An ethnographic study of Knowledge, Attitudes and Health Seeking Behaviours of Patients, Healthcare Worker (HCWs) and Community Members towards Pulmonary Tuberculosis in Akure, Ondo State, Nigeria.

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Swansea University

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Declaration and statements

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed: [redacted]

Date: 31/08/2021

Statement 1

This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by footnote giving explicit references. A bibliography is appended.

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Abstract

Background

This ethnographic study is an exploration of a research study conducted on Pulmonary Tuberculosis (PTB) infection that has claimed many lives. The incidence of TB in Nigeria in 2016 was estimated to be 219 cases per 100,000 population, which accounts for about 4% of the TB incidence globally. Nigeria holds the highest TB burden in West Africa with Nigeria among the 30 countries with the highest burden for pulmonary TB (PTB) and TB/HIV Multiple drug resistant-tuberculosis (MDR-TB) is prevalent in Africa. The management of PTB in Nigeria has been affected by the lack of funding, poor human resources, and weak health systems that are unable to support an efficient scale-up of TB services.

Despite a high prevalence of MDR-TB in Nigeria, to date, there have been few or no qualitative studies which have sought to explore the knowledge, attitudes, and health-seeking behaviours that could influence the high prevalence of the disease.

Aim: The aim of this study is to investigates the knowledge, attitudes, and health-seeking behaviours of patients, HCWs, and community members that comprises (Palace chiefs, religious leaders, traditional healers), in regard to PTB in Akure South, Ondo State, Nigeria.

Methods: This ethnographic study adapted the health belief model and social ecological model as a theoretical framework. This ethnographic study used multiple methods of data collection methods, namely, semi structured interviews, focus groups, and participant observation in a PTB clinic and community DOTS site clinic.

The purposive samples comprised of 2 community nominated leaders, 2 palace chiefs, 2 traditional healers, 2 religious' leaders, 5 patients, 5 carers/relatives, and 12 healthcare workers. The focus groups who participated in the study comprised seven Muslim men, seven Muslim women, seven church groups and seven university students. The total sample size was 58 participants, and analysis of the data was performed using the NVivo programme.

Findings:

The study identified four themes:

- Barriers to accessing healthcare services
- Knowledge and perceptions of PTB
- The socio-cultural context of PTB
- Health promotion and prevention

The fear of PTB by society led to imposition of a social–physical distance of the community from PTB sufferers. Within the HCWs system, the fear of PTB affected the attitudes and behaviour of the HCWs towards the patients and the work with PTB. The doctors indicated that TB clinics were not adequately equipped to enable the provision of quality services. For accessing services, the fear of stigmatisation, traditional beliefs, and the implications of poverty resulted in people reporting to the hospital only after a prolonged period of self-medication. Many participants highlighted that religious and traditional beliefs resulted in a reluctance or refusal to accept PTB test results. The prevention and management of PTB in Nigeria is inadequate due to a lack of funding and human resources.

Implications: The findings provide a baseline for the government to set up health promotion and disease prevention programmes in partnership with the community and non-governmental organisations (NGOs). Healthcare workers and NGOs can participate in promoting health education and prevention messages through mass media to the community to aid understanding of the disease. PTB services should be integrated into the curriculum to all schools, colleges, and universities, as well as religious programmes. The national tuberculosis and leprosy control programme (NTBLCP) is well placed to provide a monitoring and evaluation of progress.

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List of Abbreviations

Abbreviations	**Meanings**
BCG	Bacillus Calmette–Guerin
CASP	Critical Appraisal Skills Programme
CHWS	Community Healthcare workers
CDC	Centers for Disease Control
CAQDAS	Computer-assisted qualitative data analysis software
DOTS	Directly observed treatment, short-course
DS-TB	Drug sensitive – tuberculosis
ECDC	European Centre for Disease and control
FG	Focus groups
FGDS	Focus group discussions
FAST:	Face Arm Speech Time
GP	General Practitioner
HCWS	Healthcare workers
HIV/Aids	Human immunodeficiency virus and Acquired Immune Deficiency
HPA	Health Protection Agency
INH	I*soniazid* (*INH*)
KAP	knowledge-attitude-practice
MDR-RR-TB	Multidrug-and rifampicin-resistant tuberculosis
MDR-TB	Multi-drug-resistant tuberculosis
MDR	Multi-drug-resistant
MTB	Mycobacterium Tuberculosis
MSC	Master of Science
NTBC	National tuberculosis control
NTB-Ghana	National tuberculosis Programme-Ghana
NGO	Non-Governmental organisation
TB-HIV	Tuberculosis - Human immunodeficiency virus
NTLCP	National Tuberculosis and Leprosy Control Program
PTB	Pulmonary tuberculosis
PAS	*Portable Antiquities Scheme*
PTBC	Pulmonary tuberculosis suspects
RCTS	Randomized controlled trial
REC	Research Ethics Committee
SEM	Social Ecological Model
TV	Television
TB-IC	TB Infection Control
TB	Tuberculosis
UNAIDs	United nation for Acquired Immune Deficiency Syndrome
UK	United Kingdom
WHO	World Health organisation

CHAPTER 1:Introduction

Tuberculosis (TB) is a global health problem and a leading cause of death resulting in approximately 1.3 million deaths among HIV-negative individuals as well as 300, 000 additional deaths in people living with HIV/ AIDS worldwide WHO (2018), Frontières (2017).

According to the World Health Organisation, (2017), TB is an infectious disease associated with illness amongst millions of people annually, and it is ranked fourth after HIV as the leading cause of death. Globally, 10 million people developed TB disease, 90% of whom were adults. Of those adults, 64% were men. TB killed a person every 18 seconds and killed 1.3 million people in 2018. 95% of TB cases and deaths occurred in developing countries. This infectious disease caused by Mycobacterium tuberculosis has affected humans for thousands of years (Churchyard 2017) and is known as one of the top-ten causes of death worldwide and the leading cause of death from a single source of infection (Gebremichael et al., 2018; Gong, et al., 2018). The WHO estimated that TB caused the deaths of 1.3 million HIV-negative people in 2017, while a further 300,000 of the of the same population died of TB (Pan et al 2020). Preventable illnesses, including TB, continue to claim millions of lives (WHO 2016). Even though the incidence of TB (new cases per 100,000 people per year) is decreasing by 2% per year, and the TB mortality rate is decreasing by roughly 3% per year, there is still an estimated 54 million deaths per year Kasa et al, (2019). However, despite the general progress in the reduction of TB mortality and morbidity, the disease burden and its control remain a challenge across the world, including Africa. Hence, TB ranks among the world's most serious health problems despite the innumerable unparalleled biomedical achievements in healthcare and medicine worldwide (Gerace 2015). Below figure 1 shows the global trends in the estimated incidence of TB and TB deaths in 2000–2016.

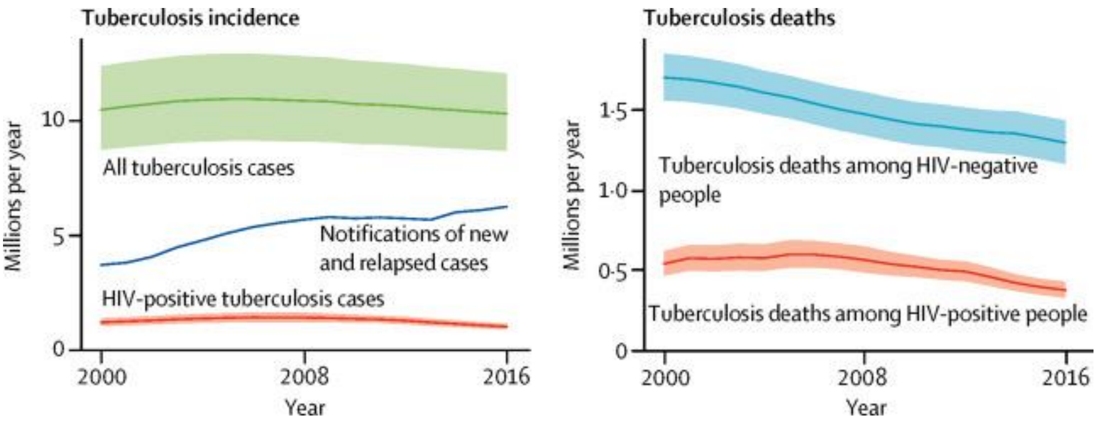


Figure 1: *Global trends in the estimated incidence of TB and TB deaths in 2000–2016 (WHO, 2017).*

Source: WHO (2017) Global Tuberculosis Report 2017.

Millions of people still suffer from TB every year, which prompted the WHO to launch the End Tuberculosis Strategy that has the overall goal to end the global TB epidemic by 2035 (Lönnroth & Raviglione 2016), as indicated in the diagram below:

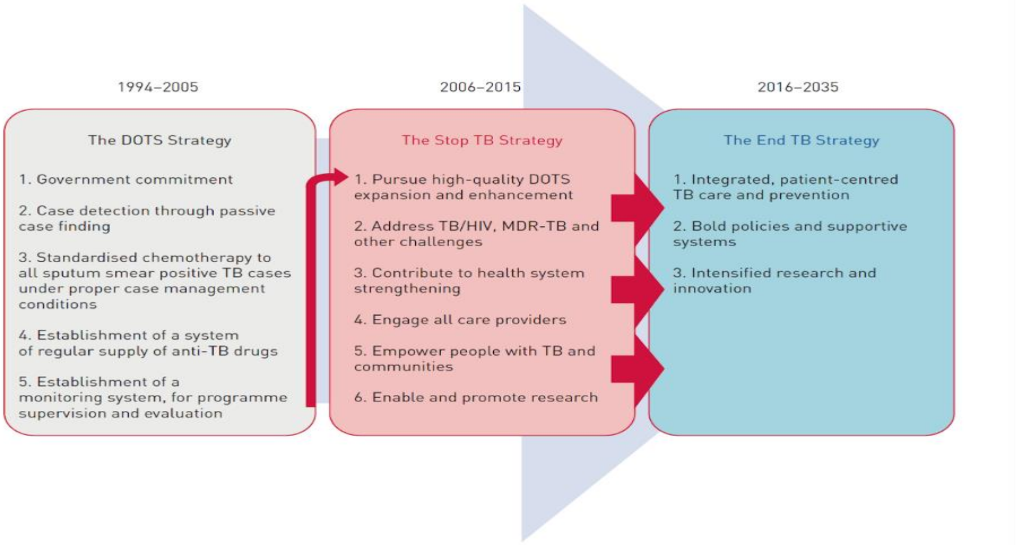


Figure 2*: The WHO End TB Strategy Source: MDR Multidrug resistant*

TB can be contracted from exposure to an infected person’s coughs or sneezes. TB infection occurs when an individual is infected with TB bacteria but does not have active TB. An estimated 23% of the global population is infected with TB bacteria, and about 10% of individuals infected with the TB bacteria will develop active TB. TB becomes active and transmittable when a person’s immune system is suppressed, for example due to pregnancy, chemotherapy, or HIV/AIDS. The latter represents a serious public health concern, as people with HIV are 20 to 30 times more likely to develop active TB than those without HIV. In 2018, TB was the leading cause of death for HIV-positive people, killing 300,000. HIV/TB co-infection remains concentrated in Africa, which accounted for 84% of all deaths due to coinfection. TB is considered a disease of poverty, and the global disease burden is uneven. India, China, Indonesia, the Philippines, Pakistan, Nigeria, Bangladesh, and South Africa account for two-thirds of TB cases worldwide (see Figure 3). In countries without comprehensive health care infrastructure, appropriate care and monitoring are especially difficult. The WHO estimates that annually health systems loss 3.6 million people with TB (Kasa et al, 2019).

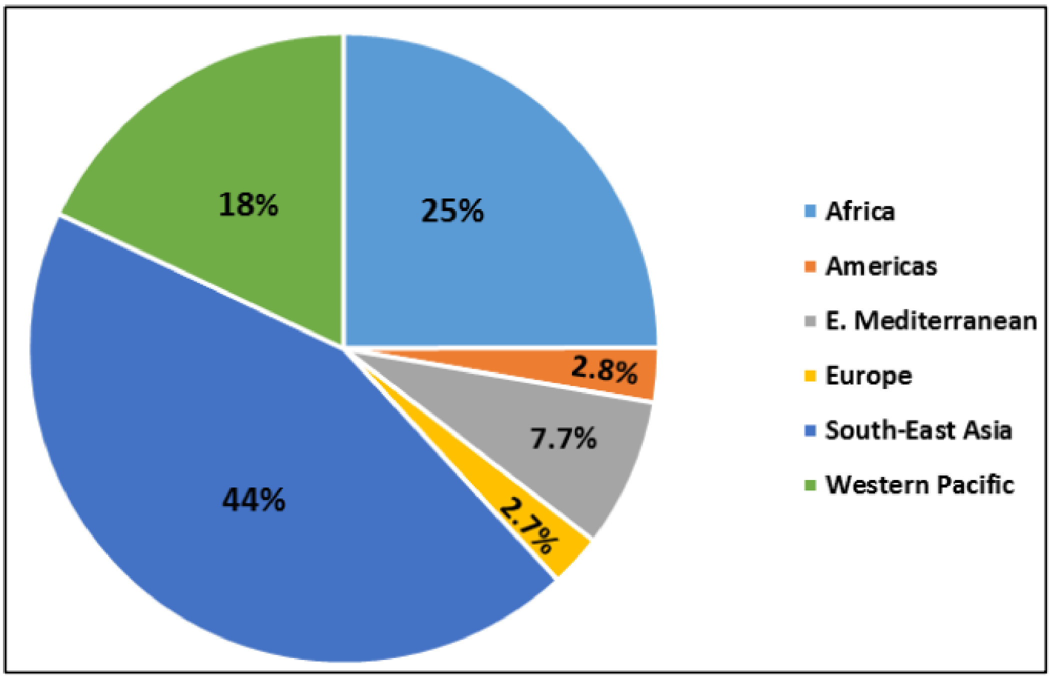


Figure 3*: Global Trends: The Burden of New TB Cases in 2017, by WHO Region Source: CRS graphic created using WHO data, 2018.*

According to the 2018 World Health Organization Global Tuberculosis Report, Nigeria has a TB incidence rate of 219 per 100,000 population while the estimated incidence of Multi-drug Resistant, rifampicin-resistant TB (MDR/RR-TB) was 12 per 100,000. Nigeria was listed as one of the top 20 countries with the highest incidence of TB cases among people living with HIV and in the general populations Frontières, (2017). The national government through the Federal Ministry of Health responded to this challenge by setting three major targets for TB control in the country which are "*to detect at least 70% of all TB cases by 2020, achieve a treatment success rate of at least 90% for all new bacteriologically confirmed TB cases by 2020 and eliminate TB as a public health problem (<= 1/1,000,000 population) by 2050*" Federal Ministry of Health (2015, p 25).

Courtwright, & Turner, (2010) in a systematic review of the literature on 'Tuberculosis and stigmatisation: Pathways and interventions', indicated that TB patients tend to conceal the disease condition because of fear of neglect, negative responses from families and friends, or the possibility of being responsible for the spread of the disease. A further study linked poor knowledge and management among tuberculosis-infected patients in resource constraint setting in Oyo state, Nigeria (Oladimeji et al 2018) suggested that poor knowledge of TB could contribute to high burden of TB due to patients' poor health seeking behavior such as looking for inappropriate care.This ethnographic study sought to explore the knowledge, attitudes, and health-seeking behaviours of patients, healthcare workers (HCWs), and community members regarding pulmonary tuberculosis (PTB) in Akure, Ondo State, Nigeria.

My interest in PTB

My interest in the subject matter stems from my experience of working in a health organisation, which provided me with the opportunity to be involved in public health issues. I became aware of various health problems in Akure South, Ondo state Nigeria, including an increase in the prevalence of PTB in the community where the research was conducted. The disease which could be easily cured unfortunately took the lives of several vulnerable people due to ignorance and misguided cultural beliefs. My MSc Public Health thesis focused on knowledge, attitudes and health seeking behaviours of patients, healthcare workers (HCWs) and community members towards PTB in Akure Ondo state Nigeria.

In my MSc thesis I adopted a quantitative approach in addressing the topic but in this M.Phil. thesis, a qualitative approach is adopted. This approach was adopted to enable a better understanding of the attitudes of community members and HCWs towards the PTB disease. Such understanding can help to identify the factors which perpetuate the prevalence of PTB so that appropriate health promotion interventions can be proactively put in place to reduce them. Such strategies may contribute to reducing the incidence of PTB among the Akure South community and influence other communities to work together in reducing the prevalence of PTB.

1.1 STUDY LOCATION AND POPULATION

The study took place in Akure capital of Ondo state Nigeria, which is situated in West Africa. The Nigeria has three major languages and over 500 dialects (World Bank, 2011). The literacy level is about 39%–51%. English is the national official language. The study was conducted in Akure, the capital of Ondo state, and Akure south is a part of Ondo state Nigeria. Ondo state is located in the Western part of Nigeria, with a landmass of 15,000km square kilometers, with a population of (3,460,877) ccomprising 1,761,263 males and 1,679,761 females. Akure population as at present is 548,314 in which male 271,932 and female 276,382.

The people of the state are mostly subsistence farmers, fishermen and traders. Ondo State geographically lies entirely in the tropical belt. The state is bounded in the north by Ekiti and the Kogi States, in the east by Edo State, in the west by Oyo and Ogun States, and in the south by the Atlantic Ocean.

***Figure 4**: The picture of Akure, the capital of Ondo State Image source: pulse.ng Source: UGC.*

Above is the picture of Akure the Ondo state capital which was surrounded by communities such as Iju-Itaogbolu, Owo, Ondo, Igbara-Oke, Idanre. It is located within the tropical rain forest region of Nigeria.

Ondo State was created in 1976 from the former Western State and it originally included what is now Ekiti State, which was carved out in 1996 by late General Sanni Abacha. The state covered the total area of the former Ondo Province, created in 1915 with Akure as the provincial headquarters. Ondo State was established formally on 1st April 1976, consisting of the nine administrative divisions of the former Western State, which then were Akoko, Akure, Ekiti Central, Ekiti North, Ekiti South, Ekiti West, Okitipupa, Ondo and Owo Nigeria (Ondo state, 2022).

With regards to health care provision, the health sector consists of public, private and mission hospitals which make important contributions to the health sector. However, the public sector through the ministry of health and social services is the main services provider. The public sector has roughly 1,150 outreach centers, 260 clinic, 40 health centres,30 district hospitals, 3 intermediate hospitals and I national referral hospital across the state. The TB services are provided in the above-mentioned health facilities. In regard to infrastructure facilities in the state, there are several projects that have been either completed or about to complete in the state which included the roads construction in some areas and some need to be repair and the federal government failed to do. Within Akure the capital of Ondo state there are good roads that leads to the hospital and the center of the city.

In Ondo state, the Internet is widely available in all areas of the state. This is widely used for telephone communication, internet browsing and more importantly, in an academic environment, hospital, public and private organisation. The internet and telephone communication where people need to communicate to other people and receive messages and search for more information outside their own environment. But there are challenges common to operators in the telecoms sector have been identified as; the high costs of right of way (the right of way are infringed upon by vandalizers and the government without appropriate compensation); long delays, bottle necks and corruption associated with the processing of permits; Lack of a common front by bodies representing the Federal, State, and Local Government leading to multiple taxation, regulatory bodies and policies; lack of essential infrastructure such as electricity, information system, Computers in the universities hospitals IT equipment that need to be in place . All these are the major problems that make the internet accessibility in Ondo state difficult for either sending or receiving messages. This can be improved if there is more support from the government to improve the challenges faced by the internet provider. Below is the map of Ondo state.

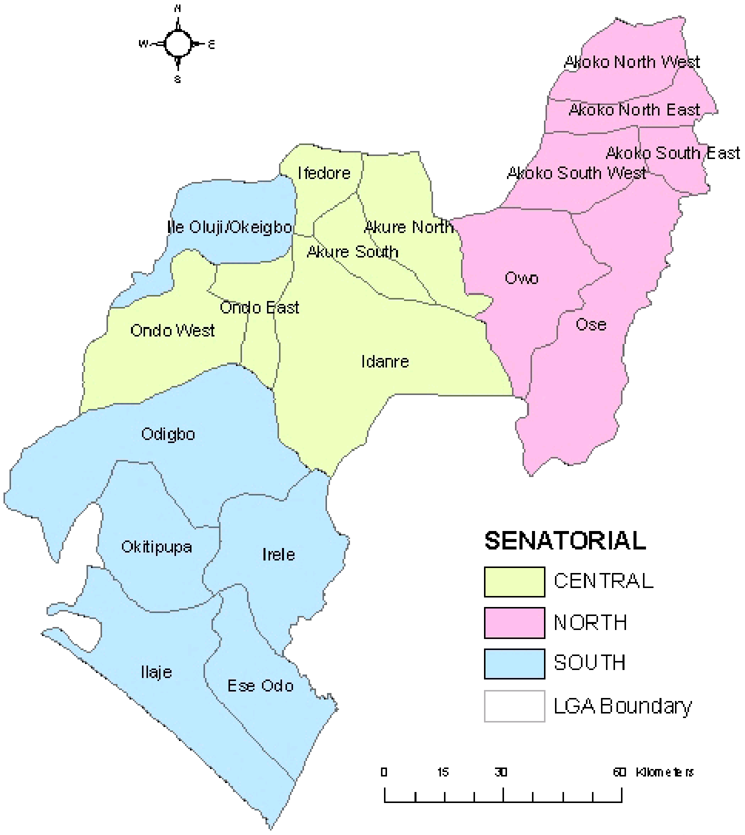


***Figure 5**: Federal senatorial district map of Ondo State*

(Source: http://www.ondostateassociation.org/about.html)

Castillo (2010) defined a study population as a definite group of people who possess homogeneous characteristics. The data used for analysis is obtained from the study participants. However, characteristic features such as sex, geographical location, and age must be recognised when conducting any research (Castillo, 2010).

Tuberculosis is a global treat and Nigeria is among the high TB, TB/HIV and DR-TB countries globally. The country ranks 7th among the 30 high TB burden countries globally and first in Africa, accounting for 4% of the estimated incidence cases globally Federal Ministry of Health Nigeria (2017).

Nigeria has the highest tuberculosis burden in Africa and one of the world’s widest gaps between estimated and reported cases according to the recently released WHO Global TB

Report 2019 (WHO 2018). A comparison of the reports for 2018 and 2019 showed the disease burden is increasing in Nigeria in sharp contrast with the improving global outlook.

Progress has, however, been made in the percentage of HIV-positive individuals on tuberculosis preventive treatment, which increased from 39% in 2017 to 62% in 2019 (WHO,2019).

Nigeria is one of the 30 highest TB burden countries and one of the top three of the ten countries that accounted for 80% of the total gap between TB incidence and reported cases in 2017 (WHO, 2018). In addition, TB prevalence among HIV/AIDS patients rose to 27% due to the increased association of TB with HIV/AIDS (Onyebuchi, 2015).

The National Tuberculosis and Leprosy Control Programme (NTBLCP, 1998) was established in 1991 based on the WHO’s DOTS strategy. In Nigeria, the NTBLCP operates along the three levels of government, namely, national, state, and local government areas, with coordinating offices at each level. Local health facilities are the operational units of the DOTS services. As of 2015, there were 3,455 health facilities providing free TB and DOTS services in Nigeria (Federal Ministry of Health, 2015). According to the first National TB Prevalence Survey in Nigeria (2015), 90,584 cases of all forms of TB were detected in 2015. The TB incidence and mortality rates for the country is 219/100,000 and 39/100,000 per population respectively 2016. The treatment coverage for the country in 2016 was 24% making it the lowest TB treatment coverage rate globally (Federal Ministry of Health Nigeria 2017). A national survey by the National Tuberculosis, Leprosy and Bruli-ulcer Control Programme on catastrophic cost experienced by TB patients in Nigeria in 2017 reported that 51% of TB patients experienced catastrophic cost with a higher proportion (93%) among drug resistance TB patients by the human capital catastrophic cost estimation threshold of 20% of higher for patients (Federal Ministry of Health Nigeria 2017), indicating the severity of TB in the country.

1.2 THE PTB PROBLEM IN NIGERIA

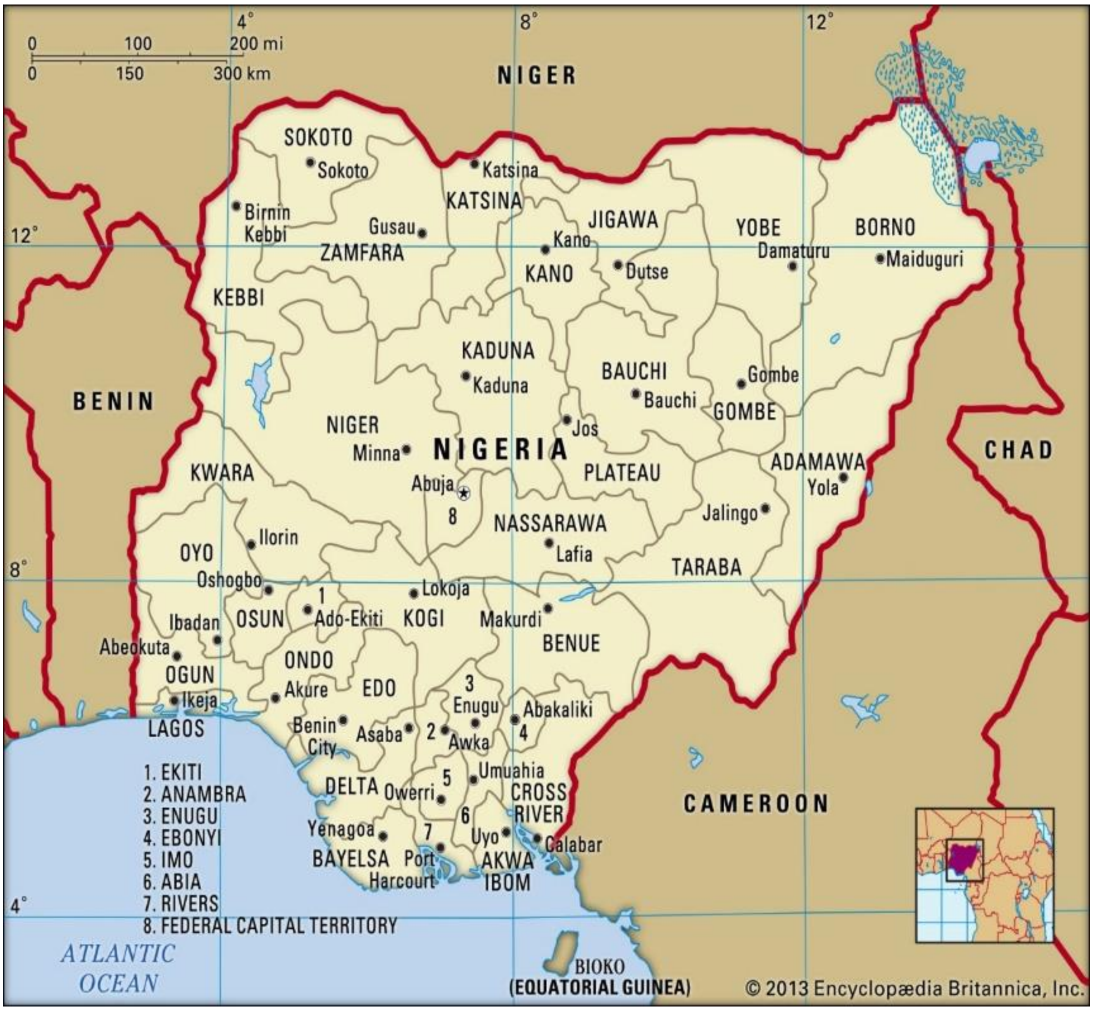


***Figure 6**: Map of Nigeria showing 35 states and Federal capital territory (FCT)*

Source: Adebowale (2020).

The above map shows the 35 states and Federal capital territory of Nigeria, with other country. Nigeria is bordered to the north by Niger, to the east by Chad and Cameroon, to the south by the Gulf of Guinea of the Atlantic Ocean, and to the west by Benin. The Ondo state position was also indicated in the map.

The NTBLCP covers all the 36 states and federal capital territories (FCTs), including all the 774 local government areas (LGAs) in the country. In terms of geographical spread, at the end of 2015, the country had 5,863 DOTS centres in the 774 LGAs as indicate in the map of Nigeria above (Federal Ministry of Health, 2015). Through the DOTS expansion strategy, the dissemination of TB information and services has been promoted through the training of healthcare providers (specifically DOTS and laboratory staff) as well as educating TB patients during diagnosis and treatment initiation. However, the general population has not been well informed about TB because of the sparse use of mass media, resulting in low awareness of TB among the general population. According to (Ogbuabor and Onwujekwe, 2019), in Nigeria, there is a costed plan and policy coordination framework for public spending on TB control, but funding is low. The policies set clear priorities and define roles and performance targets as well as shared long-term goals for TB care and control and elimination of TB. The policies align with WHO's pillar 2 of the End TB Strategy, the DOTS Strategy, and the Stop TB (Matteelli et al, 2018), with 'bold policies and supportive systems' for TB care and prevention, early case finding and proper case management, comprehensive management of the long-term physical and socio-economic effects, integration of TB services into the general health services, promoting Public-Private partnerships, behavioral change communication, and human resource development (Ogbuabor and Onwujekwe, 2019). However, the existence of the policy coordination framework has not translated into effective coordination in practice. Although plans were costed, funding gaps persisted due to low public spending and unpredictable release of funds by all tiers of government. As a result of this, TB control has received little attention. In 2014 only 20% of active TB cases in Nigeria were notified despite Nigeria having the highest TB burden in Africa (WHO, 2014).

The prevalence and incidence rates of TB remain high and are increasing in Nigeria. According to the WHO (2017), the estimated incidence of all types of TB in Nigeria is 322 per 100,000 in terms of population, with only 15% of the total burden of the disease in the country being recorded. The WHO estimates that the proportion of patients with detected Multi-drug Resistant TB, (MDR TB) is 4.3% among new cases and 25% among previously treated cases in Nigeria (WHO, 2017).

The Nigerian health care has suffered several health challenges (HERFON, 2010; Maternal Mortality in Nigeria, 2010; Nigeria National Health Conference, 2009; Nnamuchi, 2007; Onwujekwe, 2010). Despite Nigeria's strategic position in Africa, the country is greatly underserved in the healthcare sphere. Health facilities (health centres, healthcare personnel, and medical equipment) are inadequate in this country, especially in rural areas (HERFON, 2010; Maternal Mortality in Nigeria, 2010; Nigeria Primary Health Care Policies, 2010).

Although some reforms have been put forward by the Nigerian government to address wide-ranging issues in the healthcare system, they are yet to be implemented at the state and LGA levels (Nigeria Primary Health Care Policies, 2010). According to the 2009 communique of the Nigerian National Health Conference, the healthcare system remains weak, as evidenced by the lack of coordination, fragmentation of services, dearth of resources (including drugs and supplies), inadequate and decaying infrastructure, inequity in resource distribution, and poor access to and quality of care. The communique further outlined the lack of clarity of roles and responsibilities among the different levels of government (Nigeria National Health Conference, 2009). Although there were new changes regarding a health care system, the routine surveillance and medical intelligence that were recommended to support the health sector, with adequate management and strong leadership principles to implement the changes are still under process.

The international and national Tuberculosis challenges

There are a number of significant issues related to the global challenge of TB. These include TB prevention, inadequacies in TB identification including among children, drug resistance, and a lack of research finance. Another challenge identified were methods used for estimating the burden of TB management issues, that will bring private practitioners in the DOTS care team to enhance DOTS treatment and increase early detection of TB in HIV-infected persons as well as TB funding issues.

Other substantive global challenges include poor treatment outcomes which are driven by lack of evaluation, poor linkage to treatment, death and high loss to follow-up. The underlying causes of poor treatment outcomes include un-identified or additional drug resistance (Cegielski et al., 2014), inadequate support provided to people with TB to ensure high level of adherence, weak recording and reporting systems and inadequate prevention and management of advanced HIV disease including the provision of anti-retroviral treatment.

At the National level, several challenges have been identified, for instance in Nigeria, they are limitation in funding for TB diagnosis, and treatment, which resulted to lack of medicine supplies, shortage of personnel, poor primary health-care infrastructure in rural areas of the states and with unregulated private health care leading to widespread irrational use of first line and second-line anti-TB drugs. In addition, the social economic issues such as shortage of laboratory facilities, and logistical challenges encountered by the health workers, that include lack of adequate equipment for precaution, and stigmatization among nurses, that lead to shortage of healthcare workers, where frequent redeployment and health workers and some were yet to be trained resulting in work overload and spreading HIV/TB infection. The demographic issues such as under-diagnosis of TB in adults' children which resulted to poor treatment success in specific geographic areas. Finally, the lack of political will resulted to inadequate integration of TB and HIV services. Inadequate capacity to diagnose and treat drug-resistant TB (DR-TB). Sub-optimal program management, data management and supply systems that are unable to support efficient scale-up of services, which leads to work overload. As indicated by Needham, Bowman, Foster, & Godfrey-Fausset (2004), these perspectives have important implications in subsequent health care reforms.

Prevention and management of all types of tuberculosis in Nigeria

The prevention and management of TB in Nigeria is the function of NTBLCP. The NTBLCP's National Strategic Plan for TB Control (2015–2020) set out to guide the implementation that will provide Nigerians with universal access to high-quality, patient-centered prevention, diagnosis, and treatment services for PTB, TB/HIV, and drug-resistant TB by 2020. This Strategic Plan emphasised the rapid scale-up of services to achieve universal access to TB prevention, diagnosis, and treatment, with an emphasis on quality, accountability, and linkages between the different levels of the health system and partnerships that leverage the resources and efforts of other disease programs and initiatives to have a greater impact on TB control (FMOH, 2014).

It also includes working in partnership with several nongovernmental organizations (NGOs), which are operating community-based TB control interventions involving volunteers and health workers; they provide important linkages with health facilities. Rifampicin-resistant tuberculosis (RR-TB) and MDR-TB are also of concern in Nigeria. To address DR-TB, Nigeria introduced programmatic management of DR-TB (PMDT) in 2015 and currently provides ambulatory DR-TB services at the national and state levels through 27 treatment facilities.

In addition to these outpatient services, inpatient and long-term non-ambulatory services are provided through health facilities with the capacity to manage DR-TB for a period of 20–24 months using second-line TB treatment. In Nigeria, the treatment success rate for DR-TB was 78% for the 2015 cohort (WHO, 2018), which is higher than the global average of 55% (WHO, 2018). In order for the NTBLCP to continue to monitor and evaluate all aspects of DOTS, the progress for the program implementation through quarterly and annual reports, there is a need for the government to set up a reviewer team that will foresee the LGA, state, and national activities. All confirmed cases, presumptive cases, and TB/HIV coinfected cases are entered into the TB program recording and reporting system through existing data collection tools (forms and registers). The NTBLCP reports treatment outcomes for all forms of TB in line with WHO recommendations.

1.3 TUBERCULOSIS IN ONDO STATE

Western Nigeria consists of seven states, one being Ondo State, located in the south-west of Nigeria (See Figure 6). According to the national census, Ondo State had a population of 295,244 people in 2006 (National Population Commission, 2006). However, in 2021 the population rose to (3,460,877). With a land mass of 14,606 square kilometres, Ondo State is rich in agriculture, and its main products are fish, palm oil, yam, cassava, cocoa, and petroleum. As rich as Ondo State is, a significantly high prevalence of TB has been observed. The National Ministry of Health on TB and Leprosy Control Programme classified 22 states as highly burdened states for TB in Nigeria, and Ondo State is one of them. The Akure South local government is one of the most populated local governments in Ondo State and is one of the most highly burdened LGAs for PTB and TB in the state. The prevalence and incidence of all sorts of TB in the state, reported by the first national TB prevalence survey report (2012), Nigeria had a prevalence rate of 323 per 100,000 for all forms of TB and an estimated incidence rate of 338 per 100,000 (Akorede et al., 2021), furthermore, the National Tuberculosis and Leprosy Control Programme statistical report in Nigeria, 90,584 of all forms of TB cases were detected in 2015. In 2021 there were 1106 PTB/TB prevalence, TB continues to increase, and still the major public health problem and it is the largest health problem among the productive age group (Akorede, et al., 2021). In Ondo state the weak healthcare systems remain a major barrier for addressing tuberculosis care and control in the state. The state adopted directly observed treatment short-course (DOTS) strategy for the detection by sputum microscopy, short course treatment directly observed by health workers. The latest PTB/TB survey conducted in Nigeria in 2012, shows that Ondo State has the highest prevalence of PTB among all the states in Western Nigeria, with a prevalence of 460,000 cases, of which the majority are women of childbearing age. Some of the reasons for this high prevalence of PTB is the co-infection of HIV/AIDs in the state as well as the community’s perceptions of PTB in Ondo State. Ondo State has several hospitals where TB treatments can be received, but one major TB referral clinic at Akure State Hospital acts as the major referral hospital for the whole state. The problem of TB has been compounded by the emergence of MDR-TB and HIV in Ondo state.

For example, a study conducted by Bello et al. (2014) with 135 patients aged between 15 and 65 years old, visiting the chest clinic in the state specialist hospital, in Akure, Nigeria, revealed that of the 135 samples of sputum processed by GeneXpert, 48 (35.6%) contained MTB. The prevalence of RIF mono-resistant TB in this study was 18.8%. Patients within the age group of 24-32 years showed the highest resistance to RIF. Although the study was an older study it was conducted in Ondo state where my study was conducted. Hence, people's perceptions regarding PTB must be explored to develop appropriate interventions to change people's attitudes and behaviours towards PTB if the goal of eradicating TB in all the states of Nigeria is to be achieved.

Background and history of TB

The causative organism (*Mycobacterium tuberculosis*) of TB is believed to have originated from ancient humans as a result of transmitted infection from cattle to humans between 4,000 and 8,000 BC (Bloom, 1994). The cause of the disease was associated with the devil, and for a long duration, TB was understood to be an inherited disease (McKinney et al., 1998). Many attempts to cure TB had been made until 1946, when streptomycin was demonstrated to be efficacious against the disease (McKinney et al., 1998). In 1952, isoniazid became available, and in 1965, rifampicin was also found to be as effective as isoniazid, making TB curable in the majority of patients (Mandell & Bennett, 2000). The discovery of these drugs was supported with the combination of chemotherapy dubbed 'short course', with a duration of no less than six months (Harries & Dye, 2006). In ancient times, TB was believed to be transmitted from unpasteurised cattle milk (Redman et al., 2002). However, according to Murray (2004), the risk factors associated with TB in recent times include poverty, the chief cause of other factors such as poor nutrition, poor hygiene, poor medical care, and staying in overcrowded places. The close association between overcrowding and poor ventilation, two major factors leading to the spread of the disease, has led to PTB being termed as an 'urban disease' (Redman et al., 2002).

In 1993, given the high burden of TB globally, the WHO declared an emergency on the disease (Newsom, 2006; WHO, 2012). The main routes of PTB transmission are via coughing and sneezing (Cohen et al., 2010). Most times, TB patients are isolated so as to avoid the spread of the disease. Other prevention measures include covering one's mouth when coughing and sneezing to avoid the displacement of sputum, which may lead to the spread of the disease (NHS, 2011). Apart from the lungs, TB can affect other parts of the body, such as the skin, abdomen, bladder, spine, heart, kidney, and lymph nodes (Cohen et al., 2010). Several symptoms are associated with TB, but the most common are fatigue, breathlessness, high fever, sweating profusely at night, prolonged coughing, phlegm production, and loss of appetite (Cohen et al., 2010; NHS, 2011). These symptoms are not particular to TB but also apply to other disease conditions, such as respiratory disease so a healthcare centre should be visited for further tests to confirm the disease condition.

Diagnosis and treatment of TB.

Globally, TB diagnosis is usually achieved through sputum smear microscopy, in which bacteria are observed in sputum samples examined under a microscope (WHO, 2015). The use of the rapid-test Xpert MTB/RIF assay was recommended by the WHO in 2010 as an initial diagnostic test for people at risk of drug-resistant TB and has since expanded substantially (WHO, 2015).

According to the WHO (2012), the care of TB patients begins with a diagnosis of the disease, carried out by growing and identifying *Mycobacterium tuberculosis*. The CDC (2011) outlines that prior to a TB test, the medical history of the patient’s TB exposure should be investigated. Further investigation into the patient’s medical conditions should be carried out, such as HIV infection, which may show latent TB infection to TB progression. The most generally used methods for PTB diagnosis are the Mantoux tuberculin skin treatment, chest radiographs. TB is managed using antibiotics such as ethambutol, rifampicin, isoniazid, and pyrazinamide. Some of these drugs have potential side effects; for example, ethambutol may result in the loss of vision (Cohen et al., 2010; NHS, 2011).

The recommended treatment for new cases of drug-susceptible types of TB is a six-month regimen of four first-line drugs: isoniazid, rifampicin, ethambutol, and pyrazinamide (WHO, 2015). Two new therapies for TB treatment (bedaquiline and pretomanid [BP] as well as bedaquiline, pretomanid, moxifloxacin, and pyrazinamide [BPaMZP]) are also recommended for XDR-TB treatment. TB patients who are well informed about the disease are more likely to follow treatment instructions and protocol (Adekanmbi, 2015). Effective treatment as well as TB awareness can reduce the number of TB cases.

Mantoux tuberculin skin test

The Mantoux test, also known as the TB skin test or the TB blood test, is used to screen latent TB (Escombe et al., 2008; CDC, 2011). This screening process is carried out by injecting a small amount of tuberculin into the skin, particularly the lower part of the arm. Trained HCWs look out for a possible reaction, usually swollen red skin at the site of the injection after 48–72 hours. These signs show that the patient has latent TB, while the absence of these signs signifies no TB infection. The patient's immune system reaction to *Mycobacterium tuberculosis* is measured during the Mantoux skin test (CDC, 2011; Shingadia, 2012). Though the Mantoux test is one of the most commonly used tests for TB screening, it tends to give contradictory results. Most times, false positive results are reported for individuals vaccinated with Bacille Calmette–Guérin (BCG) and patients with malnutrition and immunosuppression (Shingadia, 2012).

Chest radiograph

A chest radiograph is used to detect lung and chest abnormalities such as PTB and parenchyma changes (Escombe et al., 2008). Investigating chest abnormalities may contribute to TB detection but may not be used as a definite method for TB diagnosis. However, it may be used as a confirmatory test to rule out TB in individuals tested for TB using the Mantoux test and displaying positive reactions (CDC, 2011).

1.4 DIRECTLY OBSERVED SHORT COURSE (DOTS)

In the presence of effective drugs, the treatment of TB has not largely affected the incidence and prevalence of TB, and this has been linked to noncompliance with TB treatment plans (Valsalan et al., 2012). This noncompliance led the WHO to introduce DOTS for TB control in 1993. This strategy is based on five major elements: political engagement and commitment, standard laboratory analysis backed up with efficient services, direct patient observation while taking medication, free supply of complete dosage of short-course anti-TB drugs, and documentation of the progress in curing the patient. Though the success of this strategy has been well established, it has been criticised for infringing on the human rights of TB patients (Volmink & Garner, 2009).

The structure of the thesis

The reader is now orientated to the structure and layout of the these, as indicated below:

In the next chapter a critical review of the literature is presented, which is thematically organised into five themes. These themes are:

- Knowledge of and attitudes and perceptions towards PTB patients
- Barriers to accessing PTB treatment
- Attitudes and beliefs of HCWs
- Health-seeking behaviors of patients
- Culture and beliefs of local traditional healers regarding PTB.

Chapter 3 details the research design and methods used in the study and discusses the rationale for undertaking an ethnographic approach

In Chapter 4, the main models used to make sense of the findings are presented and discussed. These models are the health belief model (Becker, 1974; Rosenstock, 1974), and the Socio-ecological model (McLeroy et al, 1988).

Chapters 5 to 8 present the findings form the study and are discussed in light of the literature on PTB. Chapter 5 Barriers to accessing PTB treatment. This is followed by Chapter 6 Knowledge, attitude, and perception of PTB. chapter 7 social cultural context of PTB which presents the findings and Chapter 8 Health promotion and prevention of PTB. Chapter 9 include discussion, of the findings in light of the HBM and SEM and the conclusion, and limitations of the study, recommendation for policymakers, practitioners, and for further research study in Ondo state Nigeria.

Summary

In this chapter I have justified why this study needed to be conducted. I have provided information on the prevalence of PTB globally, in Nigeria and in Ondo state where this study was conducted. I have identified a need for a qualitative study to be conducted to explore the knowledge, attitude and perception of patient’s carer/relative community members and HCWs. In the next chapter a critical review of the literature is presented.

CHAPTER 2: Literature review

This chapter presents the review of the literature that critically examine a theoretical background to the research aim and objective of my study, for this project on PTB conducted at Akure Ondo state Nigeria on the knowledge, attitudes, and health-seeking behaviour of patients, HCWS, and community members regarding PTB and TB and to understand what research had previously been conducted on this topic, identify any gaps in knowledge, and inform the design of this study. Although the study supposed to finished in 2018, due to family issues and financial difficulties moved to part time study and the literature review was extended to 2021.

2.1 THE RATIONALE

Ondo State is one of seven states in the Western Nigeria and is located in the southwest of the country as indicated in the introduction chapter1. The severe burden of TB in Nigeria has been linked to inadequate TB management and the HIV epidemic (Lienhardt and Ogden, 2004; Corbett, 2006). Despite expressions of political will to control TB and a clearly articulated national TB policy, the government neither set targets for Case Detection Rate nor achieved the cure rates (WHO, 2012; Bello, 2010, FMOH, 2010). In Nigeria, health behaviours and stigma are recognised as major obstacles associated with TB contributing to the failure of some TB initiatives (Olumuyiwa and Babafemi, 2004).

Studies in other developing nations with a similar demographic, population in healthcare system have had similar findings. Poor health care seeking behaviors of the study participants due to wrong perceptions and lack of financial resources mainly for transport have been observed in northwest Ethiopia (Yiner et al. 2009, Vietnam Hoa et al., 2003) and China (Wang et al., 2008).

Re-emergence of PTB in the state has been attributed to lack of knowledge, poor health awareness, lack of government support and funding, which make it difficult for people to utilise western medicine (Olumuyiwa and Babafemi, 2004). In Ondo state, there are several hospitals where TB treatments can be accessed, but the state has one major TB referral clinic at Akure state hospital which acts as the main referral centre for the whole state. High levels of poverty and lack of knowledge have prevented the majority of the community members to seek PTB treatment, because of the belief that PTB is a disease from the devil and has no cure.

There is a misconception that deep rooted beliefs have cause these communities to ignore and fail to seek help for the treatment, resulting in the increases in morbidity and mortality rates especially among women and children. This misconception is critical in changing people’s behaviour and since Nigeria is planning to eradicate TB in all the states, this research project focuses on the need for a comprehensive study into new ways of providing these communities with information to help them embrace and change their attitudes and beliefs towards TB.

The purpose of the literature review is to establish the significance of this study through an appreciation of the existing knowledge and awareness of PTB among several populations. The review of the literature is arranged according to the themes derived from the aims and objectives of the study, in which articles were examined and identified in the following: knowledge, attitudes, and perceptions of PTB; barriers to accessing PTB treatment; attitudes and beliefs of HCWs towards PTB patients; health-seeking behaviours of patients; and finally, the culture and beliefs of local traditional healers regarding PTB were examined. Gaps in the literature were identified.

2.2 LITERATURE SEARCH STRATEGY

For this literature review, a search strategy was developed to identify the relevant literature using twelve different databases. First, published articles and literature from the Swansea University library were accessed through the use of database search engines, including PubMed Central, BioMed, CINAHL, SCOPUS, NICE, ASSIA, the British Nursing database, PsycINFO, and Medline publications from the Centres for Disease Control and Prevention (CDC), the WHO, and the Health Protection Agency (HPA). The keywords used were the following:

1)*tuberculosis or tb or "pulmonary tuberculosis AND knowledge or attitude* or perception* AND community**

2) *" tuberculosis" or tb AND knowledge or perception* OR attitude*AND "HCW*" OR "health care provider*" OR "health care personnel"*

3) *“tuberculosis* OR *tb* OR *"pulmonary tuberculosis"* AND *"Health seeking behaviour"* OR *"health seeking behaviour"* AND *patient**

4) "tuberculosis OR tb OR "pulmonary tuberculosis" AND knowledge OR culture OR belie* AND "traditional healer*"*

The research process used the combination of Boolean operators AND and OR, entered into the search database as indicated above. The Boolean AND assisted in narrowing the search and served as a linking word between two keywords. According to Aveyard (2010), the goal of literature review is to ensure that only appropriate studies are included for review. It was important that the literature selected for review was in line with the research aim and objectives and met an established set of criteria for inclusion and exclusion. Such criteria assisted in narrowing down the search for relevant materials for study (Fink, 2019).

The materials sourced were screened; articles and abstracts whose titles conformed to the inclusion criteria were reviewed, while those whose topics did not conform to the criteria were not considered for review.

2.2.1 The selection of criteria

The inclusion and exclusion criteria were based on the PRISMA statement (Moher et al., 2009), which asserted that searches should be focused mainly on mapping the existing literature on pulmonary tuberculosis (PTB) in the field of social sciences. The search then narrowed the subject areas by health field. The search span extended from 2000 to 2021. All articles before 2000 were excluded. The research was mainly focused on Africa, Asia and Europe. Other countries were excluded. Forty articles were extracted for the study.

2.2.2 Data extraction

Criteria for inclusion were as follows:

- articles published between 2000 and 2021
- articles on TB and PTB
- literature on stigmatisation and TB
- articles on the knowledge of and attitude and perception towards TB
- articles on traditional healers' knowledge and medicine
- articles written in English

Criteria for exclusion were as follows:

- articles published after 1999
- unpublished articles

- literature not written in English
- articles not addressing TB or PTB

Subsequent to the selection process, articles which met the inclusion criteria were arranged according to the research titles and the aim of the study. Then, the articles were critically appraised, and the **figure7** PRISMA flowchart of the search shows how the articles included in the review were selected.

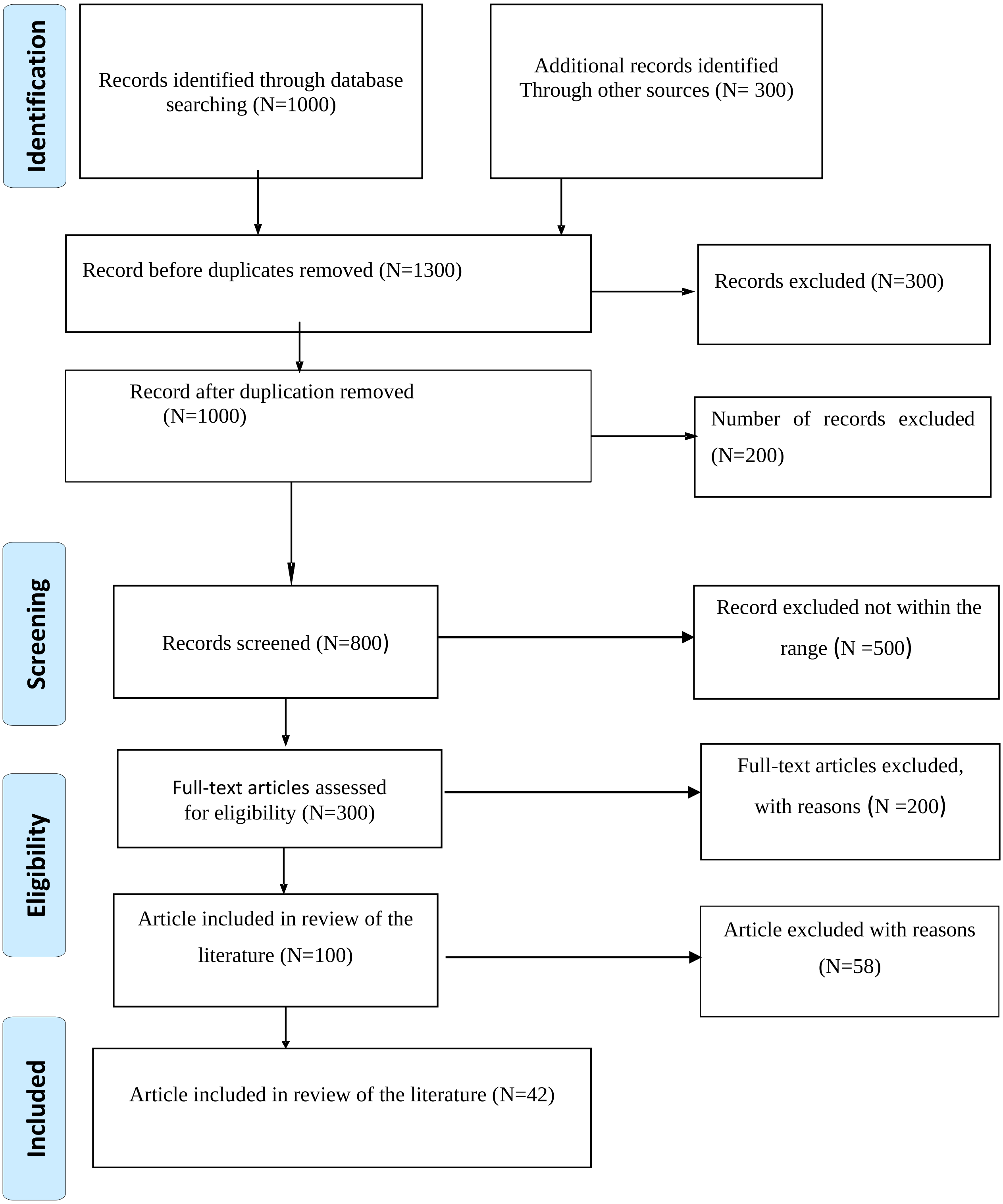


Figure 7: *Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009).*

The literature searches yielded maximal information which was specifically related to the topic of the study and included knowledge of and attitudes and perceptions towards PTB (N

= 220), barriers to accessing PTB treatment (N =100), attitudes and beliefs of HCWs towards PTB patients(N=130), health-seeking behaviours of patients (N=500), and culture and beliefs of local traditional healers regarding PTB (N=50). After application of the exclusion and inclusion criteria, the search yielded a total of 1000 articles. Other articles were also identified through other sources (N=300). Following the removal of duplicates, out of 800 articles, 500 were removed, meaning 300 full text articles remained. Of these remaining 300, 260 articles were then removed giving total of 42 articles that were assessed for eligibility. Of these remaining 40 articles, 8 were qualitative studies, and the remaining 34 were quantitative studies. The full text articles that were excluded was because the articles were not relevance to the study or only the abstracts were available for review.

2.2.3 Quality of assessment

This study is based only on original research articles. To maintain the quality of the review papers, all duplications were checked thoroughly. The abstracts of the articles were checked carefully to ensure the quality and relevance of the academic literature included in the review process. In addition, a careful evaluation of each article was carried out to limit the review to articles published in the English language only. Any articles not in English were excluded from the study. After the filtration of duplicate records, more articles were removed from the list. Finally, I selected 40 articles after assessing each article on the aforementioned inclusion and exclusion criteria.

In this study, I utilised CASP checklists to guide me to make sense of the research evidence, and this enabled me to develop the skills I required to evaluate the research articles. The summary table of the evaluation of the literature included in the review is in **(Appendix A**). The PRISMA diagram below illustrates how the literature for review was selected.

Each article was reviewed and its date of publication, geographic location, study type, use of qualitative and/or quantitative methods, key results, and conclusions noted. The articles were then assigned to mutually exclusive content themes based on the study’s primary focus:

- Knowledge of, attitudes and perceptions towards PTB patients
- Barriers to accessing PTB treatment
- Attitudes and beliefs of HCWs towards PTB patients
- Health-seeking behaviours of patients
- Culture and beliefs of local traditional healers regarding PTB

2.3 KNOWLEDGE, ATTITUDES AND PERCEPTIONS TOWARDS PTB

In this theme, I reviewed literature which had explored the knowledge, attitudes, and perceptions towards PTB disease. According to Glanz et al. (2002), knowledge as the information that leads to understanding or taking an appropriate informed action, as indicated in the aim of this present study. Knowledge refers to what is known by a PTB patient, carers/relatives, community members and HCWs regarding PTB in general, such as signs and symptoms, mode of transmission, prevention, and treatment and care of patients with PTB. Meanwhile, Nutbeam (2000) defined health knowledge as a person's ability to access, understand, and use health information. Ratanasiripong, & Chai., (2013). defined attitudes as beliefs or concepts which predispose an individual to respond in a more conducive manner. However, if PTB is to be effectively integrated into primary health care in low-income countries like Nigeria, then grass-roots workers and community members need to acquire relevant knowledge and attitudes to be able to recognise, refer, and support people experiencing PTB in their own communities. In that case, the above definition relates to a positive attitude, although it can also be negative if the people perhaps do not seek help.

A cross-sectional survey conducted by Mukhtar et al. (2012) in North-east Libya, assessed the knowledge of TB among the general population, with a sample of 1,500 participants, both male and female, aged 18 and 60 years plus. The findings revealed that the mean knowledge scores among the participants were 11.4±3.8 out of 23. while the scores were significantly higher for Libyans compared with non-Libyans (11.7±3.8 vs. 9.7±4.7; $p < 0.001$). The findings revealed that knowledge of TB within this sample was poor. It was therefore suggested that specialized educational programs should be developed for community members to promote awareness towards TB. In the same study, knowledge scores were directly proportional to level of education among study participants (Mukhtar *et al.* 2012).

Several other studies also showed similar relationship between level of education and TB knowledge (Portero *et al*. 2002; Abebe et al., 2010). These findings are in line with findings reported in the literature (Portero *et al.* 2002; Singh *et al.* 2002). Investigated general knowledge about tuberculosis (TB) and intended health-seeking behaviour for TB symptoms among the general population of Metro Manila, with a sample size of 3,970 participants aged 18 years and over, both male and female. The results revealed that the participants scored low in general knowledge about TB (3.64 1.67, range 0–10). A higher score was independently associated with college education (OR 4.35, 95%CI 6.60–2.87, P < 0.0001). There was no significant difference in TB knowledge acquired through several sources. No intention to seek health care and intention to self-treat in case of TB disease were significantly correlated to low family monthly income (OR 7.10, 95%CI 8.25–6.11, P < 0.0001 and OR 1.74, 95%CI 2.06–1.46, P < 0.0001, respectively).

Such findings are in line with those of other studies reported in the literature, which showed that almost (95%) of the study participants had heard about TB. Although the study conducted by Mukhtar et al. (2012) had a large sample and a good response rate, the questionnaire-based survey was conducted in only one part of the country. The study would have benefited from the use of different methodologies, such as mixed methods. A cross-sectional survey only provided the outcome of the study and the characteristics associated with it, while other study designs, such as ethnography with a qualitative method, could have better interpreted the data and produced in-depth information based on the findings and the results.

Similar findings were reported from Iraq by Yousif et al. (2011), where of 476 total PTB suspects, 395 (83.0%) of the participants had never heard of TB, and the “evil eye” (50.4%) was the most commonly mentioned cause of TB. Yousif *et al.*’s, (2011) study also revealed that knowledge of the cause of TB was poor, with as few as 50% (n=238) of the respondents declaring that TB is caused by bacteria. However, compare to Yousif *et al.*’s (2011) findings, respondents from Vietnam (Hoa *et al.* 2009) and the Philippines (Portero *et al.* 2002) reported good knowledge about the causative agents of TB. In the study by Hoa *et al.* (2009), about three-quarters (n=787,78.7%) of the respondents knew that TB is a communicable disease and mentioned prolonged coughing as one the major symptoms of TB. This finding was supported by studies from Pakistan and Kenya. The most problematic finding was the lack of knowledge about TB transmission. Most of this study’s respondents were of the opinion that sexual relations can transmit TB (Mukhtar *et al.* 2012). The respondents also thought that TB cannot be transmitted by kissing the infected person or drinking raw milk. The extent of these misconceptions was higher in male participants and those with lower education levels and a low monthly income. Analogous to the study findings, the level of education as a significant factor in knowledge about TB transmission has been reported in other research.

Further to the above study, a quantitative cross-sectional study conducted by Mesfin *et al.* (2005) in Northern Ethiopia also examined the community knowledge, attitudes, and practices regarding PTB and the choice of treatment supervision in Tigray, Northern Ethiopia with a sample of 826 adults (392 women and 434 men) aged 15 years and above. The results revealed that most of the respondents (86.8%) had heard about PTB, and regarding where they heard of it for the first time, the majority said from health professionals (41%), followed by friends (34.3%), relatives (14.5%), public radio (3.2%), and television (0.6%). Exposure to cold (37%), germs/viruses (9.6%), malnutrition (4.5%), and poor sanitation (4.7%) were regarded as the primary causes of PTB, while 239 (33.3%) respondents did not know the cause. In the same study, most (67.9%) believed it could be transmitted by coughing (62.5%), drinking raw milk (35.7%), eating together (40.3%), sleeping together (54.4%), touching (30.8%), and inheriting from parents (33.2%). Coughing (71.5%), weight loss (66.5%), and night sweats (33.3%) were mentioned as symptoms/signs of PTB. The majority, 632 respondents (88%), believed that TB is a deadly disease, and 573 (69.4%) stated that PTB is curable with modern therapy. Isolation from the infected patients (25.1%), proper sanitation (13.2%), and vaccination (13.9%) were modalities of PTB prevention mentioned by the respondents. Of the respondents, 110 (13.3%) were unable to mention any means of prevention, while 160 (19.4%) believed it to be God’s will that they should acquire the disease, and hence, it is unpreventable. Only 12 (1.5%) respondents believed that modern treatment of PTB cases is a means of protection.

According to Mesfin *et al.* (2005), the knowledge of TB among this population was low. In support of these findings, Mangesho *et al.* (2007) in Mpwapwa District, central Tanzania investigated community knowledge, attitudes, and practices towards tuberculosis and its treatment with a sample size of 235 participants aged 21-72 years old. The study reported that 86.8% of the sample had poor knowledge of TB. In comparison, these two studies revealed, there was poor knowledge among their participants. Although the two studies were conducted in Tanzania using similar methods of data collection, it would have been better if different research designs had been used for data collection to enable more information to be collected to see if the level of the participants’ knowledge was improving.

Daniel *et al.* (2019) conducted a cross-sectional survey in Ethiopia regarding the knowledge, attitudes, and practices related to TB among the general population of Ethiopia, in which 80 *kebele*s (wards) and 40 health centres were randomly selected; 22 households and 11 TB patients made a total sampling size of 3,463 participants, male and female, aged 18–65 years.

The results of the study indicated that although most of the participants had heard about TB, however, inadequate knowledge about its transmission, limited engagement with community health workers, and low preference of the community for using community health workers were key challenges. To address these challenges, Daniel *et al.* (2019) proposed strengthening community-level interventions in Ethiopia. In addition, to address these barriers, the authors suggested the need for targeted health education interventions to close the knowledge gaps and reach the most disadvantaged and affected communities.

Although the study's strength was based on the first national-level survey in Ethiopia that explored different population groups, however, there were limitations in the study that meant the findings of the study could not be generalised to the population around the study area. For instance, the study did not include other pastoralist regions. Another limitation was the study was unable to study the attitudes of TB patients, which limits the possibility of comparing them with those of other sub-populations in the study. The results might have been affected by the capacity of the study participants to understand and respond to the questionnaire. The respondents might also have given socially desirable answers, which could lead to an overestimation of positive responses. The study revealed that by using trained and experienced data collectors who could speak the local languages and could explain the aim of study is likely to have reduced information bias. However, further studies are required to understand the reasons for the regional variations, to understand the extent of the stigma and delay related to healthcare seeking, and to improve the performance of the National TB Program (NTP) in Ethiopia.

In Bangladesh, Hossain *et al.* (2015) conducted a nationwide survey on the factors associated with poor knowledge of TB among adults, with a sample of 240 TB cases and 240 adults from the general community population aged from 15–55 years. Information on TB knowledge was obtained through face-to-face interviews with the participants. The study revealed an overall fair level of knowledge of coughing as an important symptom of TB as well as TB transmission methods, TB curability, and the availability of free TB treatment in Bangladesh. Despite this, knowledge of the community controls of TB symptoms other than coughing and the availability of free treatment was markedly lower than that of TB cases. Overall, the community controls had more than three times higher odds of having 'poor knowledge' compared to TB cases. However, knowledge varied by areas, which may be due to differences in socioeconomic condition, stigma, sex, and educational status. In support of this finding, a study conducted in Bangladesh by Tolossa *et al.* (2014) argued that access to better services could be due to socioeconomic conditions, such as education and wealth, which, in turn, can increase TB knowledge and access to health information and care compared to rural residents who are affected by poor knowledge of TB.

A cross-sectional questionnaire-based survey conducted by Kaona *et al.* (2004) assessed the factors contributing to treatment adherence and knowledge of TB transmission among TB patients with a sample of 382 participants in Ndola, Zambia, male and female, aged 10–50 years. The results showed that the respondents possessed poor knowledge about the need to complete the treatment. Overall, 29.8% of the patients had stopped taking their medication. Among the total respondents, taking their medication within the first two months of commencing treatment, the major factors leading to non-compliance included patients beginning to feel better (45.1% females and 38.6% males), and the patients lack knowledge about the benefits of completing a course (25.7%), the limited amount of drugs at home (25.4%), and TB drugs considered to be too strong. A significant difference in TB knowledge (OR = 1.66, 95% CI, 1.23, 2.26) was observed, with more males than females reporting sharing cups as a means for TB transmission, after adjusting for age, marital status, and educational levels. Significantly ($p = 0.016$), more patients who had resided in the study area for less than two years (59%) were more likely to report mother-to-child transmission of TB compared to 41.2% of those who had been in the area for more than two years. Other findings showed that patients' non-adherence with TB treatment was influenced by the lack of drugs and perceived better health by other patients. The study did not discuss whether the patients had knowledge of the associated risk factors; however, the TB patients were not very knowledgeable about their own treatment plans. Additionally, another study conducted by Mushtaq, Shahid, and Akram (2011), on knowledge, attitudes, and practices related to TB amongst rural and urban populations in Pakistan, with a random sample of 1,080 interview subjects (432 urban and 648 rural), found that poor TB knowledge was prevalent in both the rural and urban areas but even more so in the former. The study recommended that the population be educated about TB in both areas; however, other mitigating influencing factors should be considered, such as transportation fares, lack of good roads, and poverty.

As indicated by Kaona *et al.* (2004), poor knowledge of TB was more prevalent among the rural and urban patients in Ndola, Zambia. Another study, conducted by Oluwadare and Ibirinde (2010) in the capital city of Ekiti State, Nigeria, examined the health-seeking behaviour of PTB patients and aimed to understand the treatment choice of HIV-positive persons. This study recruited 100 patients from the chest clinic register of the Akure State

Specialist Hospital; 54% of the respondents were male and 46% female. The study utilised interviews for data collection for both patients and HCWs, such as nurses, doctors, administrative staff. The average age of the male respondents was 36 years, and 22 years for the female respondents; 155 were not married, while 60% of the female and 51% of the male respondents were either divorced or widowed, and 32% of the females and 20% of the males had no formal education. The findings showed high marital separation because of stigma and death from AIDS or TB. Other major factors that contributed to the lack of service usage among the community members were low incomes, perceived cost of treatment and privacy because of the fear of stigma, poor access to TB clinics, and low education status and knowledge of TB.

The issue of stigma has also been explored by Singh *et al.* (2002), who investigated knowledge and attitudes towards TB in a Delhi slum using a cross-sectional study and a systematic random sampling technique; a sample of 208 adults aged 16–70 years was investigated. Responses from the participants reflected that 71% agreed with isolating patients with TB from their families, 74.1% reported that they would avoid sharing food with TB patients, 33% responded that they would relieve TB patients of their jobs, 27.6% responded that marriage should be prohibited, and 18% would prevent TB patients from attending social functions. Overall, negative attitudes towards TB patients were reported in this research, indicating discrimination. Such negative attitudes may be linked to poor knowledge and the misconception that TB is an incurable disease. As indicated above, the issue of how attitude can be linked to poor knowledge has also been explored. Bati *et al.* (2013) conducted a cross-sectional survey on knowledge, attitudes, and practices regarding TB with 422 participants (58.5% male and 41.5% female) in Itang Special District, Gambella Region, Southwestern Ethiopia. The authors reported that out of all the study participants, only 3.3% mentioned bacteria/germs as a cause of PTB, and 9.9% mentioned coughing for at least two weeks as a sign of TB. Taking the mean knowledge score as the cut-off value, 57.6% (95% CI, 52.7% to 62.3%) of the study participants had sufficient knowledge of TB, 40.8% (95% CI, 36.0% to 45.6%) had favourable attitudes towards TB, and 45.9% (95% CI: 41.1% to 50.9%) applied proper practices. Female participants were less likely to have sufficient knowledge and favourable attitudes (AOR = 0.23, 95% CI, 0.14 to 0.37) and to apply proper practices (AOR = 0.37, 95% CI, 0.24 to 0.57, $p < 0.001$) compared to male participants.

Mweemba *et al.* (2008) conducted a descriptive study to determine the knowledge, attitudes, and adherence regarding TB treatment of 104 PTB patients (aged 18–66 years) attending chest clinics in Zambia. In Mweemba *et al.*'s (2008) study, the findings reported a majority of respondents had a positive attitude towards TB treatment; most of the respondents (89.4%) scored high in all subscales of attitude, 74 % in commitment, and in other areas of the study 55.8%. The results also indicated that 80.8% were compliant with the TB treatment. In addition, the findings highlighted that there is a need to address the high prevalence of TB in Zambia in order to reduce the incidence of infection among the community members and understand the problem of non-compliance with TB treatment, so that the compliance with treatment determinants of TB can be controlled. However, it may have been more illustrative to broaden the scope of the study, as the key areas of the study were to explore the knowledge, attitudes, and adherence to TB treatment by individual patients, so that particularly those factors that influence compliance can be clearly understand and patients can be encouraged to adhere to treatment.

In support of Mweemba *et al.*'s, study, Samargandi *et al.* (2012) also conducted a cross-sectional study amongst 436 patients that assessed the level of PTB knowledge in Jeddah, Saudi Arabia. The findings showed that 36% of the participants were not aware that the lungs were the organ affected; 50.9% did not think it was an infectious disease, and only 53.3% of the respondents had sufficient knowledge of TB. The findings also established that public awareness of PTB was low.

Furthermore, Kigozi *et al.* (2017) also conducted a cross-sectional survey study in South Africa on TB knowledge, attitudes and infection control practices of patients attending PHC facilities in the Mangaung Metropolitan of the Free State Province in South Africa. In this study, convenience sampling was used to select patients; the study used a sample size of 507 participants, both male and female, aged 17 years and above. The results revealed that in terms of TB knowledge, the majority of patients in this study knew that PTB is transmissible and that crowded conditions and HIV infection increase the risk of TB infection. The mean of TB knowledge score was 6.5 (SD: 1.3) out of 9. Patients' knowledge concerning the cause of TB and key routes of transmission was poor; about two in every five (39.8%) patients did not know that TB was caused by a *bacillus*. Only one sixth of patients (15.0%) knew that TB cannot be transmitted through sharing toothbrushes and only about one-third (35.5%) were aware that TB cannot be transmitted through kissing. Similar findings were reported by Esmael *et al.* (2013) in Ethiopia with a cross-sectional study that performed an assessment of patients' knowledge, attitude, and practices regarding TB in eastern Amhara Regional State, Ethiopia. This study had a sample size of 422 participants, both male and female, aged

18 years and older. A substantial proportion of the patients in the study incorrectly assumed that TB can be transmitted through the sharing of toothbrushes or kissing. Overall, the findings revealed that the majority of the patients knew that TB transmission was facilitated by crowded conditions (84.6%) and that PTB was contagious (73.0%). More than half (55.2%) of the patients incorrectly associated TB transmission with strangers as compared to family members. In terms of attitudes, more than half (52.8%) of the patients strongly agreed that TB was a severe disease, and two in every five patients (40.1%) strongly agreed that infection control at the PHC facilities was important. Moreover, most patients (>50.0%) deemed infection control measures at the PHC facilities to have been acceptable. Six in every 10 patients (60.7%) strongly felt that treatment was important, and more than half (54.7%) of the patients disagreed that they were likely to miss taking their medication. However, more than half (58.6%) of the patients were uncertain whether the BCG vaccination prevented TB disease. Indeed, almost one-third of patients disagreed (32.4%) that TB disease could be avoided and just over half (58.1%) acknowledged that nurses were vital in administering TB medication. Almost half (49.3%) of the patients strongly disagreed that they would be embarrassed if other patients knew their TB status.

Regarding patients' self-reported infection control practices, over two-thirds (68.4%) of patients reported good TB infection control practices, such as covering the mouth and nose with tissues when sneezing, disposing of used tissues in waste bins, or washing of hands after contact with respiratory secretions, whether at home, at work, or in the PHC facility. Overall, the findings from the study demonstrated good knowledge of TB. Indeed, the study results provide useful information for planning and improving health education interventions in Mangaung Metropolitan, and similar settings. Nonetheless, the result findings indicated that study was based on patients' self-report, and patients might have felt obliged to present themselves in a positive light; thereby, they might have responded to questions in a manner that would be viewed favourably by others.

A qualitative study conducted by Mbuthia *et al.* (2018) explored the knowledge and perceptions of tuberculosis among a pastoralist community in Kenya. A total of 61 PTB patients, both male and female, who were receiving treatment from four health facilities in West Pokot County, were included. This qualitative descriptive study was conducted using a focus group discussion (FGs) in-depth interview. A majority, 34 (56%), were farmers, while 11 (18%) females and 10 (17%) males indicated business and farmer employment as their main source of income. The remainder (9%) indicated they had no source of income.

The study comprised 6 FGs and 15 in-depth interviews. The median age of the participants was 38 (range 27-61 years). Twenty-nine participants (47.5 %) were females, and 32 (52.5%) were males. Out of the 61 participants, 46 (75%) participated in the FGs while 15 (25%) participated in the in-depth interviews. In total, 27 (44%) of the participants had no formal education while 21 (35%) females and 13 (21%) males had attained primary level education.

The results revealed that participants perceived TB as a serious contagious disease that was hard to diagnose and treat. They attributed tuberculosis to smoking, drinking alcohol, dust, cold air, witchcraft, trauma to the chest, contact with livestock, and genetic factors. They believed that TB was transmitted through casual contact with TB patients and the sharing of utensils. This study identified that participants correctly perceived TB as a contagious disease, but they did not understand the correct cause and mode of transmission. Therefore, there is a need to improve patient knowledge and awareness of TB to improve community knowledge of PTB. The findings revealed that TB patients had different perceptions about the disease, which led to misconceptions about TB, such as whether TB was a curable disease, a serious illness that is hard to diagnose and treat, a contagious disease, and a disease caused by a germ.

The study was a cross sectional survey that comprised self-reports by patients. This proved inadequate because participants may have felt obliged to present themselves in a positive light, thereby responding to questions in a manner that would be viewed favourably by others, and convenience sampling of patients limited the generalisability of the results. Therefore, there is a need for further study that can provide more findings that will improve participants' behaviour through health education to address prevailing misconceptions about TB and to correct misinformation that might encourage the social isolation of TB patients.

The issue of stigma has also been explored by Singh *et al.* (2019); they examined the knowledge, attitudes, and perceived stigma toward tuberculosis in a community in Ethiopia, specifically regarding Traditional healers. They used a descriptive cross-sectional study of health care providers (HCPs), with a sample size of 108 HCPs, both male and female, aged between 30 to 40 years, and data were collected using a semi-structured, self-administered questionnaire. The study revealed that healthcare providers reported poor knowledge of health-seeking behaviour, poor access to modern health care facilities, and poor quality of care. It also revealed that there was a major challenge facing TB control, including delays in the diagnosis and treatment of TB within the four health centres and 18 health posts in the Kereyu District, with only one referral hospital, specifically, Merti Hospital. In addition, the study revealed that there was a total of only 65 HCPs and 46 other health professionals (clinical nurses, midwifes, environmental health workers, and pharmacy technicians and laboratory technicians) of the total 111 participants in the district and that the majority (88.9%) of HCPs had a low perceived stigma towards TB patients and only a few (11.1%) had a high perceived stigma towards TB patients. It was also found that the majority (60.2%) of HCPs were willing to work in collaboration with Traditional healers. The referral of potential TB patients by Traditional healers (29.8%) and cross visiting (29.9%) were among the possible methods of collaboration on TB prevention and care mentioned by HCPs.

The findings regarding HCPs having poor knowledge were supported by a similar study conducted by Noé *et al.* (2017) into the knowledge, attitudes, and practices regarding TB care among HCWs in southern Mozambique. A sample of 170 HCWs revealed that the average knowledge score was 14.89 points (SD = 3.61) out of a total possible 26 points. Furthermore, across all professions in the study sample, knowledge relating to TB was low. The findings revealed that 64% of HCWs participating in the study had a poor level of knowledge about TB. Most of the HCWs also had poor knowledge of the nature of the disease (57.6%) and aspects of TB diagnosis (67.6%). HCWs who had worked for < 2 years, 6–10 years, and > 10 years had better overall knowledge regarding TB by 4.3 and 4.6 points, respectively compared with HCWs with a working duration of 3–5 years ($p = 0.02$, $p = 0.03$ and $p = 0.03$, respectively). However, the findings indicated that those who had attended TB training had increased their knowledge scores by the magnitude of 2.45-points on questions concerning TB diagnosis compared with those who had never attended TB training ($p = 0.03$). In contrast to Sima *et al.*'s (2019) findings, Noé *et al.* (2017) found that 53.7% of the HCPs had an unfavourable attitude towards TB, and (55.6%) had an unfavourable attitude towards TB control systems. A large proportion (66.7%) of the HCPs had an unfavourable attitude towards TB patients. Regarding risk factors, the study found that those who believed that people with HIV are more affected by TB had approximately a four times more favourable attitude towards TB compared with those who did not mention people with HIV as a high-risk group for TB ($p = 0.027$).

Overall, the study revealed that a majority of HCPs had poor knowledge regarding TB, with particularly poor knowledge about the nature of the disease and aspects of its diagnosis. Most of the HCPs also had an unfavourable attitude towards PTB and TB patients as well as towards the TB control system (Noe *et al.* 2017).

Although Noe *et al.*'s (2017) study focused on HCPs' knowledge, attitude, and perceived stigma regarding TB, the study also included their perception of Traditional healers in the district. This is similar to the findings of Sima *et al.*'s (2019) study, which was the first of its kind conducted in the *kereyu*, among communities in Ethiopia, with the aim of strengthening TB prevention and care activities in the district. However, the HCPs in the TB unit of Sima *et al.*'s study did not report TB cases accurately, with a lack management/diagnosis and details of treatment practice. In addition, the study may have been more applicable if a different data collection method had been used. The self-reporting questionnaire adapted for the study to collect data from different people may not have been completed properly as that may affecting the results findings. Despite these issues, the study is significant, as it suggests the need for more health education among HCWs regarding TB in general, as a means of improving the provision of services for community members.

Khandoker *et al. (*2011) conducted a similar study to investigate the level of knowledge about the transmission of TB among married women aged between 15-49 years with the sample size of (n = 10 996) residing in Bangladesh. The analysed data were obtained from the Bangladesh Demographic and Health Survey, which was conducted in 2007. The covariate factors included marital status, access to the media amongst several others. The study revealed that 7% of the women were aware of the transmission of TB, and this awareness was associated with access to media and education. The findings of this research established that the married women had a low level of knowledge about the transmission of TB. The study, however, suggests that the level of knowledge of TB amongst the married Bangladesh women could be improved using the media and education. Nonetheless, the findings of this study remain inconclusive, as selection bias could have occurred during the selection of the participants. Furthermore, although this study investigates the level of knowledge, emotions and experiences of the Bangladesh women (Khandoker *et al.* 2011), there are a number of limitations which might have affected the findings; these include the inability to comment on cause-and-effect relationships, as data from a cross-sectional study were used, and the questionnaire contained a limited number of questions.

Despite the above-mentioned limitations, the main strengths of this study are based on the large sample used and the sophisticated statistical analyses and simultaneous assessment of TB knowledge and misconceptions applied in analysing the results. The study reported that the level of knowledge about TB transmission without misconceptions is very poor among women in Bangladesh, and several misconceptions were observed. The findings from this study also highlight the importance of information that could be used for implementing appropriate programmes and interventions that could be delivered via the media to disseminate TB knowledge to the general population, particularly among women. The study, therefore, suggests that the media, especially television, should be used to increase the knowledge of TB and its transmission as well as to reduce misconceptions. Overall, however, this study, cannot be used to make assumptions about a large population, as the data were derived from a national survey based on the survey sampling frame on census enumeration areas. The issue of TB knowledge and infection control in India has been investigated by Huddart *et al.* (2018); they examined how TB knowledge and infection prevention behaviours change over the course of treatment. The study utilised a longitudinal design approach with a sample size of 8,055 patients, both male and female, aged 14 years plus. In total, there were 3,424 patient questionnaires from the beginning of DOTS, and 4,631 surveys from the end of DOTS. The findings revealed that patients at the beginning of TB treatment (n= 3,424) demonstrated moderate knowledge of TB; 52.5% (50.8% F; 54.2% M) knew that coughing was a symptom of TB, and 67.2% (65.6%, 68.7%) knew that TB was communicable. Overall, patient knowledge was significantly associated with literacy, education, and income, and was higher at the end of treatment than at the beginning (3.7%, CI: 3.02%, 4.47%). Infection prevention behaviours, like covering a cough (63.4%, CI: 61.2%, 65.0%) and sleeping separately (19.3%, CI: 18.0%, 20.7%), were less prevalent. The difference between patient and health worker, as well as a shared language, significantly predicted patient knowledge and adherence to infection prevention behaviours. However, Huddart *et al.* (2018) concluded that there were no changes in the adoption by patients of prevention behaviours that would limit TB contagion to contacts. Despite initially low levels of preventive behaviour adoption rates, there was no significant change over the course of the DOTS treatment. The study's findings provide useful insights for further research and policy. The study suggests that the lack of knowledge and low adoption of prevention behaviours is concentrated in populations with low socio-economic status; this finding could inform efforts to better target counselling and follow-up efforts. The findings suggested reinforcing communication on vital information for TB patients to improve the quality of care and effect behaviour changes.

Nyasulu *et al.* (2018) explored the knowledge, beliefs, and perceptions of tuberculosis among community members in Ntcheu district, Malawi, as a means of establishing how they experienced the disease itself within the context of biomedical health-seeking behaviour and within the community, society, and family in this rural community. The study design utilised a qualitative phenomenological study design; data were obtained from eight FGDs and 16 individual in-depth interviews. With a sample size of 24 participants, the study identified and described the essence of the lived experiences of the participants, and explored the knowledge, beliefs, and perceptions about TB among adult men and women without TB experience and persons with previous TB history. The study took place in three villages: Kambuku, Majiri, and Mwadzangati. The participants were purposively selected by sex, age, and whether they had been diagnosed with TB. There were 24 participants in the study, both male and female, whose age ranged from 18-49 years. The potential participants were divided into two groups: persons who had never had TB (NHTB) and persons who had "ever had TB" (EHTB) referring to persons who had been diagnosed with TB accordingly.

The findings of Nyasulu *et al.*'s (2018) study revealed that there were differences in the levels of knowledge and perceptions about TB between those ever-had TB, (EHTB) and never had tuberculosis (NHTB) groups. For instance, ever-had TB, (EHTB) mentioned misdiagnoses that resulted in delayed treatment initiation. They also mentioned costs incurred related to repeated travel to and from the hospital. Experiences of stigma and discrimination within the community, primarily due to the perception of coupling TB with HIV. These narratives highlighted the interplay of factors at individual, household, and community levels and explored how they affected TB-related health-seeking behaviour, diagnoses, and treatments. Such findings were in line with those of other studies reported in the literature Centers for Disease Control 2009).

The study findings highlighted that those who had TB were more knowledgeable, but there was a knowledge gap in terms of the route of spread and misconceptions about similar symptoms related to HIV/AIDS. Most importantly, the study suggested that there is a need for more in-depth health education to address the complexity of the disease, which could encourage positive attitudes and beliefs among participants being diagnosed. Positive attitudes could include the desire to go for treatment and follow medical advice, as well as the condemning of discriminatory practices, which found that lack of knowledge about TB was one of the main reasons for people suspected of having TB delaying in seeking an early diagnosis. The study illustrated the significance of and obtainment of insights into the perceptions and understandings of TB within a broader context in a rural community. The most significant finding of the study was the identification of views in regard to positive attitudes and beliefs on TB diagnosis and the desire to go for treatment and follow medical advice, as well as the condemning of discriminatory practices. Of importance was the amount of support provided at the family level, which could be promoted at the community level also. Participants indicated intentions to seek medical attention in early symptoms stages and expected to get a prompt diagnosis. Lastly, the study suggested that there was a need for a collective approach with a combination of mass media, interactive communication campaigns, emphasising TB symptoms, transmission, and stigma and addressing barriers to early diagnosis and care-seeking behaviour.

Overall, the study was well presented and successfully addressed the aims of the study. Although the study design utilised a phenomenological approach, which is one of many types of qualitative research that examines the lived experiences of humans. In the case of this present study there were limitations which were identified from the findings, such as access to research participants, due to shortage of fuel that led to a crisis in transportation in the country, which might have led to selection bias due to lack of adequate responses and data collection from the participants. Other factors that may have impacted on the findings were lack of inadequate responses that could have been obtained due to the sensitive nature of TB and its association with HIV infection, which carries high levels of stigma and discrimination, and also its negative implications on the patients. Lastly, the study was conducted in three villages of one rural community, making it difficult to generalize the findings to other settings.

2.4 BARRIERS TO ACCESSING PTB TREATMENT

In the previous theme, I discussed and reviewed the literature on the knowledge, attitudes, and perceptions towards PTB. In this theme, I will explore the literature on barriers to accessing PTB treatment. Furthermore, the definition of barriers to accessing healthcare services will be highlighted. Wilson *et al.* (2012) defined barriers to accessing healthcare services as variable ranging from the narrow focus approach of service entry to the multidimensional approach. Therefore, the above factors will be considered when reviewing the articles on barriers to accessing PTB treatment.

Ayuo *et al.* (2008) conducted a cross-sectional interview-based study on the causes of delay in PTB diagnosis among patients attending a referral hospital in Western Kenya with a sample of 230 patients aged 12–80 years. The study found that patient delay contributed to a substantial part (95%) of the total delay of 6.3 weeks, which was highly linked to late diagnosis and poor knowledge of the disease condition. In support of this finding, Verhagen *et al.* (2010) conducted a qualitative study on the factors underlying the diagnostic delay in TB patients in a rural area in Tanzania. Using semi-structured interviews, 28 (93%) recently diagnosed TB patients (18 males and 10 females) aged 18–70 years, and four Traditional healers took part in this research. The results revealed that beliefs concerning the cause of the ailment were identified as an important determinant of initial health-seeking behaviour. Verhagen *et al.*'s (2010) study revealed that patients believed that diseases are caused by either God or witchcraft curses. Other results revealed from the study were how health system delays were mainly due to diagnostic delays. Patients often had several contacts with a formal health service before being diagnosed. Meanwhile, the Traditional healers was the health provider most patients consulted because of the belief that if conventional doctors were unable to solve the problem, witchcraft must be causing the disease. Poor knowledge of TB signs and symptoms and patients' belief in curses as the origin of the disease also led to delays in seeking hospital care in an area of North-west Tanzania. Failure to identify TB cases by formal and non-formal health providers indicates that the education of both communities as well as HCWs is essential to reduce diagnostic delays. Furthermore, to reduce the long delay in diagnosing TB patients in rural Tanzania, both the public as well as health providers should be educated, and efforts should be put into strengthening the relationship between non-formal and formal health providers and hospitals.

Similarly, Mangesho's (2007) research found that patients believed that illness is caused by either God or witchcraft and that correct knowledge of and a positive perception of the community towards TB and its management is a prerequisite to early treatment seeking, thus supporting the role of beliefs as causative factors of ill health. With a sample of 35 TB patients in Vanuatu in 2011–2012, male and female, aged 18 years and above, the study utilised a combination of qualitative and quantitative methods and recruited indigenous researchers to conduct individual interviews that documented the knowledge, attitudes, and behaviours of TB patients. Semi-structured questionnaires containing both closed and open-ended questions were also used to determine the patients' knowledge, attitudes, and practices regarding the cause, diagnosis, and treatment of TB. The results demonstrated that patients were aware of TB and other diseases in their communities and could describe their symptoms. However, they were generally unaware of the bacterial cause of TB and thought that TB could be caused by a range of factors, including the sharing of food, eating utensils, kava and alcohol, cigarettes, and hereditary causes. These findings are consistent with those of another study in Uganda in which beliefs about TB causation include witchcraft, smoking, sharing eating utensils, and doing heavy labour (Buregyeya *et al.* 2011). The study also identified that the community's concerns about pill burden, quality of care, financial barriers, and TB aetiology and stigma were the main reasons for delays in accessing care. Health education messages should emphasise the curability of TB, the feasibility of modern TB treatment, and the engagement of Traditional healers as partners in identifying cases and facilitating adherence to said treatment. Incorrect understanding of TB causation can influence patients' health-seeking behaviour, adherence to a prescribed regimen, and treatment outcome, which can lead to an increase in the prevalence of TB in the community.

Gele *et al.* (2010) performed a qualitative study among Somali pastoralists in Ethiopia, with a total of 19 participants, comprising 12 pastoralist TB patients who were selected to map out the migration routes and 7 other respondents (4 pastoralist TB patients and 3 government officials) who attended the interviews. Among the 12 TB patients who had participated in the mapping of migration routes, 8 were males, and 4 were females, all aged 23 to 70 years and all Muslim. The results showed that the participants attributed the aetiology of TB to hard work and malnutrition and therefore would initially tend to seek treatment through traditional medicine. Beliefs concerning the cause of the disease are a crucial determinant of subsequent health-seeking behaviour. This misunderstanding of the microbial cause of TB can also lead to delays in diagnosis in resource-limited settings.

In addition, Ngangro *et al.* (2012) performed a multicentre hospital-based survey in Ndjamena and Moundou. The study utilized a sample of 286 newly diagnosed with PTB patients aged 15 years and older and used a semi-structured questionnaire for data collection. The study revealed a long delay in TB diagnosis, and the results showed that low economic status, a low level of education, and belief in the efficacy of traditional treatments were associated with extended diagnostic delays. Furthermore, such a delay was a determinant of the centralization of the point of TB diagnosis, the referral pattern, the cost of care, and the misunderstanding of the requirements of TB treatment.

Oo *et al.* (2020) also conducted a study of delayed care-seeking and its underlying factors among patients with TB in Yangon, Myanmar. This study employed a cross-sectional design, and its sample comprised patients with active TB who received a confirmed diagnosis and treatment in the TB diagnostic centre from 1 April to 30 April 2015. The study adopted a qualitative methodology employing semi-structured interviews. The study's sample comprised 346 participants aged from 18 – 50 years old and over, and both males and females, who sought treatment firstly at the Lower Myanmar TB Diagnostic Centre in

Yangon Region after onset of suspected TB signs and symptoms. Only active patients with TB who started to receive active anti TB treatment within the past three months were chosen to participate to avoid recall bias. However, any cases of extrapulmonary TB or any known case of Multidrug-resistant tuberculosis (MDRTB) were also excluded, as they had to be referred to the tertiary hospitals to receive intensive treatment. Second, those with non-TB results were also excluded even though they sought treatment at the centre. After receiving a diagnosis confirmation of TB, all registered patients were screened according to the inclusion and exclusion criteria. The study findings revealed that the total patient care-seeking delay was 66.8% among patients with TB, while non-delay total was 33.2% indicating the urgent need for intensive TB control activities within the study community. While the trend of the TB epidemic remains high in the world today, it remains especially high in Southeast Asia (SEA). The study was also compared with similar studies in SEA countries, and it was found that the proportions of delayed care-seeking among patients were 34.1% in Myanmar migrant populations in Thailand, 67.4% in Nepal, 29% in South India, and 75.3% in East Malaysia. These percentages of patient care-seeking delay differed because they were dependent on conditions such as socio-economic status and patients' awareness and may have been due to the type of information received concerning TB prevention and treatment and the availability of health care facilities.

However, the findings suggested that national TB control programs should consider introducing aggressive active case-finding mechanisms among targeted high-risk populations. In addition, building, developing, and strengthening partnerships not only with private health care personnel (TB specialists, general practitioners, voluntary health workers, and NGO staff) but also non-health care personnel (drug sellers, Traditional healers, family leaders, religious leaders, and stakeholders) should be promoted to create greater awareness among every patient suspected of having TB. Further, prompt referrals to the nearest TB centres should be streamlined to accelerate early diagnosis and possible treatment. Dissemination of information regarding TB diagnosis and the provision of treatment at government TB centres free of charge should also be expanded.

Although the study was accurately presented and structured and sought to answer the study aim, the study had some limitations. For instance, as the study was conducted only in a region having a high TB caseload and located in downtown Yangon, the results may not prove to be representative of other low endemic areas nor of the whole country. Some people might firstly seek treatment soon after the onset of TB-like symptoms at other healthcare providers rather than a TB centre.

So far, the above study has examined HCWs' knowledge on TB, and it has been identified that most of the HCWs lack knowledge of infection control and display stigma regarding TB disease. However, a similar study was conducted by Odusanya and Babafemi (2004) between September 2000 and January 2001, which was aimed at determining why patients presented themselves late for treatment at the hospital, as the incidence of PTB increased due to the late presentation of the patients at the health facility. The study utilised a longitudinal design to recruit participants and find out exactly the time between the presentation of symptoms by the patients and the time the patients presented themselves for treatment at the hospital. The sample size was 141 patients in this study, and the average age of the patients was 29.5; 83% of the patients did not seek medical help until a month after the patient had been infected. The study found that a large percentage of patients suffering from TB did not seek medical attention at the initial onset of the disease and, as such, their bodies served as reservoirs for the bacteria. If the patients understand the disease, there may be a significant reduction in the late presentation of patients to the hospital for treatment. This can be attributed to the level of knowledge and awareness of the disease. Although the methodology of this research allowed for the determination of the potential cause before the occurrence of the outcome, the death of the participants during the study could have affected the results obtained (Odusanya and Babafemi (2004) Furthermore, the loss of participants to follow up may have affected the strength of the research

Mesfin *et al.* (2009) conducted a cross sectional study in Ethiopia to investigate the delay in consultation experienced by PTB patients. In total, 924 patients were recruited in this study of whom 42% tested negative while 58% tested positive using the sputum smear. Before presenting at the hospital for treatment, the participants had sought medical care at Traditional healers (3%), rural drug vendors (6.5%), and orthodox churches (24%) seeking TB treatment. The misperceptions of PTB due to residence in rural areas and illiteracy were the challenging factors for patients' delay in seeking a consultation. The median delay by patients was 30 days. The study reported that regarding reasons why there was delay in patients presenting their case, half of the patients delayed seeking health care at a public health facility while getting treatment from informal sources. Furthermore, the study suggested that creating public awareness and the involvement of the private health sector, traditional healers and religious institutions in TB control could be important to improve early detection of PTB, as well as reduce delays in starting modern treatment. Although the research was well presented and addressed the aims of the study, there were limitations in regard to the study; for example, the low specificity of the diagnostic methods (radiography and clinical features) used to detect sputum smear negative PTB could potentially lead to the misdiagnosis of patients. Furthermore, because of atypical clinical presentations among cases with HIV co-infection, the probability of introducing bias could be high. In addition, patients' inability to recall the exact date of the onset of symptoms may have introduced recall bias and affected the study outcomes in terms of length of delay in seeking treatment. As well as these limitations, the study could have been more useful if it had used a different diagnostic method that would reduce bias in the result findings. In summary, the study concluded that the findings of the study would be generalisable to other sub-Saharan countries where poverty, illiteracy, HIV, and the use of traditional treatment for TB disease are highly prevalent.

In regard to delay in patients presenting for PTB treatment, Wondawek and Ali. (2019) also examined the magnitude of delays in treatment-seeking and the risk factors among patients in health facilities located in Adama, Ethiopia. The study adopted a convenience sampling technique with 598 participants including males and females, aged 15 to 65 and above. The data collection utilised a structured questionnaire method. The findings revealed that there was delay in treatment-seeking behaviours among suspected PTB patients in Adama town. Out of 598 suspected TB patients, 79 (13.2%) were smear positive, and 275 (46%) delayed seeking treatment. Of the smear-positive participants, 61 (77.2%) delayed seeking treatment. Among the delayed patients, 109 (39.6%), 91 (33.1%), 61(22.1%), 24(8.7%), and 5(1.8%) visited a health facility for treatment after 31–45, 46–60, 61–75, 76–90, and > 91 days of onset of illness respectively. The median treatment-seeking period in the current study was 30 days. Of the delayed patients, 167 (60.7%) were females. The majority of delayed patients (n = 203; 73.8%) were married, and 98 (35.6%) of delayed patients had no formal education. In comparison, in other studies, such as Mesfin *et al.* (2005), the prevalence of delay in treatment-seeking was 46%, while a study by Ratha *et al.* (2009) in Tigray Region, Ethiopia recorded that 53% of patients delayed seeking treatment.

The findings revealed that the proportion of delay in seeking treatment was significantly higher among participants who lacked information about TB. A person who is not educated about TB will not have information about prevention strategies, cure rate, transmission concerns, and treatment options. The implication was that this type of patient would delay seeking diagnosis and treatment.

In this theme of barriers, a knowledge gap was identified among the PTB patients and community members due to misconceptions regarding PTB symptoms, transmission, and cultural beliefs and Traditional healers’ medicine. However, there was negative attitude displayed towards PTB patients. In conclusion, there is a need for communities to collaborate with other organisations to promote health awareness on PTB. The next theme reviews and examines articles on the attitudes and beliefs of HCWs regarding PTB.

2.5 ATTITUDES AND BELIEFS OF HCWS REGARDING PTB

Having discussed in the previous theme the barriers to accessing PTB treatment, which was derived from reviewing the literature, this theme presents the review of literature in relation to the attitudes and beliefs of HCWs regarding PTB.

Shrestha *et al.* (2017) conducted an institution-based cross-sectional survey on HCWs’ knowledge, attitudes, and practices on TB infection control (TBIC) in the Kathmandu, Lalitpur, and Bhaktapur districts in Nepal. The study recruited participants from 28 health facilities providing TB services in the Kathmandu Valley, Nepal. A sample of 190 HCWs were recruited to assess the knowledge, attitudes, and practices on TB-IC using a structured questionnaire. The HCWs were enrolled from different health facilities, including government and nongovernment facilities providing TB services in the area. Nine of them were from hospitals, and 19 were primary-level health facilities. Of the 190 HCWs, 120 (63.2%) were female, and 70 (36.8%) were male, all aged 18–59 years. Since TB services in Nepal are integrated within the national health system, all the HCWs were likely to have been exposed to TB infection regardless of their job categories. Therefore, the study enrolled different cadres of HCWs who were directly or indirectly involved in TB care, which included physicians, nurses, health assistants, auxiliary HCWs, auxiliary nurse midwives, clinic assistants, laboratory and X-ray technicians, administration staff (administration and logistic staff as well as TB volunteers), ward attendants, and support staff.

The findings indicated that in the majority of cases, the HCWs’ knowledge and practices on TBIC were unsatisfactory. Although TB was well understood among HCWs, as the majority of them were aware of TB signs, symptoms, and transmission, most often, the HCWs lacked specific knowledge on TBIC despite having a good level of understanding on general information regarding TB.

The findings of this study are similar to those of Kanjee *et al.* (2011) on TBIC in rural South Africa; they used a questionnaire-based survey to investigate the knowledge, attitudes, and practices of 57 HCWs, both male and female. While the HCWs' knowledge on TB was satisfactory, in other areas, such as stigma or confidentiality, concerns were raised, such as barriers in the staff undergoing TB/HIV testing and the redeployment of HIV-positive HCWs.

This study by Shrestha *et al.* (2017) addressed the study aim, as it revealed the knowledge of the HCWs on both TB and infection control. However, the study indicated that HCWs' knowledge on TB was satisfactory, but in terms of infection control their knowledge was poor. Meanwhile, in Kanjee *et al.*'s (2011) study, there were problems regarding stigma and confidentiality. In term of the two studies, it can be concluded that the HCWs' knowledge was not adequate; therefore, there is a need for more training on health education programs for the HCWs to enable them to perform better at their duties so they can improve in their work.

Temesgen and Demissie (2011) studied TBIC knowledge and practices among healthcare professionals in Northwest Ethiopia with a sample of 313 healthcare professionals. They used a questionnaire for data collection, yielding a response rate of 96%, which was very good. Among the total respondents, 153 (48.9%) were males and 160 (51.1%) females. The median age was 28, the mean age was 30.3, and all ages ranged from 20 to 60 years. The results indicated that out of the 313 participants, only 18.8% had received training. Among those who has been trained, 74.4% (95% CI; 69.6, 79.3%) had sufficient TBIC knowledge, and 63.2% (95% CI; 57.9, 68.6%) employed proper TBIC practices. Training was the main predictor of TBIC knowledge, which was consequently a strong predictor of proper TBIC practice. Finally, the study clearly demonstrated gaps in healthcare training and/or orientation on TBIC, which could be attributed to a poor knowledge level, particularly among administrative and lower qualified staff. Therefore, poor TBIC knowledge and practices could be attributed to the lack of TBIC policies and/or guidelines at the national and institutional levels. This can result in poor TB treatment and poor attitudes towards the patients, as explaining simple procedures to PTB patients regarding their treatment and disease may be difficult, which can lead to wider spread of the disease if care is not taken in time.

Effective PTB treatment and prevention depends on the HCWs' having sufficient TB knowledge and positive attitudes towards patients. They must understand the patients' perspectives towards the illness so that they can determine the cultural influences acting on such perspectives as well as the severity and duration of the illness (Hyder & Morrow 2006). In other words, better insight into shared PTB-related sociocultural and ethnic backgrounds is the key to providing more culturally sensitive and more client-centred PTB treatment and prevention services (Joseph *et al*. 2008; Nkulu *et al.* 2010).

A descriptive questionnaire-based study by Semiha *et al.* (2011) was conducted in Turkey to assess nursing and midwifery students' knowledge and attitudes towards TB. This study was carried out in four nursing schools in Turkey with a sample of 615 students (in their first, second, third, and fourth years). The findings showed that generally, the students' attitudes towards TB were negative; only 5.9% of the entire sample would not mind caring for TB patients. However, only those who had been educated on TB showed positive attitudes towards caring for TB patients, whilst the majority of nursing and midwifery students, who were poorly educated, said they would not like to work with TB patients.

A similar study was conducted by Dodor (2008), who investigated how the activities and attitudes of health professionals expose TB patients to stigmatisation in the community. This study adopted a qualitative approach using individual interviews and focus groups (FGs) in the Shama Ahanta East Metropolitan District in the western region of Ghana. A total of 82 participants were purposively selected from among the community members; 16 participated in FGs and 66 in individual interviews. The results demonstrated that the health professionals' behaviour towards TB sufferers was a major concern and that community members stigmatised PTB patients in society. Evidence from the study identified that the use of isolation wards by most hospitals and the observation that some doctors and nurses use masks and gloves when dealing with TB patients led to the stigmatisation of TB in the eyes of community members. In addition, the health professionals' poor attitudes and behaviours, such as the denial of full burial rites and the open avoidance of TB patients, sent a message to the community that TB is a shameful disease. However, this could have been avoided if there had been better education provided by the HCWs as to why these practices were needed to reduce the transmission of PTB.

This is in contrast with a qualitative interview-based study by Baral *et al.* (2007), who explored the causes of stigma and discrimination associated with TB in Nepal. They conducted a qualitative study with 21 TB patients: five young males, seven young females, six older males, and three older females, all aged 18 years and above. The results identified the fear of infection as the main reason for the stigmatising attitudes and behaviours of both health professionals and community members towards those with TB. Hence, TB patients often isolated themselves to avoid infecting others or possibly to hide the fact that they had TB to minimise the risk of being shunned. Moreover, the patients may have experienced social isolation in the family, where they were required to eat and sleep separately, as well as outside the family, where their friends avoided them. Therefore, although a real risk of TB infection exists when an individual spends prolonged periods with untreated TB patients, especially smear-positive ones, it must be noted that two weeks after commencing treatment, the patients are longer be infectious. The significance of the study was that it revealed that the HCWs' behaviour toward the TB patients and the fear of infection by the HCWs contributed to TB stigma. This information can be utilised in developing training programs for HCWs, particularly as HCWs' lack of knowledge can cause delay in attending to a patient's treatment, which in turn, can lead to an increase in the prevalence of TB in the community.

Similarly, Marahatta *et al.*'s (2020) explored the factors in the barriers to access, diagnosis, and treatment completion for TB patients in central and western Nepal. This study utilised a range of data collection techniques based on a phenomenological approach; semi-structured interviews (SSIs), FGs, and in-depth interviews (IDIs) were used with a range of participants. Twelve FGs were conducted with 69 community participants; 21 SSIs were conducted with government health service providers at various levels, while 3 SSIs were conducted among private health service providers and 2 among traditional health service providers. The IDIs were conducted with four patients each in a unique category of treatment, and 16 FGs (eight each in two major TB centres) were conducted among suspected TB patients. All participants were purposively selected for the study based on their likelihood to provide information relevant to the research question. The participants were aged 20 to 55 years and above. A total of six invited participants (TB suspected patients) could not participate because of their busy schedule of appointments at hospital. The study findings revealed that barriers to access to the health centre were the long distance, poor road conditions, and costs associated with travelling. In addition, the lack of awareness of TB and its consequences may have prompted many respondents to visit Traditional healers. Therefore, early diagnosis of TB was hindered by the lack of trained health personnel to use the equipment, the lack of equipment, and the irregular presence of health workers.

Additional barriers that impeded the adherence to and completion of treatment were the need to visit the health centre daily for DOTS treatment and associated constraints, a complex treatment regimen, and the stigma.

The study concluded that there is a need to improve health services and that the socio-demographic of the care seekers can be dealt with by strengthening the peripheral health services. In addition, health centres should be improved by ensuring the presence of (trained) human resources and the necessary equipment for diagnosis. As well as increasing the awareness and collaborating with the Traditional healers, health services utilisation needed to be enhanced by recompensing patients for the direct and indirect costs associated with it, including modifying the current DOTS strategy by providing medicine for a longer term under the supervision of a family member or a (volunteer) community member utilising the elements of community engagement. Finally, the overall conclusions of the study were significant and addressed the research aim. Nonetheless, although the study was well presented, the method adapted was based only on the affected patients. The HCWs and community members were not among the participants; their inclusion could have allowed the study to make a comparison and gain more information that could have been more significant to the study.

The role of beliefs and barriers in accessing the diagnosis and treatment of TB as investigated by Marahatta *et al.* (2020) was also explored by De Schacht *et al.* (2019) in their study on barriers to access and adherence to TB services, as perceived by patients. The study sought to understand barriers to access care TB services as perceived by patients, especially at facilities with a GeneXpert machine. The study selected a convenience sample of four urban, semi-urban, and rural government health facilities across the provinces of Manica (Eduardo Mondlane and Gondola health facilities) and Sofala (Nhamatanda, and Ponta Gea health facilities) where healthcare-associated infections (HAI) had ongoing TB-related activities. The study utilised purposeful sampling to recruit a sample of 51 patients (25 males and 26 females), 11 of whom participated in the FGs. There were four FGs with DS-TB (n = 23), three FGs with MDR/RR-TB (n = 9), and four FGs with TB-HIV (n = 19). The recruitment of patients was done by the nurses and was based on those patients who were interested in participating and who were attending TB services. These patients were referred to the research team for more information and to give their consent to participate. Eligible subjects were restricted to non-infectious adults with DS-TB, TB/HIV, or MDR/RR-TB.

The findings revealed that there was a good knowledge about HIV but not about TB or MDR-TB. However, although the patients had good knowledge of HIV, there were challenges for access and adherence to treatment; these were mainly at individual and institutional level, but the stigma associated with TB and the basic lack of knowledge about the disease, treatment, and transmission remained a challenge in the community and prevented some patients from being evaluated and successfully treated. Barriers to accessing care were mainly related to the long time to diagnosis and were HCW-related, while the main barriers to adherence were individual. The findings support similar studies in other Sub-Saharan countries and even in Brazil, where similar barriers were identified by Skinner *et al.* (2016) and Kigozi *et al.* (2017).

Finally, the limitations identified in the study were that the study sites were selected as a convenience sample and might not be representative of Mozambican health facilities. Nonetheless, the results can be used in other contexts of Mozambique with similar socio-cultural norms. Only patients under treatment were enrolled, which meant that the study was missing the opinions of those who did not arrive for treatment or who had abandoned services; additionally, health care provider perspectives did not inform the study's conclusions. While every effort was made to recruit a broad range of study subjects for interviews, participation at each site was voluntary and was guided by facility leadership, which introduced the possibility of bias. Therefore, the findings of this study cannot be generalised to all TB patients in the study area. Finally, the study suggested that there was a need for increased attention not only to coverage and treatment notification but also to the quality of the TB healthcare services necessary to improve TB treatment outcomes. Nonetheless, the trust between patients and the health care system could be strengthened by responding directly to the needs of the patients.

2.6 HEALTH-SEEKING BEHAVIOURS OF PTB PATIENTS

Health-seeking behaviour, as a barrier to PTB treatment initiation, is complex and is influenced by the knowledge, attitudes, and beliefs of HCWs as well as the accessibility to care pathways. These care pathways may include any form of traditional illness management, including self-treatment by taking or applying local remedies, visits to Traditional healers, 'holy water', local medicine, and buying medications from drugstores without prescriptions. On the other hand, some people with TB symptoms visit government or private modern healthcare facilities to seek prescribed treatment.

Abebeet *et al.* (2010) conducted a community-based cross-sectional survey in a rural community in South-west Ethiopia to assess TB knowledge and stigma as well as health-seeking behaviour. This study utilised a sample of 476 people aged 15 years and above who had experienced prolonged coughing for at least two weeks The results revealed that the participants' healthcare-seeking behaviour was poor; the majority of them did not seek help for their illness as a result of perceptions towards the disease and the lack of financial resources, mainly for transport. Similar reasons were mentioned in studies in North-west Ethiopia (Yimer *et al.* 2009), Vietnam (Mangesho *et al.* 2007) and China (Wang *et al.* 2008). The findings of these studies also showed that healthcare-seeking behaviour was affected by gender, education, marital status, knowledge about the cause of TB, information and treatment, perceived stigma, age, occupation, or familiarity with the TB patient.

Eshetu *et al.* (2016) also employed a community-based cross-sectional study with individuals who had experienced prolonged coughing for at least two weeks and who were aged 15 years and above. The sample size was 29,735 participants. Data were collected via interviews using a pretested and structured questionnaire. Out of the total population surveyed, the majority (n = 15,833; 53.2%) were male, and 663 (2.2%) were found to be PTB suspects. The prevalence of PTB suspects among male and female participants was 1.3% and 3.3%, respectively, and 39.1% of the total PTB suspects had not visited modern healthcare facilities during the study. This implies that the respondents either did not consider their symptoms a serious health problem, or they had used other traditional methods to alleviate their symptoms. Among the sample, 177 (26.7%) perceived their symptoms as a common cold, and 164 (24.7%) reported that their symptoms were due to 'bird' or 'nefas', while 130 (19.6%) reported that their symptoms were due to 'mitch' or 'gerefta' (all common local descriptions of an illness believed to result from exposure to cold weather or wind). In addition, 139 (21%) and 30 (4.5%) of the respondents perceived that their symptoms were due to pneumonia asthma and PTB, respectively, whereas 8 (1.2%) reported that they had no disease. In the case of actions taken, the majority of the PTB suspects (60.9%) visited modern healthcare facilities first, whereas the rest took other kinds of individual action, including but not limited to home treatment and traditional medicine.

The findings indicated that 39.1% of the PTB suspects had not visited modern healthcare facilities during the study; this finding is supported by another Ethiopian study by Eshetu *et al.* (2016a) in which 46% of the respondents reported their symptoms as 'bird'. The study findings revealed that the majority of participants with less stigma than PTB suspects had visited modern healthcare facilities, the proportion of respondents who had taken traditional measures was still higher (Eshetu *et al.* 2016b). Respondents who had received secondary education and above were more likely to visit modern healthcare facilities than those who were illiterate.

In support of Eshetu *et al.*'s, study, Yimer *et al.* (2009) argued that people with higher educational levels usually had a higher chance of accessing health-related information easily from various media and as a result of their formal education. Moreover, the higher their educational level, the better their understanding of disease processes, diagnosis availability, and treatment options as well as the risk of delay in seeking medical care. Finally, this study by Yimer *et al.* (2009) showed that 78% of the participants had taken healthcare actions irrespective of the appropriateness of the healthcare-seeking source. Of these, 60% of the subjects had contacted medical providers within a reasonable period following the onset of coughing. In support of this, a similar study by Hoa *et al.* (2004) investigated health-seeking behaviour among adults with prolonged coughing fits in Vietnam. Findings in various countries reported that knowledge about healthcare-seeking behaviour towards TB is affected by socioeconomic variables (Somma *et al.* 2008) and low awareness of the disease (Ayuo *et al.* 2008; Mesfin *et al.* 2009).

A questionnaire-based study by Oluwadare *et al.* (2010) on the health-seeking behaviour of TB patients in Ekiti State, Nigeria, recruited a sample of 117 participants (55% male, 45% female) using the snowball method. The findings showed that only 20% of the men and 10% of the women were able to access TB treatment centres until after two months after the onset of the symptoms, and one third after the third month. The men used public medicine, while the women accessed more traditional care. The major influencing factors were perceived to be cost of treatment and the need for privacy because of the fear of stigma. Gender and education level were most significantly related to the TB patients' treatment choices. Other researchers have reported that females and older patients are more stigmatised than males and younger patients in regard to TB (Atre *et al.* 2004; Hoa *et al.* 2004; Ngamvithayapong *et al.* 2001; Somma *et al.* 2008; Johansson & Winkvist 2002). Omotosho (2010) highlighted gender difference as an obstacle for ongoing TB sufferers to easily access healthcare given their social status in the community. Men have easier and more frequent access to health care than have females. The participants were purposively selected from six rural communities in three senatorial districts. The study utilised both quantitative and qualitative methods. The results identified affordable cost, closeness, staff attitude, and quality of service as additional major factors. This invariably had an adverse effect on the women, the overall welfare of their children, and other family members linked to the mothers, as these factors resulted in late and delayed diagnosis.

A further study conducted in Nigeria was a cross-sectional interview-based study conducted by Ukwaja *et al.* (2013). on healthcare-seeking behaviour, treatment delays, and their determinants among PTB patients in rural Nigeria, which employed a sample of 450 patients aged 15 years and above. The results revealed that two-thirds (78%) of the participants sought treatment more than four weeks after the onset of symptoms, which is higher than in Malaysia as indicated in the study by Rundi *et al.* (2011), which showed 52%, Iran (12%; Masjedi *et al.* 2002), Ethiopia (41%; Demissie *et al.* 2011), Spain (43%; Diez *et al.* 2004), Zambia (35%; Godfrey-Faussett *et al.* 2003), and the Philippines (50%; Auer *et al.* 2000) but lower than in urban Nigeria (83%; Odusanya & Babafemi 2004). This suggests that although the proportion of patients who had sought treatment more than four weeks after the onset of TB symptoms was higher in Nigeria compared to other countries, overall, the researchers concluded that with the public enlightenment campaigns (Federal Ministry of Health 2008), the proportion of patients who had delayed for more than a month before consulting the health system was reduced. This study showed that poor patients living in rural settings with a high burden of TB and HIV frequently accessed informal care providers for TB care before being diagnosed.

Wandwalo and Morkve (2000) used a cross-sectional descriptive study to investigate the delay in TB case finding and treatment in Mwanza, Tanzania, with a total sample of 300 patients aged 18 years and above. The data analysis took place after the interviews. An inductive content analysis was performed, meaning that the interviews were reviewed and coded for unifying ideas, which were grouped into themes and sub-themes that emerged from the interviews. The results revealed that one-third of the patients (38.9%) had first visited Traditional healers after the onset of symptoms compared to the rest (61.1%), who had visited health facilities as their first point of call. The mean delay for those who had visited Traditional healers was longer (266.9 days) compared to those who had first consulted health facilities (95 days). The major reasons for this delay may be based on them not being aware they had TB, lack of education, poverty issues, or lack of support from the government or HCWs such as the clinic nurses in the early recognition of symptomatic TB resulting in late diagnosis. The study recommended that a comprehensive approach to reducing the incidence of TB in rural South Africa must address vulnerability to initial infection when reducing the delay between the onset of symptoms and the initiation of treatment.

The above study conducted by Wandwalo and Morkve (2000) also revealed a delay in TB case findings, due to a lack of support from HCWs and due to patients not accessing the healthcare centre in time. A similar study was conducted by Khan *et al.* (2020), who explored knowledge, awareness, and health-seeking behaviour regarding TB; the study was conducted in a rural district of Khyber Pakhtunkhwa, Pakistan, and was designed to understand and assess the knowledge, awareness, perceptions, and health-seeking behaviour of the general and specifically the TB-affected population and to determine the presence and level of stigma and discrimination towards patients. The study adapted a mixed methods approach for data collection in Haripur, Khyber Pakhtunkhwa province, and used a household survey for data collection. With a sample population of 526 participants selected for the quantitative method and five FGs for the qualitative study, ages ranged from 15 to 45 years, both male and female. Each FGs comprised 8-12 participants, and the discussion lasted from 50 to 90 minutes. The participants included in the FGs were (i) district health authorities, i.e., the District Health Officer, manager of the TB program, and district managers of other health programs. (ii) female health workers, NGO workers, and private health providers (iii) opinion leaders, i.e., teachers, imam mosque, barbers, shopkeepers, ex-service men, social workers, community activists, etc. (iv) male TB patients under treatment and (v) female TB patients under treatment.

Knowledge about the spread of the disease was poor, which was a typical phenomenon noted in similar settings, too. This lack of awareness resulted in people being prone to acquire infection. Another finding from the study was gaps in knowledge of BCG, as patients did not mention the BCG vaccination as a method of prevention for TB. This generated the suggestion that interventions must be designed to improve knowledge in the community regarding immunisations against TB. Although TB was considered to be a serious, life-threatening condition, respondents were convinced that it was curable.

Furthermore, Seid and Metaferia (2018) conducted a cross-sectional surrey that examined the factors associated with treatment delay among newly diagnosed TB patients in Dessie city and its surroundings in Northern Central Ethiopia. The study aimed to estimate patients' health systems and total delay counted in days. The sample size was 390 participants, both male and female, aged 18 to 55 years plus. The study was carried out in 15 randomly selected public health facilities that provided DOTS in the study area. Total sample size was proportionately allocated for the 15 randomly selected health facilities based on their previous one year estimated number of registered TB patients. The proportions of participant

TB patients were as follows: 35 from one referral hospital, 18 from one general hospital, and 337 from 13 health centres. The findings revealed that of the total participants, 10.2% had previous exposure to TB patients, 14.7% used different forms of home-prepared self-medication, and 8.9% used different non-prescribed medications before visiting a formal health care provider. Ninety-six (25.1%) and 132 (34.6%) participants were smear-positive PTB (SPPTB) and smear-negative PTB (SNPTB), respectively. After the onset of TB signs and symptoms 78.8% of participants visited public health care providers, and 41.6% consulted general practitioners (GP). Nearly two-thirds of the TB patients had multiple healthcare contacts before diagnosis confirmation, and 46.9% were diagnosed using a combination of chest X-ray and microscopy.

Finally, the study reported that the delay in patient health-seeking behaviour was the major contributor to the total delay. About 35.1, 41.1, and 47.4% of patients had prolonged health system delay, health service delay and total delay, respectively. Older age, having a larger family size in a household, practising self-medication, SNPTB, and EPTB were significant predictors of prolonged patient delay. Initial visits to general practitioners and multiple healthcare visits were significant predictors of prolonged health system delay. However, lower level of patients' education and use of chest X-ray for TB diagnosis significantly reduced the health system delay.

The study identified the need for immediate interventions that may reduce patients' delay through communication and social mobilisation efforts targeted at informing the general population to seek early health care services when they experience symptoms suggestive of TB. In addition, there is a need for a regional TB program that would strengthen the educational campaigns designed to raise public awareness about the signs and symptoms of TB, the availability of free services, and the consequences of early undiagnosed TB disease. In addition, strengthening the health system to support TB diagnosis and management must be emphasised through the regular training and re-training of all healthcare providers.

The study was well presented and addressed the research aim, but limitations of the study included that some patients were recruited from the DOTS clinics. However, TB patients who did not report to a health facility might have experienced a longer delay, resulting in the possible underestimation of the observed length of delay. In addition, the duration of patient delay was based on self-report, which might have recall bias, as patients may not accurately estimate or remember the exact date of the onset of initial TB symptoms. Finally, another weakness of the study was its design. Results might have been better if the study could have adopted a mixed-methods or qualitative method for data collection whereby participants would have been able to give in-depth information about themselves. Also, the results of this study cannot be generalised to all TB patients in the study area. The next theme will review the literature relating to the culture and beliefs of local Traditional healers on PTB or TB treatment.

2.7 CULTURE AND BELIEFS OF LOCAL TRADITIONAL HEALERS ON PTB

Culture and beliefs in the context of health can be defined as “experiences, expressions, symbols, materials, customs, behaviours, morals, values, attitudes, and beliefs created and communicated among individuals and passed down to generations as cultural traditions” (Villa *et al.* 2015, p. 15). Therefore, health and human service providers must work toward cultural competence and cultural proficiency with the population for whom they care. Educating both traditional healers (Traditional healers) and community members about PTB could improve attitudes towards cultural beliefs and promote effective PTB treatment.

Viney *et al.* (2014) investigated Traditional healers s and the potential for collaboration with the national TB programme in Vanuatu using a mixed-methods approach. Quantitative analysis was based on the responses provided to close-ended questions, and descriptive analysis was used to describe the knowledge, attitudes, and practices of Traditional healers towards TB. Qualitative analysis was based on open-ended questions, permitting fuller explanations. The participants were recruited using snowball sampling methods, allowing them to be enrolled from one of four study sites in Vanuatu given the large proportion of Traditional healers and TB patients in the area. Nineteen Traditional healers were interviewed, of whom 18 were male and 1 was female. The results indicated that out of the total number of Traditional healers interviewed, 15 of them reported treating ‘short wind’ (a local term to describe lung, chest, or breathing illnesses), frequently but not always interpreted as asthma by the healers. ‘Short wind’ was attributed to food, alcohol, or smoking (3%), pollution from contact with menstrual blood (19%), and a range of other physical and spiritual causes. Ten of the participants confirmed treating TB with leaf medicine, and four Traditional healers said that they would not treat TB. Twelve of the healers had referred patients to a hospital for strong wet coughing, and just over half of the healers reported previous collaborations with the government healthcare system.

Overall, the study identified that the cause of delay to treatment by the patients was due to consultation with a traditional healer, as Traditional healers were well known in Vanuatu. Despite the Traditional healer’s knowledge of TB treatment, the collaboration between the Vanuatu Ministry of Health and Traditional healers is feasible. Therefore, the study recommended that there was a need for Traditional healers to engage in TB management, as it would improve TB case detection and care in Vanuatu. This was significant because the engagement of Traditional healers could reduce delays in the time taken to TB diagnosis and treatment, and the early referral of persons with presumptive TB to the healthcare system will improve the TB management, case detection, and care in Vanuatu. Importantly, the study was well presented and addressed the aim of the study, but there are limitations in the study, which can be illustrated by the snowball sampling employed for the mixed-methods approach that used only a small sample of 19 Traditional healers in Vanuatu; as a result of the small sample size, the results may not be generalisable to all Traditional healers in Vanuatu. Furthermore, a larger sample method with higher turnout could have made it possible to assess the impact of regional variations in knowledge, attitudes, and beliefs about TB. Another limitation of the study may be possible bias in the study findings because the TB nurses employed by the Ministry of Health conducted the interviews, and Traditional healers may have provided different information to these interviewers. Because the study explored TB treatment behaviours and analysed self-reported behaviour, there is the possibility of management and diagnostic strategies being either under- or over-reported, so they may or may not be significant.

Banerjee *et al.* (2004) conducted a study to examine Traditional healers’ diagnostic and treatment practices for TB in India with a sample of 120 Traditional healers, using in-depth interviews questions for data collection. The results revealed that the Traditional healers were accessible and acceptable to the population as DOTS providers and could be easily approached for the treatment of ailments as well as for the diagnosis and treatment of TB. Finally, the study encouraged the provision of Traditional healers for community members, as these Traditional healers could be educated about and involved in the Revised National TB Control Program (RNTCP) in tribal districts in Andhra Pradesh and could contribute by referring patients to reduce diagnosis delays and increase case finding and treatment adherence.

Salaniponi *et al.* (2000) determined the proportion of PTB patients who had visited Traditional healers prior to diagnosis and who had been referred for sputum smear examination by such healers in Malawi. The sample size was 770 patients registered with smear positive PTB; the sample comprised 374 men and 396 women, with a mean age of 35 years. Of the total sample, 617 (80%) were registered as new patients, 145 (19%) as having recurrent diseases, and 8% cases having no information. In addition, 248 (32%) patients had visited Traditional healers before receiving a PTB diagnosis. The results reported that 32% of the patients in Malawi had visited Traditional healers before visiting HCWs' centres for treatment, which led to some attempts to involve Traditional healers in the diagnostic process. Delay in diagnosis is significant with regard to not only disease prognosis at the individual level but also transmission within the community and the reproductive rate of the TB epidemic (Storla et al 2008)

A pilot interventional study by Sima *et al.* (2019) aimed to evaluate the role of Traditional healers in the detection and referral of active TB cases in a pastoralist community in Ethiopia. The study utilised a sample size of 22 Traditional healers from 7 villages of the Kereyu community in the Fentale district in Ethiopia. Using a quantitative method, the study revealed that out of 22 Traditional healers who participated in the pilot intervention study, only 8 were available for interview after 2 years. The rest were unavailable due to seasonal migration and instability in the district during the study period. Two of the eight Traditional healers were female, and four were in the age range 31–60 years. All the respondents were from the Oromo ethnic group and practised agro-pastoralism. Four of the Traditional healers could not read or write and migrated seasonally. In regard to the Traditional healer's knowledge on TB, five out of the eight mentioned bacteria as the cause of TB, while the rest mentioned living with active TB patients. All of them mentioned coughing for 2 weeks or more as the main symptom of TB followed by fever and night sweating. The findings revealed that the Traditional healers referred 24 presumptive TB cases to the nearest health facility in a 1-year period, out of which 13 were confirmed to be TB cases and 10 completed treatments. In addition, the study indicates that Traditional healers can contribute to the detection of undiagnosed active TB cases in the community provided they are given appropriate training and support.

This study conducted by Sima *et al.* (2019) has some limitations, for example, the absence of supplementary qualitative data and tracing back only a few of the Traditional healers and so being able to interview only 8 of the 22 Traditional healers Another limitation was that the Traditional healers referred 24 TB suspects to the healthcare facilities registry, but only 20 TB suspects linked with the Traditional healers were recorded. Thus, patients may have decided not to attend the healthcare facility after being told to do so by the Traditional healers, which is another limitation of the study. However, the study demonstrated some good strengths, which made the study significant; for example, being the first pilot study conducted with Traditional healers in the community, the research can be used as a baseline for further strengthening the link between Traditional healers and conventional health services in the detection of undiagnosed active TB cases.

Nonetheless, it could have been more helpful if the study had adopted a qualitative approach whereby more information could have been acquired from the Traditional healers on their roles. The authors recommended that feedback from the healthcare services on the patients' treatment be reported to the Traditional healers rather than the Traditional healers contacting the patients for the outcome of their treatments.

A cross-sectional study conducted by Peltzer, Mngqundaniso and Petros (2006) investigated the TB knowledge, beliefs, and practices of Traditional healers in South Africa. A purposeful sample of 233 Traditional healers from three chosen communities were selected after access was established through the Traditional Healers Council in KwaZulu-Natal and respective branches in the province. Two-thirds (150, 64.4%) of the Traditional healers who participated were from rural areas (Swayimane and Ulundi) and 83 (35.6%) were from an urban area (Mbali) in KwaZulu-Natal. Most (75.2%) were female, and 57 (24.8%) were male. All participants were African, while almost all were Zulu (96.6%), and a few were Xhosa (2.1%) and Asian (1.3%). The majority (59.7%) were aged more than 45 years old, including 12 (5.5%) who were more than 65 years old at the time of the interview. A quarter (22.5%) did not have any formal schooling, 25.1% had up to Grade 5, 51.6% between Grade 6 to 11, and 10.8% had no formal education. Most Traditional healers belonged to charismatic churches. HIV/AIDS and TB knowledge was assessed with 14 items on HIV/AIDS and 5 items on TB.

Most of the Traditional healers had correct knowledge of the major HIV transmission routes. As for knowledge about TB, 95% of the Traditional healers agreed that TB was curable, and 93% correctly said that the treatment takes 6 to 8 months. Although 81% knew the transmission route was breathing the air around a person who is sick with TB, many had misconceptions about TB transmission; 85% believed it was possible to get TB from smoking, and 65% from mosquito or other insect bites.

The findings identified that South Africa recognizes the role and function of Traditional healers in the continuum of care, compliance, adherence, adverse event reporting, and ensuring safe traditional health practices (Department of Health 2004; Homsy *et al.* 2004). The study, however, recommended that communities, Traditional healers' clients, and practitioners should be trained/ in HIV and TB prevention and care, and in the cultural beliefs and practices and traditional counselling approaches on TB. The study further suggested the need for counselling and for supporting a patient's referral.

The strengths of the study were the sample size, which was adequate for the study, and the structured questionnaire, which was administered by a professional nurse trained in interview administration, which answered the aim of the study. However, the study revealed that only one part of rural and urban areas was examined. Another drawback of this study was the methodology adopted, as the study was conducted to investigate the TB knowledge, beliefs, and practices of Traditional healers. A mixed-methods approach would have benefited the study, as, for example, more in-depth information on Traditional healers' treatment on TB could have been gained. In particular, the misconceptions on TB revealed by the Traditional healers could have been explored in more detail, which could have been of benefit to the study and yielded insightful findings to inform the development of appropriate health education strategies.

Strengths and weaknesses of literature review articles

This review of literature was drawn from a wide range of articles from different countries. They were conducted on patients, community members, health workers, and the general population. Some of the studies were conducted in areas in Africa, Europe, and Asia which have social conditions, levels of education, and cultures that are different from those encountered in Nigeria, where this study is conducted. The studies were qualitative and used small samples and in-depth structured interviews or were quantitative and used self-administered questionnaires and cohort studies. However, none of the studies reviewed or consulted were done on an ethnographic basis regarding the knowledge, attitude, and practice among PTB patients regarding HIV co-infection in Ondo State, Nigeria. This justifies the choice of the topic of this study. It is hoped that the study will provide a true reflection of PTB and TB in the setting of Akure South, Ondo State.

The theoretical critique

In this literature review, some of the qualitative studies draw on more focused theories or concepts as a ‘lens’ to enable specific aspects of the data to be viewed from a new perspective, or to allow parallels to be drawn with other literature. For example, Marahatta *et al.* (2020) conducted a qualitative study on the barriers to access, diagnosis, and treatment completion for TB patients in central and western Nepal. The study used the methods of SSI, FGDs, and IDIs among a range of patients in accessing healthcare services. However, in the discussion of the qualitative method, no theoretical approach was identified in the study because many, though not all, qualitative researchers would assume that if their aim is to understand the multiple meanings that others construct about the world, then it makes sense to start with others’ accounts rather than with theories (Cresswell and Cresswell 2018). Moreover, the impetus for the development of qualitative methods has often come from a desire to ‘give voice’ to marginalised and disempowered groups rather than a focus on testing a theory.

In regard to the quantitative method, an inductive content analysis was performed since the quantitative method was based on natural sciences (measurement, control of variables, standardised procedures). For example, Wandwalo and Morkve (2000) used a cross-sectional descriptive study to investigate the delay in TB case finding and treatment in Mwanza, Tanzania; this study also showed how a quantitative study used natural science to perform measurements and so arrive at the findings.

2.8 CHAPTER SUMMARY

This chapter has presented the literature review on the themes derived from the aim and objectives of the study, the methodology, and the reviewed literature. This literature review has discussed the search strategies, the theme of research, and the inclusion and exclusion criteria. In total, 42 articles were included in the review, of which 8 were qualitative and 34 were quantitative and considered both PTB and TB. In the quantitative research, most of the studies used a cross sectional approach for data analysis and cross-sectional surveys to investigate stakeholders’, patients’, and HCWs’ perceptions of PTB. However, this approach meant the studies were unable to answer in-depth questions regarding the participants’ feelings and opinions. Meanwhile, the qualitative studies utilised interview methods, FGs, and observation for the collection of data; some were conducted in Nigeria and others were conducted outside Nigeria. In addition, out of five themes derived from the study aim and objective, only two of the reviewed articles on PTP and TB were from Nigeria; the others were from Asia and Europe. Furthermore, in most of the articles, there were similar views about TB and PTB regarding their findings. For instance, in the review of literature on the theme of knowledge, attitudes, and perception, the articles reported that there was limited knowledge and serious misconceptions about TB and its treatment/diagnose of patients whereby most of the patients had gathered information on TB through conversations with friends or relatives. However, such information was from people who themselves were likely to be misinformed and was therefore inaccurate. These misconceptions and misinformation represented a challenge for the patients and the community members. There was also information on the theme of health-seeking behaviour, which identified that the health care seeking behaviour of participants was poor in most of the articles reviewed because the majority of the participants did not seek help for their illness because of incorrect perceptions and the lack of financial resources mainly for transport. A significant number of the patients did nothing since they considered that their illness was not severe. A similar finding was also reported in the theme of attitudes and beliefs of HCWs towards PTB patients, in which the review of the literature revealed that the overall knowledge and practices of HCWs on TB were not satisfactory, with the knowledge level being even worse among non-medical and lower-level staff. Therefore, it was recommended that there be regular skills-based training and orientation on TB for all cadres of HCWs to improve practices in the healthcare facilities. In addition, the use TB policy or guidelines is recommended to ensure there are effective measures in healthcare facilities. Finally, the theme of the culture and beliefs of local Traditional healers regarding PTB, the finding revealed Traditional healers had good knowledge on PTB, and majority of the participants do consult the Traditional healers before visiting the health care centre. The findings also identified the need for Traditional healers to receive training on TB prevention and care, and on the cultural beliefs and practices and the traditional counselling approaches on TB. The studies reviewed further suggested that there is a need for client counselling and support for a patient's referral since many people require for their services. The literature review identified gaps from the studies regarding the participants' knowledge, attitudes, and cultural beliefs, that need to be addressed. The reviewed articles on the literature also suggested that lack of knowledge of the PTB/TB made a lot of patients not aware of the cause of their illness and reported to the appropriate centers for treatment, which resulted to the increase of prevalence of TB among the community members.

On the other hand, since this is the first ethnographic study on PTB to be conducted in Ondo State Nigeria, despite the recognition that TB prevalence was high there, this study fills an important gap.

In conclusion the literature reviewed has shown that many studies that have been conducted on the knowledge, attitudes, and practices or behaviour with regard to TB and, in particular, PTB. Most of the studies revealed that the patients had either low or inadequate knowledge of TB and PTB. However, some of the patients showed good knowledge regarding PTB signs/symptoms, especially its transmission, but poorer knowledge on TB co-infection with HIV. In relation to attitudes, the literature revealed the stigmatisation of TB and HIV sufferers. With regard to practices, PTB prevention is low in the general population and fair among TB patients, and the adoption of provider-initiated testing and counselling (PITC) in health facilities can be improved. In addition, the literature was reviewed to obtain more insight and understanding on PTB and to identify the gaps in literature which can support the selection of the research topic and methodology. The strengths and weaknesses of the previous studies are identified above to justify the choice of the topic of this study. The detail of all the literature used in this study are listed in **(Appendix A).**

CHAPTER 3: Methodology

This chapter presents an overview of the research methodology used in this study. It explains the methods adopted to meet the research aim and objectives and the duration of field work (time spent observing participants in the clinic/on the ward) and focuses on the research paradigms, the research design, and the rationale for the choice of these paradigms and design. It also elaborates on the sampling and recruitment of the research participants as well as the advantages and disadvantages of the adopted methods. This chapter further presents the tools used for data collection and data analysis as well as the ethical issues considered while accessing the participants and conducting the study. Furthermore, the validity, credibility, and relevance of the research methods adopted for the study are discussed.

3.1 AIM

The aim of this study is to investigates the knowledge, attitudes, and health-seeking behaviours of patients, HCWs, and community members that comprises (Palace chiefs, religious leaders, traditional healers), relation to PTB in Akure South, Ondo State, Nigeria.

3.2 OBJECTIVES

- to investigate the knowledge and perceptions of the Akure community members regarding PTB
- to identify the barriers and facilitators to accessing PTB treatment provided for the Akure community
- to explore the attitudes and beliefs of HCWs working at PTB hospitals and clinics towards their patients
- to investigates the knowledge, culture, and beliefs of local traditional healers regarding PTB
- to identify the information sources used by the Akure community members regarding PTB
- to inform the development of a future health promotion program on PTB to raise awareness among the Akure community

3.3 THEORETICAL PERSPECTIVES AND RESEARCH PARADIGMS

In conducting research, paradigms play a vital role in resolving the means of accessing knowledge. Therefore, the research paradigm has important "implications for every decision made in the research process" (Kivunja & Kuyini 2017, p. 26). In social science, studies use different underlying philosophical paradigms. Kamal *et al.* (2019) further stated that research is underpinned by the paradigm, or a specific way of "seeing the world and making sense of it" while Oates (2006, p. 282) defined a paradigm as 'a set of shared assumptions or ways of thinking about some aspect of the world'. These philosophical paradigms have different assumptions about the nature of the world (ontology) and the way researchers can acquire knowledge about the world (epistemology) (Oates 2006). Every researcher has a particular understanding of what is knowledge and what is truth. Such understandings shape researchers' thoughts and views about themselves and other people as much as the researcher's thoughts and views about the world (Kamal *et al.* 2019). Therefore, any paradigm selected by the researcher guides them in both the philosophical assumption of the research and the selection of instruments, tools, and methods used in the study (Ponterotto 2005).

Clapton *et al.* (2006) further argued that a paradigm is "a set of beliefs about the way in which particular problems exist and a set of agreements on how such problems can be investigated" (p. 59). In other words, the paradigm adopted directs the researcher's investigation, which includes data collection and analysis procedures. The research paradigm therefore has important implications for every decision made in the research process (Kivunj and Bawa 2017). Epistemology is derived from the Greek word 'episteme' meaning knowledge. Epistemology is used to describe how we come to know something and how we know truth or reality (Kivunj and Bawa 2017). It is the very essence of knowledge that describes how its form and nature are acquired and validated. Epistemology helps to ask important questions which facilitates investigating the truth (Kivunj and Bawa 2017). Cohen, Manion and Morrison (2007) stated that epistemology is about the assumptions which one makes about "the very bases of knowledge – its nature and form, how it can be acquired and how communicated to other human beings" (p.7). It is the epistemological question that leads a researcher to debate "the possibility and desirability of objectivity, subjectivity, causality, validity, generalisability" (Patton 2002, p. 134). Adhering to an ontological belief system (explicitly or implicitly) guides one to certain epistemological assumptions. In line with the ontological view, which seeks to uncover the nature and form of reality, it attempts to explain an individual’s view of reality and what that individual understands about their view (Punch & Punch 2009). Lastly, I address the methodological view, which describes the means by which a researcher should source information for research, and this is influenced by the two questions highlighted above. Consequently, the choice of the paradigm used by a researcher guides the philosophical assumption of the study, the research method, and the instruments adopted for the study (Ponterotto 2005).

My understanding of paradigm is based on the questions how, and what, can we know. This made me locate my research within philosophical debates by identifying the set of fundamental assumptions underlying my research. It is quite clear that paradigms about epistemology, ontology, and methodology wield a significant influence on research methodology. A good understanding of the research paradigms helps determine the choice of a particular methodology or methodologies to adopt within a research paradigm. Furthermore, knowing that each paradigm is underpinned by distinct assumptions and methodologies will guide the researcher on how to design the project. Distorting or forcing a paradigm perspective over another creed may lead to intellectual rejection (Kivunja, & Kuyini, 2017; Rehman, & Alharthi, 2016). This leads to a discussion of the epistemology, ontology, and methodology and theoretical perspectives that inform my chosen methodology. For instance, philosophical beliefs, even when implicit, shape how the researcher perceives and enquires about the world.

> *All research is interpretive; it is guided by a set of beliefs and feelings about the world and how it should be understood and studied. Some beliefs may be taken for granted, invisible, only assumed, whereas others are highly problematic and controversial. Each interpretive paradigm makes particular demands on the researcher, including the questions he or she asks and the interpretations the researcher brings to them.* (Denzin & Lincoln 2000, p. 19)

As seen above, Denzin & Lincoln (2000) indicated that beliefs and feelings about world and how they should be interpreted should be taken into consideration in any research. Having considered the above and knowing that each paradigm is underpinned by distinct assumptions and methodologies, thus giving more choice to researchers, I was able to decide which of the paradigms would be suitable for my research study and design.

According to Martimianakis *et al.* (2020), there are four underlying paradigms for qualitative research: positivism, post-positivism, critical theory, and constructivism. Similarly, Oates

(2006) strongly argued that positivism, interpretive theory, and critical theory are the most ‘broad-brush’ approaches since these paradigms can be categorised further, but in this study, only two of them are examined. Positivism can be sub-grouped into positivism and post-positivism, but the goal of both paradigms is to provide an explanation that eventually leads to the prediction of and emphasises the causes and effects of the phenomena as well as the generalisation of the findings. Positivism operates from both nomothetic and etic perspectives and is based on quantitative research (Ponterotto 2005). Interpretivism can also be subdivided into hermeneutics, phenomenology, and constructivism, and critical research can be divided into Marxism and feminism research can be applied (Oates 2006). Creswell and Plano Clark (2017) also argued that the four main paradigms that researchers use when conducting social science research are post-positivism, social constructivism, participatory, and pragmatism (p. 40–41).

Although research paradigms exist as different mixed meta-theories, choosing a particular paradigm that best answers a research question is difficult (Punch & Punch 2009). This is because research paradigms can be viewed as a continuum, which is interlinked, and they sometimes overlap in their characteristics rather than being viewed as clear-cut entities (Creswell 2009). Hence, combining approaches from different paradigms is not advisable, as the theories on which these paradigms are based are logically incompatible (Grix 2010). The table below outlines four major paradigms currently in use within medical education research and describes the assumptions about ontology (the nature of reality), epistemology (the nature of knowledge), methodology (the nature of research), and the related research methods for each of these perspectives (Denzin, & Lincoln 2011; Morgan 2007). See Table 1 below:

***Table 1**: Philosophical Assumptions and Research Paradigms*

Philosophical Assumptions		**Research Paradigms**		
	Positivism	**Post-positivism**	**Interpretivism**	**Critical theory**
Ontology: What is the nature of reality?	Reality exists by natural mechanisms. Discrete variables can be measured.	Reality is static and fixed the world is ordered according to an overarching objective truth	Reality is subjective and changing there is no one ultimate truth.	Reality may be objective, but truth is continually contested by competing groups
Epistemology: What is the nature of knowledge?	Objective, generalisable theory can be developed to accurately describe the world Knowledge can be neutral or value-free	Objective knowledge of the world is not necessarily fully accessible seeks to establish ‘probable’ truth	Knowledge is subjective. There are multiple, diverse interpretations of reality. There is no one ultimate or ‘correct’ way of knowing.	Knowledge is co-constructed between individuals and groups Knowledge is mediated by power relations and therefore continuously under revision
Methodology: What is the nature of the research approach?	The aim is to discover what exists through prediction and control The theory is established deductively Uses scientific method to develop abstract laws to describe and predict patterns Looks for causality and fundamental laws	Seeks to develop knowledge through the falsification of hypotheses Emphasis on well-defined concepts and variables, controlled conditions, precise instrumentation and empirical testing	Focus on understanding. Uses inductive reasoning. Meaning is constructed in the researcher–participant interaction in the natural environment Gathers diverse interpretations (e.g. grounded theory, ethnography)	Focus on emancipation Research is used to envision how things could change for the better Seeks representation of diverse and under-represented views Characterised by continual redefinition of problems and cooperative interaction (e.g. action research)
Method: What techniques can be used to gather this information	Tends to use quantitative methods, often including statistical testing of hypotheses (e.g. randomised controlled trials, questionnaires)	Quantitative and qualitative methods: systematically gathered and analysed data from representative samples (e.g. surveys, interviews, focus groups)	Tends to use qualitative methods to capture various interpretations of a phenomenon (e.g. naturalistic observation, interviews, use of narrative)	May use both quantitative and qualitative methods, usually in a participatory way Often uses iterative research design (e.g. Case studies, focus groups, participant observation)

Source: Denzin and Lincoln (2011); Weaver and Olson, (2006)

3.4 POSITIVISM

Over time, the positivist paradigm has been considered the most dominant research paradigm and has been contrasted with the interpretivist paradigm (Morgan 2007). The positivist paradigm gains knowledge by means of systematic observations, the description of theories, the presentation of research hypotheses, the use of statistical inferences and results, and the interpretation based on theories (Ponterotto 2005). From the ontological point of view, the positivist paradigm is based on realism, while epistemology sees positivism from the standpoint of objectivism and dualism. Realism implies that the world is a well-organised place that can be easily captured, identified, and measured independent of the researcher and the measurement tool used (Ponterotto 2005; Oates, 2006; Walliman 2006). On the other hand, objectivism entails conducting research with rigour and without bias, while dualism means researchers, participants, and the subject of the research are independent of one another (Ponterotto 2005). Those conducting quantitative research informed by the positivist paradigm seek to minimise the influence of the researcher to reduce bias. However, it has been argued that research cannot be totally devoid of external influence, as the complete exclusion of an investigator is impossible. For example, the choice of the research paradigm, the research aim and objectives, and the means of data collection all lie with the researcher. Hence, the positivist paradigm believes that the scientific method is the only way to establish truth and objective reality. Positivism is based upon the view that science is the only foundation for true knowledge. It holds that the methods, techniques, and procedures used in the natural sciences offer the best framework for investigating the social world. The term ‘positivism’ was coined by Auguste Compte to reflect a strict empirical approach in which claims about knowledge are based directly on experience; it emphasizes facts and the causes of behaviour (Bogdan & Biklen 2007). Compte sought to distinguish between empirical knowledge and knowledge derived from metaphysics or theology; he proposed that scientific knowledge was more representative of truth than that derived from metaphysical speculation (Schwandt 2001, p. 199).

However, although researchers have adopted the positivist paradigm in their studies, this paradigm has been associated with several challenges. For example, Ponterotto (2005) argued that one of the challenges associated with positivism is that a study based on the positivist paradigm is bound to produce a single set of research results. Indeed, since the middle part of the 20th century, there has been a shift from positivism to post-positivism, where post-positivism is influenced by a philosophy called critical realism (Trochim 2006). Critical realism can be distinguished from positivism according to whether the focus is on theory verification (positivism) or on theory falsification (post-positivism) (Ponterotto 2005). The post-positivists, like the positivists, believe that there is a reality independent of our thinking that can be studied through the scientific method. Critical realism, however, recognises that observations may involve error and that theories can be modified (Trochim 2006); hence, reality cannot be known with any certainty. Observations are theory laden and influenced by the observer’s biases and worldview. For example, two people may observe the same event and understand it differently based upon their own experiences and beliefs. Objectivity can nevertheless be achieved by using multiple measures and observations and triangulating the data to gain a clearer understanding of what is happening in reality. It is important to note that the post-positivists have much in common with positivists, but most of the research approaches and practices in social science today fit better into the post-positivist category.

3.4.1 Interpretivism

According to Chen and Hirschheim (2004), acceptance of the interpretive research paradigm has been increasing, as it is considered an alternative to the positivist paradigm. They further revealed that the interpretivist paradigm is concerned with understanding social context and attempts to categorise, discover, and explain the relationships among different factors. Interpretivism was also described as concentrating on both the meaning and experiences of humans; this paradigm states that the world is constructed by people and that humans are constantly involved in the interpretation of their changing world. Furthermore, Bryman (2016) highlighted that human being produce a sense of the world which has neither order nor structure. Unlike positivists, who assume that reality has some tangible reference and that agreement on its nature can be achieved given time and careful research, interpretivists believe that what people know and believe to be true about the world is constructed as people interact with one another over time in a social setting (Bryman 2016).

Another key characteristic of the interpretive paradigm is that it addresses shared constructs and meanings, implying that they are affected by several contextual characteristics, such as age, culture, economy, ethnicity, gender, and political and social factors (Flick 2002; Pickard 2007). It has been argued that these characteristics have greatly influence how individuals behave, think, and conduct themselves. Moreover, the interpretivist approach is inherently explanatory and creates meaning through interaction (Pickard 2007), unlike the positivist paradigm, which cannot address meaning; rather, its focus is based on philosophical assumptions (Ponterotto 2005). Furthermore, the interpretivist paradigm aligns with naturalistic enquiry, which is an inductive style of reasoning and emphasises the use of qualitative data that are not fixed but negotiated, multi-voiced, and participatory.

The interpretive paradigm, from the ontological standpoint, is subjective, and it is influenced by the circumstances of the situation; it considers the individual's experiences through conversations that exist between the investigator and the participants (Ponterotto 2005; Oates 2006). From the epistemological point of view, the interaction between society and the investigator is paramount in capturing life experiences (Oates 2006). Although change may come somewhat as a result of interactions between the investigator and the participants, in-depth information on the research would be obtained through broad interaction (Ponterotto 2005). From the methodological point of view, dependent and independent variables are not predefined by the interpretivist paradigms but through interactive means; the findings are interpreted usually through identifying themes (Chen & Hirschheim 2004; Ponterotto 2005).

In this study, I opted for the interpretive paradigm. According to Chen and Hirschheim (2004), the interpretive paradigm is concerned with understanding social context and describing the meaning and experiences of humans. The methodology used within this paradigm may be more time-consuming because in-depth information is sought from the perspective of the participants, or the emic perspective conducted in natural settings. It accesses in-depth and subjective information from the participants, unlike the positivist paradigm, which cannot access in-depth knowledge. In considering the aim and objectives of this research, the interpretative paradigm would assist in the assessment of both subjective and in-depth knowledge and experiences from the research participants. Another reason for adopting the interpretative rather than positivist method is that theories are not tested and nor are research findings replicated; rather, the research findings represent the interpretations of the population experiencing the incident being researched (Shah & Corley 2006). Therefore, the social world can only be understood from the standpoint of the individuals who participate in it (Cohen *et al.* 2007). In that sense, knowledge is viewed within multiple realities.

3.5 RESEARCH APPROACH/DESIGN

In approaching studies, two major methodologies are used: quantitative and qualitative research. Different types of quantitative research are applied, including RCTs and surveys. Surveys are commonly used in social research to investigate people's knowledge and attitudes regarding a phenomenon of interest. In addition, a quantitative approach is described as a research method that identifies the relationships between variables (independent and dependent) after data have been collected and analysed (Ponterotto 2005). This research method is objective; uses statistical analyses to examine group correlations, means, and variances; and generalises the findings (Golafshani 2003).

According to Gatrell (2009), research information is obtained from participants through predetermined questions, and the selected sample size is usually large enough to represent the target population. However, the predetermined questions used in this research method are not detailed and hence may not reveal an in-depth understanding of the research area and may miss some information from the participants, resulting in information bias. A questionnaire is commonly used for data collection and is administered through different means, ranging from email to face-to-face correspondence, telephone, and postal methods (Creswell 2008). Hughes (2016) revealed that quantitative data collection and data analysis are carried out using numbers; such methods are time-efficient, predictions are easily made and are useful for testing a hypothesis, and the study is not influenced by the investigator (Johnson and Onwuegbuzie 2004). However, this method has been criticised for its inability to assess in-depth data, poor sample framing, inter-relationships among constructs, and irregularity between the measures and the hypothesis (Bryman, 2008; Oates, 2006). Hence, it was not considered appropriate for this study because quantitative research findings are based on statistical generalisations, while qualitative research is based on contextual understanding and may lead to analytic generation. Therefore, this study aims to generate in-depth information from the participants to facilitate an understanding of the meaning behind their behaviours with respect to PTB.

Qualitative methods permit a researcher to gain in-depth information from persons or groups of persons based on opinions and values describing the meanings and concepts under study (Gatrell 2009). Qualitative research entails the self-categorisation of meanings from participants by providing individual case information and is used for the in-depth description of personal experiences (Johnson and Onwuegbuzie 2004). These meanings are subjective, varied, and multiple in nature, causing the researcher to view the complexity of the study area rather than streamline the meanings into a few ideas. The means of collecting in-depth information in qualitative research include interviews, FGs, observation, texts, and documents (Silverman 2001). Unlike quantitative methods, these methods focus on words and narratives during data collection and analysis (Ponterotto 2005). Such research methods are, however, associated with some limitations, such as being time-consuming, an inability to generalise findings to a larger population, and the influence of researcher bias (Johnson & Onwuegbuzie 2004). They are also criticised for the lack of theoretical development and the researcher's inability to build studies that would address theoretical questions (Oates 2006). Irrespective of these disadvantages, I adopted a qualitative research methodology for this study.

The rationale for adopting this research method is based on "an approach to exploring and understanding the meaning individuals or groups ascribe to a social or human problem" (Creswell 2014, p. 32). It also examines and explains the culture and behaviour of humans and the viewpoints of those being studied (Bryman 2004). In this study context, a qualitative approach was considered the most suitable to achieve the aim and objectives of the study, as it would aid in identifying the issues that require understanding in relation to PTB disease and reveal in-depth information about the attitudes, beliefs, cultures, and behaviours associated with PTB amongst the study participants. The use of qualitative research would also allow the adoption of a flexible framework for data collection rather than one being fixed at the outset. In light of the aim and objectives of this study, I adopted an ethnographic design as the most appropriate.

However, other qualitative approaches initially considered were grounded theory, phenomenology, and case study. These are discussed in the following sections, and the reasons for not selecting them are provided.

Grounded theory: This is a qualitative research methodology that investigates the experience of people and their responses and reactions in the context in which they occur (Austin, Z., & Sutton, J. 2014). Creswell (2012) viewed grounded theory as a powerful tool when a researcher needs a broad theory or explanation of a natural phenomenon. Further evidence by Creswell (2012) also revealed that the emerging theory is “grounded” or rooted in the data collection and analysis, which requires a prescribed and structured means, with the aim of the study being an inductively derived theory (Bowling, 2002), which did not apply to this study.

Phenomenology was also initially considered as a research design for the study. This approach is centred on exploring and understanding the lived experiences of an individual and is often conducted in the areas of philosophy and psychology (Creswell 2014). Phenomenology seeks to understand the change process over time through an individual’s experiences and ideas, gathering authentic data, and advancing theory and knowledge. A phenomenological approach is more effective in studying the lived experiences of individuals because it requires the researcher to obtain and evaluate information in an unbiased manner utilising bracketing, analysing rich and descriptive data in an open manner, using varying methods of data collection, and accurately describing, defining, and effectively communicating the results of the findings. However, it focuses on capturing people’s lived experiences, which is an aspect of what I wanted to explore. However, I was keen to explore the wider influences on individual’s experiences of PTB, including the influence of, for example, health professionals and the health care system, Traditional healers and the wider community, which is why I discounted phenomenology.

Case study design was also considered for the study, as it allows the researcher to explore individuals or organisations through complex interventions, relationships, communities, or programs (Yin 2003) and supports the deconstruction and the subsequent reconstruction of various phenomena. This approach is valuable for health science research to develop theory, evaluate programs, and develop interventions because of its flexibility and rigour. However, although PTB may be considered a case in that it involves HCWs and patients in hospitals, PTB health behaviour could not be a case because it does not provide sufficient boundaries; consequently, I did not consider the case study design appropriate for this study. In addition to the above, I also examined the ethnography design.

3.5.1 Ethnography as a methodology

Ethnography is a research methodology, and, as such, it has a strong foundation in empiricism and naturalism (Hammersley and Atkinson 2007). Collectively, these approaches emphasise the collection of data in naturalistic social settings. Like other forms of qualitative research, ethnography differs from positivistic inquiry, as ethnographers neither hypothesize about their research, nor does the ethnographic method set out to test hypotheses. Instead, ethnographic research is exploratory in nature. This approach means that the ethnographer goes into the field to explore a cultural group and/or explore certain social interactions. The research questions are therefore not necessarily specified at the beginning of this endeavour; instead, this approach facilitates an inductive and iterative approach whereby thick description leads to the development of research questions as the social phenomenon is being studied.

As outlined by Hammersley and Atkinson (2007), the collection of unstructured qualitative data contributes significantly to the methods used in the ethnographic methodology. Specifically, the technique incorporates the collection of observational data, in-depth interviews, life histories, and documents (e.g., texts, photographs, videos and other media). The triangulation of these qualitative methods substantively contributes to this approach.

The use of these methods to gather rich, contextually detailed data has a direct influence on the number of cases (e.g., physical locations) one can study ethnographically. As outlined above, the focus on one case or a small number of cases is typical in ethnography. This is the direct result of gathering detailed data over an extended length of time.

3.5.2 Ethnography

One of the most commonly known methods of qualitative approach is ethnography. This focuses on studying the culture of a particular society in question. It involves immersion in a culturally distinct group to study their everyday life with reliance on participants' observation as a data collection method. The interaction of the culture groups, otherwise known as societies, communities, organisations or teams, in a qualitive manner provides a comprehensive insight into their opinions and actions with a view to investigating their perceptions of the world and how they relate with everything around them by direct observations, diary studies, video recordings, and other historical analysis which do not lend themselves to straightforward or direct measurements. What is to be observed may not be known at first let alone the measurement of the construct with any degree of meaningfulness. Ethnographic research has been associated with the study of anthropology in situations where the researcher observes or even becomes part of a group whose culture and social networks are described. It is linked to a complex history, with its roots in cultural anthropology, which involved researchers travelling to observe pre-industrial cultures (Silverman 2006). It entails studying the influence of people's cultures and beliefs on their behaviour in a society by looking at who exactly these people interact with in their day-to-day engagements Creswell (2011).

Ethnographic research designs usually specify procedures and guidelines for taking field notes. These notes often form the backbone of the analysis of ethnographic data. The field notes may take many forms, including detailed observations and general interpretations, reflections, and summaries of recorded interviews. The central aim of ethnography is to provide rich, holistic insights into peoples' world views and actions as well as the nature of the location they inhabit. Reeves *et al.* (2013) stated that "the task [of ethnographers] is to document the culture, the perspectives and practices of the people in these settings. The aim is to 'get inside' the way each group of people sees the world" (p. 152), and so the researcher gathers data through observations, interviews, FGDs, and documentary evidence to produce detailed and comprehensive accounts of different social phenomena. The ethnographic approach was later adopted by members of the Chicago School of Sociology in the 1920–1930s (e.g., Everett Hughes, Robert Park, Louis Wirth 1920-1930) for solving a variety of contemporary social problems (e.g., homelessness, immigration) linked to the urbanisation of Chicago. In the 1940s, the second wave of the Chicago School of Sociology focused on the ethnographic study of professional groups, occupations work and education (Reeves *et al.* 2013). Below, I discuss ethnography as a methodology.

3.5.3 Justification for the choice of an ethnographic approach

As a result of the complexity surrounding the study of PTB, this study adopted a qualitative methodology and utilised an ethnographic approach that used multiple methods of data collection. The ethnographic approach enabled me to investigate the cultural issues influencing health-seeking behaviours of the Akure community members regarding PTB and revealed HCWs' attitudes towards service delivery and the care provided to PTB patients. Regarding the use of multiple methods of data collection from the field, the ethnographer is the prime instrument of data collection Lambert, et al., (2011). The ethnographer embraces multiple techniques to gather data, most notably participant observation, interviews, documents, and artifacts. These various sources are one of ethnography's most notable features, as they allow the comparison of the data during data analysis and enable a more comprehensive account to be made of the issues surrounding PTB (Lambert, et al., (2011). An ethnographic approach enabled me to be closely involved in the fieldwork setting and sometimes directly participate in the activities under study, which allowed me to develop good relationships with the participants. This additionally gave me access to the participants' lives and helped me gain an in-depth understanding of the meaning behind their health behaviours rather than only a snapshot of the problem, which is what other methodologies may provide. Having discussed the ethnographic methods in social science research, in the next section, I examine the critique of ethnographic study.

3.5.4 Critiques of ethnography

Although ethnographic research has several advantages, it has been criticised for use in the field of natural science, which considers ethnography as a method that falls below the standard of science (Brewer 2000). Brewer (2000) outlined the key feature of ethnography, which breaches several central principles of natural science or positivism in relation to study setting, the role of the researcher, and the type and nature of the data collected. Ethnographic qualitative data are considered to be too subjective; the positivist approach does not permit the researcher to become a variable in the study and considers that the absence of structure affects the validity of data, as the differences that emerge in the data can be attributed to the way the data were collected. The highly structured methods of positivism aim to minimise extraneous variations in order to isolate real differences in the data (Brewer 2000). In response to this, Brewer argued that all data, regardless of the collection method, are produced by researchers who are not distant or detached, since they make choices about the design, location, and approach, which help to create and influence the data they end up collecting. Therefore, it is claimed that all research is subjective, in that it is influenced by personal and cultural constructs, including science. All knowledge is selective; therefore, research can only offer a socially constructed account of the world (Brewer 2000). Postmodernism denies the existence of all universal truth statements.

Savage (2000) identified the limitations of ethnography in relation to health care research in that it does not lead to generalisable findings. She acknowledged that generalisation is not considered to be the purpose of qualitative research and that the depth of understanding that ethnography can achieve is considered its strength in relation to gaining a deeper and richer understanding of a phenomenon. However, Mason (2002) drew a distinction between *empirical generalisability*, based on a study population that is statistically representative of a wider population, and *theoretical generalisability* where a study's findings may have wider resonance for other settings or produce explanations and strategic comparisons which may contribute to a wider body of theory or knowledge and produce cross-contextual generalities.

The ethnographic approach has also been criticised for the time it requires the fieldworker to first become accepted into a social system and subsequently to observe and interpret the social content that unfolds there from the perspective of an insider (Savage 2000). The time-consuming nature of ethnographic research has led some healthcare researchers to undertake more focused studies in which fieldwork is shortened, although this carries the risk of the observations being more superficial or inaccurate (Savage 2000).

Ethnographic methods have also been questioned in the healthcare context based on their supposed lack of rigour and a belief that ethnography, as a form of qualitative inquiry, inevitably provides a lower order of evidence than more quantitative types of research. Ethnographic methods are criticised for attempting to explain findings rather than measuring data, for seeking subjective insights rather than generalised findings, and for generating rather than testing hypotheses. Goodman (2000) went so far as to claim that although evidence-based medicine is now widely regarded as the safest form of practice, evidence that it is reliable or testable is lacking. Nonetheless, such criticisms, many of which seem valid, but which could also sometimes lead us to suspect quantitative bias, often overlook the contributions of qualitative enquiry to the reduction of morbidity and mortality in a healthcare context (Morse 2005). Moreover, although 'evidence' is often interpreted as information concerning the best course of treatment, decision making in the healthcare context is also informed by other forms of knowledge. For instance, knowledge about the nature of health beliefs, the impact of organisational and cultural issues, or patient experiences that affect treatments or services is more likely to be derived from qualitative rather than quantitative research. Despite the criticisms and limitations of ethnography, it was considered the most appropriate for addressing the aim and objectives of this research and because of the attention it gives to context and its synthesis of findings from different methods of data collection. In summary, the main reason for choosing an ethnographic approach is that it would enable the study of Akure South community members regarding PTB and provide an understanding of the factors which affect the community members' behaviours toward PTB to provide a more complete and comprehensive account of its contemporary relevance.

3.6 THE PROCESS OF VALIDATING ETHNOGRAPHIC RESEARCH DATA.

In order for ethnographic studies to validate the data collected, the Verstehen sociological approach to studying human society is applied, in which the ethnographer generates information and empirically grounds and validates it in and through the process by which he or she interacts with informants. For instance, an individual may be extremely knowledgeable and articulate and be willing and able to give a clear answer to the research question asked by the researcher, but yet may not be able to answer the question correctly at that particular time, or the person may use different words to describe the problem. On the other hand, not all informants are able and /or willing to provide insightful, coherent, and lucid descriptions of what has been (or will be) happening to them, as they get caught up in the sociocultural currents and crosscurrents that give form and substance to their world. To learn what those who are less articulate know about what is happening to and around them, the researcher returns to ask them what he or she thinks he or she has come to know as a result of interviewing one or more of their especially articulate fellows. During this process, the researcher then continues checking with the informants until he or she establishes that there is or is not consensus regarding whatever he or she is inquiring about, or until it is discovered that perhaps he or she has misclassified some informants and needs to refine his or her classification of them or of their attitudes, values, and actions to account for seemingly deviant cases, and so on. In addition to continually validating data by checking out findings as noted, ethnographers rely on a multiplicity of research techniques to systematically crosscheck emergent descriptions and analyses. The researcher may use open-ended interviews and conduct a wide range of personal observations in order to validate the data obtained.

To safeguard against unintentionally biasing the data, ethnographic researchers often arrange to conduct a reality check on their findings. Such a check may require the informants to repeat the previous information in order to confirm if the information is correct or not. Using such validation and self-correction procedures, the researcher attempts continually to perceive and understand the empirical realities of the informants in order to depict their social world as faithfully as possible. Atkinson and Hammersley (2007) in a critique of the quality of the ethnographic research process, questioned what they regarded as the method's unsystematic means of conducting fieldwork and data collection. These critics further highlighted that the use of small and non-representative samples renders findings susceptible to bias (Atkinson & Hammersley 2007). It has also been claimed that the ethnographic approach generates knowledge that is tied to one location rather than being universal and generalisable. However, while this might seem the case from the perspective of researchers who are accustomed to quantitative methods, it would be fairer to say that the criteria of validity are simply different in the case of qualitative studies which, working as they do with people and with complex real-life situations, will of necessity differ in terms of how they seek to validate their findings (Gray 2013). Having discussed some of the problems and contexts that attend the ethnographic approach, in the next section, I present the study location and the sample population.

3.6.1 Sampling strategy

Sampling is an integral part of research since the general population cannot be studied simultaneously (Bryman 2004). Hence, in any study, the researcher must specify the sampling process to determine the quality of inferences made by the researcher from the findings. According to Mason (2002), sampling is defined as a principle used to identify and access relevant participants from which information is accessed. In qualitative research, the sample is usually small and cannot be representative of the entire population, as it can be for some quantitative study designs. However, although the sample in a quantitative study may be larger than qualitative samples, the smaller samples in qualitative research support the depth of case-oriented analysis that is fundamental to this mode of enquiry. In addition, qualitative samples are purposive, that is, they are selected by virtue of their capacity to provide richly textured information relevant to the phenomenon under investigation.

The issues associated with sampling may have little or no influence on the objectives of a qualitative study (Creswell 2009). However, a small sample size is viewed as more appropriate in a qualitative study, as it allows the researcher enough time to access in-depth information from different points of view (Bowling 2009).

Consequently, a suitable sample size for qualitative research is not necessarily large but rather one that addresses the research aim and objectives and that allows the researcher to gain an in-depth understanding of the phenomenon (Bryman 2004; Creswell 2009).

In social science, two main methods of sampling are used, namely, probability and non-probability sampling. Probability sampling employs some form of random selection that ensures that different units in the population have equal probabilities of being selected. Types of probability sampling range from simple random sampling to stratified random sampling, systematic random sampling, cluster random sampling, and multi-stage sampling (Bowling 2009). Non-probability sampling, conversely, does not involve random sampling (Bowling 2009). Purposive sampling, a type of non-probability sampling, involves a researcher choosing specific persons within a target population because they are equipped with knowledge and experience of the research area (Bryman 2004; Pickard 2007). According to Cohen *et al.* (2007), purposive sampling is sometimes referred to as strategic sampling, as it is the selection of people based on their knowledge related to the research question, the theoretical position, the analytical framework, and the research argument being developed. Cohen *et al.* (2007) further highlighted that purposive sampling assists the researcher in acquiring detailed information from people in a position to give such information. Hence, the rationale for supporting the use of purposive sampling in this study lies in the selection of cases that would provide in-depth information about the study area.

Another type of non-probability sampling is snowball sampling, which is used when samples that possess characteristics of the research area are difficult to access; this entails the primary data sources nominating a potential primary data source or sources to be used in the study. In other words, snowball sampling is referral based, as the initial subjects generate additional subjects (Pickard 2007). In addition, the snowball sampling technique is used for ‘contact tracing’, in which one individual name all the other individuals who were associated with a specific event. The snowball sampling outreach strategy finds individuals who are willing to participate in a study through social networks to recruit similar subjects in a multi-stage process (Wasserman *et al.* 2005).

The limitation of snowball sampling may be the over-representation of individuals with numerous social connections who share similar characteristics (Magnani *et al.* 2005). Another limitation of snowball sampling in the research context is the fact that no statistically reliable way exists to estimate whether ‘saturation’ of the sample has been reached. This is particularly important in qualitative research because in that body of work, ‘saturation’ is defined as the event when no new information is forthcoming from the participants in the sample that has already been recruited. Therefore, knowing whether new or other information could be gleaned had a random sample been recruited is impossible; this is in contrast to purposive sampling, whereby the research process can be reviewed, and recruiting can be stopped when data saturation is reached.

However, Polit and Beck (2019) stated that sampling is the process of selecting or searching for situations, contexts, and/or participants who provide rich data concerning the phenomenon of interest. In qualitative research, the most commonly used deliberate sampling strategies are purposive sampling, criterion sampling, theoretical sampling, convenience sampling, and snowball sampling. Phenomenology uses criterion sampling, in which participants meet predefined criteria. The most prominent criterion is the participant’s experience of the phenomenon under study. The researchers look for participants who have shared an experience but vary in their characteristics and individual experiences. Grounded theory usually starts with purposive sampling and later uses theoretical sampling to select participants who can best contribute to the developing theory.

In the case of this study, as I stated previously, the purposive and snowball sampling methods were utilised. The reason for me using purposive sampling was to familiarise myself with some of the participants and the study environment, as I had been born there, and my MSc degree research project was conducted in the same hospital This enabled me to use my judgement about which potential participants would be the most informative and would provide me with the data needed. As for snowball sampling, I noticed that the number of participants was not enough, and this may have been due to the stigma associated with PTB. I therefore asked some of the initial participants to identify other people from the location who may like to participate in the study. They agreed to do this, and many were referred through patients to access family carers/relatives.

3.6.2 Access to the community/immersion in the field

I began research on 19 April 2016. Because I had lived in this community for over 10 years previously when I was younger, access to the community was easily accomplished, although it took several weeks to become immersed into the local community as I had not lived there for 8 years. I could therefore speak Yoruba, which is the spoken language in the community; however, having lived away from the country, I was able to view the community with the insight of an insider, which allowed me to gain access to the community easily, whilst being able to take a critical stance towards what the participants said and what was observed. Furthermore, I mixed with the local community, visited markets and shops, took public transport, and visited cafés and religious organisations such as the church, Muslim centres and the university campus where I could look to recruit people for my study and where I had informal conversations with community members, including market sellers, office and shop workers, café owners and staff, and members of church congregations. After I had gained permission from community leaders and religious leaders, had gained ethical approval from the Ministry of Health, and had obtained from the director of the hospital, I began the preliminary step to familiarise myself with the hospital environment. I observed for several weeks and spent hours in the waiting area of the outpatient department of the local PTB hospital and DOTS site clinics to develop a relationship with the HCWs and become oriented within the settings.

3.6.2.1 Key informants for accessing participants.

It is very important that key informants are carefully chosen. Key informants for my study were individuals who held special and expert knowledge about the phenomenon (pulmonary TB) to be studied and were willing to share information and insights with me as the researcher (Polit and Beck 2017). In the context of the study, ethical permission had to be gained. I gained ethical permission from Akure State Specialist Hospital and the chief medical director of the hospital, and TB treatment (DOTS) site clinics **(Appendix Q)** to gain access to the hospital staff (doctors, nurses, and other administration staff), and I gained permission from the dean faculty of Federal University of Technology Akure to gain access the students **(Appendix Q)**. Written consent was obtained from most of the participants (**Appendix F)**. Verbal consent was also gained from participants who were unable to give written consent because of literacy issues. The participants were also assured that their anonymity would be protected, and their full name, address, and the recruitment sites would not be disclosed to anyone or appear on any of the documents.

I then proceeded to carefully select the gatekeeper in gaining access to the participants residing within the Akure South community. He was one of the community leaders whose important role includes supporting any appointed king with various functions.

The chief or community leader is seen as the tribe's religious leader and the living representative of the ancestral spirits as well as the governance leader responsible for maintaining order and acting as the decisive authority in matters affecting the welfare of the community members. The council elders prevent the chiefs and the community leaders from abusing their powers and assist the chief in governing the community members.

In order for me to access the community members, the gatekeeper introduced me to the chiefs and community leaders, so I could encourage them to participate in the study. They agreed willingly to participate in the study, as they were very knowledgeable about the disease and were able to provide me with more information on the cultural beliefs preventing the community members from having contact with the sufferers and their families.

3.6.3 Recruitment and selection of the participants

Having previously written a letter to the hospital management regarding my research study, I was given permission to conduct my research. I therefore proceeded on 17 November 2016 with the recruitment of participants within areas of Akure South. The participants were recruited from Akure specialist state hospital, and DOTS clinics. I spent two weeks familiarizing myself with the local community. Access was made easy since I was born there. The gatekeeper introduced me to the community members (religious leaders, Traditional healers, community nominated leaders, and palace chiefs) who subsequently gave me permission to have access to the participants. I gave a brief verbal introduction to and description of the purpose of my study to the potential participants. The community leader gave me information on how to reach out to the community members including market people, business cafes, shops, local government offices, university students, and religious places, all of which I visited using public transport within the Akure South metropolis. Letters of invitation were thereafter sent to the potential participants for a follow-up meeting which was held in a community hall on 21 November 2016. On the day of the meeting, I introduced myself and stated the purpose of the meeting to all who were present. I explained the benefit of the research study with regard to individual health after which, potentially interested participants were identified and encouraged to indicate their interest by writing their names in the register provided. Further arrangements were made for another meeting, which was held at the same community hall on 2/12/ 2016. Interested participants were selected according to the study inclusion/exclusion criteria/protocol. Community leaders, and FG members eventually turned up for participation from the community members out of a total of forty-two (42) who had initially indicated interest.

Another meeting was scheduled for HCWs and was held on 15/12/2016 where I gave a PowerPoint presentation of my study to members of the Ministry of Health with the director, public health staff, and members of the ethical committee as well as HCWs (doctors, nurses, and administration staff) from Akure State Specialist Hospital in attendance. I explained the purpose of the study in detail. Many HCWs signified interest in participating in the study. This was followed up by a letter of invitation with a reply slip. Twenty acknowledgements were received while only 12 met the selection criteria after careful consideration in line with the protocol. Ten (10) PTB patients, carers and relatives were recruited through the HCWs. A total number of 53 participants were eventually selected for the study while 30 were engaged in an individual interview, and the rest of the participants in FGs.

3.6.4 The inclusion criteria for recruitment of participants

The inclusion criteria for the patient sample included those who had a confirmed diagnosis of PTB, who were attending either Akure State Specialist Hospital or DOTS-site clinics, and who were undergoing a current PTB treatment course of therapy provided through the TB clinic. Since Akure State Specialist Hospital and DOTS-site clinics are the main referral clinics, there is a high chance that the patient sample is representative of the PTB population in Akure, Ondo State, since all the ethnic groups from the state attend these clinics and Akure State Specialist Hospital. The samples of the chief, religious leaders, community nominated leaders, and Traditional healers were purposively recruited from the local community. For the recruitment of PTB patients, the HCWs recruited them from the main outpatient referral clinic at the Akure State Specialist Hospital and DOTS-site clinics**.** Participants recruited from the specialist hospital included both males and females. As for the other participants who were interested in participating in the study, the inclusion/exclusion criteria /protocol were applied as stated below:

3.6.5 Inclusion and exclusion criteria

The inclusion criteria for all participants were that they were English or Yoruba speakers, aged 18 years and above, able to give informed consent, and willing to participate in the study. The specific inclusion and exclusion criteria for each sample group are presented below in Table 2:

***Table 2**: Inclusion and exclusion criteria of sample groups*

PTB PATIENTS	
Inclusion	**Exclusion**
• Patients attending either Akure State Specialist Hospital for PTB treatment or DOTS-site clinics in Akure South. • Patients who have a confirmed diagnosis of PTB • Patients on a current PTB treatment course of therapy • Patients recently cured of PTB	• People who were terminally ill with PTB • Those with severe mental health illness or learning disabilities and who do not have the mental capacity to give informed consent
HCWS	
Inclusion	**Exclusion**
• Doctors who are specialists on PTB and other areas relevant to PTB and who have worked with PTB patients for more than three months • Nurses who have worked in the PTB wards for more than three months. • Receptionists working in the hospital in the PTB wards or TB treatment (DOT) sites clinics for more than three months. • Pharmacy staff working in the hospital, clinics or local stores in Akure who have dealt with PTB patients for at least three months.	• Doctors/ nurses and pharmacy staff who had worked with PTB patients for less than 3 months. • Doctors who are not specialists on PTB. • Nurses without knowledge of PTB and who are new in the field. • Receptionists who work outside of PTB clinics.
COMMUNITY LEADERS	
Inclusion	**Exclusion**
• People with the title of Chief, religious leaders, community leaders identified by the community and who live in Akure South.	• Community leaders without interest in the study. • Community leaders not living in Akure South.
TRADITIONAL HEALERS	
Inclusion	**Exclusion**
• Traditional healers based in Akure South who have provided care to patients with PTB.	Traditional healers who do not live in Akure South and have not treated PTB patients before.

CARERS /RELATIVES	
Inclusion	**Exclusion**
• PTB patient’s carers /relatives.	• PTB patients’ carer/relative who has not directly cared for a PTB patient.
COMMUNITY MEMBERS	
Inclusion	**Exclusion**
• Lay members of the community including university students, members from different religious groups (i.e., Christians, Muslims, and other religions) who have knowledge of PTB and are residents in Akure South.	• Lay members of communities residing outside of Akure South.

The recruitment process for each sample group is discussed below:

3.6.5.1 Recruitment of participants

As the inclusion and exclusion criteria had been met, the recruitment of participants proceeded to take place in Akure South areas, which included the marketplace, shops, offices, and religious organisations. The recruitment process involved the following steps:

FG Formation: — For the recruitment, potential FG members (N=30) were approached, including university students, market traders, church, and mosque members (different religious organisations), tennis club members, regulars at the public bar, and taxi drivers. For the Muslim FG members, I used a different location; I was assisted by a Muslim doctor, who helped me access the Muslim organisation for me to meet with them and presented my study to them for the participation and recruitment of Muslim FG members. The Muslim group was grouped into two, male and female separately, as was considered culturally appropriate in Nigeria.

The FG was separated into four groups. Although 30 people expressed an interest in participating, only 28 met the inclusion criteria. The others were thanked for their interest but were excluded from the study. Those who had met the inclusion criteria were grouped into four groups, namely, Muslim men and women, church members, and university students. During recruitment, I gave out participant information packs, which included an invitation letter, a reply slip, and a participant information sheet (**Appendices C-D).**

HCWs: With permission from the head of the department and Ministry of Health, I recruited HCWs (N=12) who worked directly with PTB patients. Potential participants were invited to a briefing presentation covering the aim and objectives of my study. During the recruitment, I collected contact details for those who were willing to participate and made an arrangement to meet the potential participants. A week later, I met all the participants; I discussed the research with them and addressed any concerns they had and then arranged a date for the interview. I made an arrangement to conduct interviews with the HCWs and either in a private room in the hospital or ay any of their preferred locations. Finally, the HCWs' interview took place at Akure Specialist State Hospital.

PTB Patients: Ten PTB patients were recruited by the HCWs, which included their carers/relatives who supported them while they were receiving treatment from the Akure Specialist State Hospital, and DOTS clinics, with permission from the head of the department. With the assistance of the nurse, I was introduced to the patients as a M.phil student from Swansea University, United Kingdom. I was permitted to regularly visit the patients admitted to the wards, TB clinics, and DOTS site clinics for three consecutive visits and to have informal conversations about their illness and how they were coping with their condition. Regarding the patients and the carer/relative, information packs with an invitation letter, a reply slip, and a participant information sheet were handed to the patients (**Appendices C-D**). The invitation letter described the aim and objectives of the study and invited patients to participate (**Appendix B**). Patients were asked to give their reply slip to the nurses, who deposited them in an identified box left in the staff room in the hospital.

Stage 4: Community Leaders: I had identified the six community leaders (Palace chiefs, religious leaders, community-nominated leaders) through immersion with the local community, at Akure South. During recruitment, I gave information packs, which included an invitation letter, to community leaders and made an arrangement to provide them with refreshments. I set interview dates at a mutually convenient venue (i.e., individual's home).

Stage 5: Traditional Healers: Finally, I recruited two Traditional healers with the assistance of the gatekeeper, who was one of community members. I made an arrangement to visit them in their individual homes to request their permission to be interviewed. I established interview dates, times, and places.

Hence all the participants had be identified; the following number of participants were recruited as stated below: HCWs' patients and their carer/relative, community members (place chiefs, community-nominated leaders, religious leaders, and Traditional healers), and FGs members (including university students, church members and Muslim community members) which made total of 58 participants as indicated below:

***Table 3**:* Characteristics of the Sample of Participants

Position	**Number**	**Characteristics**
HCWs	12	Doctors, nurses, pharmacy staff, receptionists at the Akure State Specialist Hospital and PTB DOTS clinic.
PTB patients and carers/relatives	10	PTB patients and carers/relatives who had attended the Akure State Specialist Hospital and PTB treatment site
Community leaders	6	Palace chiefs, religious leaders, community-nominated leaders
Traditional healers	2	Those with knowledge of the community of PTB
FG participants	28	University students, church members, Muslim men and women
Total number of participants	58	

3.7 RECRUITMENT SETTING AND PARTICIPANT'S INTERVIEW.

Five PTB patients from both Akure State Specialist Hospital and DOTS site clinics who were receiving treatment were recruited with five of their carers/relatives. As previously stated, permission was given to meet with the hospital staff to provide them with a presentation about the purpose of the study and the inclusion criteria for the selection of patients to be invited to participate in the study. Participant's information packs were provided for the staff to hand out to potential patients based on the inclusion criteria listed. I did not recruit the patients directly; it was done by the staff nurses of the hospital.

I made several visits to the ward and the TB clinic on a regular basis to see how PTB patients were doing and if the nurse had arranged for a meeting for me to have a formal conversation with them. After the nurse had identified those that were suitable to participate in the study and recruitment and the selection of the participants had been completed, I arranged the interview date and time for those who would be interviewed in their different venues at a time convenient to them. Three of the patients were interviewed in the hospital with their carers/relatives and the remaining two was in their houses as requested with their carers/relatives. As for the community members, I arranged to interview them at a time and location convenient to them (i.e., home or an alternative venue). For the FGD date, a time and venue were also arranged according to the participants' choices. The interviews with the HCWs were conducted in a private room in the hospital. A similar process was applied to the community members and the Traditional healers except their interview took place in their different homes.

3.7.1 Method of data collection

I anticipated that the task of data collection may take a long time since the study involves assessing in-depth information about PTB from the research participants. This study adopted four data collection methods:

- participant observation
- document review
- interviews
- Focus Groups (FGs)

The data were collected by means of primarily open-ended questions within the framework of a topic guide (**Appendix N-O**).

3.7.2 Participant observer

Participant observation is the key methodological approach involved in ethnography. This enabled me to learn about the activities of the people under study in their natural setting through observing and participating in those activities (Dewalt & Dewalt 2002). The observer is a key feature in ethnography in that it involves the systematic observation, recording, description, analysis, and interpretation of people's behaviour. Gary and Fine (2003) defined participant observation as a method commonly used in what they termed 'peopled ethnography' to describe a text that provides an understanding of the setting and that describes the theoretical implications based on field notes from observations. The emphasis is on discovering the meanings that people attach to their actions.

Norskov and Rask (2011) categorised participant observation into four field roles a researcher can adopt as follows:

- complete participant
- complete observer
- observer as participant
- participant as observer

The first two of these roles, the complete participant and the complete observer, would have potentially involved me concealing my identity. This could be viewed as an advantage, as I would not be influencing the behaviour of the participants I was studying, but it raises serious questions of ethics (i.e., spying on the participants), which would have a negative effect on the participants (i.e., loss of trust) and would have seriously influenced the quality of the data generated. The last two roles, observer as participant and participant as observer, entail the researcher revealing their identity and the purpose of their research to those whom they are observing in the research setting. Ethically, the latter two roles are less problematic. In this study, the complete participant and complete observer roles were not utilised, as I did not conceal my identity as a researcher. The aim and objectives of this study would not permit that, and neither would the ethics committee.

In this study, I utilised both the 'observer as participant' and 'participant as observer' roles. At the initial stage, I took on the 'observer as participant' role by introducing myself to the patient as a M.Phil. student from the University of Wales and giving the reasons for my study. Furthermore, when I became more familiar with the setting and the HCWs as well as they became more familiar with me, I assumed the 'participant as observer' role more frequently. This allowed me to observe patients suffering from PTB in the outpatient waiting areas in the Akure State Specialist Hospital and DOTS-site clinics. This also enabled me to observe the non-verbal expressions of the patients' and staff's feelings and learn about people's activities, which allowed me to determine who interacts with whom and how patients and HCWs communicate with each other as well as observing, for example, the availability and uptake of health information on PTB in the waiting areas. In addition, this enabled me to observe factors which may influence the service being provided to patients with PTB and that may have impeded them from utilising these services fully, such as the shortage of staff or health resources and checking for the definitions of terms used in interviews as well as information too sensitive to capture. In the context of this study, I used 'observer as participant' and 'participant as observer' roles, which enabled me to gain valuable insights and in-depth understanding of the PTB services provided as well as the process of the patient's journey to the hospital and DOTs clinics, which helped to contextualise the data from, and topics raised during the interviews and FGDs. There are advantages and disadvantages of participant observation. In terms of advantages, the participants' accounts are contextualised within the natural setting in which they were generated. In addition, it takes the viewpoint of the participants rather than the researcher and can explore social interactions in depth. Regarding the disadvantages, participant observation is time-consuming and often studies small groups.

The process of my observation study started on 12 January 2017 for four weeks at the waiting area everyday Monday to Friday 9 am – 4.30 pm. My first day, one of staff nurse introduced me to all the staff members with my study poster on with my name and as a M.Phil. student of public health at Swansea University Wales United Kingdom **(Appendix R).** During my study observation, I observed community members that came to the outpatient's department of the local hospital and the HIV/AIDs and TB clinic within the hospital site in a separate single-story building, and three days in the DOTS clinic in a different location outside the hospital. Most of things I mainly observed were the arrival of the patients, HCWs' attitude and behaviours towards patients, and procedures for diagnosis and treatment.

3.7.3 Document review

Ethnographic research often draws widely on a variety of documentary sources; many of the social settings of ethnography "are self-documenting in the sense that their members are engaged in the production and circulation of various kinds of written material"

(Harmmeley and Atkinson 2007, p. 121). This is also in the case of research in the field of health. The significance of documents in social research is not confined to content; how documents are produced and used in organisations also need to be considered.

A similar definition was provided by Grix (2010), who stated that documents are written with a purpose, based on particular assumptions, and presented in a certain way or style; for this reason, the researcher must be fully aware of the origins, purpose, and original audience of the documents. Furthermore, Payne and Payne (2004) noted that documents are not deliberately produced for the purpose of research but are naturally occurring objects with a concrete or semi-permanent existence, which indirectly reveals the social world of the people who created them. Unfortunately, in this study, there were no documents for me to review, as health education materials were unavailable, specifically those related to PTB. No material on TB or PTB was displayed on the notice boards in the DOTS or PTB clinic in the hospital that could enlighten the community members on PTB or TB disease.

Ogbuabor and Onwujekwe (2019) reported on the policy documents on TB in Nigeria. These policies and procedures provide evidence on how, despite WHO guidelines, institutional designs and organisational practices influence the implementation of the national TB control programme (NTP) and the role of governance in TB control in Nigeria. Furthermore, although there are costed plans and a policy coordination framework, public spending on TB control is low. While stakeholders’ involvement in TB control is increasing, institutional capacity is limited, especially in the private sector. TB-specific legislation is absent. Deployment and transfer of staff to the NTP are not transparent. Health workers were not transparent in communicating service entitlements to the users. Despite the existence of supportive policies, integration of TB control into the community and general health services has been weak. Willingness to pay for TB services is high, with some of the funding are from the donor from another country; however, transaction costs and stigma among patients limit equity. In addition, the effectiveness and efficiency of the NTP was hindered by inadequate human resources, dilapidated service delivery infrastructure, and a weak drug supply system. Despite adhering to standardized recording and reporting format, regular monitoring and evaluation, revision of reporting formats, and an electronic data management system, the TB surveillance system was found to be weak. Similarly, delay in TB diagnosis and initiation of care, poor staff attitude to patients, lack of privacy, poor management of drug reactions, and a lack of infection control measures breach ethical standards for TB care.

3.7.4 Interviews

Heyl (2001) defined ethnographic interviews as a method where there is an ongoing respectful relationship with interviewees characterised by a genuine "exchange of view" (p. 369) that elicits the meaning interviewees make of the world around them. According to Fetterman (2010), the interview is the ethnographer's most important data collection technique, as interviews explain and put into a larger context what the ethnographer sees and experiences, and so the interview is an effective means of soliciting information. It is described as an interaction that exists between two or more persons (Kumar 2008). Interviews help researchers to gain in-depth knowledge about a participant's attitudes and experiences and can be conducted face-to-face or by telephone (Kumar *et al.* 2008). In a face-to-face interview, the researcher and the participant are in direct contact, whilst with a telephone interview, which is often shorter in duration, the researcher tends not to have facial contact with the participant (Kumar *et al.* 2008). The type of interview conducted in this present study was the semi-structured interview. The telephone interview was not applicable in this research, as it would not permit me to assess the emotions and body language of the participants during the interview. Interviews can take either a structured or an unstructured format. A structured interview entails the researcher having predetermined open-ended or closed questions (Kumar *et al.* 2008), while for an unstructured interview, no predetermined questions are used; rather, the questions are based on the direction of the participants' responses with the help of an interview guide. Kumar *et al.* (2008) confirmed that an unstructured interview is suited for studies that aim to understand people's points of view on an actual phenomenon. Although it takes a lot of time, it provides meaningful information and better understanding of the phenomenon. This was also my experience in the field. The interview as a method of data collection has limitations; it is time consuming and expensive, and it can be affected by interviewer bias (Kumar *et al.* 2008).

The interview method used for this study was a semi-structured interview design, **(Appendix G - N)** as it permitted me to gather opinions, perceptions, and attitudes as well as to ask more questions that would enable me to collect in-depth information or probe a participant's answers on selected questions, something which may be difficult to achieve with more structured interviews. In addition, using semi-structured interviews enabled me to gain a deeper understanding of the participants' social and personal views. In a semi-structured interview, the questions are open-ended and complex in nature, and the interviewer has a significant amount of flexibility on how the questions are being asked (Bryman 2016; Oates 2006). The participants can contribute their opinions and views freely in more detail instead of responding to a list of predetermined questions. The use of open-ended questions allows the respondents greater flexibility and less restriction.

3.7.5 Interview scheduling, length, and recording (semi-structured interview)

The interviews were scheduled to last from 40 minutes to 1 hour to allow me to obtain more in-depth information. Recording is an essential part of an interview procedure. Oates (2006) noted that relying on memory is not recommended because the researcher would not be able to digest all the information and thus the interviews would be prone to error and bias. As a result, I identified three ways information can be gathered during interviews. This includes *field notes, audiotape recorder,* and *videotape recorder* (Oates 2006). Having obtained the participant's permission, I used an audiotape recorder during the interview to ensure that the complete conversation was recorded. I then transcribed the interview in order to develop a deeper understanding of the conversation. The semi-structured interview questions were derived from reviewing the literature and from further additional information based on my aim and objective. As I conducted the interviews, new issues emerged which then informed future interviews. Topic guides and questions for the various sample groups are located in (**Appendices G-N**).

3.7.6 Health care workers

First, HCWs (N=12) participated in the interviews (five doctors, including the managing director and pharmacy director, four nurses who provided services for PTB patients, and two receptionist staff: seven females and five males). The individual interviewee was conducted in English, as all the HCWs had received at least secondary-level education and could speak and read in English language. Moreover, English is the official language for all workers in Nigeria. The interviews were conducted within the hospital premises; each interview lasted for approximately 40 minutes to 1 hour. Oates (2006) noted that relying on memory is not recommended because the researcher would not be able to digest all the information, which would thus be prone to error and bias. I obtained each participant's permission to record the interview; I utilised an audio tape recorder during the interviews to ensure that complete conversations were recorded. The semi-structured interviews were recorded with permission and transcribed with fieldnotes I took during the interview to develop a deeper understanding of the conversation The semi-structured interview questions were derived from the literature review and field notes collected during the participant observation. As the interviews were conducted, new issues emerged which then informed future interviews. In addition, five PTB patients and their five carers/relatives (in total, eight females and two males) were interviewed at different venues. Eight interviews were conducted in the TB clinic at the hospital and DOTS community site clinics, while two were conducted at the participants' homes, with each of these interviews lasting 1–2 hours. In addition, two community-nominated leaders, two palace chiefs, two religious' leaders, and two Traditional healers were interviewed at their homes and their preferred venues; each interview lasted 1–2 hrs. Four FGs were held with university students, church members, and Muslim community members across Akure South. Each FG lasted for 1.5 to 2 hours and comprised 7 to 14 members of the local community in Akure south.

3.7.7 Demographic details of the participants (N = 58)

First, HCWs (N=12) participated in the interviews; Five PTB patients and their five carers/relatives (eight females and two males) were interviewed at different venues. Eight interviews were conducted in the TB clinic at the hospital and DOTS community site clinics, while two were conducted at their homes, with each interview lasting 1–2 hours. In addition, two community-nominated leaders, two palace chiefs, two religious' leaders, and two traditional healers were interviewed at their homes and their preferred venues, and each interview lasted 1–2 hrs. Four FGs were held with university students, church members, and Muslim community members across Akure South. Each FG lasted for 1.5 to 2 hours and comprised seven individuals. Table 5presents the characteristic of the participants

3.7.8 Semi-structured interview with participants

Bearing in mind that the qualitative approach aims to gain an understanding of complex and emerging views instead of making generalisations, in this study, I interviewed 30 participants using semi-structured interviews. Table 4 presents the information on participants who were interviewed, the sampling techniques used, the type of interviews, and the number of participants.

***Table 4**: Sampling, Interview Types, and Participants*

Sampling Type	**Interview Type**	**Participants Interviewed**	**Number of Interviews**
Purposeful sampling and snowball sampling	Semi-structured	HCWs (doctors, nurses, pharmacists, reception staff)	12
Purposeful sampling and snowball sampling	Semi-structured	Community leaders (chiefs, religious leaders, community-nominated leaders)	6
Purposeful sampling and snowball sampling	Semi-structured	PTB patients and carers/relatives	10
Purposeful sampling and snowball sampling	Semi-structured	Traditional healers	2
Total participants interviewed			30

Interview scheduling, length, and recording (semi-structured interview)

The interviews were scheduled to last from 40 minutes to 1 hour. Recording is an essential part of an interview procedure. Using an audio and video tape recorder provides the researcher with a complete record of the conversation. I used an audio tape recorder during the interview to ensure that the complete conversation was obtained. The semi-structured interviews were recorded with the participants' permission and transcribed with supporting documents including electronic reports which were given by the participants in order to develop a deeper understanding of the conversation.

***Table 5** Semi-structured questions for topic guide*

Stages of emerging on PTB	**Questions relating to the stage**
Questions on relating to Knowledge on PTB	1. Tell me about PTB in Akure? - What is your experience of PTB? - How do you view your role as a traditional healer in the context of PTB and other diseases? **Probe:** know someone with PTB - Is PTB different from other diseases? - What methods (e.g. herbs) are used for treating PTB - Can it be cured or not?
PTB treatment barriers	2. What are the barriers faced by PTB sufferers in relation to treatment and cure? - What do you tell PTB positive patients about the cause of PTB? **Probe: from God or Devil** - What do you tell PTB positive patients about their drugs? **Probe: safe or not safe** - Continue with drugs or not.
Attitude of people toward PTB sufferers	3. How would you feel if you were told you had PTB? - How does having PTB affect people’s lives? **Probe: Relationships** - Family commitments - Work - Income - Housing - Transport - Exclusion from society

The semi-structured interview questions were designed with the help of my supervisors to elicit further the participants’ ideas and opinions (knowledge on PTB, TB treatment barriers, and attitude of people toward PTB sufferers).

3.7.9 Focus Groups

Compared to other qualitative research approaches, such as individual interviews, FGs allow participants to learn from, build upon, and compare and contrast each other’s ideas (Stewart & Shamdasani 2014). In addition, the ability of the participants to question one another and explain themselves, agree, disagree, and compare their views and opinions make the FG a useful method of data collection. However, the researcher has less control than in an individual interview, data are more difficult to analyse, the moderator requires special skills, differences between group members can be difficult, and the discussion must be conducted in a conducive environment (Creswell 2009).

This was desirable for my study, as many participants may not yet have thought about the possible influence of PTB on their daily lives. In addition, FGs provide a more efficient way of gathering qualitative data compared to individual interviews, as less time is needed to complete the interviews. In this study, I conducted four FGs with Muslim men and women, church members, and university students. Each group comprised seven members and was conducted at a different site, for example, the university FGs took place at the university campus while the church FGs was at the church in Ashele Street, Akure, and the FGs for Muslim members took place in the Muslim centres with men and women in separate groups with total number of 14 participants in Akure South and the duration of the discussion for each group lasted up to 1 hr and 52 minutes. Prior to conducting the FGs, I had arranged to have an assistant; I briefed them on confidentiality and ensured that they signed a confidentiality agreement. In addition, the assistant helped in taking notes of non-verbal communication during the FGs. After the information sheets – which provided detailed information on the study's aim and objectives, with my contact details, and a consent form – had been given to the participants, I asked the participants for permission to conduct an audio recording of the FGs. Also, any questions the participants might have had were answered before consent was obtained and before the FGs commenced. Debriefing information (**appendix P**) was provided after each FG, refreshments were provided for the participants, and transport fares were reimbursed.

The reason for choosing the FGs method is the ability to explore participants' views and experiences during the group discussions, to gather in-depth real-life data, such as the way people perceive people suffering from PTB, their cultural values and beliefs, and their views related to medical treatment. The participants' ability to request and seek clarification from each other and explain themselves, agree, disagree, and compare their views and opinions made the FG valuable for gaining rich information and data regarding attitudes, knowledge, and beliefs about PTB.

***Table 6**: The details of focus group participated in the study*

Number of participants	Location	Participant details	FGs.
3	church building	male	focus group discussion
4	church building	female	focus group discussion
7	Muslim mosque	female	focus group discussion
7	Muslim mosque	male	focus group discussion
5	university campus	male	focus group discussion
2	university campus	female	focus group discussion

3.7.10 Focus group discussion and ground rules.

Before the FG, I established the ground rules to enable everyone to follow and accept the confidentiality requirements of the discussion among the participants and all the FG members. I explained what the study was about and why they had been asked to take part in it. Furthermore, I asked the participants to respect one another's identity and not share any information with people outside the FG. I sought verbal assent from the FG participants to the ground rules and the confidentiality agreement. At the end of the FG, I emphasised the need for respect in maintaining confidentiality regarding the other participants' identity.

3.7.11 Ethics in an ethnographic study

One of the strengths of ethnographic research, but also one of its challenges, is the reflection on the relationships that the researchers build with the participants in their studies. Carrying out ethnographic research differs from many other qualitative research approaches; it means getting to know people (e.g., participants, patients, stakeholders, employees, and managers), gaining their trust, and perhaps committing oneself to long-term friendship relations.

In all research, the researcher should protect the people who participate in the study. This includes letting them know the risks of the research, protecting their identities and, more generally, paying extra attention to the decisions that the researcher makes during the research process (Vanderstaay 2005). It is important to make the research goals and objectives clear to the members of the community under study and gain the informed consent of these people prior to starting the research project. Ethics in research also includes ensuring that the study participants are given the opportunity to decide whether the researcher can use their real names or pseudonyms in their research. The researcher must also discuss with the participants whether the participants would want to read and comment on the drafts of the research report. Overall, the researcher must be sure that the research does not harm or exploit individuals or groups of people that are being studied.

3.8 ETHICAL CONSIDERATIONS

In research of this kind, it has been argued that researchers must engage in their own personal ethical decisions regarding the research and must operate within the institutional forms of regulation. Ethics in research is a way in which the researchers ensure that the research conducted is according to best practice. According to Oates (2006), a researcher needs to obtain the respondents' agreement while outlining the purpose and the duration of the interview. In this research, I considered ethical issues when defining the original aim and objectives and throughout the research process. This involved preparing a cover letter ahead of time to seek participants' permission. The participant information sheet stated both the purpose the duration of the interview and addressed confidentiality issues before being sent to those participants who had indicated an interest in participating in the interviews.

All participants were provided with clear information about the research, the voluntary nature of participation, and the possible impact of the research study on PTB patients and the improvement of services in the future. They were also properly informed about confidentiality and anonymity, which means that whatever information they gave would remain safe and that their participation would not in any way affect the health services rendered to them (Royal College of Nursing 2009). In addition, each participant's identity was protected by using identifiers for all names throughout the data collection and coding.

3.8.1 Gaining ethical approval

Prior to the commencement of this study, I sought ethical approval from the College of Human and Health Sciences and the College of Medicine Institute for Health Research Ethics Committee at Swansea University, and approval was granted with the support of my research supervisors (**appendix Q)**. Since data collection entailed access to the participants from the central hospital in Ondo State, I also obtained ethical approval from the Ondo State Ministry of Health Ethical Committee, Nigeria (**Appendix Q)**. The process of ethical consideration from the Ministry of Health in Nigeria took a long time, in contrast to the same process in Wales. However, the research commenced only after ethical approval had been granted in both Wales and Nigeria.

At the beginning of each data collection session, as indicated previously in the information sheet, I explained the purpose of the study and gained written consent to tape-record the participants' interviews and the FGs. The PTB patients, in particular, were informed that participation in the study was voluntary and that refusal to take part in this study would not affect their access to the services offered by the hospital. No form of inducement was used to entice the participants to participate in the study. However, refreshments were provided after the FGs. To help protect the identity of the patients and prevent questioning by community members, some of the PTB patients were asked if they would like to be interviewed at the hospital or at home; some preferred to be interviewed at home, but most were happy to be interviewed on the hospital premises. During data collection, a sensitive approach was adopted because in-depth interviewing and FGs are intrusive in nature, especially when patients discuss their personal experiences of the disease. Moreover, no identifiable records, such as names of interviewees and hospitals, were kept on the tapes or written in the transcripts. The recorded audiotapes were listened to only by me; therefore, the anonymity of the participants was guaranteed.

3.8.2 Ethical process

Ethics are principles or standards laid down for suitable moral behaviour in science, and hence, ethical issues are always associated with studies involving human participants (O'Leary 2014). The importance of accessing ethical approval prior to conducting a research study has been emphasized (O'Leary 2014). The issues related to participants' rights to personal autonomy including informed consent, and the ethical imperative on non-maleficence is considered a fundamental concern for the researcher, and this underpinned all ethical decisions I made in the field. However, throughout the conduct of this study, I became increasingly aware of the importance of ethical deliberations that required respecting the different beliefs and values of participants and prompting them to give reasons for their own points of view. Furthermore, the ethical reasoning that I applied during this study included the autonomy and privacy that guide the participant's right to participate in the research without being forced or coerced.

3.8.3 Autonomy and privacy

The participant's right to personal autonomy was a guiding concern throughout the research. An important aspect of respecting personal autonomy is gaining informed consent from all participants. However, as Mason (2002, p. 82) warned, the issue of informed consent in qualitative research requires the researcher to engage in ‘a reflexive and sensitive moral research practice’. Therefore, when the participants received information about the research, it was presented in a non-technical and understandable manner so that the participants could comprehend the information and understand their right to choose whether or not to participate in the research (RCN 2004b).

In ethnography, consent is more likely to be negotiated and renegotiated over time as the relationship between the ethnographer and the research hosts develops (Murphy and Dingwall 2007). However, informed consent must include a full explanation presented in meaningful terms, with the researcher and other agencies financing or supporting the research clearly identified.

3.8.4 Informed consent

Informed consent with regards to participant observation methods in ethnographic studies presents additional ethical challenges. There is universal agreement that research participants’ involvement must be voluntary and be based on adequate knowledge and understanding of the nature, duration, purpose, and methods and the potential risk of the study and that consent must be obtained from participants at the outset of the study (Murphy and Dingwall, 2007). This raises several issues in relation to informed consent, ethnographic fieldwork, and participant observation.

The flexible research design of ethnographic studies means that researchers do not often know all the information about the research from the outset because, as Davies stated, “The theoretical focus may shift and different sorts of data become relevant as the research proceeds” (Davies 2008, p. 55). Therefore, the researcher is rarely able to give a full account of what the study will involve at the outset, and while this reflects the essence of ethnography, it complicates the process of obtaining prior informed consent (Murphy and Dingwall 2007). The aim in this study was to provide as much information as possible at the beginning and, as the study progressed, to enable people to assess the likely effects of the study on them and for them to make as informed a decision as possible about whether or not they wished to participate.

Consent in ethnographic fieldwork is a process that requires negotiation and renegotiation over the time of the study as it develops and as the relationship between the researcher and participants develops; it is not just a one-off event at the beginning of the study. In long-term studies, participants can forget that they are involved in research and that they have given prior consent (Davies 2008). As Murphy and Dingwall (2007) suggested, “Ethnographic consent is a relational and sequential process. Based on trust between researcher and researched and is a matter over which research host exercises ongoing judgment (Murphy and Dingwall 2007, p. 2226). In this study, informed consent was sought from all participants from the beginning of their involvement in the study. After the initial contact and once verbal agreement to be interviewed had been given, all the participants were given a letter elaborating on the research, and an information sheet was attached. This letter noted unambiguously that the participants would have the right to give or withhold consent. During the fieldwork, gaining consent was reconfirmed and renegotiated as the fieldwork and study progressed; the letter and information sheet were worded to be suitable for the participants at this stage of the research **(Appendix E).**

Furthermore, I was careful to obtain the written consent, including permission for the interview to be audiotaped (**Appendix F)**. I was aware that all the participants, the patients in particular, might feel placed in a vulnerable position, so I took extra care to ensure that they did not consider themselves to be forced into taking part in the study. Potential participants were given two weeks from the initial agreement to be interviewed to the interview date, during which time they could change their mind about participating. A reply slip was given to the participants during this time, to be signed and returned with the interview date, venue, and time as well as my contact details **(Appendix C).** The participants were clearly informed that their right to withdraw their agreement to the interview could be exercised at any time without any negative consequences. For the patients, I emphasised that refusal or withdrawal of consent would not lead to any negative effects on their care. All questions were answered before the consent forms were signed by the participants. Verbal and ongoing consent was sought for the participant observation because data collection required several visits to the TB clinics and DOTs site clinics.

3.8.5 Confidentiality

Ensuring the anonymity of the participants was a paramount concern. Written and computer entries were rendered anonymous, and identifiers were always used. A word program (Microsoft Word) and a data management software program were used to store and manage the data. Computer entries were kept on my password-restricted personal laptop computer, with the data securely saved on a password-protected USB/external hard drive. All the data saved in Word files were transferred to the qualitative data analysis software package, NVivo 11. The interview audiotapes were identified by number and not by name and were stored securely in a locked filing cabinet with access restricted to me. The data were coded to ensure confidentiality, with only me knowing the codes and entries. In the case of data transcribing, I used headphones so that no one else could hear the audiotaped interviews; neither the participant's name nor any other identifying information (such as voice or picture) was used. On the participant information sheets (**Appendix D),** the steps taken to ensure confidentiality of any data collected were clarified to the participant. During the interviews, the participants who had given written consent were informed of the actual research contribution they would be making to my thesis and to future publications. They were also informed that the audiotapes would be destroyed after the research was completed in accordance with the instruction of the ethical committees. Additionally, any publications that would arise from the research would be presented in such a manner as to ensure that the participants remained anonymous.

3.8.6 Gaining consent for participant observation

Consent to conduct participant observation was gained from the chief medical director of the Akure State Specialist Hospital, as doing so from all those who attended or worked in the DOTS clinics and the out-patient department was not feasible. In accordance with the permission from the managing director, during the participant observation, the patients who did not wish to be observed were advised to inform me, and no further questions were asked.

3.9 INTRODUCTION TO DATA ANALYSIS

This section presents the thematic data analysis framework for the study. According to Creswell (2007), the data analysis process in an ethnographic approach is divided into five different parts, namely, data management, the coding and development of themes, description, interpretation, and representation. In this study, a thematic data analysis framework that incorporated NVivo programme, which facilitated the data analysis, was adopted.

3.9.1 Thematic analysis

Braun and Clarke (2006) defined thematic analysis as "a method for identifying, analysing and reporting patterns within data" (p. 79). Lacey and Luff (2001) agreed that there is no quick technique in qualitative analysis, as qualitative research is interpretive and subjective in nature, and the researcher is closely involved in the process. It is important to note that there are several approaches to analysing qualitative data, and no one approach is the best. However, the approach one chooses is dependent on factors such as the research questions and objectives and time available for the research, and the researcher must know what they think the data will contribute (Lacey & Luff 2001).

I decided to adopt thematic analysis for this research because the method helped me in searching, identifying, analysing, and reporting themes that were identified from the data (Braun & Clarke, 2006). Braun and Clarke (2006) maintained that because qualitative research is complex, thematic analysis should be seen as a primary method for qualitative analysis, as it provides the core skills for different forms of qualitative study. The flexibility of the method allows for a number of different ways to analyse the data. Thematic analysis is essential for research like this because it constitutes a step-by-step process that allows the researcher to transform qualitative information into qualitative data.

In thematic analysis, codes and themes are generated during the process of analysis. The process by which data are analysed predominantly involves coding or categorising the data (Wong 2008). Coding is way categories are created in relation to the data. Categories are the fundamental concepts the researcher is trying to describe. This is considered the most important stage in the qualitative data analysis process, and it involves subdividing a huge amount of data and assigning data to categories (Wong 2008). The categories can come from the data or from the researcher prior to the theoretical understanding of the participants being investigated.

Creswell (2015, p. 156) defined coding as a "process of analysing qualitative text data by taking them apart to see what they yield before putting the data back together in a meaningful way". Yet coding is also a process which goes remarkably undocumented apart from some notable exceptions (Richards 2015; Miles, Huberman, & Saldaña 2014 for a thorough exploration of the process).

Miles, Huberman & Saldaña (2014, p. 25) defined coding as "an analysis… to review a set of field notes, transcribed or synthesized, and to dissect them meaningfully while keeping the relations between the parts intact". It includes tags for assigning units of meaning to the descriptive or inferential information generated during a study (Miles, Huberman & Saldaña (2014).

Themes can be described as the subjective meaning and cultural-contextual message of data. Codes with common points of reference and a high degree of transferability through which ideas can be united throughout the study phenomenon can be transformed into a theme. In other words, a theme is similar pieces of data that can be tied together and within which the researcher may answer the question "Why?" (Erlingsson & Brysiewicz 2013). Since codes and themes can sometimes be confusing, what constitutes codes and themes in this research is highlighted in Table 7.

Table 7*: Illustration of codes and themes for the research*

Code	**Theme**
The concept that the basic units of texts are describing	The merging of quotes from different transcripts that explain the concept. They constitute phrases or sentences.

According to Miles, Huberman & Saldaña (2014, p. 14), qualitative data analysis consists of “three concurrent flows of activity: data reduction, data display, conclusion drawing/verification”. *Data reduction* is the process of searching; it involves selecting, abstracting and transforming the pieces of data generated from field notes or the transcripts, and occurs continually throughout the research project (Miles, Huberman & Saldaña 2014). The thematic data analysis (hybrid approach) used in this study involves all of these. This technique helped me to code all the interviews and FGs using NVivo which aided in revealing a number of related patterns and themes. The approach used here allowed me to display, organise and assemble data, and it helped further verification to be ascertained. How I generated the codes, categories, and themes with their relationship can be seen in **(P).** The next section will discuss the data handling in this study.

3.10 COMPUTER-ASSISTED QUALITATIVE DATA ANALYSIS SOFTWARE (CAQDAS) PACKAGES

In this study, I used NVivo 11.0 (QSR International Pty. Ltd., Melbourne, Victoria, Australia) to aid the data analysis. My decision to use this package was based on the nature of the research topic. Furthermore, as I had collected data from a wide range of sample groups and as the extent of the data was large, NVivo was useful in the storing, coding, and retrieval of the data and enabled patterns in the data to be compared, thereby allowing meaningful analysis to be done. The package also ensured consistency in the coding process, helped enhance the transparency of the qualitative data analysis, and made the analysis process clearer to show how the conclusions had been reached.

3.10.1 Getting started with NVivo.

In NVivo, a project refers to a collection of stored information – such as transcripts, background data, personal notes, etc. – for analysis. In the project, documents can be opened, edited, coded, and analysed. In this study, I began the data analysis with data management, in which I organised raw data collected from the study into file folders in my computer. Each interview was put into one file, while all the fields and notes were labelled and placed in a single file, coded using NVivo.

The analysis involved looking for concepts or ideas (called ‘nodes’ in NVivo) in the data and seeking to understand their differences and similarities as well as how they were linked to one another. NVivo distinguishes three ways of keeping nodes: free nodes, tree nodes, and case nodes (Gibbs, 2002; Richards, 2015). The free nodes are the simplest; they stand on their own, usually in a list, with no relation to other nodes. Tree nodes, on the other hand, are organised into a hierarchy and can be used to demonstrate the relationships among nodes. Free nodes can be made into tree nodes and vice versa, a process which is analytic in nature. Case nodes are used to organise coding about cases; they can refer to all the texts for a particular case or can be used to organise these cases into types. For example, HCWs working in the TB control programme could be labelled as a case node, to which all the texts can be coded. In relation to this study, a particular attribute was created and named where all the related text was stored. For instance, the attribute for the knowledge of PTB was created, and all the information or texts generated from the participants was stored under the node of knowledge.

3.10.2 Data handling

The data collected from the research, which include field notes, reflexive notes, analytic notes, and interview transcripts, were extensive. All this information required a system to facilitate the ease of access and manipulation of the data. The data were entered into a Word file using identifiers Hesse-Biber (2016) stated that reflexivity is a communal process intended to help a researcher bring ‘subjugated knowledge’ to the surface and to become aware of and then to develop a critical consciousness that enables the researcher to ‘manage’ their own perspective in some way. The goal is to help researchers give a voice to their participants rather than to speak for them.

A reflexive approach was used throughout the research, from the formulation of the research questions to the write-up of the study. To encourage reflexive thinking, I maintained a reflexive journal. This enabled me to record my reflexive insights and the way in which the research may have been affected by my personal, social, and cultural background as well as my subjective experiences that were intrinsic to the research. During participant observation, all the detailed observed were recorded in field notes and later transferred to a laptop computer. The interview data were stored in Microsoft Word files; a copy was printed for each interview and stored in ring folders for each participant group or case (nurse, doctor, patient, pharmacist, receptionist) in order of date. For Microsoft Word, the 'Insert comment' function was used to add memos, insights, or reminders during transcription. All the data saved in Word were later entered into NVivo for data coding manipulation.

3.10.3 Data transcription

Transcribing the interviews and FGs was the starting point for data management. Though it is laborious, and it reflect on how best to approach the analysis. According to Oates (2006), in qualitative research, transcribing the raw information is necessary, and the researcher needs to capture the respondents' views the same way the respondents have expressed them with their own informal notes and comments. While some researchers may try to transcribe and slightly edit the transcript (Oates 2006), transcribing the interview verbatim was essential in this research because during interpretation, I was required to include some of the quotes in the findings. The interviews and FGs data were transcribed verbatim in order to develop a deeper understanding of the participants' views.

After each data collection activity, I used the recorded audio tapes and field notes to literally transcribe and translate some of the interviews that were in Yoruba to English language, see (**Appendix T**) such as the interviews from the Muslim focus group and Traditional healers which were later word processed. Immediately after that, I used the information from the audio tapes and field notes to crosscheck the transcripts to ensure that they were accurately translated and transcribed according to the participant's words and statements. Where there were any discrepancies, I went back to the participant to cross check for more accurate information to improve subsequent transcriptions. Gibbs (2007) defined coding as a way of indexing or categorizing the text to establish a framework of thematic ideas about it. In accordance with

Graneheim and Lundman (2004), after reviewing each participant's transcript, the "meaning units”, the words and sentences that conveyed similar meanings, were identified and labelled with codes. The coding process allowed for the interpretation of large segments of text and portions of information in new ways. Assessing how these meaning units were linked led to the identification of themes. Braun and Clarke (2006) defined a theme as a pattern in the data that captures something significant or interesting about the data, and at the same time, helps in interpreting the phenomenon; the process of recognising an important moment and encoding it helps in developing themes. This is referred to as the coding process.

3.10.4 Familiarising oneself with the data

First, I listened to the tapes generated from the interviews, read all the notes taken during the fieldwork, and familiarised myself with the data recorded during the interviews and FGs. I then transcribed and translated verbatim all the interviews into English, especially those in Yoruba (native language). Immediately after that, I repeatedly used the audiotapes and field notes to crosscheck the transcripts to ensure that they were accurately translated and transcribed to preserve the meaning of the participants’ words and statements.

3.10.5 Generating initial codes

This process involved the transcription of the data. Furthermore, I entered the data into my laptop computer using Microsoft Word. The data were then transferred into NVivo for coding, during which I began to write notes to remember all the field data I had collected. I then identified which codes I needed to select for which group and to determine whether any relationship existed among them.

3.10.6 Searching for themes

During the coding process, I broke down the codes into small units and generated sub-categories, categories, subthemes, and finally themes. A theme is an outcome of coding and analytic reflection (Saldana, 2013). Various codes can be combined into categories, and they then form an overall theme (Braun and Clarke, 2006). I searched for relationships among the codes so as to group them into a single theme to support the interpretation of the data.

Reviewing the themes

With various processes, the preliminary themes were identified with several categories.

Refining and naming themes

At this stage, I identified four themes and assigned working titles to the themes.

Producing the report

The report provided for the study overall was concise, coherent, logical, and non-repetitive, with a notable account of the data themes, and no repetition of data was established.

3.10.7 Coding the data

Coding is an analytic process through which a researcher identifies one or more discrete passages of text that, in some sense, exemplify the same theoretical or descriptive idea (Gibbs, 2002). The coding process of my data involved reading through the transcripts line by line to identify key nodes (issues) the participants talked about. The identification of the nodes was guided by the words of the participants. Then, I used the identified nodes to develop a coding framework for coding the data and linking and connecting texts to the nodes generated. If any new nodes emerged while coding from the transcripts, I then added them to the coding framework. Previously, when I was in Nigeria, some of the interviews were coded manually, and on my return to UK, I continued with coded transcripts and entered all the data into the NVivo program. I then checked to identify the texts representing the new nodes and coded them appropriately. Attributes on certain variables, such as gender, age, and responses to certain questions (e.g., Would you marry a PTB patient?), which I felt might have some influence on the analytic process, were created. In NVivo, attributes are associated with a document or set of documents and regarded as data about the data (Gibbs, 2002). During my coding process, for example, the attributes ‘gender’ and ‘type of interviewee’ were used to search for patterns and variations in the data. The research journal information, and diary memos about the data collected from the field, which included thoughts and comments that were recorded during the interviews, were added to the data to check for accuracy. As the analysis progressed, number of phenomena were recognised as being related to one another. Hence, I created diagrams of the relationships among the elements of the emerging node using the NVivo model and conducted a search on their nodes **(Appendix S).** After the search, I then retrieved and examined text nodes repeatedly to ensure that the data supported the emerging conceptual model. This enabled me to construct a holistic mental picture of how each element related to the others.

3.10.8 Developing analytic schemes and models

As the analysis progressed, I further explored the codes and grouped them under common headings, or categories, that best described the content of the data, although in my literature review, I generated five themes, the knowledge and attitude was combined in order to reduce repetition. Then further review of the list of categories involved sorting and identifying those that cohered together meaningfully such that they represented an overarching theme (Braun and Clarke, 2006). I achieved this through the manipulation and organisation of nodes into different nodes, resulting in a hierarchy of nodes containing categories and subcategories, which later generated four themes:

- barriers to accessing healthcare services
- knowledge and perceptions of PTB
- socio-cultural context of PTB
- health promotion and prevention of PTB

For example, at the beginning of the coding process, a node called ‘knowledge of PTB’ was created, to which statements on knowledge, the lack of knowledge, and limited knowledge on PTB were coded. The participants had mentioned various reasons as to why they had varying levels of knowledge of PTB. These reasons became subcategories or ‘children’, as they are called in NVivo, and were organised and hierarchically arranged under the parent node ‘knowledge of PTB’.

I used various strategies in NVivo for searching nodes and texts to explore any developing analytic schemes and concepts. I used both simple and Boolean (and/or) search terms together with the NVivo attributes. After the search, I retrieved the texts and read through them, constantly compared their meanings and contexts to identify any common and recurring patterns in the data. For example, I conducted a search using the attributes ‘past experience with PTB’ and ‘marrying a PTB patient’ to ascertain whether past experience with PTB (that is, whether the participant knew someone – family member, close friend, or community member – who had had PTB) had any influence on the decision to either agree to marry a PTB patient or consent to such a union involving other family members.

3.10.9 Rigour and quality issues

Qualitative researchers aim to design and incorporate methodological strategies to ensure the trustworthiness of the findings. These strategies include accounting for personal biases, which may influence the research findings; acknowledging biases in the sampling and critical reflection of methods used to ensure sufficient depth and relevance of the data collection and analysis; and data triangulation, whereby different methods and perspectives help produce a more comprehensive set of findings. Several procedures have been described to increase the rigour in qualitative research. Triangulation and reflexivity are commonly used to enhance validity. Validity, as defined by Brewer (2000, p, 46), is the extent to which data accurately reflects the phenomenon under study. While internal and external validity are available, internal validity is more appropriate in qualitative research. Triangulation is a means of using multiple methods of data collection; it provides different ways of viewing the same phenomenon, which, in turn, adds credibility to the findings drawn from a study (Patton, 2002). In ensuring the credibility of the findings from this study, I engaged in the triangulation of data sources, which entailed cross-checking information from the patients, HCWs, carers/relatives, and community members.

3.10.10 Reflexivity

Considerations of reflexivity are important for all forms of research but are of central importance to social research and especially so in ethnographic studies, where a close connection exists between the researcher and the research setting. This makes influences by the researcher and the research process on the study outcomes more likely and less predictable (Davies, 2012). Therefore, researchers must detail the personal and theoretical assumptions which underpin their work.

> *"The concept of reflexivity acknowledges that the orientations of researchers will be shaped by their socio-historical locations, including the value and interests that these locations confer upon them … [This] represents a rejection of the idea that social research is or can be carried out in some autonomous realm that is insulated from the wider society and from the biography of the researcher in such a way that its findings can be unaffected by social processes and personal [characteristics]. (Hammersley & Atkinson", 2007, p. 15)*

I adopted strategies for promoting reflexivity throughout the study, such as keeping a diary to record my thoughts, decisions, and rationale as well as experiences, feelings, and attitude changes while undertaking this study. In the diary, I recorded my values and beliefs about PTB as well as the participants' emotional reactions relating to PTB. I recorded methodological memos as well as initial ideas regarding further lines of enquiry and theoretical notes. After each interview and FG, I recorded the setting and my personal reflections on the conduct of the interviews, and I carefully updated the fieldwork diary every time I visited research setting to understand previous phenomena, to avoid missing information, and to inform future data collection.

3.10.11Reflection on Methodology

Reflective writing has become essential to the notion of learning from experiences and is now a major part of reflective practice. The literature suggests that researchers indulge in reflective writing to contribute to cognitive developments, to facilitate creativity, and to contribute to new perspectives on the issues being investigated. According to Jasper (2005), all of these are essential and are expected from a competent researcher. She argued that despite reflective practice being recognised in most qualitative research, the researcher needs to acknowledge it more and more as being central to the methodology process and as an important part of the research methodology. Similarly, Myers and Newman (2007) noted that one of the most commonly used tools for data gathering in qualitative research is qualitative interviews, and researchers have treated it as unproblematic. They argued that the qualitative interview is considered a fairly simple way to collect data. However, the difficulty and pitfalls encountered during the research should be accounted for rather than just reporting how many interviews were conducted, the number of interviewees, and all methods of data collections as well as the sampling process and who carried out the interview (Myers & Newman, 2007).

Although reflective writing is not without its criticisms, as noted in several studies (Jasper, 2005; Taylor, 2003; Cotton, 2001), the motive for reflecting on the research study is because reflective practice within the qualitative research process contributes to the trustworthiness of the research and offers the researcher a technique to enhance creativity, critical thinking, and strategies in which the collected data are analysed with new discoveries (Jasper, 2005). Therefore, this section reflects on the problems encountered during the course of this research.

3.10.12Dependability and confirmability

Dependability and confirmability aim to establish the truth, accuracy, validity, or genuineness of the research findings. Therefore, the interview questions were well structured and checked by my supervisors to confirm whether they reflected the aim and objectives of the study before the commencement of the research, and all the necessary corrections were made before the interviews were conducted with the participants.

3.10.12.1 Validity

Qualitative research is based on the fact that validity is a matter of trustworthiness, utility, and dependability (Zohrabi, 2013). The validity of any research is the extent to which the requirements of the scientific research method have been followed during the process of generating the research findings. It is a compulsory requirement for all types of studies.

Another way of enhancing validity is for participants to read, discuss, and verify the interpretation drawn from the analysis; such respondent validation is established when participants discover in the study recognition of themselves (Cuteliffe & Mckenna 2002).

In this research, respondent validation was not undertaken for the above reasons and because returning to participants with one's findings is time consuming and not always possible as participants have often left the setting. It is acknowledged, however, that broadening of my analysis may have been aided by this strategy. For instance, I sought the participants' views on issues raised by previous participants, as this enabled some degree of verification; however, this qualitative study did not seek to achieve a consensus agreement" but rather to map a range of views and experiences" (Burnard & Naiyapatana, 2004, p. 758). Prolonged engagement in the field and the development of rapport with the PTB patients and the HCWs enabled me to return to the participants, especially the community leaders and the PTB patients, to gain a more complete understanding on the developing themes and thus enhance claims for validity.

Finally, triangulation of data, it has been argued, will help increase construct validity, and if a different data collection method provides similar findings, then validity can more readily be claimed (Guion *et al.* 2011). Following the philosophical underpinning of this research and drawing on Hammersley's (2002) notion of subtle realism, the goal of this research was not to seek just one single truth. So, I did not seek confirming data to prove or disprove any hypotheses. In a qualitative undertaking, the use of multiple methods or data sources is a recognized approach to gain interpretative understanding, as was the case in this research. As Hammersley (2002) noted, 'Where a claim is central, more convincing evidence will be required than where it is marginal'; such evidence must then be judged in terms of its plausibility and credibility.

Therefore, I do not claim validity based on the multi-method and across-case approach used in this study from criteria that would support generalisability as emphasised by qualitative research. Instead, I suggest merely that such approaches add to the richness of the data and permit a more complete understanding (Sangasubana, 2011). Validity was enhanced by gaining interview data from participants from seven groups (HCWs, PTB patients, carer/relative, community-nominated leaders, palace chiefs, religious leaders, FGs participants and Traditional healers) and from prolonged participant observation. This made it possible for different perspectives to feed into the interpretation offered.

3.10.12.2 Relevance

According to Mays and Pope (2006, pp. 50–52), qualitative research can be assessed "*by two broad criteria: validity and relevance*". Their further discussion provides some insight into several ways that research might be relevant, as follows:

> *Research can be relevant when it either adds to knowledge or increases the confidence with which existing knowledge is regarded. Another important dimension of relevance is the extent to which findings can be generalised beyond the setting in which they were generated.* (Pope *et al.*, 2006, pp. 114–116)

Regarding the 'importance of the topic' and 'the contribution to knowledge and literature, judgment can be made as to the centrality or importance of the studied topic to the substantive field and its relevance to the values and needs of the wider society. Claims for generalisation in qualitative research are by theoretical influence or analytical generation (Silverman, 2001) and not by statistical measures or probability. If the findings and analytical insights or theoretical claims are found to have potential generalisability to fields beyond that of the study, Silverman (2001) noted that the relevance of any research will be judged by its contribution to the literature and further argued that confirming what is already well known is of little value. In many ways, research relevance seems a necessary condition for impact – a process or component of efforts to make rigorous research usable.

3.10.12.3 Accuracy

Accuracy refers to the extent to which the classified text is in line with standards or norms (Krippendorf, 2004). According to Krippendorf (2004), to achieve accuracy implies that data must be gathered under test-standard conditions where a comparison from one person is compared against the other data-processing procedure. Regarding inaccuracy, observed differences between coders depend on intra-observer inconsistency, intra-observer differences, and deviation from the norm. Accuracy is regarded as the most powerful of the three types of reliability because it offers something used to assess the performance of the coders for quotes that have been established. However, this type of reliability is not predominantly used by qualitative researchers. Krippendorf (2004) noted that many researchers who assess the reliability of their coding end up with practices that are not acceptable. For example, when disagreement exists between the coders, the researchers involved might decide to invite a judge, perhaps a senior researcher, to resolve the disagreement. Weber (1990) argued that such judgment might lead to bias towards the opinion of the coders and suggested that the reliability of the coding should be calculated before the disagreement is settled. For the purpose of this research, reproducibility is the form featured in this research and the rationale for adopting reproducibility is given in detail below.

3.10.12.4 Reproducibility

Reproducibility, which is also called "inter-coder reliability", "inter-subjectivity agreement", and "parallel–forms reliability" (Krippendorff, 2004, p. 215), refers "to the extent to which content classification produces the same results when the same text is coded by more than one coder" (Weber, 1990, p. 17). In addition, it was noted that in reproducibility, inconsistency in coding instruments is due to cognitive variations, recording errors, ambiguities in coding instruments used or what Krippendorf called inter-observer and intra-observer differences in the interpretation and comprehension of a given instruction. This type of reliability is considered the minimum accepted standard. One of the reasons for this is that while stability measures only the consistency of just a single coder in understanding the text, reproducibility measures the consistency of two or more independent coders. For example, my supervisors coded a sample of my data according to my coding frame to assess inter coder reliability. As a result, reproducibility is a much stronger measure of reliability compared to stability and is the one featured in this research.

3.10.13Challenges During Research

Funding: Funding is one of the most essentials tools required in carrying out effective research work. In the case of my research, I faced many challenges with respect to the sourcing of funds during my field work. For example, one financial challenge I encountered was during the application and processing of research approval from the Ministry of Health, Akure, Ondo State, Nigeria. Sourcing for funds to obtain the application form was very difficult. As a result of these problems, I had to concentrate much of my energy on the administrative side of the research until I decided to approach my brother in Nigeria, who helped with payment. Hence, the time required to resolve this issue led to a delay in data collection for the project.

Stigma: The challenge I encountered during my research study was stigmatisation on the part of the participating patients. Many of them did not want to participate in the study due to the cultural stigma associated with PTB disease. They had the impression that PTB and HIV/AIDs are shameful diseases which affect the quality of their lives and can lead to death. They believed that PTB and HIV/AIDs are very infectious, and that people can contract the disease easily; therefore, they did not want to associate with PTB patients or have anything to do with any study related to PTB disease. For these reasons however, it was very difficult for me to recruit participants especially in the Muslim community. However, I was lucky to have a connection with one of the Muslim doctors, who had to make the necessary arrangements and had to introduce me to members of the Muslim community before they would accept the invitation to be part of my study. It took much effort and perseverance to convince these participants.

3.10.14Time management:

Despite the challenges presented by time management in research studies, I have been able to allocate meticulous periods of study to aspects of the research. Time management is very important in any research study. Although establishing and allocating time and resources for my research was challenging, I was able to follow up, monitor, and report progress in a timely manner. Many unforeseen circumstances were encountered in the field. Transportation was very difficult, which resulted in delays in holding meetings at the arranged time, and there were other factors that had not been perceived at the planning stage of the study; for example, delays were also experienced during the recruitment of participants, the processing of ethical applications, the data collection/analysis, and the write up. Therefore, I had to allocate more time to accommodate the delays encountered.

3.10.15Benefits and Harms

Throughout the study, I remained aware of my responsibility to ensure that the participants were not harmed due to their involvement in this study. Most of the topics were not therefore obviously sensitive, embarrassing, or upsetting. Nevertheless, it must be considered that there is potential for upset to occur as qualitative and ethnographic methods encourage open and honest discussion and sharing of ideas and experiences. If a participant were to become upset during the FG or interview, he/she would be given the opportunity to terminate the interview or leave the FG, and time would be spent discussing any issues/concerns with the individual. To address such issues, there was an arrangement made with the organisation to provide counselling services through the hospital occupational health and non-governmental organisation (NGO).

My contact number was given to all participants with my details if they needed to contact me in case of emergency after the interview, FG, or observation sessions or if they wished to discuss any matter related to the research process. All the participants were made aware that they could withdraw their consent to be part of the study at any time without any consequence.

The benefit of participation in the study was the opportunity to voice an opinion and to discuss experiences about an aspect of PTB disease and how the health of the community members could be improved. The ethical deliberations had already been considered as indicated above, and throughout the field work, I was aware of no ethical deliberation regarding any issue, harm, or emotional upset that might trigger participants' past experiences during the interview. The next section discusses the thematic data analysis in research study.

3.11 SUMMARY

This chapter presents the research paradigms and methods mostly used in the social sciences, with an examination of a range of literature. All stages of the research process, from setting the aim and objectives to the criteria used to select the samples and recruitment of the participants, were explained. The data analysis, reflection on methodology, the challenges encountered during the study as well as the criteria used to assess the validity of the study were also explained and justified. In the next chapters 4, a reviewed of health belief model

and social ecological model will be presented with a discussion in the light of the reviewed literature.

CHAPTER 4: Health beliefs, and social ecological models

This chapter presents an in-depth discussion of the literature related to the chosen models and theories used in the analysis and in facilitating understanding of my PTB findings for the Akure South community members. It is important to provide clarification about the difference between a model and a theory because this study made use of both models and theories to explain the effectiveness of PTB awareness for the Akure South community members in regard to health promotion. A theory represents a "set of statements that are developed via a process of continued abstraction while a model involves a deliberate simplification of a phenomenon" (Nilsen 2015 p. 15). These two models are used to aid understanding of my findings. In addition, I draw on other models and theories in understanding my findings, such as stigma and locus of control as well as the health belief model (HBM) (Becker, 1974; Rosenstock, 1974), and the social ecological model (McLeroy *et al.*, 1988), which are the main models used for this study. These models will be discussed with reference to the academic literature. Furthermore, the application of each model in the field of health promotion will be discussed. This chapter will conclude by discussing the limitations and challenges of the models presented in the academic literature. The justification for adopting HBM and SEM models will be presented in the finding and discussion chapters.

4.1 THE HEALTH BELIEF MODEL (HBM)

The HBM is the most commonly used model in health education and health promotion (Glanz,2002; Sharma & Romas, 2012). It was originally developed in the 1950s by a number of social psychologists in an attempt to determine why individuals were failing to participate in the prevention programmes offered by the United States Public Health Services (Becker, 1974; Rosenstock, 1974).

The HBM is an individual-based model that advocates behaviour change through rational decision making (Glanz, 2002; Janz, Champion & Stretcher, 2002). According to Finfgeld *et al.* (2003), reversal theory was introduced in the 1970s, based on theories of observations of behaviours and the mental states that accompanied those behaviours. Based, in part, on their historical origins, the HBM and reversal theory offer differing beliefs regarding how individuals perceive, understand, and behave. According to reversal theory, ways of knowing and behaving are dependent upon characteristic physiological factors and subjectively structured perceptions. In contrast, the HBM suggests that health-related behaviours are largely attributable to cognitive decision-making processes. As such, health care providers are directed to approach health behaviour change in different ways.

This new theory rejected other models of human behaviour, such as cognitivism, social constructionism (Finfgeld *et al.*, 2003). However, based on this brief comparison, it is clear that the impetuses for model development in each case were quite different. Reversal theory experts were initially focused on the psychosocial behaviour of children, whereas HBM theorists were primarily interested in the action (or inaction) of adults. The HBM has been used in developing many health programmes exclusively to explain health-related behaviours (Orji, Vassileva & Mandryk, 2012). The goal of the HBM is to explain behaviour change to maintain health-related behaviours and provide a guiding framework for health interventions (Fishbein & Yzer, 2003).

The HBM is one of the most widely used frameworks developed to understand health behaviour (Naghashpou *et al.*, 2014). For instance, it is recommended for nutrition education to increase the impact of educational programmes (Lynch & Happell, 2008). A major feature of this model holds that the patients have choices and are able to make suitable decisions regarding their health. The constructs of this model are perceived as susceptibility, severity, threat, benefits and barriers, cues to action, and taking health action (Champion & Skinner, 2008). Some researchers have also mentioned the benefits of applying this model in different health education programmes (Daddario, 2007; Chang *et al.*, 2007). The HBM model was developed to explain the complicated actions of human beings irrespective of differences in their backgrounds. In regard to this study, the HBM was adopted to explain the factors that influenced the health behaviours of the PTB patients and the community members of Akure South regarding PTB disease. The reason for adopting this model was based on its adaptability in health contexts and situations (Shade, 2010). Therefore, the HBM is an appropriate model to use in combination with the SEM, which has been used in the other themes.

A graphical representation of the HBM is presented in Figure 8.

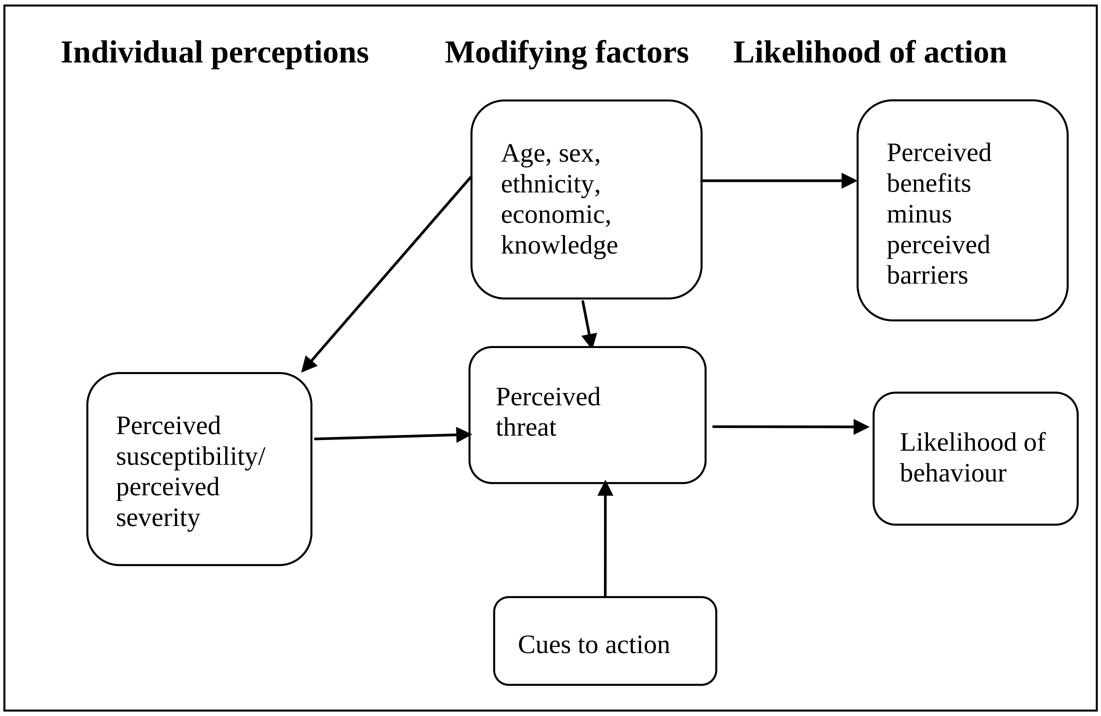


Figure 8*: The Health Belief Model (HBM). Source: Glanz et al. (2002, p. 52)*

4.1.1 Application of the health belief model in the field of health promotion

A review of the literature shows that the HBM was employed in a study by Azizi *et al.* (2018) to identify the determinants of adherence to TB treatment among Iranian patients. The study was conducted as a cohort study survey from January 2010 to December 2016, with 297 TB patients (159 males and 138 females) aged from 19 to 72 years. The study identified that due to the increasing prevalence of immigration of people from Afghanistan, the risk of TB influences, such as the knowledge, attitudes, beliefs, and perceptions that affect the individual behaviour of patients, in adherence to treatment had also increased. The study adapted the HBM to guide the planning and control of TB programs.

The design of the study used the core levels of the HBM as a basis. The HBM constructs are perceived benefits and barriers, perceived threat, and perceived self-efficacy, for example, "Timely use of anti-TB drugs will lead to my optimal recovery and health." The points in this part ranged from 1 to 5 for the questions on perceived threat (perceived susceptibility and severity), self-efficacy, and perceived benefits and barriers, and they were assigned to the questions.

The findings of this study revealed that HBM constructs were able to explain 42% of the variance in patients' behaviours; in other words, these results provide experimental support for the idea that HBM constructs might contribute to predicting therapeutic adherence in TB patients. This present study, in line with other studies, showed that HBM is a useful model to explain the healthy behaviours including treatment adherence that patients should practise. It also identified some studies, for example, Tola *et al.* (2016), which showed that TB patients in an educated group based on HBM were 0.31 times more likely to adhere to treatment. Similarly, Llongo (2004) reported that the HBM was a useful model to explain treatment adherence in TB cases in New York City. Overall, the study revealed that nearly all patients reported that their improved health was a major factor affecting their adherence behaviours. Improving the ability to work was reported as an important reason for over two-thirds of patients. Perceived benefit was the second most important factor influencing adherence, which means that participants who had good knowledge about the benefit of treatment were more adherent. This is consistent with the report by Li *et al (2015).* in China, which indicated that perceived benefit was the most important predictor of TB care behaviours. Similarly, Rodríguez-Reimann *et al.* (2004) found among Mexican Americans that action benefits predicted greater determination to engage in TB health-related behaviours.

In conclusion, the results of Azizi *et al.*'s (2018) study indicated that the HBM is a suitable model for predicting therapeutic adherence in TB patients. The study also suggested that to design effective TB prevention interventions, HCWs should target programs towards minimising perceived barriers and should promote perceived self-efficacy, benefits, and threats to achieve improved adherence to treatment. In addition, the results highlighted the importance of self-efficacy in TB treatment adherence, which health educators should consider when developing programs to improve motivation for treatment adherence.

Although these constructs can be applicable to non-health-related events (such as risk of financial loss), the scope of the HBM is limited by the nature of these constructs. Sharma and Romas (2012, p. 85) stated that "cultural factors, socio-economic status, and previous experiences also shape health behaviours, and those factors are not accounted for in the HBM". Munro *et al.* (2007) noted that when applying the HBM to long-term medication adherence, it is important for the influence of cultural factors to be considered. The HBM should be incorporated with other models (i.e., the SEM) in order to account for the areas of weakness of the HBM and to suggest strategies for change. That is the reason why I incorporated the SEM with the HBM to address the areas which the HBM could not cover. In the next section, criticism of HBM will be examined.

4.1.2 Measuring Constructs of the Health Belief Model

4.1.2.1 Perceived susceptibility

Perceived susceptibility, also called perceived vulnerability, refers to an individual's perception of the risk or the chances of contracting an infection (LaMorte, 2018). There is wide variation in a person's feelings of personal vulnerability to an illness or disease (LaMorte, 2018). It has been shown that an individual's decision to adopt a healthy behaviour is influenced by the knowledge, attitudes, and beliefs about the efficacy of alternative actions, perceived vulnerability, psychological barriers to action, perceived self-efficacy, and interpersonal factors (Karimy, Azarpira, & Araban, 2017).

In regard to perceived susceptibility in the patient's attitude and behaviour in this study, most of the patients did not think they had PTB or that they had contracted the disease. If the patients had known that they were displaying symptoms of PTB, they may have sought treatment earlier and not have delayed seeking medical help. As for the community members and leaders, if they believed that they were at the risk of being infected with PTB, they may have acted sooner in seeking medical advice. According to the HBM, raising awareness of community members' perceived susceptibility to PTB may encourage them to seek medical care at the first signs and symptoms of the disease.

4.1.2.2 Perceived Severity

Perceived severity is one aspect of the HBM. Perceived severity refers to an individual's belief about the seriousness of contracting an illness or disease, or the severity of the consequences of leaving it untreated. When perceived severity is combined with perceived susceptibility, they are labelled as perceived threats. When evaluating the severity of a disease, an individual should consider both the medical consequences (death and disability) and the social consequences (family life, career, and social relationships) of the disease (LaMorte, 2018).

If a person believes that an illness could have severe consequences to any aspect of their life, according to the HBM, they will be more likely to change a health behaviour to prevent contracting the disease. However, if an individual does not consider the risks of an illness or disease to be severe, then they are unlikely to change any of their behaviours. It is important for public health and health professionals to educate the public on the severity of the diseases that they are at risk of developing in order to encourage behaviour change. Education about the specific risks and consequences of conditions or health behaviours can help individuals to consider improving their health behaviours. Therefore, perceived severity is one's belief about the seriousness of a medical condition, the sequence of events after diagnosis, and the personal feelings related to those consequences (Janz *et al.*, 2002).

4.1.2.3 Perceived threat

The HBM argues that a person is more likely to take action to avoid a potential health risk if they believe contracting the disease would have some negative impact on their life (Janz *et al.*, 2002). For example, with an illness such as PTB, patients are aware that contracting the disease can cause pain, disability, and even death. This present study revealed that some participants also believed that contracting PTB could affect their work family, and social life. Most of the patients and community members and leaders knew that PTB was a serious disease and that it could be transmitted through being in close proximity to a person with active TB and that the disease could be fatal. As will be shown in the findings and discussion chapters, three patients out of the six reported that they thought the disease was incurable. The findings also identified that some of the carers/relatives did not know some of the signs and symptoms of PTB. If information is available for the community members regarding access PTB preventive practices, this may improve their health-seeking behaviour. Another benefit identified was that while the drugs were free, there were significant costs involved, both direct and indirect, in getting to the clinics and hospital, which was a barrier to accessing health care and adhering to their lengthy drug regime, as is discussed in chapter5.

4.1.2.4 Perceived benefits

The HBM relies on two main factors to change a health behaviour: the desire to avoid illness and the belief that a behaviour can prevent the illness (Ganz *et al.*, 2002; Glanz *et al.*, 2008). The second factor in the model relies on perceived benefits, which is the belief that there are potential positive aspects of a health action including a person's perception of the effectiveness of changing a behaviour to reduce the threat of disease. An individual is likely to change a behaviour if the health action is perceived as beneficial (LaMorte, 2018).

4.1.2.5 Perceived Barriers

This refers to a person’s feelings about the obstacles to performing a recommended health action. There is wide variation in a person’s feelings regarding barriers or impediments. The person weighs the effectiveness of the actions against the perceptions that it may be expensive, dangerous (e.g., side effects), unpleasant (e.g., painful), time-consuming, or inconvenient (LaMorte, 2018).

With regard to the findings, it was revealed that the lack of a secure and sustained drug supply meant that some patients had to return to collect their medication, which incurred additional costs for the patients or their relatives. Another perceived barrier was fear of infection. As will be reported and fully discussed in Chapter 5, fear of infection is one of the major impediments to adopting PTB preventive behaviour. The findings revealed that the community members’ fear of infection, as well as how this fear of infection led to patients’ isolation within Akure South, influenced patients and community members and created more barriers to them accessing healthcare services. People are generally influenced by their cultural beliefs that PTB is a disease from the devil, especially in Africa (Moola, 2015). About 80% of Africans consult Traditional healers, who are significant in determining the causes of illness in Africa (Reid & Cornell, 2004). Consulting with non-western doctors was commonly reported among Akure South community members, and this was a barrier to seeking medical advice and effective drug treatment and in combating PTB disease. Among some community members, requests related to health and well-being are directed to the ancestral spirits, and some of the Traditional healers interviewed attributed the causes of illness to these spirits. For example, the cause of PTB is sometimes attributed to an ancestor’s spirit, which orders the infected persons to adhere to and perform a ritual (Thinwa, 2004). Due to these attributions (cultural beliefs), there is some belief that illnesses cannot be cured through therapeutic techniques. Traditional African medicine, therefore, becomes the healing system of choice.

4.1.2.6 Cues to action

Cues to action are those incidents that occur to remind one of the severities of an illness (Henshaw & Freedman-Doan, 2009). Cues to action, are the factors which cause someone to change or want to change. For example, the cues to initiate action against PTB could be having a family member fall ill with PTB or knowing someone who died from PTB. In relation to my findings, patients sought medical treatment after their symptoms worsened following the use of home or traditional healer’s remedies. This behaviour-change model is useful for developing health promotion campaigns because the health promotion messages in such campaigns can present the facts that may lead the audience to identify the advantage in the message and help them to eliminate the risk of contracting a health problem or illness that may lead to death. (Moola, 2015).

***Figure 9**: Self-Efficacy*

This refers to the level of a person's confidence in his or her ability to successfully perform a behaviour. This construct was added to the model in the mid-1980s. Self-efficacy is a construct in many behavioural theories, as it directly relates to whether a person performs the desired behaviour (LaMorte, 2018). It is also an individual's belief in his or her capacity to perform the behaviour necessary to produce specific performance attainments (Karimy *et al.*, 2017). According to the HBM, self-efficacy focuses on a person's confidence in their ability to successfully perform the recommended action (Campbell, 2004). If a person is not confident in their ability to successfully perform a recommended behaviour, change will not occur. As will be shown, the PTB study revealed that some of the patients felt depressed and guilty about having PTB; they were afraid of being a burden on their family or friends. Negative feelings seemed to be intensified by non-disclosure and, in some cases, self-chosen social isolation. Some patients-maintained levels of isolation but concealed their PTB diagnosis to avoid distress and discrimination.

Whilst the HBM helps to aid understanding of some of my findings, it is acknowledged that the HBM has been subject to certain criticisms. For instance, the HBM assumes that people are rational thinkers and that when provided with the knowledge about the causes, signs, and symptoms of PTB, the severity of the illness, and their susceptibility to it, they will then modify their health-seeking behaviours and seek medical help immediately. However, as will be shown in the subsequent findings' chapters, there were many factors which influenced health-seeking behaviour and people's experiences of PTB.

4.1.3 Critique of the Health Belief Model (HBM)

The HBM has been criticised for being an individual-based model that does not take into consideration the factor of culture even though culture plays a major role in health-related behaviours (Carol, 2007). According to Naidoo (2006), an individual's behaviour is often guided by the cultural context within which they live. The Akure South community members or PTB patients may not adopt PTB preventive behaviour because of their cultural values, and this may hinder the process of eliminating PTB. This is because culture forms the basis of healthcare in Akure South, and it determines how a community will react to an illness (Moola, 2015). Individuals are influenced by their culture, which includes consuming herbal remedies to cure PTB. In Nigeria, community members have access to a traditional medicine which is part of the health policy that is acknowledged by the WHO (1985a & b). The Edict No. 1, 1996 established the Oyo State Advisory Board on Traditional Medicine that was integrated as part of Nigerian culture, and which was included in the national health policy that stated that traditional medicine practitioners should be trained to improve their skills.

In Nigeria, traditional medicine has been recognised by the Nigerian government for sustaining healthcare in both urban and rural areas (Gavriilidid & Ostergren, 2012). Many communities in Akure South use herbal medicine as treatments for illness because of their traditional beliefs. For instance, a traditional healers claimed how he used immunisation to prevent or cure TB and used snake bite with Traditional healer leaf medicine (Isola Omoleke Ishaq 2013).

Richter (2003, p. 7) pointed out that "biomedical medicines are characterised by diseases of the physical body only, and are based on the principles of science, technology, knowledge and clinical analysis". This indicates that cultural beliefs are not catered for in biomedical medicine. Thus, it is evident that any model of healthcare based on a single system of medicine will find it difficult to cope with the healthcare demand in the near future (Payappallimana, 2010). If culture is recognised as a contributing factor in public health and health promotion, it has the potential of developing new and effective strategies to fight diseases (for example, TB) (Kreuter & McClure, 2004). stated that Nigeria, for example, is characterised by cultural complexity and differences. Given the multiple languages (Government Communication and Information Systems 2007) used in Nigeria, health promotion sectors have acknowledged that culture plays a significant role in determining health behaviour (Keuter & McClure, 2004; Lui, 2010). However, as mentioned earlier, the HBM overlooks this cultural dimension. Thus, the lack of cultural consideration in the HBM limited its applicability on how health awareness for the Akure South community could be improved. In the case of this present study, the findings uncovered several layers of HBM constructs. However, I applied SEM as an additional model to aid more understanding of my findings and especially of the wider influences which affect individual health-seeking behaviour as indicated below.

4.2 SOCIAL ECOLOGICAL MODEL (SEM)

The social ecological model (SEM) is a theoretical framework adopted for understanding the complex multifaceted and interactive effects of personal and environmental factors. McLeroy *et al.* (1988) acknowledged in the SEM that health is affected by the interaction between the characteristics of the individual, the community, and the environment that includes the physical, social, and political components. The SEM was first introduced as a conceptual model for understanding human development by Urie Bronfenbrenner in the 1970s and was later formalised as a theory in the 1980s, (Simwaka *et al.*, 2007). The SEM has been utilised by many health organisations; for instance, the Centers for Diseases and Prevention have adapted the SEM for various health promotion endeavours that include the spheres of intrapersonal, interpersonal, organizational, community, and public policy (Sallis, *et al.*, 2008). In addition, as the initial model acknowledged, with many contributors to human development, subsequent revisions and adoptions use the SEM to represent multilevel approaches to areas such as in public health promotion, violence prevention, healthy college campuses, geriatric preventive health, and colorectal cancer prevention to name a few (Kilanowski, 2017; Polit, & Beck, 2008).

Caperon *et al.* (2019) conducted a study on the dietary behaviour of people living with diabetes or high blood glucose levels (HBGLs) in urban Nepal, with 22 patients. Of these 22 patients, 6 had HBGLs but not diabetes. Three themes were revealed in the analysis of the study based on the scope and broad nature of their influences. The first theme was those factors which related to the environment around the individual; second were intermediate environments, such as political and physical; and finally, the environment with the broadest influence was the socio-cultural environment. Using SEM to aid the understanding of dietary behaviour for people living with diabetes or HBGLs, the study revealed that socio-cultural context is paramount in underlining, defining, and influencing dietary behaviours in Kathmandu. The socio-cultural environment was the most overarching influence on dietary behaviours in an LMIC context, and interventions should consider this influence on behaviour rather than developing interventions which consider only the individual without the influence of wider environments on their behaviour.

Furthermore, the SEM has been widely and successfully used in studies relevant to the present context; for example, it was successfully applied in a study conducted by Babalola and Uman (2009) on exploring the socio-cultural aspects of TB and the factors predicting BCG immunisation in Northern Nigeria. Another study conducted with immigrants living with TB in New York (Ming-Jung, 2004), which explored the socio-cultural aspects of TB, also supports its wide acceptance and usefulness, as the study results revealed that TB is determined not only by bacterial infection but also by a multitude of other factors. The works of Brofenbrenner (1977) and McLeroy *et al.* (1988) recognize the interpretative value of the five ‘levels’ of the SEM, namely, intrapersonal, interpersonal, organisational, community, and public policy, to aid in understanding the conditions that influence a patient’s behaviour. Furthermore, the study below explained how SEM was used to aid the understanding of colorectal cancer.

In 2013, the Center for Disease Control and Prevention (2000) used the SEM to represent their Colorectal Cancer Control Program’s approach to prevent cancer, in which all SEM core levels were utilised. At the individual level, the CDC’s goal was to educate people on colorectal cancer and the importance of being screened. The intervention aimed to change people’s mindset about getting screened, which would lead to better overall health, as those with cancer could receive an early diagnosis leading to a more positive outcome (Center for Disease Control, 2015). In the next level, the interpersonal level, relationships to the individual are targeted. Individuals should be in healthy relationships with their friends, families, and healthcare providers, and those relationships should be ones that assist them and provide them with support. For the colorectal cancer program, providers were heavily targeted. They wanted to make sure healthcare providers reminded patients about screening and helped them navigate and control their fears of screening (Center for Disease Control and Prevention, 2015). The third level is the organizational level. At this level, the aim was to look at the resources provided by the organizations involved and whether or not they were fulfilling their function. The fourth level is the community level where the researcher seeks to understand how the community environment affects behaviours and how these can change for the better. For colorectal cancer prevention, the researchers focused on collaborations with tribal health departments to expand screening and also conducted educational campaigns (Center for Disease Control and Prevention, 2015.) The fifth and final level is the policy level. At this level, the researcher examines how policies in government (local, state, or federal) affect the health behaviours and overall health. At this level in the colorectal cancer program, there was collaboration with certain groups and coalitions to promote public health policies, which were implemented to effectively communicate to the public the regulations and laws. Also translating local policies for members of communities to aid understanding was crucial. That could be anything from a local official declaring a month "Colorectal Cancer Screening Month" to local officials passing resolutions to give communities better access to cancer screening. By following these steps, the SEM is applied, and if done thoroughly, it can help to prevent disease within a population.

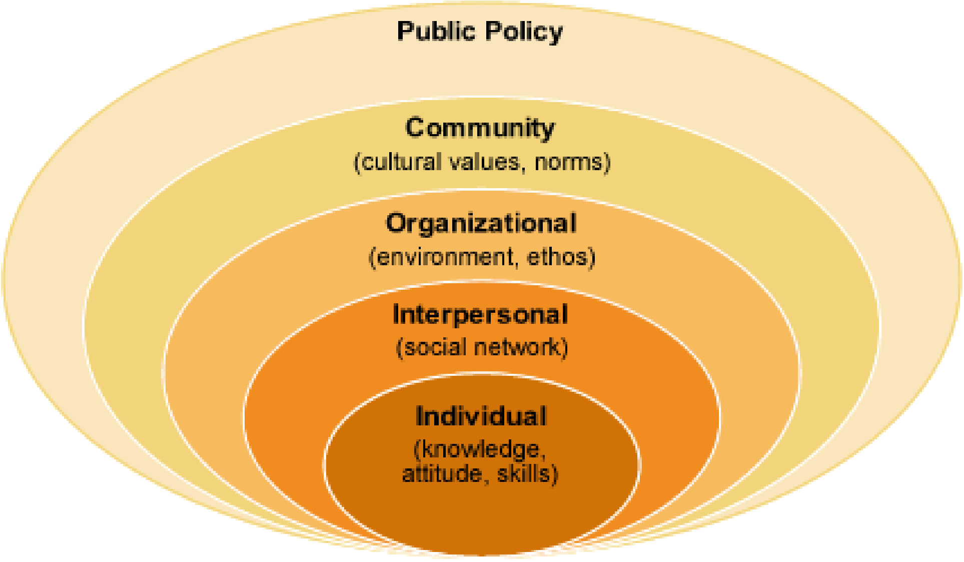


***Figure 10**: Social ecological model Source: McLeroy et al. (1988)*

In this study, the SEM was adopted because of the interrelationship among different levels of the model to aid understanding of my findings. For instance, the SEM explains how human development is influenced by different types of environmental systems, for example, we encounter different environments throughout our lifespan and individuals interact within the environment together with the factors that influence our behaviour in varying degrees. These factors and determinants exist at all levels of health, making prevention, control, and intervention most effective. In relate to this PTB.

4.3 THE HEALTH BELIEF MODEL AND SOCIAL ECOLOGICAL MODEL IN THE CONTEXTS RELEVANT TO PTB STUDY.

This section discussed the health belief model and social ecological models with literature on the application of the models in the context of PTB in Akure south Ondo state Nigeria**.** Health belief model and social ecological model are public health models centered entirely around individual-level behaviours and perceptions. These models examine individual level of behaviour of patients in related to PTB study. The models were used to aid the understanding of PTB findings conducted at Akure south in Ondo state, Nigeria. They were also used in chapters 5-8 and discussion chapter 9 to explain the study findings of PTB.

In regard to HBM, the model addresses the beliefs of individuals in understanding why some people participate in health-promoting behaviours and others do not (NCI, 2005). The HBM was originally developed to understand why some people were lack of participating in the programs that can prevent and detect disease that making it particularly useful to change behaviours that would help to eradicate infectious disease (National Cancer Institute [NCI], 2005). The HBM focuses mostly on the perceptions of individuals, regarding their susceptibility to illness, the severity of that illness, the benefits of the health-promoting behaviour, and the nature of any barriers which exist in carrying out that behaviour (NCI, 2005). Wong & Abubakar, (2013) stated that if PTB education is well-executed, it would help to bring individuals' level of perceived susceptibility in line with reality. That is, a person who believes that they are not at risk of developing tuberculosis because they are young and healthy is unlikely to seek PTB screening. A well-informed person, however, would be aware that PTB typically remains dormant in a healthy individual, and that testing might be beneficial, even to a healthy person. Perceived severity relates to the individual's understanding of the nature of the PTB's symptoms, and the associated risk of death (NCI, 2005). In relation to PTB, this might include the awareness that reduction in the strength of the immune system can lead to illness in those who were previously healthy, as well as the existence of drug-resistant strains which are more likely to lead to death. Two others useful HBM constructs are perceived benefits and perceived behaviours.

A person is more likely to proceed with a health-promoting behaviour if they understand its potential benefits (NCI, 2005). In this context, awareness that treatment is even possible is not universal. Therefore, increasing the awareness that PTB can be cured if it is adequately. This last point also relates to perceived barriers; a person's understanding that treatment will be difficult, but it is accessible and can be completed successfully, is critical to continuation of and adherence to treatment (Wong & Abubakar, 2013). Of course, this supposes that treatment is indeed available in this person's community, which is not necessarily true in all parts of the world. Additionally, the HBM construct as known is relevant to the PTB context, such as "cures to action can provide information, promote awareness, and employ reminder systems" (NCI, 2005, p. 21). In the case of PTB, these may include symptoms of the PTB in question, as well as interpersonal cues from other individuals which prompt the person to seek or continue treatment (NCI, 2005). In the case of PTB, it may be imagined that a person who is knowledgeable about the PTB's symptoms is more likely to recognize them and seek treatment. Additionally, others are more likely to prompt the infected individual to seek treatment if they possess adequate PTB-related knowledge. The process of gaining knowledge, for example, by consuming written or spoken information, may itself serve as a cue to action in this instance.

A finally HBM construct, and perhaps the most vital in this context, is known as self-efficacy (NCI, 2005). Self-efficacy is described as "confidence in one's ability to take action", or whether an individual believes that his or her attempts to engage in a health behaviour will be successful (NCI, 2005, p. 21). Increased self-efficacy in turn increases the likelihood that a person will in fact perform the behaviour. This construct is therefore critical to the individual's eventual behaviour, and naturally self-efficacy is a part of individual level (NCI, 2005). The HBM is useful in the PTB context, however, it does have some limitations, such as the lack of consideration of socio-cultural factors, and the differences in individual access to and availability of healthcare-related resources (Boston University School of Public Health [BUPH], 2016). The Justification for the use of the SEM is that this model may be limited with consideration of its application to the geographical area of this particular study (i.e., West Africa) due to low socioeconomic status.

4.3.1 The Social Ecological Model (SEM**)**

This study of Akure south in Ondo state utilised SEM, which recognizes the intertwined relationship existing between an individual and their environment. The model addresses the complexities and interdependences between socioeconomic, cultural, political, environmental, organisational, psychological, and biological determinants of behaviour (Stokols, 1996). It recognises that whereas individuals are responsible for instituting and maintaining lifestyle changes necessary to reduce risk and improve health, individual behaviour which influenced by factors at different levels (Elder et al., 2007). For the purpose of the study, I used five levels of the model to aid my project findings (Sallis et al., 2015). The reason for adapted this model was based on a multilevel framework for understanding behaviour and tools for designing possible interventions, taking into consideration the complex multilevel environments of individuals.

The first level SEM focuses on individual-level factors which include knowledge, beliefs, attitudes, and skills that the PTB patients needed to reduce the risk of PTB and improve health and well-being. The second level, interpersonal process provides social identity and role definition such as partner, friends, and family of the PTB patients that can support them during their PTB illness. The third level, which is organizational, includes rules, policies, and formal and informal structures such as the healthcare workers. Fourth level: community with established norms and values, standards, and social networks with the patients and the community members in regarding the PTB. The fifth level: societal which includes cultural context and national policies on health. The five levels of SEM had been used to aid the understanding of the PTB findings in chapter 9. A major strength of the SEM approach to health in this study is that it was possible to offer strategies of behavioural change and environmental enhancement for the PTB patients, community members of Akure south in Ondo state, Nigeria. The SEM made multilevel analyses possible among individuals, interpersonal, organizational, community, societal, and related intervention strategies that were possible as stated by Reifsnider et al., (2005). At the same time, however, SEM reflects certain practical limitations. The incorporation of multilevel analyses proved to be cumbersome and complex.

The SEM is very similar to the HBM, but it does serve the needs of this study, in that it provides some insight into social and cultural factors related to health behaviours and outcomes, as discussed in the chapter. The multi-level model examines individual, interpersonal, community-level and society-level factors, and how these may interact and influence one another to create behavioural patterns (CDC, 2015). Individual-level factors are related to biological and personal history (CDC, 2015). In this context, this might include the strength of one's immune system and how effectively it is able to fight off the PTB bacterium. The relationship-level factors are interpersonal factors which bring a person more or less in contact with the infectious agent. An individual's contact with others may also make them more or less likely to receive prompting to be tested or untreated for PTB, and to adhere to the treatment once it has begun. The community level in the SEM involves the settings, such as schools, workplace, or neighborhoods, in which social relationships occur and the characteristics of these settings (CDC, 2015). Again, one's physical environment can result to more or less people likely to come in contact with the PTB bacterium. It may also impact on the availability of treatment facilities, medications, and other treatment-related resources. The final and broadest level delineated by the SEM is the societal level; this "includes social and cultural norms…[and] health, economic, educational, and social policies" (CDC, 2015). In terms of PTB, this may relate to disease-reporting laws, detection initiatives, the allocation of human and economic resources to combating the PTB, and customs or taboos which might make a person more or less likely to receive or continue with treatment.

In terms of comparison of HBM and SEM in this study, the HBM is useful because it addresses the beliefs of individuals regarding PTB, in an effort to understand why it is necessary for people to participate in health-promoting behaviours that will prevent them to change their behaviours on PTB and seek help at the early time for treatment. In the case of SEM, it is a multi-level model which examines individual, interpersonal, community-level and society-level factors, and how these may interact and influence one another in creating behavioral patterns (CDC, 2015). Additionally, the model considers how people's decision may be shaped by habitual behaviours, it also addresses the economic and environmental factors that can affect PTB patients' health behaviour such as poverty, which is a major barrier affecting the Akure south community members and the PTB patients. Furthermore, SEM addresses individual beliefs, attitudes and other characteristics that affect how readily a person can change their behaviour, Orji et al (2012). In addition, SEM focuses on how to describe health behaviours rather than explaining how to change them. It also addresses individual factors that affect health behaviours such as culture which HBM does not address. However, the combination of the HBM and SEM have aided and enhanced a better understanding of the study findings.

4.3.1.1 Strength of the Ecological Model

The model allows for project integration between behavioural and environmental change. It also allows for attention to be given to the interaction between personal and environmental factors. The model also can assist those in need with education on how different factors can play a role in their overall health. It helps them to understand how to balance personal and environmental factors to promote safe and healthy living. Examples include vaccinations and yearly check-ups for different diseases. In regard to the advantage of the SEM, the model has a built-in ability to offer strategies for behavioural change and environmental enhancement. It will provide people with a good understanding of how to balance personal and environmental factors to promote safe and healthy living with regard to the social conditions surrounding health behaviours. In addition, the SEM is able to consolidate the environmental strategies of behaviour changes. Another advantage of the SEM is the ability to incorporate two or more core levels to address problems, which enables the researcher to examine the imparts of core levels on health promotion intervention at a reduced cost in order to prevent a disease rather than trying to cure it later on. Hence, the SEM is very useful for encouraging individuals to take responsibility for their healthier lifestyle.

4.4 SUMMARY

The aim of this chapter is to provide a discussion on the HBM and SEM, which have mainly been used for analysis of the findings of my PTB study of the Akure South community members. Constructs from the selected models were explained; previous studies conducted using these models were also discussed to provide a context for the current research. The chapter’s aim was achieved by discussing these models with reference to my study and the usefulness of SEM and its advantages, limitations, and strengths, such as the ability to offer strategies of behavioural change and environmental enhancement, which allows people to understand how to balance personal and environmental factors to promote safe and healthy living. It also provides a good understanding of the social conditions that surround our health behaviours. In addition, the HBM focuses on behaviour change, and it is useful in aiding the understanding of health-seeking behaviours and helps health providers and policy makers in providing interventions to address the factors that influence community members’ health behaviours, which in this thesis, refers to the Akure South community members in regard to PTB. Furthermore, this chapter examined how the models can help the Akure South community members to change their health behaviours on different levels at different stages in an individual’s life, not only for preventing but to prolonging both individuals and entire population.

The reasons for using these two models for PTB study was based on the merits and demerits. For instance, the HBM model posits that message will achieve optimal behavior change if perceived barriers, benefits, self-efficacy, and threat are targeted. The SEM conceptualises health broadly and focuses on multiple factors that might affect health. In case of PTB, the SEM addresses the socio-ecological and behavioural factors that influencing patient’s intention.

In regard to PTB, the HBM is useful in addressing behaviour changes, knowledge of health education. For example, if a patient in treatment is likely to adhere to their medical regimen under a very specific set of conditions enumerated as indicated below.

1) Patients have some minimal health knowledge and motivation towards staying healthy.

2) Patients perceive themselves as vulnerable to the disease and they must also believe that their illness is clearly a serious medical and health problem.

3) Patients believe that current treatment is effective, i.e., that it is indeed possible to obtain control over the disease at an acceptable cost and that the cost does not outweigh the benefits.

4) Patients have an internal or external stimulus, commonly referred to as “cue to action,” that triggers the health behaviours such as taking medication.

5) Patients have self-efficacy in order to perform routine tasks such as taking tuberculosis medication daily for the entire duration of treatment.

The SEM conceptualizes health broadly and focuses on multiple factors that might affect health. Within this model environmental settings have multiple physical, social, and cultural dimensions that can influence a variety of health outcomes, including physical health status, developmental maturation, emotional well-being, and social cohesion. While the HBM only focuses on individual problems, the SEM addresses multiple behavioural factors that influencing patient’s intention. Having discussed the two models, the next chapter will provide a discussion on the analysis and the project findings.

CHAPTER 5: Findings and discussion

This chapter presents the findings from my study of PTB for the Akure South community members and the themes generated from analysing the data collected from the Akure South community members – palace chiefs, Traditional healers, community leaders, religious leaders, PTB patients, and their carers/relatives, as well as HCWs. In the findings, four themes emerged, which are as follows:

- barriers to accessing healthcare services
- knowledge and perceptions of PTB
- the socio-cultural context of PTB
- health promotion and prevention

Within each theme, subthemes were identified, presented, and discussed. A number of theories and models were drawn upon to aid in understanding the data, which are integrated and discussed within each chapter. First, the characteristics of the participants' sample are presented in Table 8 below:

Table 8: Characteristics of the participants

Number of Participants	**Sex**	**Age Range**	**Location**	**High education Qualifications**
Number of doctors and pharmacy: HIV/AIDs clinic (N=1), TB clinic (N=1), DOTS clinic site (N=1) Community doctor (N=1) pharmacy (N=1) Total doctors (N=5).	4 males and 1 female	30–59 years	Akure specialist state hospital at TB clinic and DOTs Clinic.	Pharmacy degree qualification (N=1) Bachelor of surgery (BMBS) (N=4)
Number of nurses: Drug nurse (N=1) Immunisation nurses (N= 2), Lab staff (N=1) and DOTS clinic (N=1) Total nurses (N=5)	5 females	28-48 years	Akure Specialist State Hospital at TB clinic and DOTs clinic.	Nursing degree (N=4) Laboratory staff (N=1)
Receptionists: TB clinic (N=1) and DOT clinic (N=1) Total number of receptionist (N=2)	males (n=1) and female (n=1)	24–50 years	TB clinic state specialist hospital	GCSE (N=2)

Patients: TB clinics (N=3) DOTS clinic (N=1) and home (N=1) Total Patients (N=5)	females (N=4) male (N=1)	20–59 years 45–60 years	Akure Specialist State Hospital at TB clinic and DOTs clinic	GCSEs (N=2) Diploma holders(N=3)
Carer/relative (N = 5)	females (N=4) male (N=1)	20–59 years	TB clinics DOTS clinic and home	University student (N=1) No formal qualifications (N=2) GCSEs (N=2)
Focus groups members Participants				
Church FGs (N= 7)	females (N=4) males(N=3)	23–58 years	Church	degree holders (N=3) diploma holders (N=2) with a GCSE (N=1) No formal qualifications (N=1)
Muslim women FGs (N=7) and Muslim men FGs (N=7) Total = (N= 14)	females (N=7) males (N=7)	35–69 years	Muslim mosque building hall	No qualifications (N=11) GCSEs (N=2) Nursing degree (N=1)
University FGs (N = 7) Total number (N=7)	males(N=5) females(N=2)	20–37 years	University campus	Undergraduate degrees (N=1)
Community-nominated leaders 1& 2 (N= 2)	males (N=2)	40–59 years	Local community hall	Bachelor’s degree(N=1) master’s degree (N=1)

Palace chiefs (N = 2)	males (N=2)	40–60 years	Palace office	GCSE (N=1) No formal qualifications (N=1)
Religious leaders (N= 2)	males (N=2)	50–60 years	Church office and Muslim Mosque office	Diploma (N=1) and with a GCSE(N=1)
Traditional healers (N = 2)	males (N=2)	40–60 years	Traditional healers’ home	No formal qualifications (N=1) With a GCSE (N=1)

5.1 BARRIERS TO ACCESSING HEALTH CARE SERVICES

This chapter reports the findings regarding the barriers that impeded PTB patients from accessing healthcare services in Akure South. Within the theme of Barriers, other subthemes emerged which include the fear of PTB infection, the healthcare-seeking behaviour of PTB patients and delay in seeking treatment and the influence of poverty on PTB patients access to healthcare services as indicated in chapter3. In this theme of barriers to accessing health care services, the findings are discussed in light of the literature regarding PTB. The findings are then further discussed and are applied in the context of the HBM to aid understanding of my findings.

The HBM was adopted to explain the factors which influenced the health behaviours of the PTB patients and the community members of Akure South regarding PTB disease. The reason for adopting this model was based on its adaptability in health contexts and situations (Shade 2010). Therefore, the HBM is an appropriate model to use in combination with the SEM that has been used in the other themes. The HBM will be discussed fully in discussion, in chapter conclusion and recommendation.

5.1.1 Fear of infection

Community members, HCWs, and patients as well as their carers/relatives expressed the fear of infection. The findings regarding the community members' fear of infection and how this fear of infection can lead to patients' isolation within Akure South influenced patients and community members and created more barriers in accessing healthcare services, which are presented and discussed. PTB infection presents a real danger, especially for the inhabitants of the study area, where the prevalence of PTB is high. Thus, PTB is rightly perceived as a serious and highly transmittable disease that should be feared by the community. Indeed, PTB patients' fear was observed during the fieldwork in the PTB clinic and from interviewing the participants in Akure South. The perception of PTB as a serious disease can be ascribed to many factors, such as the long treatment period and its close association with HIV/AIDS. During observation, most of the dying AIDS patients at the hospital showed PTB symptoms. Visible signs of PTB disease include coughing up blood and weight loss, are also associated with HIV/AIDS. PTB has additionally long been compared with incurable tumours and cancer. These symptoms and associations have made many people fearful of the disease. The fear of PTB infection is also shaped by cultural norms in the context of PTB in Akure South.

The community members feared the disease because they thought it was incurable and because it manifests some of the symptoms of HIV/AIDS. For instance, Community-Nominated Leader 1 reported that strong cultural beliefs and a lack of understanding about the disease are major barriers preventing patients from seeking timely healthcare:

> *Our community perceive PTB as a very scary disease mainly because it is highly transmittable and often associated with HIV/AIDS and the work of evil spirits. This is a hugely cultural belief that impedes timely visit to the hospital by patients suffering from the disease. I have, for example, witnessed cases of terminally ill patients who unfortunately could have been treated well and healed from PTB. Towards this end, there are many cases of unnecessary deaths among PTB patients in my area.* (Community-Nominated Leader 1)

This fear and particularly the contagious nature of PTB also prevented people from the community from associating with PTB patients. At a societal level, the widespread fear of contagion can lead PTB patients to be rejected by their communities. This was noted by Community-Nominated Leader 2, who reported as follows.

> *Many residents in my area completely detach themselves from PTB patients. The situation is made worse when relatives and friends avoid contact and communication with the patients. This, on the other hand, makes patients lonely and thus they avoid appearing in public places.* (Community-Nominated Leader 2)

Various participants were concerned that PTB patients pose a danger to their families, households, and community. As indicated above, many community members completely separated themselves from the PTB patients, which exacerbated the patients’ condition because their relatives and friends could not have contact with them. This finding is supported by Baldwin *et al.* (2004) and Baral *et al.* (2007), who indicated that TB is a family disease because of the many consequences of TB on all family members. The fact that the fear associated with the disease affects both the patients and their families must be emphasised. Such fear is also connected to cultural and traditional beliefs. For instance, within the community, PTB is often believed to be contracted as a result of bad behaviour or evil spirits, and people with PTB are generally believed to be unclean and more likely to have other diseases, such as HIV/AIDS as well as to have indulged in immoral behaviour (Juniarti & Evans 2011). Doctor 5 reported the statement below regarding how community members think that people with PTB have HIV/AIDs.

> *Members of the community think that people with PTB have HIV/AIDs, and they are caused by gods because of the lack of knowledge and the similarity in the symptoms; this makes a lot of people keep away from the PTB patients.* (Doctor 5)

This fear has a significant impact on the sufferers and results in their stigmatisation and a higher rate of mortality because of delays in receiving medical treatment. Community-nominated Leader 2 posited:

> *I have seen many people die of the disease. It is a very dangerous disease. It kills within a short period if care is not taken.* (Community-nominated Leader 2)

The above quotation indicates a lack of awareness on the part of the community members, as the community-nominated leader stated how dangerous PTB can be without proper treatment. The lack of education about PTB among community members has created various fears about PTB, and some of these fears are linked to the consequences of having a serious disease and the real risk of dying. These fears render people reluctant to declare their PTB diagnosis or take advantage of the available treatment and support. This unwillingness contributes to the widespread ignorance surrounding PTB and its management and accelerates the transmission of the disease throughout the community. These traditional beliefs about PTB are both comparable to and different from attitudes expressed by Akure South's Christian and Muslim communities. I interviewed leaders from these two main religions, and fear of the disease was prevalent among both. Some participants in the church FGs expressed similar views on how PTB is transmitted.

> Participant 2: *As with any transmittable disease, people are scared of having contact with PTB patients, whether or not they have been receiving treatment or are in a condition to transmit the disease to others.* (Church FGs)

Participant 2 above suggested that the fear of contagion leads people to shun PTB sufferers. In the same vein, an interview with a local church pastor indicated the following:

> *I had somebody who was being warned about moving closer to another man who was infected in case the disease should affect him. Therefore, people believe it can affect them.* (Church pastor)

The pastor's statement above confirmed the belief that contact with an infected person can be dangerous; hence, people may be warned to stay away from PTB sufferers. Similar views were also held in the Muslim community. According to the Muslim community leader, the infected person may be isolated to stop the spread of the infection; however, such a person can be accepted back into the community as soon as they recover:

> *In general, other believers are opposed to sharing the same space when prayers and sermons are conducted. We have told them to allow their sick brothers and sisters to interact, but it is all in vain. This makes patients feel very frustrated.*
>
> *If the infection is seen to be very serious, such people can be told to sit outside. Such an individual will even be told to pack his mat* [prayer mat] *so as not to spread the infection. We always pray that any illness that will be terrible should not befall us. When such an infected person gets better, he can come back. We at leadership level, however, interact with patients and encourage them to seek treatment and follow doctors' advice.* (Muslim leader)

The Muslim leader understood the seriousness of having PTB and how difficult it may be for people to associate with the sufferers. However, he seemed prepared to risk his own health to care for and support those who were ill with PTB. He also encouraged anyone displaying symptoms to seek medical help.

According to Dodor's (2012) systematic study, when patients are diagnosed with TB, they suffer from many different emotions, such as frustration, disappointment, and fear. These feelings are then compounded by the reactions of their social group. As the quotes above indicate, exclusion from congregational prayer sessions in the mosque can result in frustration as well as fear. Denying a PTB sufferer the opportunity to pray with the rest of his community may be understandable from the public health perspective of seeking not to spread the disease. However, the social and psychological impact of this isolation on PTB sufferers is significant in the sense that even family members of the afflicted person bear the consequences of being labelled negatively by the wider community. This seems to be a significant social problem in the Akure South community.

Raising awareness of the impact of this social exclusion is essential because, among other things, it will ensure that PTB patients are treated humanely in both public and private places. This will help minimize one of the barriers to accessing healthcare among community members and PTB patients. PTB is not a new disease, and the stigmatisation of its sufferers has ample historical precedence. Providing his perceptions concerning the fear of PTB within Akure South, Palace Chief 1 reported how even before the colonial period, PTB patients were banished from the community because of the fear of infection:

> *Before the arrival of the foreigner* (British doctors), *PTB patients were always banished from the community, which regarded them as an abomination in the traditional society. (*Palace Chief 1)

It is important to note here that the past treatment of PTB patients as outcasts may not exist within the present context to the same degree. However, widespread discrimination persists against PTB patients in Akure South, as I witnessed nurses and other workers distancing themselves from the patients.

> *During my research observations at the TB clinic, I observed that the nurses were not friendly with the patients that come to the clinic for treatment; they distance themselves like 10 ft from the patients. No proper direction was given to patients for their collection of sputum; with this type of attitude, many of the patients may not come back again so the nurses' attitude toward patients is bad.* (Field notes observation)

One widespread fear surrounding PTB patients was the sensible precaution of HCWs that led some of them to distance themselves from the patients due to the fear of infection, as I observed during my field work. In addition, PTB patients were often considered as being possessed by evil spirits, which was reported by Palace Chief_1 and reinforced by a community doctor.

> *The community members regarded PTB as the work of evil spirits. The fact that their community members did not have a clear idea about PTB infection led them to avoid socializing with PTB patients regardless of their treatment history.* (Doctor 1)

The above quote demonstrates that the doctor believed that community members consider PTB to be the work of an evil spirit, regardless of whether they receive treatment, because they believe that they are made vulnerable to the transmission of PTB to others. This perception of the disease by the community members may create not only fear but also tangible barriers to accessing healthcare services. According to Nguyen *et al.* (2001), despite a PTB patient having received a full course of treatment, the community may still fear that the patient may infect the people around them. This fear is somewhat prevalent in the Akure South community, presumably because medical assurances are unable to fully calm fears rooted in traditional beliefs. The lack of health education and awareness about the disease may contribute to a lack of knowledge among community members about how they can assist the infected patients and where to direct them to get further help.

5.1.2 Patients' and carers'/relatives' perceptions of the fear of infection

The beliefs described above were about the community members' fear of PTB infection. In general, the PTB patients did not understand what the disease is, and neither did they know whether it is curable. Many patients had inadequate knowledge about the causes and treatment of the disease. Hence, they were fearful of being discriminated against for having a transmissible disease and of their families' and friends' reactions after telling them the results of the PTB diagnosis:

> *I felt very bad. When I was told, I cried. I have not experienced it before in my family, both paternal and maternal families. I thought I would die; I was afraid that the disease might kill me because I knew nothing about the disease. I didn't even know what causes the disease and thought there was no cure.* (Patient 1)

Previous studies have also demonstrated an increase in frustration, disappointment, and fear when patients are diagnosed with PTB (Juniarti & Evans 2011; Long *et al.*, 2001; Khan *et al.* 2003). Furthermore, patients diagnosed with PTB were more fearful and frustrated because of the lack of adequate knowledge concerning the general treatment of the disease; a similar finding was reported by Juniarti and Evans (2011), who revealed that PTB also increased the risk of unemployment and divorce, and patients viewed it as a 'death penalty' because two of five of the patients considered PTB to be an incurable disease. Other studies reported similar views on how the patients feared PTB as they assumed it was a death sentence (Long *et al.* 2000). Clear and succinct understanding about the curability and sources of treatment for PTB may motivate patients to seek timely care. Some patients found it difficult to seek help from other people because of fear and stigma:

> *There is in general fear of people having been afraid of the disease and patients suffering from it. This led to increase in isolation and stigmatisation among the PTB patients.* (Patient 3)

This added another burden for sufferers who were already struggling to cope with the distress and physical impact of PTB:

> *People have different opinions about it* [PTB], *so I did not tell anyone. However, they noticed that I was sick and had lost a lot of weight. Anytime they ask I just tell them that I am sick and go to the hospital for treatment. I have not informed anyone that I have* [PTB]. *I have to deny that I have PTB or know anything about the disease.* (Patient 4)

As is evident in the above quotes, the desire for secrecy has important implications for the treatment and control of PTB because adherence to treatment may bring a risk of public exposure. It may also mean that some strategies to stop the spread of PTB among the family and community may have been deliberately avoided, as the patients were fearful of what people may think if they were to become aware of them having the disease. A study by Cremers *et al.* (2016) on assessing the causes and consequences of stigma for TB patients in urban Zambia indicated that apart from scientific methods and the economic and cultural barriers to effective TB control, the stigma related to fear of the unknown constituted one of the major social factors causing fear and delay and hindering compliance among TB patients.

A systematic review by Chang and Cataldo (2014) stated that the consequences of fear related to and generated by such a stigma hinder or even adversely influence efforts to stimulate treatment adherence and reduce delays in diagnosis and treatment worldwide. Moreover, fear impedes the application of preventive measures, such as coughing hygiene and proper ventilation at home, resulting in an increased risk of transmission, morbidity and mortality, and the development of MDR-TB, thus undermining successful TB control (Bond & Nyblade 2006; Jittimanee *et al.* 2009). This study – based on interviews conducted with PTB patients, their carers/relatives, and community members – confirmed that PTB patients are exposed to a great deal of ostracism from the community as a result of general fear from knowledge of their PTB results. Such fear causes a vicious cycle and results in those afflicted becoming unwilling to disclose their condition, leading to health complications or death, as stated below:

> *I did not inform anyone because I know how people talk; before you know it, everybody will isolate themselves from you, thinking you have HIV/AIDS rather than PTB. So, my fear was being isolated, and feeling discrimination and neglect from my people,* (Patient 2)

No programme for PTB control can be effective unless erroneous beliefs amongst the masses are identified and addressed. Therefore, social and cultural factors must be considered, as they play an important role in TB patients' beliefs regarding the disease (Khan *et al.* 2003). Otherwise, the patients will become modern-day lepers, shunned by their friends, their co-workers, and their community. This will make it difficult for patients to come forward for treatment as stated below:

> *I do not have any social interaction because I do not expose myself. It is only my mother, my husband, and my children that know. If I tell my friends, they will not associate with me because of fear of infection and stigma, as they know it is a deadly disease.* (Patient 5)

As indicated in the quote above by patient 5, who confirmed that she did not socialise with community members because of fear of how people would react, she did tell the family about the diagnosis in the hope of winning their trust and confidence. Patient 5, however, did not disclose her result to anyone else for fear of rejection, isolation, and stigmatisation. She believed that the best way to avoid the stigmatisation, rejection, and shame of having the disease was not to inform anyone about it outside of the immediate family. As might be expected, the impacts of the fears and stigma around PTB are particularly heavy upon the relatives and carers of the afflicted persons. Isolation and stigma are two of the issues that the patients found most difficult to address.

A study by Sushil *et al.* (2007) reported the causes and effects of stigma and discrimination associated with TB in Nepal. In developing countries, the social isolation of patients is evident both outside the family, where the person may be avoided by former friends and acquaintances, and inside the family, where the patient may be forced to eat and sleep alone. Children are separated and stay in their rooms, while married couples sleep in different rooms, eat meals separately, and spend time in their room or at a park (Long *et al.* 2001; Godfrey-Faussett *et al.* 2002; Baldwin *et al.* 2004). On the other hand, some loyal family members of the patients interviewed still offered support. Despite the aforementioned reluctance of patients to disclose their condition even to close relations, the imperative to share the burden of the condition with a close friend or family member can sometimes lead to patients revealing the news to someone they trust. The benefits of being open about the disease were evident in the data as family members of the patients both were given and gave support during the illness. The positive consequences of seeking family support are shown in the following quote:

> *When it comes to a disease like this, people are scared to contract the disease. However, it should not be like that. We have to ensure we make him happy or else thinking might cause more damage to his health.* (Carers/relatives 5)

The quote above by Carer/relative 5 understands the importance of providing emotional and psychological support to those who have PTB and shows that fear of the disease needs to be changed. A systematic review carried out by Sagbakken *et al.* (2008) assessed TB treatment non-adherence and the inability to follow up among TB patients with or without HIV in developing countries. This review also revealed that social support from family, friends, neighbourhoods, the general community, and HCWs was identified as extremely important for TB treatment adherence and accomplishment. This was because family, HCW, and community support, to a large extent, compensated for financial shortage, food costs, transportation costs, and physical support in being taken to the clinic. Moreover, this review revealed that the lack of social support led to patients stopping or interrupting their treatment because of the lack of money and transportation to the TB clinic. For TB/HIV co-infected patients, the lack of social support was difficult because most of them lived within nuclear families (husband or wife) and because of the stigma attached to the disease. However, disclosure of the disease does not always guarantee that the family will provide support. In this study, the decision to disclose or not to disclose PTB results was affected by the lack of knowledge and understanding of the disease and the stigma associated with it. Testimonies from patients' carers/relatives supported the fact that the fear of the disease resulted in the community shunning the patient. However, this fear is balanced among carers and relatives by the feeling of responsibility to care for their infected loved ones.

The role of cultural factors in attitudes towards the disease is supported by Lienhardit *et al.* (2003, pp. 91–95) in their study of patient adherence to TB treatment in Delhi, India: 'Patient choice in taking treatment is framed by the physiological and psychological impacts of disease and by the social and cultural structures in which the person is immersed'. For instance, even after the patient has been cured, the stigma of the disease continues to create ill effects at both the individual and collective levels. As reported above, many community members, including relatives, still do not want to be associated with the patients even after they might have been cured given the fear of infection. Therefore, community members’ understanding of the disease and its treatment must be improved using health education (e.g., wider public health campaigns and health promotion initiatives).

5.1.3 The attitude and behaviour of HCWs

Scientifically trained HCWs may not be influenced by such traditional and religious beliefs regarding the cause of PTB. Medical science dismisses religious explanations and defines PTB and other diseases strictly in terms of biological knowledge. However, similar fears expressed by PTB patients, and their carers/relatives were also expressed by some of the HCWs, not necessarily because they did not know that the disease is treatable, but because they were afraid of its infectious nature and did not have the resources to maintain their own health. The behaviour of the HCWs towards PTB patients was also seen to be affected by the social stigma and tendency towards isolating the patients. This can contribute to delays in seeking and receiving treatment in the Akure South community. Some HCWs’ negative attitudes towards PTB patients because of the fear of infection were reported by a community leader as being similar to those of other community members, as indicated in the quote below:

> *The attitudes and behaviours of* (HCWs) *towards* (PTB) *patients especially the way they relate to, and treat those with the disease, when required for their sputum sample, made them feel embarrassed and shameful.* (Community-nominated Leader 2)

Such unprofessional behaviour was confirmed by Community-nominated Leader 2 above about HCWs attitudes towards PTB patients. In the statement below reported by Participant 2, in which it was indicated that lack of funding for healthcare services was a problem in Nigeria.

> Participant 2: *In the Nigerian context, health care is not taken serious not to talk of PTB. When it comes to funds in this country, the majority come from NGOs, government only adds little. HCWs attitude is very bad to patients*. (University FGs)

The above statement reported by Participant 2 indicates that government PTB services are underfunded, and it shows the negative attitude of HCWs towards PTB patients.

Furthermore, during my observations at the PTB clinic at the hospital, I made the following observation:

> *The nurses were standing about 10 feet apart from the patients, and any time the patients come to the clinic late, they called them names and shouted at them before they administered their drugs. No form of checking if the medicine is taken or not. For those in the hospital ward, when the nurses are administering their drugs, they make sure they attend to them as quickly as possible, so they can be out of the ward as soon as possible.* (Field notes observation)

In addition, the patients normally sat in a waiting room area of the TB clinic about 10 feet away from the nurses. The patients were in the hospital ward receiving treatment, but when the nurses visited their ward, they normally covered their mouths and made sure that they attended to the patients as quickly as possible to enable them to leave the ward, as they were scared of catching the disease. The doctors and nurses did not verbally express their feelings to determine who interacted with the PTB patients at the hospital. However, the HCWs attitude toward patients was reported by patient 2.

> *The HCWs' attitudes are bad toward the patients. The patients are always blamed for not seeking help in time because they think the patients first seek traditional healer for spiritual cleansing, and when they come to the clinic, they will not tell the truth, and the HCWs also will not assist the patient enough or confirm if they have been to traditional healers or have been using any other medication.* (Patient 2)

The above quote reports the HCWs' attitudes towards PTB patients; their aversion to the PTB patients contributed to a vicious cycle in which the patients, sensing this aversion, became even more prone to negative emotions, such as loneliness, anger, neglect, abandonment, boredom, and stigmatisation, which made it more difficult for the HCWs to support them appropriately. The negative attitude of the HCWs towards those they were supposed to be helping was evident to the patients themselves. One patient reported:

> *The nurse's attitude here is very poor; the order they receive patients is very poor. They shout at them, they call them names, and they are ignorant.* (Patient 1)

Patient 1 reported that most of the HCWs shouted at the patients, asking them to produce sputum for tests on their own without supervision, calling them names, and mocking their ignorance when they did not know what to do.

The prevalence of this ostracism by HCWs was also corroborated by a receptionist from one of the clinics and in the general discussion within the university FGs:

> *Yes, the HCWs may not be friendly, they may just put them aside, and the patients may say, 'What am I doing here?' They may not come back again, so the HCWs' attitude toward patients is bad.* (Receptionist 1)

> *Participant 1: The nurses and doctors' attitudes are very bad to patients. They complain that they are not well motivated; they go on strike - even if the patients are in difficulty, they don't care.* (University FGs)

During observation, I witnessed patients being neglected when they came for treatment while the HCWs were on strike for the lack of payment of wages. Despite this justifiable cause for a strike, the health authority did not ensure that trained staff were available to assist the patients. Inadequate care can prevent many patients from returning for treatment, and this can result in further spreading of the disease. This is supported by the quote below:

> *Initially, I did not know it was PTB. I easily got tired and lost a lot of weight and was wondering what was wrong with me. I went to the hospital ... When I report to the doctor, he makes sure I do not come near him; so, I realized that PTB patients are not considered as human beings.* (Patient 5)

The above quote was from a patient in the initial stage of her illness; she was unsure of what was wrong with her but had noticed symptoms such as tiredness and weight loss. She later sought treatment and was much later diagnosed with the disease. Doctors and nurses have a professional duty of care to all patients to reduce the risk of healthcare-associated infections, including PTB. They also have a duty to address not only their patients' physical needs but also any psychosocial problems arising from the treatment they receive because of their illness (Zachariah *et al.* 2009). The role of the doctor is clearly to treat the patients and cure diseases, but if the fear of being infected by the patients is a major concern, then who will be responsible for the treatment of these patients, and where will the patients get help or information? Nonetheless, despite the need for training about communicating effectively with the patients, my observations must be set within a context of high workload, the staff not being paid, and the lack of basic equipment, such as face masks and resources, to maintain high-quality care.

Overall, the findings identified that doctors and nurses were hostile and unprofessional towards patients with PTB. This led to some patients preferring not to return to the hospital for further treatment. The situation at Akure South seems particularly acute, based on the testimony of interviewees and observations. Time and again, I was made aware of patients who were let down by the system that was supposed to be looking after them:

> *When I was in the hospital for my sputum test, I was told to come back three days after the testing for medication; nobody examined me or came near me.* (Patient 4)

The statement above indicates that the HCWs distanced themselves from the patient during the collection of sputum for testing. This lack of a clinical examination may have been due to disorganisation or to a high level of fear of PTB infection among some of the doctors and nurses. Nevertheless, if trained HCWs are unable to supervise the patients to obtain the correct sputum samples for tests, how will accurate results be obtained to confirm whether the patients are positive or negative before the commencement of drug treatment? The lack of knowledge or training, particularly among nurses, may result in more errors in the diagnosis results and the inadequate treatment of the disease, which may lead to an increase in the prevalence of the disease in the wider community.

One of the community doctors interviewed, sated that both ignorance and fear contributed to the negative behaviours of HCWs.

> *The only times the issue of discrimination occurs is due to ignorance and fear, and this happens with health workers that are not used to seeing the patients, especially those that are not directly involved with them.* (Doctor 2)

The evidence above demonstrates that the fear of infection is still a major issue among some nurses and HCWs who work directly with PTB patients. The question, then, is why this should be the case given that it would be reasonable to expect the HCWs to have been immunised before coming into contact with the patients. This safeguarding routine was described by one of the doctors:

> *Everybody is expected to be vaccinated during childhood; it is part of the national immunization program. All waiting areas are open areas to minimize the risk of infection to health workers. Masks are also provided for patients that cough seriously; they are also educated on what to do during coughs, for example, to use a handkerchief to cover their mouth. Before a health worker is employed, they are meant to undergo a number of health tests; every health worker is supposed to have a medical examination of fitness. In addition, part of the examinations done is to check the vaccination history. If all vaccinations have not been properly done, then the worker gets vaccinated.* (Doctor 4)

This quote describes the existence of a proper procedure for the staff to undergo as well as the availability of TB vaccination. However, the nurses and HCWs, despite being protected and immunised, still kept their distance from the patients for fear of infection, is an issue which may need to be addressed through training. This discrepancy can be partly explained by the lack of equipment for the nurses and doctors to protect themselves. Some of the HCWs reported that their fear of interacting with the PTB patients, going beyond the simple fear of infection, stemmed from the lack of protective materials while they were on duty, as stated below:

> *There is nothing to work with - no gloves for staff. Sometimes, our salary was not being paid for five months, and still we needed to come to work. How then can we protect ourselves and control infection?* (Nurse 2)

Menzies *et al.* (2007), in a systematic review of the risk of TB infection and disease associated with work in healthcare settings in India, found that HCWs have a substantially increased risk of occupationally acquired TB infection and related diseases. This study found that such a risk is due to the lack of basic equipment, staff shortages, and delays in salary payment, which also contribute to the negative behaviours of nurses towards PTB patients.

Most of the nurses, particularly those working at the PTB units, reported that the equipment required for them to do their work was not adequately provided as indicated above. They pointed out that health management gives less priority to the needs of the PTB programme and services; the logistical support they needed for the day-to-day running of the units was unavailable, resulting in a lack of basic materials and equipment. In this context, the fact that they feared becoming infected is hardly surprising. Baussano *et al.* (2011), in a study on TB in HCWs and infection control measures at primary healthcare facilities in South Africa, reported that the average annual risk of developing TB was three times higher for HCWs (across all settings) compared to the general population. Other studies also indicate that health professionals in resource-poor countries are at a higher risk of acquiring PTB in the course of their work. Seidler *et al.* (2005), and Curran and Ahmed (2000) found that some of the HCWs were being immunized before taking up their appointments, but because of the lack of funds, not all the staff were protected from the risk.

The need for vaccination for HCWs before commencing work is highlighted by various studies. According to Farhat *et al.* (2006) in a study on TB among HCWs in high-burden countries, having a BCG vaccination after infancy will not be sufficient to prevent the HCWs from becoming infected with TB. Similarly, Zwerling *et al.* (2015) indicated that the BCG vaccination in most high-burden countries is given only once, in early infancy, so the vaccination will most likely not be effective for life. Therefore, the study concluded that HCWs in high-burden countries remain at increased risk of TB infection. Therefore, if the Akure health authority does not provide its HCWs with recent BCG vaccinations at the point of their employment, the staff may justifiably fear infection, making it difficult for them to provide quality services to their patients, as they should. However, data regarding the vaccination status of the doctors and nurses interviewed were not collected. However, one of the reasons for the HCWs' expressed fear is that they were not provided with the protective equipment necessary to prevent infection.

However, this study also found evidence that some of the HCWs' attitudes may also be influenced by traditional beliefs, as stated below:

> *What I know about traditional healers is they are people who treat people with the local herbs and concoctions to cure many diseases. They cure PTB and believe and are confident in themselves that they cure PTB. I also believe that they can cure. They may not be educated people, but they are people with wisdom and knowledge and know something as well. I would say they can* [cure people]. (Receptionist 2)

It is apparent that this healthcare receptionist remained under the influence of traditional and/or religious beliefs and lacked the HCWs' training. Even in the micro-culture of a modern hospital, various attitudes are at work. Here, scientific and medical knowledge concerning the cause and spread of disease mixes with more traditional attitudes and beliefs. The HCWs are not sealed off by their knowledge from the rest of the population; outside their workplace, they are, of course, ‘community members’, like everyone else. Thus, as is evident from the above quote, individual HCWs might embody and express a complex mix of attitudes towards their patients. On the other hand, they are ordinary community members who, in their private lives, may be influenced by the same mix of traditional, family, and religious beliefs as their friends, neighbours, and acquaintances. As the healthcare receptionist is the first point of access to treatment, they must be fully informed of the efficacy of medical treatment and remember that patients are encouraged to seek such treatment.

The evidence from patients, their carers/relatives, community members, and HCWs confirmed that the fear of PTB is common among nurses and other HCWs – such as the receptionist – given the severity of the disease and its ease of transmission. The evidence further showed that this fear significantly affected some HCWs’ behaviour towards PTB patients. The patients did not necessarily receive high-quality care, as they should have, because, in particular, the nurses were frightened of being infected themselves. Within this subtheme, a significant part of the poor treatment given to PTB sufferers is caused by fear of the disease. Although PTB is, of course, a serious disease if untreated, the findings indicated that many of the fears surrounding the disease are either unsupported, being based on mistaken beliefs about its origin and causes, or only valid in the context of a healthcare system that fails to provide adequate information and resources to its own staff. Addressing these key deficiencies would contribute significantly to promoting more positive cultural attitudes to PTB in the Akure South community.

5.2 HEALTH-seeking behaviour of PTB patients and delays in seeking treatment.

This subtheme presents the health-seeking behaviour of PTB patients and delays in seeking treatment. The aim is to aid the understanding and interpretation of the data collected from PTB patients and their carer/relatives, HCWs, community-nominated leaders, and community members. The HBM has been applied as the theoretical framework and this is presented in Chapter 9. Furthermore, when the data were analysed, the following categories emerged – the lack of knowledge of PTB disease, cultural beliefs, and religious beliefs. These are discussed below.

5.2.1 Lack of knowledge and understanding of PTB.

Among the five patients interviewed, four reported that they had sought over-the-counter self-medication and consulted with local Traditional healers before visiting the healthcare centre or hospital for treatment. Only one patient reported that they had sought medical help without delay. A typical example of responses from those patients who had delayed seeking treatment was indicated below:

> *I just used a mixture of lime juice, honey, and 'Epa Ijebu'* [traditional medicine]. *I was also eating bitter kola and licking Tom-Tom* [a menthol sweet]. *When none of these worked, I went to the chemist, where I was given drugs. The symptoms subsided at this point but then later came back.* (Patient 1)

As indicated above, the patients sought self-medication in various places, and only when the over-the-counter medication ceased to work did, they go to the hospital for treatment. Given that four out of the five patients utilised self-medication before seeking healthcare services, inadequate knowledge of PTB was evidently common. Furthermore, this lack of health awareness in the community led to the members not being able to assist the patients by directing them to more appropriate centres for PTB treatment.

The lack of basic health awareness of PTB symptoms is also indicated in the quote below:

> *I thought I had malaria. I was treated for malaria, but the symptoms I felt persisted. I then went for a malaria test, the result of which was negative. It was then that I started experiencing a cough. I was tested for PTB at the time, and the result came out positive. I have been receiving treatment from that time.* (Patient 3)

This patient's insufficient knowledge and understanding of the symptoms of PTB led to a delay in receiving treatment. Although, in this case, there was only a minor delay in treating the patient, as PTB is a communicable disease, any delay in the treatment can result in a wider spread of the disease among the community members or an increased risk of mortality. This was pointed out by Nyamongo (2002) on the healthcare-switching behaviour of malaria patients in a Kenyan rural community with 35 adults (18 women and 17 men). The results showed that the patients were more likely to administer self-treatment at home as they monitored their own progress. This allowed them to minimise the expenditure incurred as a result of the sickness. Although this finding is not directly transferable to this study, as it was carried out with malaria patients, the philosophies behind the patients’ self-medication before seeking help from medical doctors or nurses were similar. What can be argued here is that the lack of understanding of PTB significantly contributed towards the delay in the diagnosis and treatment of PTB. This indicates a need to educate people on the signs and symptoms of PTB and on the importance of seeking medical help at the onset of their illness rather than visiting local chemists or Traditional healers for help. The lack of health awareness also led to isolation from the community. The lack of healthcare literacy is evident from the quote below:

> *Illiteracy is still there because some of patients do not even know the symptoms of PTB let alone diagnosing it. So, the aspect of public enlightenment is necessary for the community members on* [PTB] *are on top of it but it is not adequate.* (Community-nominated Leader 1)

The above view reported by community-nominated Leader 1 indicate that the majority of community members do not know the symptoms of PTB or its diagnostic procedures. In the Akure South community, the level of illiteracy is high as indicated in the findings which has an impact on patients’ health-seeking behaviour. For instance, as indicated in chapter 6 the knowledge and perception of PTB, the majority of the patients interviewed did not have sufficient knowledge of PTB, and some had not even heard of PTB; nor could they read or write. This deficiency in health literacy on PTB may hamper their treatment-seeking behaviour and contribute to delays in diagnosis and treatment adherence, leading to the high PTB burden in Akure South. In support of the above views, a study on health literacy amongst TB patients in a general hospital in North Central Nigeria, conducted by Elbireer *et al.* (2011), stated that the lack of adequate health literacy on treatment requirements was the major pitfall in treatment adherence. A similar view was reported by a carer/relative of a PTB patient:

> *My son had been ill for some time, and we had been using different self-medication both from the chemist and traditional medicine, but there was no cure. Then he started coughing blood and we took him to the hospital.* (Carer/Relative 2)

The above quote indicates that some carers and relatives seek help in many places to find effective cures. This finding is supported by a study conducted on the factors associated with delayed TB test-seeking behaviour in the Peruvian Amazon, in which 108 participants aged 14 years and above participated (Ford *et al.* 2009). The results revealed that a lower level of education led to delayed TB test seeking, which was consistent with findings from a study in Zambia (Needham 2001). Another study was conducted by Kingsley *et al.* (2013) on healthcare-seeking behaviour, treatment delays, and their determinants among PTB patients in rural Nigeria. This was a cross-sectional study with 450 patients aged 30 years and above, and the results indicated that 84% of patients reported that they had first consulted a National Tuberculosis Control Programme (NTCP) provider. The overall results showed that the delay was due to stigma and the lack of knowledge of the disease, with many people thinking that PTB symptoms were just a common coughing spell that could be cured with over-the-counter medication; this belief lasted until the condition became unbearable, after which they visited a hospital or TB clinic. This delay in the diagnosis of PTB-related issues contributed to TB-related morbidity and mortality as well as growing drug resistance.

One pharmacist reported on patients' lack of understanding of PTB:

> *In this environment, before people come to the hospital, they will have tried so many things, like visiting pastors and using herbs, and when they don't see any improvement, they come to the hospital.* (Pharmacy)

As indicated above, people seek self-medication and visit various places without being cured. It is only when the over-the-counter medication fails to work that people go to the hospital for treatment.

One nurse reported that some of her patients believed that PTB was inherited:

> *Some even say the disease is always inherited, because it keeps re-occurring in their family, they go to traditional healers looking for a cure, until the disease gets to a very bad stage, and then they come to hospital. That is one of the barriers* (Nurse 2).

This belief may be grounded in reality. PTB may well keep occurring in a family but not because the disease is hereditary; instead, sufferers who do not seek immediate help are very likely to pass the disease onto family members. This tendency unfortunately encourages the belief that PTB is an inherited disease. This is yet another example that demonstrates the need for a health-awareness programme in the community to enlighten people on the fact that PTB can be cured.

Having examined the views of PTB patients, community members, and HCWs on health-seeking behaviour and comparing these with relevant examples from the literature, I concluded that the factors associated with patients' delay in seeking healthcare are largely due to a lack of understanding and knowledge of the disease, particularly with regard to whether or not it is curable. This calls for a need for more health promotion education and awareness for the Akure South community on what PTB is and on where to get help as soon as possible to eliminate this disease.

5.2.2 Cultural and religious beliefs

In this section, the influence of religious beliefs on delays in seeking medical help is presented and discussed from the perspectives of the various study participants. Cultural norms led to delays in seeking medical treatment. The two doctors quoted below recounted the way patients had sought alternative providers before visiting the hospital for help:

> *So, the quality of life of TB patients is not pleasant, especially those that have been running helter-skelter from traditional healers, requesting them to make certain provisions* [rituals and sacrifices] *before they can cure them; and so, by the time they get to the health centre, it affects them because even when healthcare is free, they still find it difficult to transport themselves down to the healthcare centres for treatment.* (Doctor 2)

> *They go to traditional healers looking for a cure, until the disease gets to a very bad stage, then they come to hospital. That is one of the barriers.* (Doctor 4)

The statements above indicate that the patients frequented Traditional healers before seeking medical help. The lack of health awareness in visiting the healthcare centre, compounded with faith in Traditional healers (many patients had paid a lot of money for Traditional healers' 'consultations' for a PTB cure) made the matter worse. Furthermore, the issue of cultural beliefs made the community members and patients believe that the cause of the disease was either the devil or a punishment from God because of their immorality as stated in chapter 6 knowledge and perception of PTB.

> *Some of them believe that it* [PTB] *is due to witchcraft, and it is caused by a witch, or punishment from God* (Nurse 2).

Given such beliefs, they suspected that the only cure was either from God or from Traditional healers, whom they believed in as part of their cultural norms. Traditional healers commonly asserted that PTB resulted from being bewitched and that the source of the disease was from dreams and nightmares used as routes of infection by the witches. Notions such as these were usually why many uneducated patients did not believe that orthodox treatment would heal them of the disease. Such behaviour led to delays in treatment and diagnosis and often resulted in health complications, ending in high levels of morbidity and mortality.

> *When people come to us for treatment, we examined them, and some are being attacked by witchcraft that sends PTB to them; that is why people should be careful* (Traditional Healer 1).

Considering the above quote, some of the Akure South community members believed that PTB was sent to them by the power of witchcraft and that the only way they can be healed is through traditional medicine. This traditional culture embedded in society is particularly strong in Akure South; therefore, there is a need to address this serious knowledge gap to encourage the users to access appropriate healthcare services. These findings are supported by those of a study by Cambanis *et al.* (2005), who investigated the duration and associated factors of patient delay during TB screening in rural Cameroon, with 243 participants aged 39 and above. The study revealed that patient delay in Cameroon lasted approximately 1–4 weeks, which is shorter than the 2–13-week delay in Ethiopia. Significantly, fewer patients delayed treatment for more than 1, 2, and 3 months in Cameroon compared to those in Ethiopia. These delays were significantly associated with being the main income earner, the belief that TB is stigmatizing, and the use of traditional medicine, with the last being the only significant factor in both studies. The main similarity between this study and that of Cambanis *et al*. (2005) was the delay caused by patients visiting Traditional healers rather than seeking a cure in an appropriate health centre.

Many doctors reiterated the problem of cultural beliefs and their impact on health-seeking behaviour:

> *So instead of going to doctors, they go to Mallams, Alfas and Sheiks. That's where the problem lies; differentiating between what is caused by spirits and what is caused by microorganisms. There are so many people who are poorly trained in communities in their major sect* (Community Doctor).

A similar view was reported by another doctor:

> *There are still people that visit medicine vendors, traditional healers, mission houses, or deliverance homes manned by religious bodies to seek assistance. There are people that still believe PTB is a curse, either from their ancestors or the gods* (Doctor 1).

Doctor 5 went on to report the lack of health awareness by patients:

> *Most people are not aware of the early signs of tuberculosis. They are not aware of the fact that it is caused by a microorganism. They attribute it to not fulfilling religious rites or tenets. They are not aware of where drugs are and how they can access them. They don't know where to go to. Many people don't go to the correct places. So, lack of information and cultural orientation are major barriers to treatment of TB* (Doctor 5).

Community nominated leader2 reported why community members prefer to seek help from traditional leaders.

> *Akure community members prefer to go to traditional healers or church for their PTB treatment rather than to go to the hospital, as they are used to local treatment, which is not ok. The PTB sufferers believe if people find out, they will be trying to run away from them because of the disease; that is just because of local belief - they don't want to associate themselves with the people with PTB* (Community-nominated Leader 2).

The above quotes indicate the strength of cultural beliefs and insufficient education regarding the cause and treatment of PTB on health-seeking behaviour, which compounding this to the delay in seeking help as many people did not aware that TB treatment is free in Nigeria. The findings in this present study were consistent with those of other studies conducted among TB patients in India and elsewhere. Uplekar *et al.* (2001) and Ahsan *et al.* (2004) found that patients prefer Traditional healers because of their comparatively easy access and friendliness. Similarly, Waiswa *et al.* (2008) found that TB patients, before presenting to public health centres, first visited private practitioners, where diagnosis was often inadequate, thus delaying TB diagnosis and treatment. In addition, a study by Kobaidze *et al.* (2009) found that many patients in high-burden countries purchased TB drugs in private pharmacies without prescriptions. This, therefore, created the conditions for the uncontrolled and inappropriate use of drugs, which can exacerbate the issue of antimicrobial resistance. Many of the interviewed HCWs reported that patent medicine stores had the most affordable treatment in the community and were easily accessible, thus becoming the dominant health provider and the first port of call for most people with TB. This inappropriate practice of seeking out treatment at medicine stores for PTB can result in varying degrees of health complications. While PTB drug treatment is free, other costs that patients incur while they are ill – such as accommodation, food, clothes, transportation, and, in some cases, further treatment costs – are not included in the free treatment.

A study conducted in Mali and Nigeria (Uzochukwu, 2008; Ellis *et al.* 2012; Akande, 2009; Chukwu eke *et al.* 2012; Ore agba, 2004). In these studies, a greater proportion of the patients sought healthcare from medicine stores/dealers and Traditional healers than public health centres. This could be explained by the fact that patent over-the-counter medicine stores and dealers are more readily available in rural areas (Ellis *et al.* 2012). In Nigeria, the presence in all regions of Traditional healers who are registered either with Edo State or other states with traditional medicine boards (Edo State Ministry of Health 2010) gives community members the confidence that they can be cured when they seek help from them as indicated in the chapter 6 knowledge and perception of PTB. However, the confidence gained by the community members as a result of Traditional healers being registered with the Ministry of Health is not as valuable as high-quality PTB awareness and the knowledge of the effective measures to take when PTB symptoms appear. Many of the interviewed HCWs pointed to the fact that patent medicine stores were the most affordable places of treatment in the community. In the words of a community-nominated leader:

> *This is what I said initially: the local people believe in traditional healers, which is not western medicine, and when western medicine came in, people started to get relief from those diseases. The traditional healer's treatment is trial by error, whether they could heal people or not. But in western medicine, there is definitely a drug for the treatment of these diseases.* (Community-nominated Leader 1)

The majority of the HCWs and community members stated that most of the PTB patients, when experiencing TB symptoms, had first approached Traditional healers, the church, or private doctors while seeking help with their illness. It was reported by the nurse that the shopping around by patients visiting patent medicine store and private sector has often been related to patient choice and delay in accessing TB clinic as indicated below:

> *Many of the TB patients first visit the medicine store to buy cough medicine in the early stage of their illness rather than going to the hospital until they don't see any improvement and things are getting worse* (Nurse 2).

The above statement reported by Nurse 2 demonstrates her belief that many patients first shop around before visiting the TB clinic. This finding was supported by a study conducted by Ukwaja *et al.* (2017) on healthcare-seeking behaviour, treatment delays, and its determinants among PTB patients in rural Nigeria with a sample size of 450 patients, male, and female aged 18 – 65 years. The study revealed that 84% (95%CI 80, 87) reported first going to a non-NTP provider after the onset of TB-related symptoms. Patients who initially went to a non-NTP provider were similar to those who initially went to an NTP provider regarding age (P= 0.4), gender (P =0.5), residence (P = 0.3), educational status (P =0.2), HIV serostatus (P =0.5), and smear status (P = 0.2). Non-NTP providers initially consulted were mainly pharmacy/drug shops (79%), Traditional healers (10%), and private clinics (10%). For patients who first visited a non-NTP provider, their main reported reasons for not first visiting a public facility were because it was too expensive (22%), it takes time (26%), it is a long distance to the facility (23%), they have the belief that they will get better services elsewhere (18%), and they do not trust the public facility (10%).

Whatever the underlying reasons, in most cases, delays in seeking treatment and associated setbacks in obtaining a diagnosis prevented early treatment that could have counteracted the disease. This is of utmost importance in PTB care from two important perspectives. First, PTB requires timely treatment, and second, it requires protracted treatment. A good level of knowledge, along with positive health behaviours, helps patients accept timely help from an appropriate health facility. Hence, informing community leaders of the true cause and treatment of PTB may be one way to raise awareness and thus reduce morbidity and mortality. This finding is supported by those of a study by Sumartojo (2016) in a rural district in Kwa-Zulu Natal, South Africa. He reported that the TB patients said that they had first gone to Traditional healers, who ascribed the disease to bewitchment or food poisoning. Therefore, the community needs better health education to promote adequate knowledge of the disease and its treatment and to facilitate quick access to an appropriate centre for treatment. Some patients still prefer to go to Traditional healers for help, implying the strength of community authority. In Nigerian culture, when a patient is suffering from PTB disease, the family and community provide advice on whether to seek help from the healthcare services or Traditional healers' medicine. This depends on the community members as indicated in the quote below; therefore, the patients regarded it as very important factor that cannot be ignored; as a result, patients pay a lot of attention to their families or community members and do whatever they recommend:

Community-nominated Leader 2:

> *It all depends on the community and the culture of that community. When you have a community with a particular culture, you must abide with the community. If these things are not adhered to, it could lead to major contact of PTB and it not being taken care of properly* (Community-nominated Leader 2).

A similar report was given by Community-nominated Leader 1:

> *Yes, people will be trying to distance themselves from the people with the disease, just because of local belief, they wouldn't not like to associate themselves with the people with PTB?* (Community-nominated Leader 1).

As stated above, statements from the two community nominated leaders presented their view that the cultural beliefs of the local community have a very strong influence on the community members. Studies such as that of Navaneetham and Dharmalingam (2002) indicate that some families may advise the patient to visit church pastors for prayers or to try traditional healers to determine the cause of PTB and to cure it. However, in reality, all this leads to delays in the patient accessing medical treatment. Similarly, studies by Haasnoot et al. (2010) and Kasse *et al.* (2006) in rural South Africa identified that PTB patients had consulted traditional healers as their first point of contact to seek help for their disease before seeking hospital treatment.

An effective TB control program requires early diagnosis and immediate initiation of treatment. Delay in diagnosis is significant with regard to not only disease prognosis at the individual level but also transmission within the community and the reproductive rate of the TB epidemic (Storla *et al.* 2008). In this study, three out of five of the PTB patients interviewed sought help elsewhere before visiting clinics, with the implication that treatment delay can result in greater morbidity and mortality. Many HCWs and nurses agreed that patients held deep-rooted Christian beliefs regarding the disease and saw Christian religious groups as an alternative provider before visiting the hospital for help.

Nurse 3 suggested that patients were led to visit churches for a PTB cure:

> *As humans, most of the time we go to the churches first to find a solution to our problems. It is possible at this point that patient are led through*

> *spiritual visions to believe that it is their grandfather or grandmother that is behind the problem* (Nurse 3).

The statement reported by the nurse suggested that people normally seek help from the church to find solutions to their problems. In most cases, the patients were led to seek help from spiritual people, who would share with them misleading information about their illness. Some HCWs corroborated the statements of patients and community members, who were unaware of the cause of PTB but also indicated a lack of awareness of where to access drugs. More importantly, the nexus between Christian and traditional beliefs and the subsequent delay in diagnosing patients was identified as another key factor delay in PTB treatment. As reported in the university student FGs:

> Participant 1: *Some Christians believe you don't have to use drugs to be healed. Even when they are advised to go to the hospital, they prefer to pray and expect healing while their condition worsens* (University FGs).

The above statement indicates that some religious groups believe that they do not need to use medication and that God will heal them, as they believe that there is nothing God cannot do. Among the participants from the Christian community of Akure South, some believed that only prayer (and not medicine) could help PTB sufferers. However, the belief in a spiritual cure was a feature not only of Christian communities but also of communities where traditional beliefs were practised. Comparing the beliefs of Christian groups with those of Traditional healers, some Christian groups believed that patients do not need to take medication or to go to the hospital for treatment, while believers in traditional healers acknowledged the need for treatment but sought it from folk medicine rather than the hospital. In the Muslim community, similar beliefs are prevalent; although the strength of belief varies from individual to individual, many believed that Allah was capable of curing any kind of disease. One FGs participant stated:

Another FG participant reported:

> Participant 2: *Some patients and their families believed that bad jinn may have sent their illness and turned to their Imams and Mullahs for religious instruction and comfort* (Muslim Women FGs).

The above quotes indicate that some participants believed PTB disease to be caused by bad spirits in the Muslim community, with the result that they turned to their Imams and Mullahs for religious instruction and comfort rather than seeking help from doctors or nurses. This delay in seeking appropriate care may lead to more health complications as well as the spread of the disease among the family and the wider community. A good level of knowledge, along with positive health behaviours, encourages patients to accept timely help from an appropriate health facility. Perhaps the most important point to stress is that faith in an all-powerful deity has important consequences in terms of help-seeking behaviour. One doctor's statement gives an insight into this:

> *That is true; the people are very religious. So sometimes, the people may not believe in the theory of disease causation. They would rather believe in the superstitious theories* (Doctor 3).

A similar statement was reported by a community nominated leader:

> *This is what I said initially: our people - the local people believe in traditional healers or going to the church to seek assistance for their PTB, which is not western medicine* (Community-nominated Leader 1).

This statement supports the idea that some of the Akure South community members strongly believe that only God can cure diseases and that faith in God has curative powers. This belief is highly predominant among modern Christians in Akure South and shows strong parallels with the findings of a study by Mesfin *et al.* (2009), in which Orthodox Christian PTB sufferers in Ethiopia were initially treated with holy water, which was identified as a cause of patient delay in seeking a cure for their illness. Another fundamental reason for the continuing influence of Christian and Muslim religious beliefs is the lack of health awareness that could have educated patients about the disease, leaving a vacuum which religious groups are able to fill.

5.3 THE INFLUENCE OF POVERTY ON PTB PATIENTS' ACCESS TO HEALTHCARE SERVICES

In this subtheme, findings on the influence of poverty on PTB patients' access to healthcare services under the loss of income, the cost of transportation to the TB clinic, and the cost of food and medication are presented. To aid the understanding of these findings, poverty must be defined in the health context. Benatar and Upshur (2010) stated that poverty is a condition of life severely limited by malnutrition, illiteracy, disease, squalid surroundings, high infant mortality, and low life expectancy. This includes the lack of basic commodities, such as food, clothing, sufficient income, and shelter. Poverty can result in illness as a result of malnutrition that can compromise the immune system and can act as a barrier to healthcare access. The World Bank (2001) defined poverty as a multidimensional phenomenon that includes the lack of opportunity, the lack of employment, and the lack of security. In Nigerian society, the factors that contribute to poverty are varied; among the most important are high unemployment, corruption, non-diversification of the economy, income inequality, and a poor education system (Garcia *et al*. 2006).

5.3.1 Loss of income

Community members, community leaders and religious leaders, patients, carer/relatives and HCWs generally agreed that being diagnosed with PTB had financial consequences for the individual and their family. Often, these individuals were already living on limited incomes, which was exacerbated after PTB diagnosis. Although PTB services are free in Nigeria, patients still face considerable expenses and financial loss before and during treatment. Most of the costs are due to the loss of income. One patient reported:

> *I was a trader before my sickness and was travelling around the country selling, but because of the sickness, my business has collapsed. I have no money and I have exhausted all my savings to access treatment* (Patient 1).

The above quote demonstrates the impact of PTB disease on the patient's loss of income and savings. Another patient reported a similar view, as follows:

> *Before, I was selling food, but I tried to hide my cough, so people would buy from me. But when people became aware that I was coughing all the time, they refused to come and buy from me again* (Patient 4).

Generally, severe coughing in public and weight loss caused embarrassment and were socially unacceptable among the members of the community. The fear of infection made people keep their distance from PTB sufferers who coughed in public, thus making it difficult for them to earn money to take care of themselves:

> *For those that work in an office, if people know of the disease the sufferer will be advised to go home and not to come back until the disease is cured. For a person selling food, people will not go near her to buy* (Receptionist).

A community-nominated leader commented:

> *The patient will not be able to lead a normal life and she/he will not be able to work. Their movements will be restricted, and they may be kept in a place, in an isolated place* (Community-nominated Leader 1).

This view regarding fear of contagion was also expressed in the university FGs:

> *Participant 2: I agree the patient will lose their job and people will be talking about them and the community members will run away because of fear of infection as they see the disease as contagious* (University FGs).

The above quotations demonstrate the experiences faced by PTB sufferers while at work. Since the disease is highly contagious and because of the stigma associated with it, many people fear getting infected, which is understandable in terms of protecting the health of the rest of the employees and promoting public health. Therefore, when people are informed of the type of disease the patient suffers from, some employers tell these patients to leave their work, resulting in unemployment, a financial crisis for the family, and the patient's inability to acquire the necessities to deal with their illness. All social groups are affected by this sort of social exclusion, whether working in offices or as street traders. The loss of income typically has negative consequences for the extended families of the sufferers. Family support is essential in the lives of PTB patients, as in most cases, the family provides daily food while these patients are in the hospital. Families also provide money for transport to the hospital and visit and stay with them until they are well:

> *The kind of help that comes that I have seen are from relatives. They donate things, contribute money, mainly that's it. The government and NGOs donate drugs* (Community doctor).

Another participant remarked:

> *PTB patients cannot work when they are ill and depend on family and friends to survive in terms of financial support* (Church FGs).

However, this creates a great burden on the family when there is no further help from the government, as seen in the quotation below:

> *However, it has affected my income, which made it difficult to purchase food and nutrition to support* [my husband]*, which affected my functions in the house* (Patient 5).

Negative consequences for families were also reported, as in this interview with an HCW:

> *PTB itself prevents the patient from working. If the patient has a job that pays daily, it affects his/her income, and once it affects the income, if he/she is the breadwinner, the dependents are affected, their quality of life is affected, and they become susceptible to other diseases* (Doctor 2).

Some patients' carers/relatives reported receiving no support besides their faith:

> *Aside from the support from God through holy water, I have not received any kind of support* (Carers/relatives).

What aggravates this situation is the perceived inadequacy of financial support from the government. In Nigeria, government programmes are in place to tackle PTB as discussed in chapter 1 introduction. These include provisions in terms of management of PTB like provision for community rehabilitation programs and new housing schemes; these were not available at the time I was collecting this data, as there was reduction in funding due to the economic recession. One doctor commented on the continuing availability of funding despite the economic recession.

> *It is part of the responsibilities of the local government. There is a health unit of the local government. And, of course, there are a lot of sponsors, NGOs, which provide funding. In terms of treatment, there is the German Leprosy PTB Programme that is providing facilities. The state and federal government also sponsor through their various institutions, in terms of providing enlightenment and prevention services. These sources of funding are all still available; they have probably reduced due to the economy recession, but they are still ongoing* (Doctor 1).

Regarding the above statement reported by doctor 1, the TB funding is provided by various sponsors as indicated above, but there were problems with a lack of finances due to the economic recession.

In support of the above findings, Ukwaja *et al*. (2012) reported that in Nigeria, TB treatment is the responsibility of the NTBLCP, which strives to reduce patients' costs by removing user fees and fees for anti-TB drugs and laboratory tests. It has also introduced a community-based DOTS strategy to reduce such costs. However, the total care cost to patients and their households, from the onset of the illness to treatment, is yet to be properly assessed and accounted for. Umar *et al.* (2012) stated that despite the NTBLCP's strategy, many patients are prevented from accessing healthcare because of the lack of funds, as they still need to pay administration fees to access the system. As one participant put it:

> Participant 1: *The help they are offering the patients at present is not enough. The government only offers help for drugs. They need to render more help for the patients* (Muslim Men FGs).

Even with regard to the treatment itself, despite the government's provision of free PTB drugs, complications that may arise during treatment and may require different kinds of medicine are not considered. If a secondary infection develops, for example, the costs of this treatment must be borne by the patients themselves. In addition, the patients have to pay for card registration before they can be seen by any doctor. If the patients cannot afford treatment, then their families will be responsible for their care. The direct and indirect costs of PTB and their social consequences are often catastrophic for the patient, their family, and the wider community (Hanson *et al.* 2006). In fact, because of these associations, many patients suffering from this disease are unable to seek help at all:

> *I told you he hadn't been able to go to his work. They told him to go and take care of himself and come back when he was cured from PTB completely, so that has been affecting him a lot, as his income is reduced* (Carers/relatives).

This problem is compounded by the fact that sufferers might not be aware that some government help is available free of charge:

> Participant 2: *Some patients without a job will not have money to buy the drugs and they may not be aware the drug is free. Some will die due to poverty* (Muslim Women FGs).

Thus, the lack of awareness of existing free PTB medical provisions may lead to the spread of infection to the wider community. Another aspect of the consequences of PTB and the associated loss of income is the demoralization of sufferers who no longer see themselves as integral parts of a functioning community, as indicated in the quotations below:

> Participant 1: *It takes away your time and prevents you from taking care of your family. It could result in hopelessness and waste of life. This kind of disease condition is demoralising* (University FGs).
>
> Participant 3: *It is a big problem because it affects personal well-being and social interaction due to isolation and stigmatization. It will also affect finances. You won't be able to move freely as well* (University FGs).

Socially, the patients' roles in the family and community can be attenuated or lost altogether. Moreover, the majority of these patients may have spent their savings in consultations with various private providers, without receiving any cure, before coming to the hospital:

> *What I'm trying to say is that there are still people that visit patent medicine vendors, traditional healers, mission houses, deliverance homes manned by religious bodies to seek assistance* (Doctor 2).

A similar view was expressed in the Muslim FGs as follows:

> Participant 1: *PTB patients visited traditional healers for help, as the patients received very good care and believed that they could receive a cure for PTB disease by using native herbs and concoctions, which cost a lot of money* (Muslim Women FGs).

During these consultations, most of the sufferer's savings will be spent needlessly, reducing their ability to find the resources to support their families and tackle the disease. Despite what has been said about the exclusion experienced by all socioeconomic groups as a result of PTB symptoms, the actual prevalence of PTB can be highly class dependent. A study by Boccia *et al*. (2011) conducted in the diverse settings of South Africa focused on the association between household socioeconomic position and the prevalence of PTB in Zambia, with lower socioeconomic groups experiencing higher PTB prevalence. The study found that household food availability and vulnerability were the main drivers of such a link. Similarly, a study by De Alencar *et al.* (2009) looked into household crowding as a potential mediator of socioeconomic determinants of TB incidence in Brazil. The results indicated a positive association between TB incidence rate and income inequality as well as an inverse association between the disease prevalence and household income. A parallel study on TB and poverty in India revealed that unless the root cause of poverty is understood, intervening and addressing the proximal risk factors that put the poor at risk may be difficult, as a strong association exists between poverty and TB (*Creswell et al.* 2011). Similarly, a study by Hargreaves *et al.* (2011) looked at the association between household socioeconomic position and TB prevalence in Zambia, which indicated that although some epidemiological studies have sought to measure the effects of these determinants, only a few have addressed the question in the context of understanding the routes where poverty leads to TB. Further contributing to these findings was a study by Lonnroth *et al.* (2016) on the drivers of TB epidemics, which stated that social, environmental, and biological determinants of PTB are more prevalent among the poor than among wealthier groups and are likely contribute to a complex web of poverty-based risk factors that are difficult to examine separately. Similar studies have stressed the need to intervene not only in terms of the patients' economic status but also in relation to the proximal risk factors that put the poor at risk. Similarly, Jackson *et al.* (2006), in a study on socioeconomic factors affecting the success of TB treatment in six counties in Shandong Province, China, confirmed that poverty is both a determinant and a devastating outcome of PTB. It is closely associated with the socioeconomic status of the population and is a chief contributor to the vicious circle of poverty and disease among rural residents. Finally, a study by Hoa *et al.* (2011) on household expenditure and TB prevalence in Vietnam indicated a significant association between the two, with lower incomes being correlated with a greater incidence of PTB. Other potentially related causes were poor nutritional status, low education level, and other demographic factors.

In terms of possible solutions to the PTB poverty trap, the current programmes of government aid for the poorest patients are not sufficient to stop households from incurring expenditure for TB care in Nigeria for instance a study by Ukwaja *et al*. (2013) on household expenditure on PTB in Nigeria found that while government programmes lowered patients' costs through the removal of user fees, the decentralization of services, community-based care, and free diagnosis and treatment, there is an important question that needs to be answered empirically – that is, whether these programmes are sufficient to prevent impoverishment (Kawabata 2002).

The basis of this concept is that such a high level of spending must be at the expense of the consumption of other goods and services in the short or long term. This other level of expense is what is meant by 'catastrophic' (Wagstaff & Doorslaer 2003; Xu 2005), and it makes it difficult for patients to cope with their illness.

5.3.2 Cost of transportation to the TB clinic

In this section, the factors surrounding the cost of transportation to clinics for treatment are presented. Patients reported a lack of funds to travel to health centres for treatment:

> *Yes, lack of funds for transportation may impair access to treatment* (PTB Patient 3). *Funds for transport and support are the challenges encountered by PTB sufferers, preventing them from accessing treatment and cure because when there is no work, it is difficult to do anything* (Patient 4).

Carers/relatives were also affected:

> *Lack of financial support* [is a problem]. *Most of the time I have no money to take her to the* [TB clinic], *though sometimes my husband gives us money for transport and food* (PTB carer/relative).

Healthcare professionals concurred that transport costs were a barrier:

> *Even though* [healthcare] *facilities are close to the people, the people still have problems coming to the healthcare centres, probably due to the absence of funds to transport the patient to the healthcare centre* (Doctor 2).

While the facilities are close, patients may not be able travel to health centres for treatment because of a lack of funds despite possible help from relatives or friends, as their relative and friends will not be able to help all the time, which poses a risk of inadequate treatment, the development of complications, and the spread of the disease to the wider community. Since PTB is a socially determined disease, which most frequently affects people of lower socioeconomic status, poorer PTB patients are disproportionately affected by the cost of travel to health centres and clinics. Distances to the nearest health centres may represent an almost insurmountable problem for the poorest and most marginalized patients, who may have little support from their families or have been socially excluded from their communities:

> Participant 5: *The challenge is the accessibility to the treatment centre. The location of the DOTS, I can tell you, is very far from the patients … because of that, they just keep away and stay with themselves* (Church FGs).

According to the church FG, patient access to the healthcare centre is a major challenge because of the locations of DOTS clinics. Some treatment centres are more than five kilometres from the patients' homes, and even in cases where a centre is nearby, insufficient drugs may be available for all the patients, which necessitates more visits. The PTB patient carers/relatives below expresses a similar view:

> *Maybe the distance to the health centre from a patient's home is far and is costly in terms of transport; getting themselves to a treatment centre might be so difficult* (Carers/relatives).

The healthcare centre being far from a patient's home may result in the abandonment of treatment, which can, in turn, lead to the spread of the disease within the family.

Although, in theory, TB services are provided free of charge, in practice, for an individual to receive these 'free' services without first paying fees, such as a registration card to access care, is impossible. One solution in some cases has been to supply bulk medication. Complaints by PTB patients about their inability to travel to TB clinics daily because of transport costs have led to a treatment change in which the doctors order the nurses to give patients a month's supply of medication to help reduce costs:

> *Before, they came for treatment every day, but because they complained of a shortage of funds for transport, they were advised to come in once a month for treatment, as this will help reduce their costs of accessing treatment* (Nurse 1).

However, some patients may not take the drugs given to them, and this cannot be monitored since no support workers are available to check whether the drugs are being taken. This can result in a wider spread of the disease within the family as well as drug resistance, which will then cost more money in terms of greater quantities of more expensive drugs to treat the patients. Thus, the lack of funds for the patients to visit clinics for treatment may increase the prevalence of PTB and multi-drug resistance. These findings demonstrate a consensus among HCWs that poverty and especially the cost of transport to visit healthcare centres are common barriers to accessing healthcare.

5.3.3 Lack of transportation facilities to reach TB services.

I observed that geographical barriers due to poor in road infrastructure have been further complicated by the lack of roads for vehicles and means of public transportation. Even seemingly accessible areas in Akure south were more remote due to lack of roads and public transport than other states.

A significant number of participants during individual interviews expressed that because of the lack of transportation facilities people were not able to utilize health service. Mostly, means of transportations were not available as people could not get a vehicle at the time of need. While there was consistency among respondents about this problem, undoubtedly, this had an impact on the maintenance of health services. For instance, the lack of transportation facilities constantly impeded the supply of medicines and equipment for the healthcare workers to visit patients during the raining seasons always difficult. The quote below explained by community members1, the difficult faced by the community members or patient when traveling:

“Akure south *has many remote places from where it is difficult to visit a health facility due to bad road construction which has being on for years. Most of the people are using motorcycle as an alternative transport which is not good for patient” (Community-*nominated Leader 2).

5.3.4 Cost of food and medication

In this section, the cost of food and medication and its impact on PTB sufferers will be presented. When patients cannot afford nutritious food, this creates a vicious cycle in which effective treatment is less likely to be acquired. However, whether the lack of funds is most felt in relation to food, transport, or healthcare costs, patients who cannot afford to travel to or stay at healthcare centres often have no other choice than to return home and seek help from local people, who may be as poor as or even poorer than them. This has been found to further aggravate their situation. The quotation below illustrates the dilemma faced by those living in poverty who cannot afford food or medication:

> *If one can also get monetary assistance for food, it will be good. This is because not eating during the illness is another problem* (Patient 3).

Another patient responded:

> *For example, I am supposed to be eating well now, but there is not sufficient money for feeding. I only bought N200 worth of petrol for my car, and my place is far away* (Patient 4).

The above quote presented by patient 4 indicated that apart from being not able to eat well, he lives a significant distance away from the clinic, and therefore, the transport costs in accessing his medication are also a challenge. The importance of eating well was emphasised by the HCWs. One of the nurses also stated that the drugs have side effects if they are taken on an empty stomach, as indicated in the following quote:

> *They have nothing to eat, and they have to eat after using the drugs because the drugs disturb them if they do not eat* (Nurse 3).

A doctor responded:

> *The patients can be given drugs, but cannot be given food, and their nutrition status has a lot to do with the body’s ability to fight the infection. This is a problem because the patient’s socio*-economic status limits how *well they fare with their treatment* (Doctor 5).

Doctor 5 recognised the impact of poverty on an individual's ability to recover from the TB infection, which was also acknowledged by a community leader in the following quote:

> *Food is a barrier, in that the government provides free drugs to the patients, but it is one thing for the drug to come to the body and another thing for the body to be able to take the drug due to lack of strength for the drug to work. In a word, poverty is a major barrier* (Community-nominated Leader 1).

These quotes suggest that although the government provides free drugs, other necessities such as daily food in the hospital for the patient and at home to aid recovery were barely met, especially for those living in poverty. Vassall *et al*. (2010) studied the cost of accessing TB/HIV interventions in Ethiopia and found that patients incur high expenses before and in addition to treatment. Because of the relatively high levels of these indirect costs, when patients recognise that their symptoms need treatment, they do not turn to TB/HIV services as their first port of call. As one pharmacist put it:

> *Although TB drugs are free, treatment cost is still a major concern, especially in rural areas where the poverty is high. The cost includes travel from homes to health facilities or hospitals, daily food in hospital, tonic drugs, etc. Therefore, patients and their families have to spend much more money on necessities than usual; lack of money could be another barrier, in terms of transportation* (Pharmacy).

Complications during treatment may be another result of the lack of financial support for either food or transport to the TB clinic at the onset of illness, with a consequent delay in treatment and diagnosis.

For patients who developed complications during treatment, the costs were even higher. As one of the doctors reported:

> *A patient with chest complications has to access care at a higher level, and it comes with a cost, and that is another problem* (Doctor 3).

The additional costs incurred relate to certain tests, investigations, and additional drugs not being provided for free. This view was supported by doctor 5, who stated:

> *Some of them are very poor; they don't have money to carry out most of these investigations* (Doctor 5).

The above quotes indicate that in the event of medical complications, some patients cannot afford to make payments for further treatment, and this becomes a problem for the patient and their family. Poverty denies patients the choice of treatment. The findings of this study on patients' indirect costs and other hospital costs are similar to those in the literature. For instance, some studies on hospitalisation expenses reported that patient costs ranged from I$4 (international dollars) in Uganda (Okello *et al.* 2003) to over I$530 in Kenya (Nganda *et al.* 2003). Some patients were required to pay hospital admission fees. Patients in Freetown, Sierra Leone, paid an average of I$1 at a missionary hospital and I$47 at a government hospital, which included the cost of food. Other studies reported medication costing around I$20 in Uganda (Chard 2001). Sharing very similar views, Mauch *et al.* (2011) and Umar *et al.* (2012) investigated the high cost of free TB services and the patient and household costs associated with them in Ebonyi State, Nigeria. The studies found that direct costs are still substantial (14% of annual patient income), with non-TB drugs, diagnostic tests, coping costs, and transport as the biggest cost items. Some PTB patients went to the hospital when the disease was at an advanced stage, and the poorest patients were unable to assess treatment for complications because of the lack of funds. Furthermore, government funding of free medication has, in the past, been patchy, which has made it difficult for the poorest PTB patients to access treatment:

> Participant 2*: Some time ago, when the government could not continue funding for the free drugs, many patients were finding it difficult to pay for their drugs. This affected the patient's condition very badly* (University FGs).

Regularity of drug supply was another perceived problem:

> Participant 6: *The government is actually giving free drugs to these people, but it is not on a regular basis* (University FGs).

TB clinics may not have enough drugs for the patients when they come for treatment because of shortage from drug donors. As mentioned above, the government was sometimes unable to supply enough drugs to the patients, and this resulted in patients not accessing alternatives elsewhere effectively. Not taking drugs during an appropriate schedule commonly results in drug-resistant TB, which costs more to cure. Nicholls *et al.* (2005) stated that delays in seeking treatment and the lack of treatment adherence could negatively affect PTB-related morbidity and mortality and potentially spread the disease to others.

The phenomena of treatment and food costs, the inconsistent availability of drugs from the government, as well as their implications for the patient's health were confirmed in the FGs with the university students, who explained how poverty was the main barrier in patients' accessing healthcare services. HCWs also recognised the impact of poverty on patients with regard to access to services and their recovery.

5.3.5 SUMMARY BARRIERS

In this theme of barriers to accessing healthcare services, three themes emerged: fear of infection, health-seeking behaviour of PTB patients and delays in seeking treatment, and influence of poverty on PTB patients' access to healthcare services.

Within each theme, subthemes were also identified. Under the theme of fear of infection, the following subthemes were emerged:

- Patients' and carers'/relatives' perceptions of the fear of infection,
- the attitudes and behaviour of HCWs.

Sub-theme of health-seeking behaviour of PTB patients and delays in seeking treatment.

- Lack of knowledge and understanding of PTB.
- Cultural and religious beliefs.

Sub-theme of the influence of poverty on PTB patients' access to healthcare services.

- Loss of income, cost of transportation to the TB clinic.
- Cost of food and medication.

The findings in this theme of barriers to accessing healthcare services identified various factors in the people delaying in seeking timely medical help. It was also revealed that income loss as well as transportation, food, and medication costs, can place a considerable financial and economic burden on PTB patients and households to the extent that patients were not be able to support themselves during their illness. Although TB care is supposedly free of charge, patients/households have to make significant out-of-pocket payments in their pathway to diagnosis and treatment. In this study, the incidence of catastrophic payment incurred during the patient's illness was high.

All the factors described above (ignorance of the symptoms, deference to elders, belief in traditional medicine, social stigma, and the lack of funds to access clinics) contribute to delays in patients receiving effective treatment. In many cases, such delays can lead to serious complications and make the illness more difficult to treat. The factors associated with patients’ delay in seeking healthcare are largely due to a lack of understanding and knowledge of the disease, particularly with regard to whether it is curable or not. Other major factors are cultural norms and religious beliefs. Better health promotion and education for the Akure South community members that will inform them of the true nature of PTB and where to get help as soon as possible shall be discussed in the health promotion and prevention chapter. This chapter concluded that with the aid of HMB in behaviour change, most of the above factors that influence the community behaviour can be addressed through HBM behaviour change. The next chapter presents the findings from the knowledge and perceptions of PTB.

CHAPTER 6: Knowledge and perceptions of PTB

Within the theme of knowledge and perceptions of PTB, three subthemes emerged: knowledge of the signs and symptoms of PTB, knowledge of the cause and risk factors of PTB, and knowledge of the cure and treatment of PTB. The SEM is a multi-level model which encompasses five levels of influence specific to health behaviour: intrapersonal, interpersonal community, organisation, and public policy. It also offers an account of how these levels of influence interact and influence one another to create behaviour patterns (CDC, 2015). The SEM has been applied to aid in understanding the findings regarding the knowledge and perceptions of PTB in the discussion chapter 9.

6.1 KNOWLEDGE OF THE SIGNS AND SYMPTOMS OF PTB

Although TB affects many parts of the body, it mainly affects the lungs. Its clinical presentation therefore depends on the site of infection, the organ affected, and its severity. Patients with PTB present with pulmonary symptoms (such as a productive cough, haemoptysis, chest pain, and shortness of breath), constitutional symptoms (such as fever, poor appetite, weight loss, night sweats, and anorexia), and other symptoms depending on the infection site. Understanding these signs and symptoms informs the community about them, so they can seek medical advice, and it helps HCWs to easily detect PTB cases presenting to health institutions. If an individual lacks knowledge about self-care, he/she would also lack self-care practices; in this case, the lack of TB treatment knowledge may lead to non-adherence to TB treatment. For any person to have sufficient knowledge of PTB, they must be able to identify the above signs and symptoms correctly or even partly.

6.1.1 Participants' knowledge on PTB

The majority of the patients were aware of the signs and symptoms of PTB, although some had only limited knowledge of the disease. Out of the five PTB patients interviewed, three had sufficient knowledge of the signs and symptoms prior to their first diagnosis. The other two had no knowledge of these signs and symptoms given their lack of education and health awareness. Of the five carers/relatives, only two demonstrated adequate knowledge of the signs and symptoms of PTB, as they could not identify all such signs and symptoms. The other carers'/relatives' knowledge of PTB signs and symptoms was very poor. The majority of them were uneducated, which made it difficult for them to understand and identify such signs and symptoms. As indicated below, PTB

Patient 1 reported that a cough and a high temperature were some of the signs and symptoms of PTB:

> *It is a coughing disease, with a persistent cough. I experience high body temperature. This reduces when I take drugs, but the temperature returns later. After a while, I developed a whooping coughing. Moreover, it was when it became excessive that I came to the hospital here* (Patient 1).

The cardinal signs and symptoms of PTB, as mentioned by the doctors (a persistent cough, high body temperature, and whooping cough), were known to patient 1, who showed the best knowledge and understanding of the disease among the patient sample. This patient was the with formal education among all the patients, which may explain why she had displayed more knowledge about the signs and symptoms of the disease. Furthermore, Patients 2 and 4 identified coughing up blood as one of the signs and symptoms of PTB. Patients 3 and 5 showed a total lack of knowledge of the signs and symptoms of PTB. The patients who displayed good knowledge of PTB mentioned coughing as a major symptom, while Patient 2 reported chest pains, bodily weakness, and appetite loss:

> *The cough was the major symptom, [] In many ways for example, (1) Inability to sleep at night. (2) One won't be able to walk due to weakness. (3) People with PTB have chest pain. (4) Loss of appetite* (Patient 2).

However, Patient 2 reported several signs and symptoms not specific to PTB; chest pain, for example, can be attributed to diseases other than PTB. Such general knowledge about the signs and symptoms of PTB can be classified as limited knowledge acquired from HCWs while visiting the hospital.

Patient 4 reported below:

> *I was coughing severe cough when it first started and sometimes with blood* (Patient 4).

This patient realised that coughing is one of the symptoms of PTB, as did Patient 2 above; no other symptoms were identified. The only patient who specifically mentioned a persistent cough was Patient 1. Given her educational background, Patient 1 was able to express a positive attitude towards the disease. Her knowledge as a retired nurse made her to overcome the fear of discrimination among other patients. Those who possess sufficient knowledge of the signs and symptoms of PTB are more likely to have a positive attitude, which will help at the onset of their illness and is a promising indicator of the potential benefits of educating the people; they will gain not only better knowledge but also increasingly better attitudes and a potential eradication of TB stigma, as discussed in the chapter 5 barriers to access healthcare services.

The other two patients reported a lack of knowledge of the disease, as indicated in the following extract, which is typical of their responses:

> *I know nothing about the disease or the symptoms. I do not even know what causes the disease* (Patient 5).

A similar lack of knowledge about the disease is reported below:

> *It is a disease I do not understand and* [I have] *no knowledge of its symptoms* (Patient 3).

This lack of knowledge on the part of these two patients may have contributed to their decision not to seek help regarding PTB, which made them hide their signs and symptoms. For instance, a study conducted by Cambanis *et al.* (2007) on factors associated with patient delays in TB screening in Cameroon among 243 participants aged 18 and above revealed that TB patients thought that PTB was dangerous. Knowledge about the progression of symptoms allows an individual to recognise them in themselves and/or others. Awareness of how transmission occurs might also allow a person to recall situations in which they may have been exposed, allowing for the identification of active cases.

This conclusion is consistent with that of a cross-sectional study conducted by Esmael *et al. (*2013) on patients' knowledge, attitudes, and practices regarding PTB in Eastern Amhara Regional State, Ethiopia. A total of 422 people participated, all 18 years old or over. The result indicated three key issues: first, the majority of the respondents had several misconceptions about TB; second, numerous misconceived ideas about the cause, transmission, and prevention of TB were observed; and third, a majority of the respondents were unaware of or ill-informed about the different symptoms of TB. The most serious problems hindering TB results or adherence to treatment by the patient may be due to their limited knowledge and negative attitudes and practices towards PTB. This problem may, in turn, contribute to another, such as the increasing resistance of PTB to certain commonly prescribed drugs.

Out five patients interviewed in the TB clinic had limited knowledge about the PTB; I found this unsurprising, however, as not a single leaflet, poster, or health promotion picture was displayed in the clinic to enumerate the signs and symptoms of PTB. The limited knowledge on the disease and the lack of information in the hospital environment also made it difficult for the patients to locate the TB clinic without asking for directions as it was observed during my research observation. The stigma associated with the disease may result in patients not asking for directions at all and deciding to go home. Five carers/relatives participated in the interviews. Of these, only two were able to demonstrate some knowledge of the signs and symptoms of PTB:

> *What I know about* (PTB) *is* [that it is] *a disease with serious cough, that people cough blood* (Carers/Relatives 1).

Carers/Relatives 1 was the carer of patient 1, who also had the best demonstration of knowledge on the signs and symptoms of PTB. The remaining carers/relatives, however, demonstrated limited knowledge about such signs and symptoms:

> *I knew nothing about it before now. She* (sister*) only came to visit for the festive period, and I noticed she was coughing. I brought her to the state hospital only for her to be diagnosed with it* PTB (Carers/Relatives 2).

Carers/Relatives 2 recognised that a cough was a symptom of ill health, as she took her sister to the hospital but was unaware that she had PTB. Similarly, Carers/Relatives 3 recognised that a cough was a sign of PTB:

> *What I know about* (PTB) *is a disease that makes people cough* (Carers/relatives 3).

The above statement by Carers/Relatives 3 demonstrates that her only knowledge of PTB is that it is accompanied by a cough. This type of knowledge does not demonstrate that the carers/relatives have any knowledge about the disease that could lead them to take precautions against becoming infected. Such a lack of knowledge can lead to patients waiting for a long time before seeking medical help. This delay in reporting to the healthcare centre at the onset of the illness can cause complications in treatment.

Alvarez (2001) indicated the importance of identifying and treating PTB early because delayed treatment increases the risk of infecting others. A similar study was reported by Gupta and Behera (2011), who stated that the inability to complete prescribed treatment because of the inability to read the prescription is an important cause of treatment failure.

This can result in drug resistance and the continuous transmission of infection. This study demonstrated that general PTB knowledge was lower among carers/relatives. Although the carers/relatives may not be directly affected by the disease (unless they become infected), their knowledge in helping the patients to adhere to the treatment is very important, and as such, patient education is a valuable component of TB control. Nearly half of the PTB patients and most of their carers/relatives displayed limited knowledge of the signs and symptoms of PTB.

6.1.2 The knowledge of community members on PTB

Meanwhile, community-nominated leaders displayed sufficient knowledge of PTB signs and symptoms:

> *People know they have PTB when they have persisted cough it is a dry cough and coughing accompanied by blood* (Community-nominated Leader 1).
>
> *Hard cough, which is extended for a long time and sputum coming out of the person's mouth, shows a noticeable sign and symptom that indicate the presence of PTB in individual PTB patients* (Community-nominated Leader 2).

The above quotes by the community-nominated leaders emphasise that chronic cough, especially with blood and sputum, is the most pronounced symptom of PTB. The community-nominated leaders' good knowledge of PTB signs and symptoms was aided by their educational background and their experience in the community. On the other hand, most of the patients had less awareness of it because this knowledge was not transferred to them or to members of the community to stop them from spreading the disease. The community-nominated leaders had an opportunity to educate these members about the disease. The role of the community leaders in Nigeria is to provide general information that can help the community members with their problems, for instance, the church leaders and the Muslim leaders provide help for their members on the basis of their request within their religious organisation. If there is training power given to them by the government to promote health education, with will be beneficial, as the community members respect them in regard to TB. However, there was no information indicated that the community leaders held any event on PTB to address the community members during my data collection period.

These participants described what they knew about the signs and symptoms of PTB:

> Participant 1: *The person will be coughing, if the disease takes too long in the body, and it will also result to the damage of the lungs if the person continues to cough for a long period. Moreover, the person will be so thin, and he/she won`t be able to eat comfortably* (Muslim Women FGs).

As stated in the quote above, Participant 1 identified that any person who is suffering from the disease for a long period will have a number of signs and symptoms. This participant displayed a sound knowledge of the signs and symptoms of PTB.

Other participants in the Muslim women group also reported a cough as one of the main signs and symptoms of PTB:

> Participant 2: *If the sufferer`s cough disease does not end after using medications for a long period, the victim of the disease will die as a result of it* (Muslim Women FGs).

Participant 2 also knew that PTB could be fatal, clearly showing a reasonable knowledge of the disease. Participant 3 also expressed a similar view of the signs and symptoms of PTB:

> Participant 3: *PTB cough is very different and strong and loud, unlike another cough; when PTB patients cough, they cough like when a dog is barking* (Muslim Women FGs).

Similar to the previous participants, this Muslim woman indicated that a cough was the major symptom of the disease and that this was a distinctive kind of cough. Most of the Muslim women reported prolonged cough as the primary sign and symptom of PTB. A similar view was reported by Participant 4:

> Participant 4: *The cough is different as it has been described by others. PTB is a very strong disease and differs from other diseases. Some coughs can be cured with palm oil, but in case of PTB, it will not go, and the person will cough and cough continuously, and it is difficult than other cough. Although people use other medication, if the cough does not go, that means it is a PTB cough, because the person will be weak and at the same time very thin, and people will be wondering, What's this? Your cough is not a normal cough and that you need to see a doctor', and the doctor will carry out a test and if positive, he/she will be placed on treatment or medication* (Muslim Women FGs).

Participant 4’s own understanding about the signs and symptoms of PTB is better because she was able to realise that traditional medication is not useful in treating PTB coughing fits and, therefore, that seeking help from HCWs is better than seeking help from traditional healers. Another participant, Participant 6, demonstrated her knowledge of the disease’s signs and symptoms, indicating how serious the disease can be when people are infected:

> Participant 6: *There is nothing that a person can do to make him/her comfortable. The disease is not a good thing to happen to someone because anybody that has it will not be able to do anything. Although people use Tom-Tom, but the cough did not go, that means it is a PTB cough, because the person will be weak and, at the same time, very thin. In most cases when the patients come to the hospital, they look very thin and haggard* (Muslim Women FGs).

These quotes demonstrate Muslim women’s knowledge of PTB signs and symptoms. The final quote above demonstrates Participant 6’s awareness that the use of a menthol sweet known as Tom-Tom, which helps relieve mild coughs associated with the common cold virus, will not be helpful in treating a cough associated with PTB. Seeking lay or traditional remedies can delay seeking medical treatment, which can result in the individual losing further weight and energy. The use of traditional healers and medicines is further discussed in the discussion chapter 9. The overall findings from the Muslim women’s FGs indicate that all the women had a good understanding of the signs and symptoms of PTB, as they mentioned the clinical manifestations of PTB.

Participant 6 was a retired nurse from the state hospital, and the knowledge obtained from her work and experience made her stand out from the other participants, who demonstrated adequate knowledge but were aware that persistent coughing, coughing up blood, weight loss, and chest pain are among the main signs and symptoms of PTB. Although their educational level was low, the Muslim women who had participated in the study had sufficient knowledge of PTB. The retired nurse was a source of information about PTB for the Muslim women by drawing on the knowledge of her nursing experience, with various community members in terms of peer health promoters to aid in raising awareness and knowledge of PTB within the Muslim community and the wider communities. For instance, this retired nurse can be a source of information about PTB for the Muslim women and the wider communities to promote health awareness, which will improve the number of individuals screened for PTB, reduce the public health risk of infectious PTB cases, and improve the health of vulnerable populations. According to Aldridge (2015), peer education is being actively promoted by key organisations (including WHO Europe and UNICEF) in health education and promoting TB and reproductive health. This retired nurse can provide peer educators (individuals with her experience on PTB and TB disease) and facilitate open and honest discussions about sensitive and stigmatised issues for the TB patients and community members by engaging with health professionals who are working alongside TB services and by providing meaningful, structured activity, such as increasing the use of health services in several areas.

Meanwhile, five out of the seven participating Muslim men were also aware that a severe cough was a sign of PTB:

> Participant 1: *What I know about the cough is that it is a very severe type of cough. It is a different type of cough because the infected person coughs as if the mouth has dried up* (Muslim Men FGs).
>
> Participant 2: *The cough troubles, and it is a disease that makes the victim emaciated* (Muslim Men FGs).
>
> Participant 4: *It is a blood draining type of cough. That, for me, is a good indicator. An infected person also loses weight* (Muslim Men FGs).

Although the Muslim men and women gave slightly different statements, both groups displayed some knowledge of the disease. With this knowledge, the participants can easily identify the signs and symptoms of the disease and assist, where necessary, in preventing the spread of the disease to other community members. Weight loss was also commonly reported, from Participant 4 and in the following comments:

> Participant 5: *It makes the sufferers lose weight, have sleepless nights, cough with blood at nights and it will be noticed that the individuals have the disease* (Muslim Men FGs).

As can be seen, Participant 5 was able to report a wider range of signs and symptoms of PTB than the other Muslim men.

These quotes show that the majority of the Muslim participants knew about the signs and symptoms of PTB, but others did not:

> Participant 6: *People having the disease look very thin and the disease eats the blood of the person having the disease so if care not taken and the disease is eating up the person the person will eventually die* (Muslim Men FGs).

The above quote reported by Participant 6 shows limited knowledge of the signs and symptoms of the disease. His knowledge is not entirely accurate and is limited. Overall, the male Muslim FG participants' knowledge about the signs and symptoms of PTB was similar to that of the Muslim women discussed above. Out of the seven Muslim men participating in this research study, five demonstrated good knowledge of PTB while the remaining two possessed little or no knowledge of the disease. The five men who had displayed sufficient knowledge of PTB mentioned severe coughing as the main PTB symptom. The other two, with their limited knowledge, described other signs and symptoms without mentioning coughing. Among the Muslim women, Participant 2 said that the disease could be fatal if the medication did not work.

The findings identified among the Muslim community members indicated that women Muslim members have good knowledge of the signs and symptoms of PTB. Overall, the majority of the Muslim men and women demonstrated a good knowledge of the signs and symptoms of PTB. The majority of them mentioned cough, cough with blood, weight loss, and sleepless nights. In general, the knowledge of both the women and men FG participants is similar. Therefore, this study found that Muslim FG participants had knowledge of PTB signs and symptoms.

The following shows the traditional healers' and church pastor's knowledge of PTB signs and symptoms:

> *The cough makes people sweat and makes the person act irrationally with shortness of breath* (Traditional Healers 1).
>
> *The only symptom I have seen was that the sufferers continued coughing for a long period* (Church pastor).

The traditional healers and the church pastor demonstrated their knowledge of PTB, while the Muslim leader below reported their lack of knowledge of PTB.

> *I do not know the signs and symptoms of PTB* (Muslim leader).

Both the traditional healers and the church pastor showed basic knowledge of PTB signs and symptoms. The traditional healers knowledge about such signs and symptoms was limited, although he had considered himself capable of treating patients suffering from the disease.

Seven university students participated in an FGs, of whom only two were able to demonstrate sufficient knowledge of the disease's signs and symptoms:

> Participant 1: *The sufferer coughs out blood from the mouth and nose, and this can lead to the death of such a person and others* (University FGs).
>
> Participant 2: *Symptoms include persistent coughing and coughing out of blood, by vomiting blood regularly* (University FGs).

The quotes above show similar knowledge, as persistent coughing, coughing blood, and vomiting blood were mentioned as signs and symptoms of the disease. However, the remaining five participants in the university FGs could not identify the signs and symptoms of the disease.

This study provides evidence to suggest that community-nominated leaders' and community members' knowledge of PTB signs and symptoms is better than that of most patients and carers/relatives. This finding is corroborated by a study conducted by Melaku *et al.* (2013) in Shinile, Ethiopia, on a pastoralist community's perception of TB. The study recruited 821 participants, both male and female, aged 18 and above. The results indicated that most of the participants had basic knowledge of the common signs and symptoms of TB. Another study was conducted by Abebe *et al.* (2010) in Ethiopia, with 476 people over the age of 14 suspected of having PTB because of persistent coughing (at least two weeks). The results indicated that those who could read and write were more likely to be aware of PTB. Another study by Legesse *et al.* (2010) also reported similar findings about the knowledge and perception of PTB in pastoral communities in the Afar region, involving 818 randomly selected males and females aged 18–70 years. The results indicated that the majority of the participants were familiar with PTB signs and symptoms. Overall, given that according to this study, community-nominated leaders have greater knowledge of PTB signs and symptoms, they could use this knowledge to prevent the spread of the disease to the wider community and to encourage sufferers to seek timely medical care.

6.1.3 The perspectives of the doctors and nurses on PTB

The perspectives of the doctors and nurses on PTB signs and symptoms are presented and discussed below.

Lack of government funding is another problem reported by the doctors:

> *In terms of the structure, I think it is quite good enough, but in terms of the delivery, there may be a lot of gaps. There are number of issues peculiar to the Nigerian health system, for example, lack of funding to carry out health education programmes that will educate community members, and you want to perform an acid-fast bacillus* [AFB] *test, if there's no electricity, you wouldn't be able to perform the test, and this would lead to delay* (Doctor 1).

The above statement by one of the doctor shows that the funding that should be naturally provided for health awareness promotion was not available. Entities such as local and national governments, non-governmental organisations, and other actors have a role to play in this fight against disease, but these stakeholders have not yet been adequately engaged to work against this killer disease because there has been no direction from the health authority to do so.

> *There are cardinal symptoms that one must exhibit before saying it is a possible presumptive TB case; they are cough lasting two weeks or more, weight loss, drenching night sweats, and low-grade fever. Once clients come to the facility complaining about these symptoms, we advise them to go to the designated centres where diagnostic services are provided* (Doctor 3).

The quote above from Doctor 3 indicates, as expected, good knowledge of the disease. He reported what he described as the cardinal symptoms, such as a cough lasting two weeks or more, weight loss, drenching night sweats, and a low-grade fever. Doctor 1 reported similar symptoms:

> *The commonest symptom is a prolonged cough associated with a lot of weight loss, difficulty in breathing, and in some instances, blood-stained sputum* (Doctor 2).

In the statement by doctor 1, the PTB signs and symptoms are a prolonged cough that is associated with significant weight loss, difficulty in breathing, and blood in the cough. The statement shows that the doctor had enough knowledge that could enable him to provide adequate treatment to patients.

Other doctors demonstrated similar knowledge:

> *They are coughing, losing weight and have a fever in terms of symptoms, when they have a cough that has lasted more than weeks and they have taken antibiotics without any improvement, loss of weight, and night sweats* (Doctor 4).

The pharmacy staff expressed an additional view of PTB signs and symptoms:

> *The person starts to lose weight, cough for over two weeks, a productive cough, and loss of appetite. I know cough is the main symptom* (Pharmacy).

The HCWs quoted above are knowledgeable enough to identify patients with the disease and to take the correct action for treatment without delay. Out of five doctors who had participated in the interview, their statements demonstrate sufficient knowledge about the signs and symptoms of the disease given their educational background and work experiences. However, their knowledge was not passed down to the community members and the patients. The reasons for this include the fear of infection, which resulted in a lack of attention given to the patients who sought their help as reported in chapter 5 barriers to access healthcare services; and insufficient staff to educate the community members and patients on PTB. The complex relationship between patients and HCWs is an important determinant of the outcome of PTB treatment. If the patients or community members have sufficient knowledge of their disease, they can seek treatment at its onset. The success of this interaction is affected by the HCWs’ knowledge of the disease and treatment protocol, their skills in patient counselling, and their education of the patients. Patients who are poorly counselled or who lack awareness of PTB, and its treatment may end up with poor outcomes. Similarly, negative attitudes by the HCWs towards the patients may cause the latter to stop treatment. However, when the HCWs act positively towards the patients, this can be a source of great encouragement for such patients. Below is a quote from one of the laboratory staff on how the TB clinic staff counsel PTB patients when they test positive:

> *They* (TB clinic staff) *are trying their best. They give them free drugs, they pray for them, they encourage and counsel them* (Lab Staff).

According to the laboratory staff member, the patients are cared for and encouraged through counselling and communication to understand that the disease can be cured while they remain on medication. This demonstrates the HCWs' skills and knowledge in supporting patients to follow their treatment. Patients commonly hold erroneous beliefs about their disease and its treatment to the extent that it prevents them from taking their medication or seeking help on time. However, with the help and support of HCWs, these erroneous beliefs can be reduced through improved communication.

The WHO (2009) reported that HCWs receiving the DOTS course who are ill-informed about the management of PTB patients are unable to offer effective counselling to their patients. Mesfin *et al.* (2009) conducted a study on the quality of TB care and its association with patient adherence to treatment in eight Ethiopian districts, with 237 participants aged 35 and above. The results indicated that to address the patients' cultural misconceptions about PTB, the HCWs must be equipped with the knowledge to communicate with the patients. The HCWs who had participated in the study corroborated this. They identified poor education as a major barrier to patients' adherence to treatment and to delays in the duration of treatment (Mesfin *et al*. 2009). Similarly, in a study by Bam *et al.* (2006) on factors affecting patient adherence to DOTS in urban Kathmandu, Nepal, the results indicated that non-adherent patients claimed insufficient knowledge about the need to continue treatment, especially after they felt better. This confirms the need for HCWs to possess proper education so as to enlighten the patients and the community about the disease. The community doctor interviewed in this present study expressed his experience with PTB patients below:

> *They do not really know, but they come to the hospital to complain of a cough. It was when we then investigated that I discovered it was due to PTB. Cough is the commonest presentation. When they cough, they cough and cough. These presentations were common: cough with blood in the sputum, fever, and weight loss - these are common in the patient's statements* (Community doctor).

The doctors in this study were undoubtedly knowledgeable about PTB symptoms. Building upon Arora and Sarin (2004) in the Revised National Tuberculosis Control Programme (RNTCP) in Nigeria, the evidence presented by the doctors during their interviews shows that they not only were knowledgeable about PTB symptoms but also met the standards of the RNTCP. Such knowledge of TB control among HCWs is essential for effective TB management at the primary care level.

Similar signs and symptoms were reported by the nurses:

> *But usually, most of them, after they might have been coughing for two weeks come around to complain of blood in the sputum, weight loss, sweating profusely at nights, fever, and tiredness* (Nurse 2).

Nurse 2 indicated that most of the patients delay reporting their PTB illness and that when they come, they complain about signs and symptoms of PTB, such as blood in the sputum, weight loss, sweating at night, fever, and tiredness. Reporting her experiences of patients suffering from the disease, Nurse 2 demonstrated sufficient knowledge of the disease, and this understanding could help her to provide a high-quality service to the community members through diagnosis and treatment as well as educating the community members on how to stop the spread of the disease into the wider community.

The immunisation nurse demonstrated similar knowledge on PTB:

> *The most known symptoms are coughing out of blood for more than 3 weeks. They also experience night sweats, loss of weight and lack of appetite for food* (Immunisation Nurse 1).

The above quote shows Immunisation Nurse 1’s knowledge of PTB, probably given her educational background. This nurse was in charge of children’s immunisations. During my observations, she had mentioned how difficult it was for some of the mothers to bring their children to the centre for immunisation because of the lack of knowledge and health awareness regarding the benefits of the immunisation programme and how it can protect their children against serious diseases.

A similar view by Nurse 1 is as follows:

> *Having fever, headache, sweating at night, body pains, loss of appetite, loss of weight, and persistent coughs that have lasted more than a month, and night sweats are the symptom* (Nurse 1).

The reports by the doctors, nurses, and drug nurse are similar with regard to the signs and symptoms of PTB. Having presented the findings about the knowledge of the signs and symptoms of PTB and the influence of multiple factors that impact this knowledge, the risk factors of PTB will be discussed in more detail.

6.2 KNOWLEDGE OF THE RISK FACTORS AND CAUSES OF PTB.

Risk factors

Of the five PTB patients interviewed, none could properly describe the risk factors associated with PTB. The quotes below describe the mode of PTB transmission rather than the risk factors. For instance, the first quote is a typical example of patient knowledge about PTB risk factors:

> *If a PTB patient in a house uses the bathroom and spits on the floor, other people can contract the disease through that means* (Patient 1).

Similarly, other patients also displayed a lack of knowledge about the disease:

> *Consumption of ripe pawpaw and cashew. Coughing without protection is also another one.* (Patient 2)

Patient 3 was blunter about her lack of knowledge:

> *I do not know* (Patient 3).

While these patients displayed limited knowledge of the disease's risk factors, they did have some knowledge about its modes of transmission. These findings support those of a similar study conducted by Olufemi *et al.* (2013), which was a cross-sectional survey to determine the level of public awareness of TB warning symptoms, risk factors, and treatment in Ilorin, Nigeria. The study recruited participants aged 18 years and over who resided in Ilorin West and East LGA of Kwara State, Nigeria. The study was conducted between July 2011 and August 2011, with a sample size of 384 participants, both males and females. The results revealed that 71% of the participants were aware of at least one warning risk factor of TB, while the remaining 29% could not mention any such warning risk factors. This study is similar in that out of the five patients interviewed, only one had sufficient knowledge about the risk factors of PTB.

Among the carers/relatives interviewed in this study, only two were able to describe some of the risk factors of PTB:

> *High risk factor are HIV people that have low immune systems; HCWs caring for PTB patients are at the high risk of PTB* (Carers/Relatives 2).

Carer/relative 3 offered this answer:

> *HIV people that have low immune systems are at the high risk of PTB* (Carers/Relatives 3).

These participants showed their understanding of some of the risk factors of PTB, which are a weakened immune system and having HIV/AIDS. In addition, HCWs are at greater risk of contracting PTB from their patients given inadequate health awareness about how nurses or doctors should operate while they are on duty.

As the majority of them were not educated, this may make it difficult for them to understand and identify the risk factors of the disease. The most important means of PTB control and case detection is the ability of community members to self-identify risk factors of PTB and voluntarily report to the nearest health facility for diagnosis.

Having identified the knowledge of PTB patients and carers/relatives regarding the risk factors of PTB as being limited, the knowledge of other community members was now presented to gain insights into the wider social context in which the disease is understood.

Out of the seven church FGs participants, five showed sufficient knowledge of the risk factors of PTB:

The remaining two displayed limited knowledge of the disease:

> Participant 1: *I do not know. I only know it is airborne* (Church FGs).

> Participant 2: *I do not know what the risk factors of PTB are* (Church FGs).

Based on the above quotes, it can be argued that the limited knowledge of PTB of these participants may be insufficient to prevent the transmission of PTB among the community members and to prevent themselves from being infected with PTB:

> Participant 3: *Those who that are exposed to the HCWs* (Church FGs).

The above quote by Participant 3 indicated that the threat is from HCWs, which may lead to this person not seeking medical help.

Below is a statement reported by the church FGs on the knowledge of risk factors:

> Participant 4: *Immune comprised people either they are elderly or young those are mostly at risk* (Church FGs).

The quote above reported by the church FGs participant demonstrates the belief that people with compromised immune systems are at high risk of acquiring PTB. The same view was expressed by Participant 5 below.

> Participant 5: *Is the people with lower immune system and if the immune defences system where infected through air droplet, I think that is a major cause* (Church FGs).

Participant 5 went further, explaining that if a person with reduced immune defence systems were to inhale a sufferer's cough, they could become infected that way.

Participants 4 and 5 considered that the very young and old are most at risk of PTB. The church FGs members tended to see a weakened immune system as the greatest risk factor, especially among the elderly and children. One saw exposure to HCWs as the greatest risk. Overall, these members had a general understanding of PTB risk factors, and only a few church FG participants had no knowledge of the disease.

Meanwhile, two participants of the Muslim FGs showed little, or no knowledge of the disease's risk factors:

> Participant 1: *I do not know what the risk factor of PTB are.* (Muslim Men FGs)

> Participant 3: *I cannot say what the risk factor are because no one have it in my house.* (Muslim Men FGs).

The participants quoted above did not understand what PTB is, and neither would they be able to assist others, protect themselves, or direct anybody on where they could get treatment or be diagnosed.

> Participant 1: *Dirtiness and overcrowded accommodation is risk factors for PTB.* (Muslim Women FGs).

Out of the 14 Muslim FGs participants, both women and men, only Participant 1 in the Muslim women FG demonstrated sufficient knowledge of the risk factors of PTB, most likely because of her education as a retired nurse. Meanwhile, in the university FGs, out of seven students, only two demonstrated sufficient knowledge of the risk factors of PTB; the rest had no or inaccurate knowledge.

> Participant 1: *People that smoke, people exposed to dust and those who do not cover their noses.* (University FGs).

Another participant in this group stated that dwelling in an unclean environment (poverty) was the major risk:

> Participant 2: *People who do not take cognisance of their environment or dwell in an unclean environment.* (University FGs).

Such little knowledge and understanding of the risk factors may prevent the participants from properly addressing the disease.

> Participant 5: *Those that are ignorant about the disease. Those that know will take action once they see symptoms.* (University FGs).

The quote reported by a student in the university FGs indicates the importance of people seeking help once symptoms have developed but not how to reduce the risk of developing the disease.

As mentioned earlier, some participants of the church FGs demonstrated limited knowledge of the risk factors of PTB, as indicated by the church pastor in an interview:

> *It is only a doctor that can tell. Yes. Especially if there is an infected person amongst such people* (Church pastor).

As indicated above, the church pastor shows that although he did not have the knowledge of PTB risk factors, it is better that he advises people to seek medical assistance than give out inaccurate information.

Below, the community-nominated leader demonstrated a sound knowledge of the risk factors:

> *The risk factor is when the PTB is not treated, and definitely, when there is overcrowded accommodation in a place with 10 or more people living in a room there is probability of contracting the disease. Where there* [is] *no proper care, no ventilation, will come in and they will contact PTB* (Community-nominated Leader 2).

Having such knowledge and being a credible member of the community provides an opportunity for the abovementioned community leader to become involved in raising awareness of PTB in the community.

The overall statements from the patients, carers/relatives, community-nominated leaders, and FGs participants mainly stressed overcrowded accommodations and poor hygiene in homes as risk factors for PTB. Being exposed to PTB carriers who coughed without covering their mouths or who indiscriminately spat out their sputum in public places was also highlighted as a common risk factor, as was the sharing of cutlery and other eating utensils such as cups and having low immune systems. The university FGs participants showed scarcely sufficient knowledge of PTB risk factors, and such limited knowledge among the participants may result in their inability to recognise the disease at its onset.

Sufferers' willingness to seek early diagnosis seems to be partly affected by the community's poor knowledge of most of the risk factors of PTB as well as the fear of the perceived consequences of being diagnosed with PTB. This finding is evident in a study by Verhagen *et al.* (2010) on factors underlying diagnostic delay in TB patients in a rural area in Tanzania, with 28 recently diagnosed TB patients and four traditional healers aged 50 years and above, both male and female. The results indicated a lack of knowledge about TB signs and symptoms among patients, which prevented them from visiting a hospital. This was especially the case because many of the participants with poor knowledge of TB symptoms suspected that they had HIV/AIDS and thus delayed seeking care for what was actually PTB.

The doctors and nurses, as expected, possessed good knowledge about PTB risk factors than the community members and the patient's carers/relatives.

> *The risk of getting it is overcrowding accommodation (*Lab staff 3).

> *The hospital workers are also at risk because when patients cough openly and throw their sputum out without regards to their surroundings and anybody or HCWs pass through they too can be infected* (Immunisation Nurse).

The immunisation nurse held the view that HCWs are at risk of PTB, as some have direct contact with the patients, and if they cough openly and throw their sputum out without regard, they could be infected. One of the doctors stated:

> *Socioeconomic status is one; the risk is higher in people with low socioeconomic status. Poor housing environment is another one, poor nutrition also. All these are associated with poverty. Diseases that compromise the immune system is another predisposing factor, HIV for example* (Doctor 1).

The above quotes demonstrate that overcrowded accommodation is one of the risk factors of PTB, in which PTB sufferers can infect non-sufferers through proximity. Both the nurse and the doctor have the same levels of knowledge of PTB risk factors; however, this could be attributed to their educational backgrounds. Although Laboratory Nurse 3 and the doctor mentioned that overcrowding accommodation was a risk factor, other risk factors were not stated.

A similar view was reported by doctor 2:

> *Risk factors: living in poor hygiene areas, overcrowding, drinking non-pasteurized milk . . . milk from cows reared by Fulani's in our communities. They sell this milk to people. So, those areas where people consume those things are risk areas* (Doctor 2).

The above statement reported by doctor 2 was similar to that of doctor 1 and Nurse 3 in that they both referred to overcrowded accommodation as a risk factor. This shows that these doctors and the nurse have a broader understanding of the risk factors than Lab Nurse 3, who only mentioned overcrowding as a risk factor.

Nigeria has a sizable population of Fulani pastoralists. The Fulani are the people who migrated from the north of Nigeria and settled in Akure. They have a high prevalence of TB because of zoonotic infections like Bovine TB, which are common among Nomadic Fulani (NF) and their livestock. Close interaction between the travellers and their animals provides a critical human-animal interface with potential for the transmission of zoonoses. The Fulani face several challenges in Nigeria; among them are lack of education, poverty, and healthcare issues, and accommodation, as many of them are often still far from schools or other facilities such as healthcare centres. The Fulani people are seminomadic pastoralists whose culture and economy are centred on cattle trade and who move from one state of Nigeria to another state for settlement; they live in overcrowded accommodation and dirty environments and sell non-pasteurized cow's milk to the public Ducrotoy *et al.* (2017). The statement below reported the risk factors of PTB.

> *Other risk factors are poverty, immunocompromised people, poor housing (where there is no proper ventilation), overcrowded areas because it is transmitted when an infected person coughs and releases sputum in the air and an uninfected person inhales it* (Doctor 3).

The above statement by doctor 3 mentions poverty as a factor that leads to poor accommodation, which was similar to the comment by Doctor 4:

> *Poor housing environment is another one, poor nutrition also. All these are associated with poverty. Diseases that compromise the immune system are another predisposing factor – HIV, for example* (Doctor 4).

Doctors 3 and 4 highlighted more factors, such as the poor diets of PTB patients, which are also associated with poverty. As such, the effect of poverty on PTB patients, which aggravates their conditions and affects their ability to seek help, is worth reiterating. The following demonstrates Doctor 5's knowledge of the risk factors:

> *Traditional risk factors are things like extreme age, exposure to people who have PTB, and of course, immunosuppressed conditions. But now, the most important risk factors are absence of immunisation, and HIV has also become a very important risk factor* (Doctor 5).

In addition to the other doctors' statements mentioned above, the laboratory doctor indicated that the most important PTB risk factor is the absence of immunisation. For instance, if the HCWs are exposed to PTB by not being immunised, it can result in the spread of the disease. However, I was unable to obtain any data regarding whether HCW immunisation against PTB was offered. As expected, HCWs are highly knowledgeable about the risk factors of PTB. According to the HCWs interviewed, the most common risk factors include drinking non-pasteurised milk, having poor personal or environmental hygiene, living in overcrowded accommodation without proper ventilation, having contact with PTB sufferers by working in a hospital, having a compromised immune system (often due to HIV/AIDS), and poor nutrition. Many of these factors are the result of poverty, which is not easy to eradicate.

6.2.1 Causes of PTB.

The findings indicated that the patients and their relatives, and community members had limited knowledge of the risk factors of PTB. However, a community leader and some participants in the university FG recognised that overcrowding and poor hygiene are often associated with poverty as risk factors of PTB. Nonetheless, the majority of community members only possessed basic knowledge of such risk factors. Ten PTB patients and their carers/relatives were interviewed. Among the patients, two possessed some knowledge of the cause of the disease, while three had no knowledge of the cause of PTB:

> Patient 1: *I don't know.*
>
> Patient 2: *I don't know.*

> Patient 3: *It is a disease I don't understand.*

Meanwhile, Patient 4 knew it was a 'cough' disease:

> *It is a cough disease. It affected me about 10 years ago. I was treated, and I became okay. I was asked to stop drinking alcohol. At a certain time, I resumed drinking. Unfortunately, I have it* [PTB] *again* (Patient 4).

Patient 4 associated PTB with the respiratory system and had successfully been treated in the past. However, Patient 4 was unclear about what had caused his disease. The other patients displayed a lack of knowledge of the disease despite having sought help and having been diagnosed, and they were taking medication at the time of the interview.

Fatiregun and Ejeckam (2010) conducted a study on the determinants of patient delay in seeking treatment among PTB cases with 102 newly diagnosed patients aged 18 and over in a government specialist hospital in Ibadan, Nigeria. The results indicated that when people know the cause and symptoms of the disease, they will more likely visit a TB treatment centre when the need arises. More importantly, knowledge will help mitigate the social stigma generally associated with TB and other determinants of patients' delay in seeking treatment.

However, Patient 5 demonstrated a good knowledge of the cause of PTB as illustrated in the following quote:

> [PTB] *is caused by bacterial infection and if care is not taken, the patient can die* (Patient 5).

Out of the five PTB patients interviewed, two demonstrated sufficient knowledge of the cause of PTB, which may be due to their backgrounds such as education and socio-economic background, whilst the other three patients had limited or no knowledge of such causes. Patient 5 had witnessed some of their family members dying of the disease. Even after diagnosis, three out of the five (80%) patients interviewed reported that they knew very little or nothing of PTB nor the available treatment for it. Such poor knowledge may not only affect the patients' health-seeking behaviour but can also weaken strategies aimed at preventing the transmission of the disease within the wider community. This study has demonstrated the need for health education programmes or individual patient education about the cause of PTB. By having this information, patients may be more likely to adhere to PTB treatment, understand the need for short-term isolation until they are no longer infectious, and know that the disease is entirely treatable if the treatment plan is followed.

The HCWs, especially the nurses, had provided the carers with information about the cause of PTB. Of the five carers/relatives interviewed, three were able to identify the cause of PTB:

> *What I know about* [PTB] *is it is a di*sease *that can kill, and the nurse told us that the disease is caused by the contagious spread of bacteria if no care is taken, as it stays in the lung* (Carers/relatives 1).
>
> *PTB is a quite deadly the HCWs told us, and the disease is caused by microorganisms, and it can kill if not properly managed.* (Carers/relatives 2)
>
> *What I notice about the disease is that it is* [caused by] *bacterial infection and is a very terrible disease* (Carers/relatives 4).

Most of the carers/relatives had sufficient understanding of the cause of PTB. Two were able to state correctly that the disease is caused by a bacterial infection. Information obtained from the hospital staff and the symptomatic manifestations of the patients they cared for formed the bulk of what the carers/relatives knew about the disease. The patients' lack of knowledge on the cause of PTB may be influenced by many factors. For instance, the patients may have been informed of the cause but have been unable to absorb the information because of being ill at that time. Other factors include the way the information was presented, such as whether or not it was provided in a conducive environment for the patients. This finding is supported by Haughton's study (2006) on the knowledge, beliefs, and perceptions of TB among community members in Ntcheu, Malawi, with a sample of 16 men and women aged 18–49 years. The study found that family support plays an important role in the patient's recovery. For instance, some sources of social support can be provided by the family while the patient is unwell, such as health-related information, the reinforcement of psychological resources, self-esteem, and emotional and material support. In this study, the mother of one of the patients stated that she had provided support for her daughter both day and night. The family helps in encouraging engagement in healthy norms and behaviours as well as supporting access to health care. Carers/relatives remind the patients to take drugs according to the advice of medical doctors and provide the food, clothing, and other hygiene products they may require.

Within Nigeria, local chiefs and religious leaders are viewed as key sources of knowledge and information for the community. However, their knowledge on the cause of PTB was shown to be limited.

> *I don’t know* (Palace Chief).
>
> *I will not say I know the cause of the disease, but from my experience and for what I have seen around is that any patient that contact PTB going through pains while coughing; the pains are very severe* (Community-nominated Leader 2).
>
> *I don’t know the cause of PTB* (Church Pastor).

With the knowledge of the community-nominated leader quoted above, patients can be given advice on how to seek treatment. With regard to the palace chief and religious leaders, this has serious implications, because the community members normally seek help from them, and their duties are to provide advice and to direct community members to an appropriate place where they can receive care. As the pastor and palace chief do not have knowledge of the cause of the disease, rendering any assistance to PTB sufferers may be very difficult for them.

Having reported the community leaders’ knowledge about the cause of PTB, the knowledge of community members derived from data from the focus groups with Muslim men and women and university students about the cause of the disease is presented here. Out of the 14 Muslim FGs participants, both men and women, only one participant demonstrated sufficient knowledge of the cause of the disease:

> Participant 3: *I know is caused by microorganism the moment you encounter with micro bacterium you can get PTB* (Muslim Men FGs).

The other participants showed a lack of knowledge of the disease:

> Participant 5: *We do not know, the only people that can know the cause is the professional doctors* (Muslim Women FGs).

The above statement from Participant 5 implies that the community members are not responsible for having this knowledge. However, such knowledge may help them to seek treatment, as they would know that the disease is caused by a bacterium which can be killed by drugs. This would raise awareness of the cause of the disease within the local community to dispel any myths and reinforce the need for medical help to cure the disease. However, four of the carers/relatives and three of the patients interviewed did possess sufficient knowledge of the disease and could share their knowledge with other community members.

Out of the 14 university FG participants, only one showed sufficient knowledge of the cause of PTB:

> Participant 2: *PTB is caused by a bacterium, so it can be treated by taking things that are very hot like tea and food* (University FGs).

Participant 2 understood the cause of PTB as being a bacterium but also attributed incorrect treatments such as drinking very hot tea or eating very hot food. The other participants also mentioned incorrect causes of PTB as indicated in the following quote:

> Participant 1: *It could be genetic* [hereditary], *passed from one generation to another or due to the habits of an individual such as smoking* (University FGs).

The statement of Participant 1 above reported that the cause of PTB could be genetic, as it passes from one generation to another. While the university FG participants had a higher education level than the community members, they did not have any more knowledge about the cause of PTB than the participants with a lower educational level. Meanwhile, out of the seven church FGs participants, only one understood the cause of PTB:

> Participant 1: *PTB is a contagious organism; I think it is a bacterium that causes the disease, and I think it is endemic* (Church FGs)

Participant 1 was a retired college teacher whose educational background contributed to her knowledge of the cause of PTB. Other church FG participants demonstrated no such knowledge.

The overall knowledge of the study participants regarding the cause of PTB was varied. For instance, Participant 3 in the Muslim FGs, Participant 2 in the university FGs, and Participant 1 in the church FGs could identify the correct cause of PTB. Over half of all the carers/relatives were more knowledgeable about the cause of PTB, and regarding the patients, only Participant 5 demonstrated sufficient knowledge of the cause. Community-nominated leaders and other elders, such as the church pastor and palace chief, displayed little understanding of the cause of PTB.

The limited knowledge of the cause of PTB among the Akure South community members demonstrated differences in the level of knowledge and perceptions about PTB among patients, their carers/relatives, community members, and community and religious leaders. As can be expected, the HCWs' (i.e., doctors, nurses, receptionists) knowledge of the cause of PTB was rooted in the aetiology of the disease. They generally regarded it as another disease which, though it may have serious effects if untreated, is curable. In their discussions, many HCWs enunciated that the disease is generally not as prevalent as it used to be because of the attention it has received from both the federal government and many international organisations that have put facilities in place to cater to the needs of those infected. Nonetheless, a consensus exists that PTB is a serious disease which can lead to death if left untreated.

The quote below presents the knowledge of Immunisation Nurse 1 about the cause of PTB:

> *The most known cause is coughing up blood for more than 3 weeks. They also experience night sweats, loss of weight, and lack of appetite for food* (Immunisation Nurse 1)

The statement above demonstrates the lack of knowledge of the cause of PTB by the one of the HCWs after I had asked the question several times to clarify the nurse's statement, but she still provided the same answer, include coughing up blood. In this context, the quote above implies this particular nurse's lack of training; immunisation nurses do not have to undergo TB training as they are not in the TB section. Such poor knowledge may result in patients or community members receiving incorrect information, leading to the spread of PTB among the community members. This particular nurse may not be able to deliver proper medical services to the people in need, educate the patients, or give adequate information to the community members unless other trained nurses are available to support her.

Below is the view of a receptionist on the cause of PTB:

> *What I learned or was told was that is a microorganism that causes TB, and if there is an outbreak of the illness, it seems to affect the people in the community, and it can cause PTB* (Receptionist)

The receptionist had knowledge and understanding of the cause of the PTB. She went further to demonstrate her knowledge by saying the cause was due to microorganisms that cause the outbreak of PTB, which results in an illness that affects many people in the community. The drug-administering nurse expressed her knowledge on the cause of the disease below:

> *It is caused by a bacterium* (Drug nurse)

A similar view is presented by the nurses below. These nurses were aware that PTB is caused by a microorganism:

> *TB is an infectious disease caused by a microorganism* (Nurse 2)

The nurses demonstrated sufficient knowledge of the causes of PTB, which will enable them to carry out their work successfully. Other HCWs had different views. For example, Nurse 3 and Doctor 2 stated that PTB is a kind of TB that affects the lungs and can spread to other parts of the body; their knowledge was because of their education and experience in regard to their work.

> *PTB is an infectious disease caused by microorganisms, and PTB is a kind of TB that affects the lungs, and that can spread to other parts of the body. It is an infectious disease caused by bacteria* (Nurse 3)

> *Pulmonary TB is caused by Mycobacterium, I'm sure. It's a microorganism. That's what causes pulmonary TB. Once it is contracted, it develops* (Doctor 2)

All the doctors possessed proper knowledge of the disease and further explained that the cause of PTB is the bacterium *Mycobacterium tuberculosis* and that once a non-infected person comes into contact with the disease, then that person will likely be infected.

> *It is caused by a micro bacterium, a pathogen called Mycobacterium tuberculosis* (Doctor 4).

The doctors had requisite knowledge of the aetiology of PTB infection. They all specified the causative organism as the bacterium *Mycobacterium tuberculosis* and discussed the mechanism of transmission of the bacterium effectively. They were aware of the facilities available for treatment and the effective management of the infection and reiterated that early diagnosis aids in the effective treatment and cure of the disease.

All the HCWs encountered people who had suffered from PTB, mostly as patients, in the line of duty. The above evidence demonstrates the knowledge of Doctor 4 about the cause of PTB.

A similar view is reported below:

> *The chest condition is called pulmonary TB, and the systemic disease TB is called extra pulmonary TB. The second can complicate the first. If the first is not treated, it can spread to other parts of the body to cause the second* (Doctor 5).

Out of the five PTB patients, only two were knowledgeable about the causes of PTB. three patients said the cause of PTB was bacterial infection, while the other mentioned that it was a symptom. However, the knowledge of PTB demonstrated by these patients was basic and not adequate to dissuade community members from putting themselves at risk or properly preventing the disease from spreading. Overall, in the case of the HCWs, knowledge about the disease is well-rooted in the aetiology of the disease. Five nurses and five doctors had enough requisite knowledge of the aetiology of PTB infection to specify the causative organism as the bacterium *Mycobacterium tuberculosis* and discuss the mechanism of transmission of the bacterium effectively. The findings presented in this chapter can be better understood by the application of the four levels of the SEM (McLeroy *et al.* 1988): intrapersonal, interpersonal, community, and organisational factors and this discussion is presented in Chapter 9.

6.3 KNOWLEDGE OF CURE AND TREATMENT OF PTB

This section will present participants' knowledge about PTB's cure and treatment, linking this with relevant literature from other, comparable studies.

6.3.1 Knowledge of PTB cure

The level of knowledge as to whether or not PTB is curable varied among the interviewed patients. Out of five patients two believed PTB is curable while two patients were unaware that PTB is curable, and one was not sure that it can be cured. Typical examples of these patients' responses are stated below:

I do not know. I only know it is airborne (Patient 1).

Patient 1 knew it was an airborne disease and patient showed understanding that droplets containing bacteria are released into the air when a person with PTB coughs, sneezes, sings or talks. It can be argued that this participant's knowledge of the disease would be able to prevent him from transmitting it to another person.

> *I don't know anything about PTB cure* (Patient 3).

Patient 3 displayed a total lack of knowledge about how the disease could be cured, despite having sought medical help and been diagnosed, and despite the fact that he was in the hospital receiving treatment at the time of the interview, where the nurses provided a health talk to educate the patients.

During the HCWs health talk, which was normally done once a week, to educate the patients about their PTB and how to use their drugs. But I noticed that there was distance between HCWs, and the patients which may have, impacted on being able to hear what the nurses were saying which may then have impacted on the patients' understanding (Observation Field Note).

This talk advised patients how to use their drugs so that they will not default and contribute to multiple drug resistance (MDRS) as well as increase the likelihood of spreading the disease to family members. The nurses in the clinic provided this health information to patients, emphasising the importance of taking the medication, covering the mouth when coughing and not spitting on the floor; they also informed the patients that the disease is curable. The question is therefore why the patients did not retain this information. Possible factors might include the fact that the health talk was delivered in a large, open-plan waiting area where there were many distractions. The very illness of the patients might also have affected their ability to attend to the information fully. According to my observations as indicated above, such health talks may therefore not be an effective way to provide that information. The below quote reported by patient 3 demonstrates his knowledge about whether PTB is curable or not:

> *Yes, I was told that it can be cured but I don't believe it* (Patient 3).

Patient 3 was told that PTB can be cured but did not believe it. This disbelief seems to have been due to cultural norms among the community and reflects a widespread and longstanding traditional misconception about the disease: namely, that PTB is incurable. There is a need for more health education to enlighten the community members about the disease, their knowledge remains the same. A similar attitude is reported below:

> *When talking about culture, some people do not believe the disease can be cured, they just wait to die after presenting with symptoms* (Patient 4).

Patient4 here refers to the cultural norms that have been constructed by some of the community members with regard to PTB, that makes them disbelieve that PTB can be cured. This makes some of the patients assume that the disease is a death sentence.

Another patient who expressed knowledge that PTB can be cured was patient5, who was a retired nurse; she reported that once the infected patient has taken his/her medication, they will be cured. This patient's knowledge is due to her educational background, as well as her experience of working as a nurse in the hospital. The knowledge of patient 5 is further demonstrated below:

> *Yes, it can be cured. Once one takes the recommended medication, it will be cured* (Patient 5).

This study has revealed that knowledge about the curability of PTB was reported by 2 out of five of the patients interviewed. Out of five patients interviewed only two patients had knowledge while other three showed limited knowledge of the PTB and the remaining ones stated that they didn't know. The limited knowledge of among the patients about whether PTB can be cured or not can be linked to misconception about the PTB that are the consequence of a lack of education.

This finding is similar to that of the study conducted by Mangesho, Shayo and Makunde (2007), in Tanzania using six FGs with a total of 105 community members, both men and women, aged 21-72 years old. This study set out to investigate the community's knowledge, attitude, and practice towards TB and its treatment. The findings revealed that knowledge was poor among the patients in regard to adherence to treatment and how the disease is spread. Not only was their knowledge found to be poor, but multiple health assumptions were found to have contributed to or been associated with their ignorance. Some of these beliefs had a negative effect on the patient's health and the spread of TB. The most notable gap in knowledge was found in the relationship between HIV/AIDS and TB. This poses a great threat to the community, for TB strides in the shadow of HIV/AIDS as one of the leading causes of death in AIDS patients. This assumption associated with TB, and other misconceptions about the disease, are possibly associated with cultural beliefs that will be fully discussed in Chapter 7 which presents findings related to the social-cultural context of PTB.

The data from the carers/relatives of the patients indicated they also lacked knowledge about whether the disease was curable. Five carers/relatives were interviewed of whom two reported that PTB cannot be cured, as illustrated in the quotes below:

> *There is no cure; we should just pray that it should not affect our family members* (Carers/relatives 1).

A similar view was reported below by carer/relative 2 who was not sure if the HCWs' medicine can cure the disease:

> *I believe may God complete our healing; I am not sure if HCWs medicine can cure it* (Carers/relatives 2).

The above two carers/relatives did not believe that PTB can be cured; even one carers/relatives indicated that the HCWs' medication cannot cure the disease. The overwhelming power of fate in God's hands was perceived by carers/relatives2 who believed that those who are not yet affected should pray so that their family will not succumb. These carer/relative' lack of health awareness and education makes it harder for them to know what type of disease PTB is and who to contact for more information about it. Moreover, as noted above, 3 out of 5 patients in this study were unaware or unconvinced that PTB is curable, because of their misconceptions about the disease. For example, if the family members know that PTB is curable they will support their loved ones to comply with the treatment regime and stop isolating the patients for long periods. Their knowledge will also help to dispel the cultural beliefs that have been passed down to them from previous generations according to which PTB cannot be cured because it is a consequence of the actions of the devil or of witchcraft, as will be fully discussed in the next chapter. It is therefore essential for HCWs to address these misconceptions and disseminate accurate information to patients and their carers/relatives, as ignorance may encourage stigmatisation and social isolation of those diagnosed with PTB, which may then result in a wider and more rapid spread of the disease.

However, some carers/relatives inferred that if the government supports action against PTB, then it must be curable:

> *It can be cured with the support of Government (carers/relatives 3).*

Another carer/relative reported a similar view on PTB:

> *Yes, it can be cured, we notice changes since he started taken his drug. Definitely, TB can be cured* (Carers/relatives 4).

The statements above by the two carers/relatives indicate their belief that the disease can be cured; their good knowledge of the disease may be due to the health education they received from nurses in the hospital, as they themselves.

As for the patients and carers/relatives, (n=10) who participated in the study, four had knowledge that PTB is curable, two had no knowledge, two had some knowledge and one did not believe that the disease can be cured, despite being informed that it was curable. The remaining one did not respond to the question. Therefore, the majority of PTB patients, carers/relatives and community members possessed some knowledge that PTB is curable. Even those who have knowledge will still need to participate in health education and awareness programmes that will assist them to promote and encourage the community members to seek help and direct them to appropriate centers for treatment. These measures should help to combat the endemic poor health awareness, lack of trust in HCWs medicine and their behaviour, lack of educational background, and unhelpful cultural norms and beliefs in this community in Ondo state.

The findings from the Muslim FGs participants indicated that the degree of knowledge as to whether PTB is curable determines the level of acceptance of the PTB treatment. If the community lacks knowledge about PTB, they will not accept the patients socialising within the community, which will result in isolation.

Below are the views of the Muslim men and women interviewed about whether PTB is curable or not. Fourteen participants who were Muslims participated in the study, of whom only two men and one woman demonstrated good knowledge of whether the disease is treatable:

> *Participant 2: When they treat it, it is a curable disease, which can be successfully managed. If it is not treated, it causes a lot of problems* (Men Muslim FGs).

A similar view indicating a good knowledge of the disease is reported below.

> *Participant 4: If given proper medical attention, it can be managed* (Men Muslim FGs).

The other eleven Muslim participants did not believe that PTB can be cured. A typical example of these participants' lack of knowledge is demonstrated below:

> *Participant 1: PTB cough is very different and strong and loud unlike another cough when PTB patients cough they cough like when a dog is barking, the person will continue until he/she died so there is no cure* (Muslim men FGs).

Participant 1 demonstrated lack of knowledge of the disease, asserting that it cannot be cured, while a Muslim woman participant indicated that only doctors could know if the disease can be cured or not:

> Participant 1*: A medical practitioner is in the best position to answer this* (Muslim women FGs).

Only one female participant from the Muslim focus group reported that PTB can be cured, as indicated below:

> Participant 2: *The people with PTB that their condition is not too bad, and they can go and see the doctor they will be cured* (Women Muslim FGs).

This statement by participant 2 demonstrates her knowledge that if patients go to the hospital at the onset of their illness, then they can be cured. The overall knowledge about whether PTB is curable shows that there is a need for more health education for the Akure South community members. Knowledge about the disease is shown to be patchy in this sample and scant, as a majority of participants believed that PTB cannot be cured. Even those who do believe that the disease can be cured may lack confidence because their beliefs go against the cultural norms of their community. This may mean that they are unable or unwilling to advise other people or direct them to where they could get help.

These findings are supported by Samargandi *et al.*'s (2012) study, conducted amongst 436 participants aimed at assessing the level of knowledge of PTB in Jeddah, Saudi Arabia. Findings from the study showed that 36% of the participants were not aware that the lungs were the organ affected; only 53.3% of the respondents had adequate knowledge of TB, while 50.9% did not think it was an infectious disease. The findings of Samargandi *et al.* (2012) established that the public awareness of pulmonary TB in Jeddah was low. Even though the participants of this study were selected without regard to their disease status, the findings of this research showed that public awareness regarding PTB was also low. Essential information about PTB was lacking even among well-educated people, though Muslim females were found to have less knowledge than males.

The need for increased funding for health education can also be supported by Addisu *et al.*'s (2014) study that examined TB-related beliefs, intentions and behaviours' in Ethiopia. The purpose was to identify which, if any, of these factors significantly impact treatment-seeking for symptoms similar to TB, specifically an ongoing cough (Addisu *et al.* 2014). This study found that an individual's ability to recall or know about the etiology of a disease, chain of disease process, symptoms, preventions, and treatment options plays a crucial part in motivating patients to seek treatment (Addisu *et al.* 2014, p. 136).

Having identified the knowledge of Muslim FGs participants, I now present the knowledge of Christian church FG participants. Seven church FGs members participated in the research, and all agreed that PTB can be cured. Examples of their statements are presented below:

> Participant 3: '*Do you think this PTB can be cured?'*
>
> Participant 1: *Yes, it can be cured, is curable* (Church FGs).
>
> Paricipant 2: *yes, it can be cured* (Church FGs).

The good knowledge demonstrated in the church FG shows an important message in that the participants can be of assistance in health promotion to the patients as well as to members of the public by providing health information about PTB. They can also help by directing sufferers to the right place to seek medical treatment. Although the church FGs demonstrated good knowledge of PTB, as we have seen, the Muslim FG participants demonstrated a lack of knowledge about PTB. It is important to try to identify the reasons for this difference, and many factors seem to be at work. First, the Muslim participants did not believe that non-Muslims could teach them what to do. They felt that they could not be understood by non-Muslims, and that therefore the advice they received came from a position of ignorance. Therefore, they did not welcome non-Muslims coming to talk about health to their members:

> *Muslim communities are very close, hardly people can be penetrated if they are not Muslim. At the same time for somebody to have illness of PTB, they will not separate that person from the community or from the family* (Community Doctor).

The above quote demonstrates the Muslim cultural belief relating to access to the Muslim community by non-Muslims. The quote supports the findings of Abdel-Khaled (2011) in a study on the positive influence of religion, religiosity and spirituality on the mental health of young people (age 18-24) in Kerala state, India, conducted with 453 participants of whom 325 were Hindus, 66 Muslims and 62 Christians. The study found that Islam has a multidimensional aspect and multifaceted nature that influences all aspects of its adherents' lives and makes it difficult for non-Muslims to penetrate into their community.

This finding also supported by the results of a study conducted by Campbell *et al.* (2007) which demonstrated that faith-based organisation can be effective channels for the delivery of health education, health promotion and community outreach. For these organisation's health is part of their holistic mission, in which they offer spiritual counselling and health services through special committees (Catanzaro *et al.* 2007). The most important aspect of the faith-based programs is working with partnerships, which include the church, health professionals, health care organisation, the government, and the media. The last two mentioned can play an important role in ensuring that accurate health messages are delivered to the community (Rowland and Chappel-Aiken 2012).

Having compared the knowledge of the Muslim FGs and the church FGs, I now present the knowledge of the University FGs as to whether PTB can be cured, as stated below:

> Participant 1*: PTB is not easy to cure because it will still come back* (University FGs).
>
> Participant 2*: PTB is not curable, especially during cases of drug resistance* (University FGs).

The statements above from the University FG demonstrates mixed and a limited knowledge of whether PTB is curable.

> Participant 4: *Of course, it is very curable if the patients adhere to their treatment* (University FGs).

Out of seven participants from the University FG, one third clearly stated that PTB can be cured. Moreover, one University FGs participant who had limited knowledge of the disease believed that PTB can be cured but will still come back.

As for the community leaders, the chief, and the religious leaders, they were all knowledgeable about whether PTB is curable. The importance of their knowledge is that they could all be utilised to disseminate information throughout their communities and congregations as respected individuals regarding the importance of early detection of the disease, seeking prompt medical help and complying with the medication regime. Below is a statement reported by the palace chief indicating his knowledge of the curability of PTB:

> *I know it can be cured. I believe that's why the government has provided free treatment and drugs* (Palace Chief).

The above statement demonstrates a good knowledge that PTB can be cured, and since the palace chief recognised that the government is providing free treatment and drugs to help the patients, his knowledge could be useful in promoting health education to the community when community members visit the palace.

The community-nominated leaders also expressed similar views that PTB can be cured if properly treated:

> *Yes, it can be cured. In the past, PTB patients are cured, but I don't know how they were cured but the medicine cured them* (Community-nominated Leader 1).

> *Well, is a serious disease by nature, is a deadly and its kills and can be cured* (community-nominated Leader 2).

The two community-nominated leaders believed that the disease can be cured, as did the church pastor, as indicated below:

> *As a pastor I believed that it can be cured* (Church Pastor).

The church pastor knew that PTB was curable, while the Muslim leader displayed a lack of knowledge, as stated below:

> *There should be no barriers to a disease that is incurable. Going to the doctor won't really change anything. It can only delay the time of death* (Muslim Leader).

The statement reported above by the Muslim leader indicated his belief that the disease has no cure and that visiting the hospital for treatment from the doctor will not change anything and will only postpone the time of death. This participant lacked knowledge that the disease is curable; his idea that the disease is not curable was rooted in religious belief. It is noteworthy that the Muslim participants displayed less knowledge that PTB was curable than the Church FG participants, and this may be because the religious leaders themselves had different levels of knowledge about the disease. With the exception of the Muslim religious leader, all the other respected leaders in the community were knowledgeable about whether PTB is treatable and curable; hence they could all be utilised to disseminate accurate information throughout their communities and congregations regarding the importance of early detection of the disease, seeking prompt medical help and complying with the medication regime.

In contrast, although traditional healers also believed that the disease can be cured, they insisted that doctors need to have knowledge of traditional medicine to enable this:

> *Yes, the traditional healers believe it can be cured if patients take the medicine. But medical doctors must have knowledge of traditional healer medicine with that they will be able to cure any diseases that come to them. They should understand the traditional healer type of leaf and herbal concoctions and combine with their medicine so that they can cure any disease that come to them* (Traditional healer1).

Traditional healers stressed the importance of examining whether elements of the Traditional healers methods of treatment could be combined with orthodox medicine, as he felt both were needed to fight this deadly disease.

> *PTB is a disease that can be cured, yes, they believe it can be cured if they (*patients) *take the traditional medicine* (Traditional healer2).

According to TH2, PTB can be cured if the patients take traditional herbal medicine. Furthermore, Traditional healers believed that medical doctors must have knowledge of traditional medicine in order to cure PTB. Taken together, the above evidence demonstrates that out of 31 participants, 21 (67%) have knowledge, one was not sure and nine (29%) have no knowledge of whether PTB is an incurable disease or not. These nine participants may be influenced by many factors, such as lack of education, cultural norms, religious beliefs, lack of trust in the medical profession and poor health awareness. For instance, there is a need to address the lack of health education about the disease and the use of traditional healers medicine so that they can have trust in the medical profession. The community needs to be enlightened about orthodox medicine by demonstrating that PTB is caused by a micro bacterium and can be cured. This can be demonstrated by leaflets, illustrated on message boards and other media that can convince the community members not to seek traditional healers' help, or at least not exclusively. The findings in the study show multiple factors that influence lack of knowledge about whether PTB can be cured.

Below is presented the knowledge of the HCWs about whether PTB is curable. Of course, HCWs have good knowledge and understand that with early diagnosis and treatment, PTB is a totally curable disease. Example of the HCWs' views are stated below:

> *Yes, if the person is not defaulting the treatment, it can be cured* (Receptionist).

The TB clinic receptionist whose main duty is to receive people and direct them to the appropriate place was also aware that PTB could be cured. This shows a good understanding of PTB treatment. With this knowledge she can perform her duty very well and help to counter the negative effects of cultural norms that contribute to patient misconceptions. I observed how, the receptionist working in the TB clinic was the first point of contact for the patients and the public. She offered support and information about where to go and get their sputum tested and returned the samples to the container left in the centre of the building. Below is the view of nurse1 on the curability of PTB.

> *I observed there was shortage of human resources. The Nurses start seeing patients from 8 am and end by 9 am to administer the drugs to the patients and after the patients made their way home, there was limited interaction with the HCWs. In terms of staff providing services for those patients, they were 3 nurses, 2 receptionists and a cleaner.* (Observation field note).

In regard to the above statement there was no interaction between HCWs and patients due to shortage of staff. It would have been more helpful if there were more interaction between patients and carers/relatives, and the HCWs. The limited interaction was due to the stigma associated with the disease, and its infectiousness, which made the HCWs was unable to come closer to the patients. Below is the view of Nurse 1 on the curability of PTB:

> *Most people don't believe it can be cured. Some regard it as a death sentence. Once they start coughing out blood, they believe they have been bewitched by witches or wizards in their families, instead of coming to the hospital for treatment* (Nurse 1).

A similar statement was reported by Nurse 2, who stated that many PTB patients did not believe that the disease can be cured:

> *We the nurses and doctors know that the disease can be cured but many of the patients didn't believe but we need to encourage them that it is curable* (Nurse 2).

The above statement presented by Nurse 1 indicated that most of the patients do not believe that PTB can cured as soon as they start coughing blood; they assumed that they have been bewitched and that there is no cure. That was one of the reasons the nurses provided health talks to explain that the disease is curable, and that patients need to take their drugs as prescribed.

> *Yes, TB is curable. That is if the patient takes his/her drugs as prescribed and also regularly, it is cured. I have many examples of patients that took their drugs regularly and are very fine now. I don't even recognize them anymore because of how much they have changed, some of them put on weight, until they come to me and explain how they used to be TB patients. But those TB patients that are drug defaulters, when they come back, they are always worse than they used to be. This is why we always emphasis on TB patients to take the drugs regularly and correctly.* (Drug Nurse).

The drug nurse and Nurse 3 confirmed that PTB can be cured, and she had seen many people cured of the disease having taken their medication; however, those who did not take their medication as directed saw their condition worsen. She then emphasised that patients should take their medication regularly. Nurse 3 showed good knowledge of the disease and demonstrated the value of being able to interact with the PTB patients.

> *It can be cured if the people report to the clinic in time and take their medication as directed by the nurse it can be cured totally* (Immunisation Nurse).

The above statement reported by the immunisation nurse demonstrated good knowledge and understanding that PTB can be cured if well managed.

> *Definitely, based on the information I've had I think it is treatable provided the infected person follows the procedures to the letter, on what to do and what not to do.* (Lab Staff)

The knowledge of the laboratory scientist was also good, no doubt because his knowledge was acquired from his educational background and experience on the job. The same applies to all the doctors. As Doctor 1 reported:

> *Of course, it is a very serious disease, but it can be cured* (Doctor 1).

Similar knowledge was expressed by Doctor 2, as reported below:

> *It is curable like most bacterial infections; PTB is curable most of the times, except during cases of resistance* […] *But the treatment is available and there's total cure once the treatment complies with, only that it takes quite some time* (Doctor 2).

The above doctor demonstrated good knowledge that PTB is curable, except during cases of resistance. Furthermore, the doctor raises the issue that the drugs have to be taken for a long period of time which can be problematic. The doctor then mentioned that the treatment is available for the patients, although he did not mention that the drug is not necessarily stocked in the hospital every time patients attend. During my four weeks at the clinic, I observed a frequent shortage of drugs. In fact, in most cases the patients had to go home without medication and sometime were obliged to return the next day to check if it was available. Below is the statement of another doctor confirming that PTB can be cured:

> *Tuberculosis is a very serious ailment, but it can be cured if patient adherence to their treatment* (Community Doctor).

Without doubt, the HCWs were knowledgeable about the disease, and of course this will help them to treat the patients. Although the HCWs are knowledgeable about the disease and although health talks of about ten minutes have been arranged to enlighten the patients and the carers/relatives in the clinic, other factors that influence why the patients lack knowledge about the disease have not been addressed. For instance, the nurse and receptionist had the most contact with patients, while the doctors had limited direct contact. The health talks provided for the patients were not necessarily delivered in an environment where the patients could assimilate what the nurse was telling them; because of distractions around the building and their condition as sick people in pain, it may have been difficult for them to take in any messages.

> *During my research observation on 16th December 2016, which was my last day I observed that the 2 doctors assigned to the TB clinic both the*

> *DOTs site clinics were not performing their duties, which made the patients suffer more. They left their work for the nurses to do for them. When I was there, I did not see any Doctor attending to the patients but was I notice was they gather themselves in the doctor's room without been engage with the patients* (Observation Field Note).

The quote reported above about the knowledge of community members, church FG, Muslim FG and traditional healers reveal that there is limited knowledge of the curability of PTB among the Akure South community members who participated in the study. Even the HCWs, who have good knowledge of the disease, have only limited opportunities to communicate directly with the patients and the community members to pass on their knowledge.

The lack of knowledge and understanding among patients and community members about whether PTB is curable can be better understood by applying the Social Ecological Model (SEM) of McLeroy *et al.* (1988) which is presented in Chapter 9. Having examined these groups' knowledge about whether PTB is curable or not, I therefore now present the knowledge of community members regarding the treatment for PTB.

6.4 KNOWLEDGE OF PTB TREATMENT

Among the five PTB patients, none was able to demonstrate how PTB is treated; this shows the lack of health education and health awareness among the patients. Even after diagnosis and being provided with a health talk by the nurses, the patients interviewed reported that they knew very little or nothing of the treatment, nor the available drugs This poor knowledge about the treatment was caused by a lack of education, as the majority of the patients interviewed could not read and write. This has a great impact on the patients seeking help, and it may not only affect the health-seeking behaviour of patients but could also weaken strategies aimed at preventing the disease within the wider community. Typical responses showing lack of knowledge about treatment among PTB patients are reported below:

> *I don't know how PTB can be treated* (Patient 5).

Whilst a carer/relative stated that

> *Adhering to the instructions given in the hospital* (Carers/relatives 1).

This carers/relative reported that if sufferers adhere to the treatment given in the hospital, he/she will be cured.

The patients' and carer/relative' knowledge presented above shows some knowledge but not enough for the carers/relatives to assisting patients to Adhering to their treatment. The knowledge of the Muslim FG participants on PTB treatment is presented below:

> Participant 5: *Then the doctor will open a card for him/her and send the person for test and if the test come out positive then the doctor will place him/her on medication. If the patient is using the drug regularly as prescribed by, the doctors the disease will be cured* (Women Muslim FGs).

Muslim FG Participant 5 showed good knowledge regarding the treatment of PTB. She was the only participant in this group who was knowledgeable about treatment, as the others were unable to respond to the question. The reason may well be that she was a retired nurse. With this knowledge and understanding of the disease, she could assist other patients suffering from the disease by directing them to the TB clinic for diagnosis and treatment.

The responses of the church FG regarding their knowledge of PTB treatment are presented below:

> Participant 4: *when they know the appropriate channel where to go* (Church FGs).

> Participant 3: *I think someone has to summon up the courage to go for treatment anywhere to overcome the disease as quickly with constant checking* (Church FGs).

The above quotes present the knowledge of church FG participants about PTB treatment, indicating their awareness that patients suffering from the disease should make sure they seek help in an appropriate place for treatment to increase their chance of being cured. Below are presented the related responses from the University FGs:

> Participant 2*: PTB is caused by a bacterium so it can be treated by taking things that are very hot like tea and food* (University FGs).

> Participant 3: *Since it is caused by a bacterium, taking antibiotics should be effective* (University FGs).

> Participant 4: *The treatment I know is the use of drugs* (University FGs).

The above statements reported by the University FG participants show that most have good knowledge of the disease, to the extent that Participant 2 knew that the cause was a bacterium and two knew that the disease required medication. Participant 3 stated specifically that antibiotics can be used to cure the disease. Participant 4 stated that PTB could be treated by drugs. The seven participants in the University FG all demonstrated good knowledge regarding the treatment for PTB.

Having examined the knowledge of the University FG regarding PTB treatment, I now present the knowledge of other community members, including the palace chief, community-nominated leaders and religious leaders. The palace chief ‘s understanding of PTB treatment is presented below:

> *I don’t know how PTB can be treated* (Palace Chief).

The above statement reported by the palace chief demonstrates a lack of knowledge of PTB treatment. A similar statement was made by Community-nominated Leader 1:

> *What I know about treatment is to go to the hospital or chest clinic. I don’t know of any local treatment* (Community-nominated Leader 1).

The above statement reported by Community-nominated Leader 1 demonstrates his view that the only way PTB can be treated is for the patients to go to the hospital, whilst the second community-nominated leader stated the following:

> *Well, I am a community leader, I am not a medical doctor, it can be treated in two-ways, and people can treat it in a local medical way, with native doctor or in an orthodox way in the hospital* (Community-nominated Leader 2).

The above quote from community-nominated leader 2 indicates his belief that native doctors (traditional healers) can treat PTB, which could lead to some community members not seeking medical help. Increasing knowledge and awareness among community-nominated leaders would enable them to better support the patients and assist in directing them to the appropriate place where they will receive treatment. The community-nominated leaders can also play a useful role in promoting health education to the community members, as they are highly respected in society.

The statement by Community-nominated Leader 1 shows good knowledge but doesn't acknowledge that there are factors that can deter patients from seeking hospital treatment directly. Although when patients are ill, they need to go to the hospital for diagnosis and treatment, this may not always be straightforward. The patients might need assistance to get to the hospital if they lack the money to pay for transport. Patients in remote areas may also require advice about how to reach their nearest hospital or clinic.

Both the community Muslim leader and church pastor demonstrated their knowledge about PTB, as indicated below:

> *When I am not a doctor or herbalist, I do not know about the drugs. All people that have it die; they do not survive it* (Muslim Leader).

A similar lack of knowledge was reported by the church pastor, as indicated below:

> *I don't know how PTB can be treated* (Church Pastor).

The Muslim leader demonstrated a lack of knowledge about PTB treatment, as stated above, as he believed that anyone that has the disease will die of it, since there is no cure. This belief is influenced by many factors, including longstanding cultural norms among the community members, religious belief, and a lack of education and health awareness. All these factors feed the misconception by the community Muslim leader that PTB is not curable, and the Church pastor's ignorance of treatment of the disease. The chiefs, community Muslim leader's and church pastor's lack of knowledge about the disease has serious implications. Their position in the community is vital since they are the people that the community members contact for help when they need advice or direction for some problem. It is very important that they must be educated about how PTB can be treated so they can assist the community members that require their help. As previously suggested, illiteracy and a lack of knowledge about PTB may result in an increase in the prevalence of the disease in the wider community.

This finding is consistent with that of Morsy *et al.* (2003) in their study of predicators of treatment failure among TB patients under the DOTS strategy in Egypt. Results from the study support the view that knowledge about PTB will increase treatment compliance among TB patients and increase the cure rate. In addition, greater knowledge and awareness of the disease among the community members may improve the control measures that may in turn lead to a decrease in the transmission of the disease. Public education and awareness are essential for the prevention and reduction of the spread of TB, and therefore there is a need for information that will educate the community members about the cultural norms that have generated the misconceptions about PTB within the community. These are fully discussed in the next chapter.

The importance of possessing knowledge about the disease is also reflected in the responses of HCWs about PTB treatment, as presented below:

> *Some people due to the lengths of time they used to take the drug, some might default* (Receptionist).

The statement above demonstrates that a long course of treatment may be one reason for patients not adhering to their medication as recommended. This can in turn result in multiple drug resistance (MDR), which is difficult to treat.

> *They believe more in the traditional way of treatment than this orthodox method except if they come here by intervention and when we recommend patients for PTB treatment they just commence treatment with anti-tuberculosis drugs* (Nurse 1).

The quote above, reported by Nurse 1, indicated that a majority of the PTB patients believe in traditional medicine rather than orthodox medicine but are placed on anti-TB drugs when they attend the clinic or hospital as a last resort, having failed to find a cure elsewhere. The reasons for patients' lateness in presenting their illness are a lack of trust in the HCWs' medicine, cultural beliefs and the fact that they are used to traditional treatments. Furthermore, some Traditional healers convince patients that orthodox medicine may cause a relapse of the disease while the traditional herbs will ensure a permanent cure. Therefore, patients believe that traditional treatments are best for them.

The below quote demonstrates Nurse 2's knowledge about PTB diagnosis. She explains that there are three methods of diagnosing PTB sufferers who present for treatment:

> *Usually, we use three methods to diagnose; 1. Gene Xpert. 2. Clinical features (such as cough, mild sweat, fever and others) and 3. X-ray. Usually, once HIV patients present with cough, we place them on treatment. We don't allow them to go for those tests because their immunity is suppressed, and they are susceptible to TB already. So, we just start them on treatment immediately* (Nurse 2).

The above quote demonstrates Nurse 2’s knowledge of the three methods by which PTB can be diagnosed. During my research observation, I was able to find out how these three methods were utilised in diagnosing PTB. One of the doctors told me the process is as follows: in Nigeria, there are national guidelines and protocols for the treatment of TB, although I did not access this as it was beyond the scope of my study. According to the national protocol, the patients are required to provide sputum, and the sputum is then analysed to determine whether acid-fast bacillus (AFB) can be found. The clinical history of the patient is also examined, because even though the test is negative, it does not necessarily mean the patient does not have TB. The gold standard in Nigeria for diagnosing a patient with TB is performing a chest X-ray. However, in Akure South it is not possible to Xray or scan all patients who present with a cough at the initial stage because almost none of the primary health care centres with TB treatment sites have X-ray facilities, and people are also too poor to pay for a hospital card to see a doctor who will examine them; the sputum examination is therefore the next best alternative for testing. A number of secondary health centres have an advanced method of detecting AFB, namely, the GeneXpert. This is a molecular diagnosis to diagnose the molecules of AFB. The AFB is just like a stain; it is a microbiological procedure in which the sputum sample is placed on a slide and then stained. This is the method used in field-testing for TB in the Nigerian setting. After the clinical evaluation, if the patient is found positive, then treatment commences with the anti-TB drugs. According to my research observations, among these three methods that can be used to diagnose PTB, only the sputum test is carried out regularly, and even this is potentially inaccurate due to inadequate equipment as reported by doctors.

The importance of adhering to the drug regime was emphasised by the doctors and the nurses:

> *PTB patients that are drug defaulters, when they come back, they are always worse than they used to be. This is why we always emphasize on PTB patients to take the drugs regularly and correctly. The complaints of the drug defaulters are that they are fed up taking so many drugs* (Lab staff).

The implication of the above quote is that patients who do not take their drugs regularly thereby worsen their condition and involuntarily promote more drug-resistant strains of the disease, which are difficult and expensive to treat. From this nurse’s perspective, the most common reason for patients defaulting on their treatments was that they were tired with taking so many drugs. Below is a statement reported by doctor 6, explaining the implications of leaving PTB untreated:

> *Well, because if untreated, the complications are many, which can vary from the respiratory system developing a lot of problems, destruction of the whole lung, cardiovascular system problems, and so many other problems. Duration of treatment can span for more than 6 months, and this time frame could be a little challenging. When there is no education and no misinformation, of course there's a potential for the PTB spreading. The only cost is the cost of transportation to the health centre. Beyond that, it shouldn't be a disruption to family life* (Doctor 5).

The above quote presents the various implications of what happens when PTB goes untreated. These implications range from respiratory problems, including destruction of the whole lung, to cardiovascular system problems that can increase the treatment duration to six months and more. Other factors leading to untreated PTB include a lack of health education and the high cost of transportation to the TB clinic.

> *Once they are diagnosed, they place them on anti-tuberculosis drugs treatment, either in the facility or through a treatment support worker* (Doctor 1).

The above statement reported by doctor 1 describes how the PTB patients were diagnosed and how, when they tested positive, they were placed on treatment either in the clinic or at home. The role of the treatment support worker is to provide some level of counselling and to track patients, for example, when a patient is absent from the clinic when he/she is expected to take his/her drugs, they do home visits to find out what has happened. They also assist them in obtaining the necessary care.

A similar statement on patient adherence to treatment was provided by Community Doctor 2, as shown below:

> *So, they are unable to follow up 6 months' treatment course and they get tired of the drug* (Community Doctor).

The above statement reported by a community- doctor indicates that some of the PTB patients were unable to follow up their 6-month treatment, as they were tired and lacked knowledge of the disease.

> *That is why we advise them to come around so as not to spread infection. This is because in most cases, when an infected person is being treated, it is probable that they might have infected their neighbours who may re-infect them. So, it looks like the medication isn't working* (Nurse 1).

Another reason why the nurse advises the patients to come around as stated above was to inform them about the re-infection of PTB, in case their neighbour might have been infected so the patient will not think the drug is not working.

The Laboratory Officer reported a similar view:

> *They tend not to use their drugs when they are given to them probably because it is free. Even when they use it, they do so anyhow. Not using their drugs or defaulting on it leads to them developing resistance* (Lab Staff).

The above statement by the laboratory officer indicates that PTB patients were not using their drugs regularly, thereby causing relapses and an increase in the disease's resistance to the drugs. He suggested that adherence to the drug regime was impeded by the drugs being free, implying that perhaps they were unaware of the importance of completing the full drug course. There are multiple factors that influence why the patients were not taking their drugs. First, during the period of the present study, Nigeria was afflicted by industrial strikes that led to patients being deprived of their drugs. Second, some of the patients believed that the disease is incurable and that, therefore, there is no need to take the drugs. Third, the treatment duration for the drugs is so long that many patients become tired of the treatment. Fourth, lack of availability of the drugs in the hospital affects adherence, and fifthly, lack of education, support, and encouragement results in patients abandoning their drugs. Finally, the lack of finance for transportation to the hospital, which was discussed in the previous chapter, prevents patients travelling to get their drugs. However, even when patients collected their drugs on a monthly basis instead of daily, adherence remained poor.

Patients frequently discontinued their treatment when they began to feel better because they thought they were already cured. More generally, defaults in patient adherence are caused by a lack of education and understanding and the failure of HCWs to inform the patients that interrupting or halting the drug regimen can result in drug resistance, which will in turn further prolong the treatment. Therefore, there is a need for interventions aimed at improving communication and mutual understanding between HCWs and patients and their carers/relatives to improve PTB treatment.

A similar example of the duration of the PTB drug treatment period is indicated below:

> *Once the patients are on the drugs, within 14 days, they are no longer termed as infectious* (Doctor 3).

PTB patients receiving treatment after 14 days are no longer considered infectious, as reported by doctor 3. However, because of a lack of knowledge and health awareness, many patients are not aware of this, and some are isolated by their families and communities because it is feared that they are still infectious. People still find it difficult to continue with their drug usage and complete their treatment.

> *The best treatment for PTB is the anti-TB drugs and social rehabilitation to prevent the patient from spreading the disease* (Doctor 4).

Doctor 4 was looking at the big picture: not only curing the disease with an anti-TB drug but also preventing his patients from spreading the disease by providing social rehabilitation. However, the provision of social rehabilitation, which involves setting aside housing schemes for PTB sufferers, had not yet been established at the time I was in Nigeria.

As expected, all HCWs were knowledgeable about the treatment of PTB. They generally regarded it as another disease, which, though it may have serious effects if untreated, is definitely curable. In their discussions, many HCWs stated that the disease is generally not as prevalent as it used to be due to the attention it has received from both Federal Government and many international organisations that have put facilities in place to cater to the needs of those affected. Nevertheless, there are still some concerns about the knowledge of PTB demonstrated by both HCWs and community members. The HCWs have knowledge of the disease, but they do not necessarily effectively communicate this knowledge to patients and other community members.

This finding is similar to that of a mixed-methods study by Islam (2014) about the knowledge and attitudes of key community members towards TB in BRAC TB control areas in Bangladesh. This study utilised a quantitative survey with a sample of 432 participants, and a qualitative study involving in-depth interviews and a sample of 48 respondents. Both males and females aged 18 years and above were interviewed. The findings from Islam's study also confirmed that health providers like village doctors have good knowledge of the signs and symptoms, transmission, and prevention of TB. This is consistent with the present Akure South study, which revealed that HCWs' knowledge is an important facilitating factor for improved case detection and patients' timely referral, although getting people with symptoms to seek medical help quickly seems outside the control of the hospital HCWs. This latter finding emphasises the importance of improving public awareness of the disease but also of improving the knowledge of the disease among respected people within the community such as retired HCWs, nominated leaders, and religious leaders.

Another study on health professionals by Dodor (2008) exposed TB patients' stigmatisation in society. This study was undertaken in an urban district in Ghana and involved 16 FGs and 66 individual interviews. The findings show that HCWs' knowledge levels directly affect the effectiveness of healthcare services. Therefore, there is a need for improvement through intensification of health education about the disease. The campaign needs to be three-pronged, targeted at the patients and community members, and at the improved training for nurses and doctors, which will enable them to deliver better healthcare services.

When PTB patients are educated about the disease, the derived knowledge may be of help during treatment. It can help them to accept their condition, provide them with the confidence to stand up to stigmatising behaviours from others, and decrease self-stigmatisation (Rafferty 2005). Providing good health awareness for patients would also help to improve the early recognition of symptoms and subsequent reporting to the hospital for early diagnosis and initiation of treatment, which invariably improves the prognosis of the disease. Indeed, a study conducted at the Effia-nkwanta regional hospital in an urban district in Ghana also confirmed that one important factor motivating patients to complete PTB treatment was the encouragement they received from health professionals (Dodor 2008).

6.5 SUMMARY

The findings regarding knowledge of the signs/symptoms, causes/risk factors, and cure and treatment of PTB revealed limited knowledge of the above factors. For instance, three out of five PTB patients showed a lack of knowledge about curability, while the other two patients believed that it could be cured. As expected, all HCWs were knowledgeable about the cure and treatment of PTB. They generally regarded it as another disease, which, though it may have serious effects if untreated, is certainly curable.

Among the community members, palace chief, community-nominated leaders, and religious leaders interviewed, one-third believed that PTB could not be cured, whilst the remainder demonstrated knowledge that PTB is curable. As regards PTB treatment, community members overall demonstrated a lack of knowledge. Only the HCWs demonstrated a good knowledge of both the cure and treatment of PTB.

Regarding the knowledge of treatment of PTB, out of five patients, none could demonstrate a good knowledge of PTB treatment. In the University FGs out of seven participants, only three were able to demonstrate good knowledge of PTB treatment. In the Muslim FGs, only one participant demonstrated good knowledge of PTB treatment, and she was the retired nurse. The church FGs demonstrated good knowledge of PTB treatment. Finally, other community members, i.e., the palace chief, community-nominated leaders and religious leaders demonstrated only very limited knowledge.

CHAPTER 7: Socio-cultural contexts OF PTB

Introduction

This chapter presents the socio-cultural context of PTB. Within this theme, several subthemes are identified, including the health and religious beliefs, fatalism beliefs, and PTB stigma, and the consequences of the stigma on relationships and marriages. Finally, the influence on stigma of the perceived relationship between HIV and PTB, are also discussed. The findings identified are based on the data collected from community members, patients, carers/relatives, and HCWs.

7.1 HEALTH AND RELIGIOUS BELIEFS

In this subtheme, in practice, separating health beliefs from religious beliefs in this context can be difficult (and indeed artificial) because the traditional healers that patients consult may combine medical and spiritual/religious practices.

This study utilised the SEM of McLeroy *et al.* (1988) to analyse these findings. This model has been widely and successfully used in studies relevant to the present context – for example, one by Babalola and Uman (2009) on exploring the sociocultural aspects of TB and the factors predicting BCG immunisation in Northern Nigeria and one by Ming-Jung (2004) on the sociocultural aspects of TB, including a case study of immigrant TB in New York City. The results of these studies revealed that TB is determined not only by bacterial infection but also by a multitude of other factors. The works of McLeroy *et al.* (1988) recognize the interpretative value of the five ‘levels’ of the SEM: intrapersonal, interpersonal, organisational, community, and public policy.

People’s health beliefs are rooted in wider social-cultural contexts, traditions, norms, and religious beliefs. Health beliefs, as indicated by Salazar *et al.* (2013), can be invoked in an attempt to explain why people do not take up preventative and/or protective health behaviours. In this context, the term ‘lay health beliefs’ will be used to refer to the beliefs about PTB of non-experts who may nevertheless have valuable knowledge and understanding about their own bodies, medication, technical medical procedures used by themselves or those close to them, and the circumstances in which they live, all of which may affect their healthcare (Atkin & Amad 2002; Emslie *et al.* 2002). The patient’s knowledge cannot be compared with the expert knowledge of HCWs who have specialized academic and professional training. Since one objective of this study is to examine the beliefs about PTB held by patients and community members, the context within which they understand the disease must be examined. However, many people initially preferred to seek help from traditional healers rather than from healthcare facilities:

> *Some people prefer going to the traditional healers when they are sick where they are given herbs. These may persist until they find someone to direct them to the hospital for treatment. I don't believe in churches and mosques but in our traditional ways. My father was a traditional healer when he was alive, and he could even treat and cure barrenness. It will work* (Patient 1).

The above quote demonstrates Patient 1's belief in the ability of traditional healers to control and cure their condition. One explanation for this may be that the patient believed that PTB can be cured with traditional medicine. As indicated in the chapter on the knowledge and perception of PTB, of the patients and carers/relatives (N=10) who participated in the study, five (50%) had knowledge that PTB is curable, four (40%) had some knowledge, and one (10%) did not believe that PTB can be cured. Regarding community members, out of 31 participants, 21(67%) had knowledge, one was not sure, and nine (29%) had no knowledge of whether PTB is an incurable disease or not. The patients who had been interviewed believed that PTB is caused by witchcraft or spiritual attacks and that the only way to cure it is through spiritual or traditional healers. Patient 1 discussed some people's preference for traditional healers over orthodox medicine for PTB treatment in Nigeria, until someone directs them to a health facility to seek orthodox medicine from HCWs.

Patient 1 lacked understanding of the clinical treatment for PTB and lacked health awareness more generally. Patient 1 believed that PTB can only be cured by traditional medicine, and their beliefs and behaviour regarding the efficacy of traditional medicine also seem to have played a part in their scepticism of orthodox treatment. Health-seeking behaviour was influenced by the example of the father and the belief in the power of traditional healers passed down through generations, as well as misconceptions of PTB. The belief that PTB is inheritable seems to be supported by the fact that it is highly contagious.

In support of the above quote from patients, more information about the beliefs of community members is presented below:

> Participant 2: *But because many people believe that whatever the disease you have, if you seek spiritual help, such as praying, it can heal your ailment. Instead of going to the hospital, we believe in going for prayers, and that's a big problem. So, the place of physical treatment and so-called prayers as spiritual treatment has created a strong confusion that exists presently* (Church FGs).

This quote supports the view that many people still believe that whatever type of illness, it is important to seek spiritual/religious leaders for prayer instead of going to the hospital for medical treatment. These beliefs create confusion and delay the sufferers from accessing healthcare at the onset of their disease. Various factors influence this belief, but of particular importance is the influence of the patient's social group. Cultural norms and values undoubtedly affect the sufferers' beliefs and attitudes and influence the behavioural choices they make, whether to the benefit or detriment of their health. These social influences can be considered in different ways. Family, friends, and wider social expectations and norms all influence the patient's behaviour and belief that the only escape from PTB is to be cured by visiting traditional healers or spiritual/religious leaders, as that is what people in the community practice.

Below is the view of a TH, demonstrating his cultural beliefs about the use of traditional medicine and herbs in curing PTB:

> *I ask God on their behalf because God said he created plants for the benefit of the human body. He didn't create them to destroy man but to help man restore him. Some may have it, and it won't be curable. When this happens, it implies that the witches are behind it. At this point, they may need to appease the witches with sacrifice; only then can it be cured. The mixture of the spiritual and their herbs means they might try to attach the spiritual with their herbs that is from God or from someone they offended that might have inflicted them with PTB, from witchcraft or all other options are possible* (Traditional healer1).

The traditional healer 1 indicated that before he proceeds with PTB treatment, he must follow certain procedures, such as contacting God about what needs to be done for the illness to be cured. After God has been consulted, the healer will apply the treatment; if the treatment does not work, this means that witches are behind the disease. For the illness to be cured, the witches will need to be appeased with sacrifices; only then will the disease be cured.

In communities with strong respect for traditional healers and an established belief in the spiritual causation of illness, seeking healthcare from traditional healers is the norm. Several studies have reported on patients ‘shopping around’ for help with PTB before seeking hospital care (Ukwaja 2013). For example, Viney (2014), in a study on TB patients’ knowledge and beliefs about TB, revealed that many patients visited a traditional healer because of lower costs and geographical proximity. This was a mixed-methods study from the Pacific Island nation of Vanuatu, with 35 TB patients, males and females, aged 18 years and over. In addition, Macfarlane and Alpers (2009) reported that worldwide, many people with TB symptoms often consult traditional healers before seeking Western medical care. They argued that in low-income countries, the traditional healers are often the first point of contact among PTB sufferers. Patients with presumptive TB should first consult their local hospital instead of a traditional healer so that a definitive diagnosis can be made, and the correct combination of antibiotics can be prescribed. However, changing health beliefs and behaviours is a complex task, which may be best managed by HCWs, the government (through health promotion initiatives), local chiefs, church leaders, community members and leaders, and traditional healers themselves.

These findings are supported by those of Edginton et al. (2002), who conducted a study in a rural district of South Africa with 302 participants – both males and females, aged 15 years and over – on whether patients’ beliefs affect TB control. The results revealed that a strong belief in the community that TB is the result of breaking cultural rules, and that the resulting disease can only be treated by traditional healers, which delays presentation to hospitals or clinics. They also believed in a ‘Western’ type of TB that can spread from sufferers or is due to environmental pollution, smoking, or excessive alcohol consumption. A similar study conducted by Pronyk *et al.* (2001) in South Africa on assessing health-seeking behaviour among TB patients. The study revealed that many people with TB symptoms often consult traditional healers before seeking Western medical care. The proportion of people who would first consult a TH depends on the setting and on contextual factors, including cost, ease of access, and local beliefs about the cause of PTB. The findings of these studies broadly support those of this study.

In contrast, another patient expressed reliance on religion/faith in Jesus for her healing:

> *Their idols are blind and immobile. Jesus has done wonders in my life and family. So, any problem I have I direct to Christ.* (Patient 2)

The above quote demonstrates a belief in reliance on Jesus for healing, the patients' beliefs as a way of controlling and curing their condition. HCWs are aware of the religious beliefs commonly held by community members and how these could lead to delays in seeking medical help for PTB:

> *The people are very religious. So sometimes, the people may not believe the theory of disease causation; they would rather believe in the superstitious theories* (Nurse 1).

Nurse 1 indicated that people who are very religious may not believe that the disease is caused by a bacterium but rather by the agency of the devil or witchcraft. This misconception about PTB results in people initially seeking help from traditional healers or religious leaders rather than people seeking medical treatment. Many factors influence why people prefer traditional healers. For example, in one of the doctor statements in chapter 6 report that community members belief in traditional healers' consultation as the traditional healers made the community members feel comfortable and more welcome at home and listened to their problem without the use of modern medication, the belief that they have been bewitched, and the lack of knowledge of what they are suffering from. These misconceptions cause sufferers to delay seeking treatment which could lead to an increase in the prevalence of PTB among the wider population and a poorer prognosis.

> *The community members believe that whatever the disease you have, if you seek spiritual help, or TH they will be able to find solution, because the spiritual and TH we welcome them and tell them who sent them the sickness and what they need to do help them cure their PTB* (Community Doctor).

As reported by the community doctor's belief regarding the traditional healers' consultation, there are various factors that lead people to the traditional healers: they made the community members feel comfortable and more at home and listened to their problems without the use of modern medication, the people's belief that they have been 'bewitched', and the lack of knowledge of what they are suffering from. These misconceptions cause sufferers to delay seeking treatment, which could lead to an increase in the prevalence of PTB among the wider population and a poorer prognosis.

A similar view regarding how the cultural beliefs around PTB delay patients' presentation for medical treatment is reported below:

> *The patients believe it is a spiritual attack and don't believe it is PTB till they come for a PTB test and then test positive* (Drug Nurse).

A similar view, presented below, also reflects the belief that PTB is caused by evil spirits and can only be counteracted by spiritual treatment:

> *Most of the older generation think that the disease is a sort of curse from God or caused by evil spirits. The treatment is also some sort of spiritual in nature* (Palace Chief).

As reported by a palace chief, older people are more likely to be of the mind-set that the disease is caused by evil spirits or results from being bewitched. People's religious orientations determine their lifestyles and sets of beliefs. They then seek spiritual healing for the disease instead of going to the hospital for free and effective treatment. Some traditional healers make people believe that PTB is from evil people and also offer other causes:

> *Yes, people believe that bad people can send PTB to them; that is why people come to us to find out if their disease is from bad people, God, or not* (Traditional healer 2).

This statement from a traditional healers confirmed people believed that bad people, such as the devil or witchcraft, can send PTB or TB can be caused by them, which is why people come to such healers for consultation and in hope of a cure. If traditional healers' assistance about the cause of PTB originates as a result of an ancestral cause or spiritual attack, then patients may deem it pointless to seek medical treatment.

The extent of the influence of patients' cultural beliefs and social norms on their likelihood to access healthcare services is demonstrated by doctor 2 below:

> *They still believe it is a spiritual attack, maybe through their dreams and nightmares so the quality of life of TB patients is not pleasant. Especially those that have been running helter-skelter from* traditional healers' *requests to make certain provisions* [rituals and sacrifices] *before they can cure them. Therefore, by the time they get to the health centre, it affects them because even when health care is free, they still find it difficult to*

> *transport themselves down to the health care centres for treatment* (Doctor 2).

The above quote reported by doctor 2 indicates that people still believed that PTB is a spiritual attack, perhaps delivered through dreams and nightmares. In addition, the influence of poverty in accessing healthcare is still an issue for patients, as my data from the patients and community members confirmed, and as reported in Chapter 5, barriers to accessing healthcare. In addition, communal knowledge of PTB is plagued by misinformation. Various misconceptions about PTB have been expressed, chiefly that it is the work of an evil spirit and that the only way to treat and cure it is by prayer or sacrifice or consulting a TH.

The quote below by the community doctor reports a practice among community members according to which the patient is taken to a herbalist or a mission house for healing, with predictable consequences:

> *Some believe it* [PTB] *has never happened in their family before; they withdraw the patient and take them to an herbalist or a mission or mountain where they go to pray. Eventually, such a patient dies. It is very common* (Community doctor).

Because of the lack of health education about the disease, patients and/or their carers/relatives choose the kind of treatment they want to undergo as they do not believe they have PTB. The HCWs conduct counselling sessions for the patients after a positive diagnosis, informing them about the cause of the disease and the treatment available for it. Despite this, some patients still did not believe PTB was curable:

> *I feel very bad because I regard it as a death sentence, even though I am in the hospital receiving treatment* (Patient 5).

This patient's belief that to have PTB is a death sentence, and his consequent hopelessness about the prospect of recovery, is made more alarming by the fact that he was actually being treated in hospital. Although care should be taken not to derive generalisations from one instance, Patient 5's attitude serves to illuminate the scale of the task in promoting awareness of the cause of PTB within the community. Even though a few patients choose to stick to the available orthodox methods of treating the infection, others choose to explore different means of treatment, such as through traditional and spiritual means. The latter mostly perceive the disease to be a form of spiritual attack, which can only be healed through prayers, holy water, anointing oil, or herbal concoctions made by traditional healers. People combining different forms of treatment in an attempt to cure their ailment is also commonplace. This behaviour seems to be correlated with the kind and degree of religious affiliation of the patients and/or their carers/relatives:

> *Yes, because like I said, people attach so many things to a cough; they either think it's punishment for one's offence to the gods or the person is a witch or wizard that the gods want to expose* (Doctor 3).

The statement above indicates that because of the misconception of community members, some people perceive the disease to be a form of punishment for an offence committed years ago:

> *Some people believe they are being bewitched, not that it is an airborne disease. They think it is the work of the devil. At times, when they bring some from the churches or herbalists, their condition would have deteriorated. We always inform them that it is an airborne disease* (Nurse 2).

The above statements represent many claims from HCWs about how the community perceives PTB. Socially constructed community norms have created a fear that PTB is not an airborne disease but is caused by being bewitched, or that it comes from the devil, which made them focus on churches for healing, until their condition deteriorated leading them to seek help at the hospital.

Out of five PTB patients, three perceived the disease to have supernatural origins. These people choose to visit traditional healers, who place them on concoctions made from herbs to treat the disease. Others subject themselves to spiritual interventions as a means to heal themselves. Many ends up ignoring the infection until it is too late to remedy the situation. The lucky ones, however, are later referred to hospitals, where they can access adequate and proper treatment before the infection becomes life-threatening. HCWs seek to address these cultural and religious beliefs by counselling and making contact with patients' carers/relatives:

> *However, we still call them and counsel them. Even in marriage, some husbands or wives may want to disclose their PTB status to their spouse. We call such people and explain to them that the disease was not caused by being wayward or unfaithful; anyone can have it, even the spouse* (Lab staff).

The above quotation expresses a concern raised by a laboratory worker that having a PTB diagnosis could have an adverse impact on relationships and marriages due to a belief that the disease is caused by being wayward and unfaithful. In this instance, the laboratory staff members sought to reassure both partners that the disease can affect anyone and is not an indication of infidelity. Reliable information about PTB is also provided when patients and family members arrive at the DOTs facility.

> *Like I said, when they enter any DOT facility, information is given to them on TB before sending them for diagnosis. We do group counselling in a way, and we answer any of their questions* (Doctor 1).

Doctor 1 confirmed that new patients are provided with information and have the opportunity to ask questions of the doctors during group counselling sessions. The next subtheme below presents the findings regarding the influence of fatalistic beliefs.

7.2 FATALISTIC BELIEFS

Fatalism can be defined as a belief that health outcomes are predetermined or controlled by a higher power (i.e., God); it refers to a wide variety of beliefs, ideas, and concepts that appear to have a significant impact on the health behaviours of individuals from a diverse range of backgrounds (Franklin et al, 2017). Fatalism, in the context of health, generally refers to the belief that health issues are beyond human control, and it is conceived in terms of different ‘sub types. Another school of thought defines fatalism as a generalised belief that outcomes are predetermined and governed by external forces, such as luck or fate (Plante & Sherman 2001). Many studies have identified the impact of fatalism in the context of health as a barrier that can inhibit healthcare utilisation and promote or exacerbate unhealthy lifestyles (Perfetti 2018; Ugwu *et al.* 2015). In the context of this study, various beliefs related to fatalism were demonstrated by the majority of the participants, fatalism being understood as a belief that nothing you can do will improve your situation and that whether you get well or not is outside your control.

A typical example of the beliefs expressed by the patients is as follows:

> *Yes. Local belief affects them. For example, if you tell people that are experiencing a cough to go to the hospital, they will rebuff you for insinuating they have PTB because of the belief that the disease has no cure. Some others just prefer getting drugs from the chemist* (Patient 4).

The above quote demonstrates Patient 4's belief about how difficult it is for PTB patients to accept having PTB due to the beliefs and misconceptions about the disease. This patient stated that local beliefs still affect many people, as they do not want to believe they have PTB. Even if they experienced a serious cough and were told to go to the hospital, they still preferred to buy their drugs from the chemist because of their fatalistic belief. Religious values and beliefs are intimately linked to cultural norms and practices that shape patients' notions of health and illness, which influence treatment adherence and adherence to doctors' recommendations as well as health outcomes. The quote above offers insight into how beliefs and values influence patients' notions of health, illness, and healing by making it easier for them to deny that they have PTB, thus influencing their behaviour in going to the chemist to buy their drugs rather than going to the hospital for treatment. This finding is supported by Franklin *et al.* (2008) in a study on the development and validation of a measure of religious health fatalism for the African American faith community, which consisted of 276 participants of both sexes, ranging from 18 to 84 years old. The results revealed that patients believed that they had little or no control over their health. According to Ukaegbu (2007) in a study of leadership, fatalism, and underdevelopment in Nigeria, all actions and events are believed to occur through the power of God or other supernatural entities. Irrespective of the country, the concept of fatalism is similar in regard to belief. This is prevalent in the daily expressions of Nigerian citizens of all ethnic groups and socioeconomic statuses when referring to fatalism. Therefore, personal action is believed to be less important because the health outcome is thought to be inevitable.

Another patient confirmed the existence of fatalism around PTB in Akure South:

> *When talking about culture, some people do not believe the disease can be cured; they just wait to die after presenting with symptoms* (Patient 5).

This demonstrated the belief of Patient5 that save people believe the disease cannot be cured and that there is little to do but wait for death. This type of cultural belief can be influenced by many factors, such as cultural norms and traditional practices that have existed for years and thus cannot be changed overnight. Unless these misconceptions are properly addressed, it is difficult to see how they can be changed at all.

> *It lies with the doctor. When they do their best, we pray to God to heal them. Besides that, no other help is available* (Carers/relatives 1).

Carer/relative 1 hoped or believed in the power of God to help the patient to be healed from the disease. This finding is supported by Gall's (2010) study, which aimed to explore the role of religious resources in long-term adjustment to breast cancer, in Southern California, using a sample of 52 survivors and 40 supporters. The study found that belief in a relationship with God was related to optimism, hope, and inner strength in coping with illness. A similar finding was reported by Pargament (2003), who stated that a relationship with God appears to represent a complex process that does not preclude the experience of a negative emotional state of disappointment, questioning, and doubt. This type of belief seems to have a significant impact on the behaviour of carers/relatives towards the patients they support, as they believe that having a relationship with God can help to give them comfort or strength to deal with the illness. The precise nature of these beliefs can vary but may include the provision of comfort, social support, a sense of belonging, encouragement, and inner strength to deal with it until they die or are cured. However, the effect of these beliefs is often to delay the patient seeking treatment at the onset of their illness. It may result in death or complications in their treatment/diagnosis and cause or hasten the spread of the disease in the family or wider community. Below is a similar view on fatalism relating to PTB expressed by a Muslim leader:

> *PTB happens only to those who are predestined to suffer from it* (Muslim Leader).

The above quote reported by the Muslim leader states that those who are destined to suffer from the disease will definitely have it.

The Muslim FG participants demonstrated their view that God's healing power protects them from being infected with PTB:

> Participant 2: *May God never allow us to experience the disease. May God not allow it to befall us* (Muslim Men FGs).

This is another strongly fatalistic expression of one's belief about PTB. The Muslim FG participants considered that it is a disease curable only by God:

> Participant 3: *My prayer is that those who are suffering from it get healed and live. May Allah count us unworthy of it. Again, may God heal the conditions for those suffering from it. May God grant us all good health. May it not turn into a family problem* (Muslim Men FGs).

According to the Quran, the creator of all power is Allah. The word or the name of ‘the one who cures and heals’ was also quoted by Participant 3 and others, referring to the belief that Allah cures all ailments. This participant believed that nothing can be done without Allah. He then prayed for purification and that Allah should count them unworthy of the disease and would heal sufferers. Their fatalistic beliefs were so evident that they considered nothing to be within human control. In this study’s context, such powerlessness, helplessness, or submission was apparent when the patient expressed the belief that they could not do anything to help themselves. I was even told by a participant that whether and how much they talked to patients was not under their control. According to the participant, if God wants the PTB to be cured, it will be cured.

The same beliefs were also reported by the female participants in the Muslim FG that it is only God who can heal the disease:

> Participant 5: *And may God not allow us to encounter the disease. The cause of PTB may be difficult to say because is not because of a particular food they eat that cause the disease or water they drink that causes it is only God that knows it* (Muslim Women FGs).

As the cause of PTB was unknown to patients and the disease was not transmitted through the food or water they drink, Participant 5 believed that only God had knowledge of the cause of the disease.

Similar beliefs were expressed by participants in the church FGs:

> Participant 1: *If it happens, there is nothing anybody can do other than to pray for God to help. If it happened to someone, I am sure the helper will come from anywhere to assist* (Church FGs).

Participant 1 expressed similar fatalistic beliefs towards PTB, asserting that it is only God who can heal sufferers through being petitioned with prayer. The ‘helpers’ referred to by Participant 1 are divine agents. Participant 1 did not mention that the patient should seek help from either the TB clinic or local religious leaders. Cultural beliefs about the origin of PTB is also related to the patient’s fatalism because if their disease is a result of a spiritual attack, then they may see no point in seeking medical treatment. Ignorance can lead to people having fatalistic beliefs, as indicated by doctor 1:

> *Ignorance is also another barrier; for example, a patient who has PTB is told by relatives it is a spiritual attack, and they discourage him/her from*

> *using the drug and ask them to go for spiritual prayers instead* (Doctor 1).

Doctor 1's statement above indicated that community members' limited knowledge and understanding of PTB leads them to misjudge the need, timing, and kind of preventative and curative action required. Ignorance also feeds into fatalism; when sufferers attribute PTB to a diabolical or otherwise spiritual case rather than to bacterial infection, then they will find hope only in divine intervention. Thus, most of the patients and the religious groups (church FGs and Muslim FGs) who participated in the interviews lacked hope and felt powerless, helpless, or submissive in the face of the disease. The community members stated that if God wants, he will heal them; otherwise, the disease will be fatal.

Fatalism is also strong within the Christian community and can lead to poor self-care and healthcare utilisation. These people believe that their illness is beyond anyone's control and that only God can heal them (Powe *et al.* 2003). In the Muslim community, the notions of acceptance, submission, fatalism, and inevitability lead Muslims to value health as a gift from God and to endure suffering and disability with patience and acceptance in expectation of better rewards in the hereafter. However, the lack of openness to outsiders on the part of the Muslim community is a barrier to their acceptance of medical care and information. Overall, this study's findings identified a need for health education programmes to target both traditional healers and religious leaders for them to advise community members on PTB prevention and how to seek help in case of infection.

One effect of fatalism is that it allows people to rationalise negative events in their lives, to overcome their grief, and to accept the outcome; however, it also acts as justification for their lack of responsibility. Nonetheless, some religions do urge people to seek medical help for their illness. For instance, in the Quran, Muslims are strongly encouraged to seek treatment and care, and Islam permits the use of any drug in a life-threatening situation (Attum *et al.* 2018). However, some Muslims misunderstand this teaching and may choose to ignore treatment and preventive measures in the belief that they are submitting to their fate and destiny (Elbarazi 2005). This 'acceptance' may lead a person to delay reporting their ill health for treatment at the onset of their disease.

A qualitative study conducted by Elbarazi *et al.* (2017) examined the effect of religion on the perception of health states among Muslim adults in the United Arab Emirates, with 200 participants, both males and females, aged 18 years and above. The results revealed that the Quran encourages Muslims to accept illness, suffering, and dying. Moreover, the

Islamic faith teaches that calamities can absolve the sins of genuine Muslims. These views can influence Muslims' perception of dying and illness and their beliefs regarding different health outcomes. Elbarazi *et al.* (2017) acknowledged that Muslims are strongly encouraged to seek treatment but presented evidence to suggest that some Muslims misunderstand this advice and may choose to ignore treatment and preventive measures in the belief that they are submitting to their fate and destiny. The tendency among the Muslim community in particular to have fatalistic beliefs about PTB that are rooted in their religious faith was also noted throughout my fieldwork.

7.3 PTB STIGMA

This subtheme examines the factors that influence the causes of PTB stigma in relation to their impact upon sufferers accessing health services, not being able to work, and socialising with others in all aspects of their lives.

Stigma is a powerful phenomenon; it is inextricably linked to the value placed on varying social identities, and it also brought to bear on individuals or groups both for health (e.g., disease-specific) and non-health (e.g., poverty, gender identity, sexual orientation, migrant status) differences, whether real or perceived (Nyblade *et al.* 2019). Stigma is a powerful social process that is characterised by labelling, stereotyping, and separation, leading to status loss and discrimination (Nyblade *et al.* 2019). In this study's context, some community members discriminated and stigmatised the PTB patients because of their PTB, which led to the latter's isolation and the rejection of PTB patients by the community members.

The United States Agency for International Development (UNAID) defined discrimination as unfair and unjust action towards an individual or group on the basis of real or perceived status or attributes, a medical condition (e.g., HIV), socioeconomic status, gender, race, sexual identity, or age (Stangl *et al.* 2019). The symptoms exhibited by PTB patients – such as incessant coughing, emaciation, and weakness – were attributed to many causes by some of community members. As stated previously in this chapter, the disease was viewed by community members as a punishment from the gods or from witchcraft, and this attribution led to stigmatisation and contributed to the shame associated with the disease.

Some community members considered coughing and weight loss as signs that the sufferer had been bewitched by evil forces; as a result, they disassociated themselves from the sufferer. According to the WHO (2008), stigmatisation is a social determinant that may affect the ease with which healthcare services may be accessed. Stigmatisation, when embedded in community norms and interpersonal attitudes, is associated with a particular trait or characteristic that is considered undesirable (Link & Phelan, 2001). Stangl *et al.* (2019) stated that stigma enables varieties of discrimination that ultimately deny the individual/group full social acceptance and reduce the individual's opportunity. These perceived undesirable characteristics lead individuals to feel self-disgust, shame, and guilt.

In this study, stigmatisation was identified as one of the major problems faced by patients during their illness. The patients claimed they behaved in a certain way because if others knew about their diagnosis, they would not approach them because of the stigma associated with the disease:

> *People have different opinions about TB, so I did not tell anyone. However, they noticed that I was sick and had lost a lot of weight. Anytime they asked me, I just told them that I was sick and went to the hospital for treatment. I did not inform anyone that I had TB* (Patient 1).

Patient 1 reported that he had to lie to people about being ill, and when his illness became impossible to hide, he did not disclose that he had PTB, and when people asked what was wrong with him, the only response was that he was going to the hospital. However, he did not tell anyone that he had PTB and his reason for not telling anyone about his PTB status was because people would disassociate with him due to the stigma associated with PTB.

However, this study also found instances in which the PTB sufferers received compassion and support. One of the patients reported how her family supported her, encouraged her to seek treatment, and provided her with proper care.

> *Yes, stigma is a problem, but as for me, I tell my friends about it, because it will not be good for them to find out on their own. Furthermore, when one tells people, they may be able to suggest ways to treat the disease* (Patient 2).

The above statement reported by patient 2 demonstrates the patient's recognition that stigma exists, but she decided to tell people because of the possibility that they could suggest ways to treat the disease.

Despite such examples of compassion and openness, Patient 1 experienced being stigmatised. The reason this patient did not disclose his PTB results was that to a significant extent, stigma was itself a consequence of deficient health awareness and education. Considering these factors, the patients may not want to come forward for treatment as they may not even be able to accurately interpret their symptoms. This makes it very difficult for PTB patients to access health services at the onset of their symptoms without support:

> *I was distraught, I cried bitterly and hopelessness and powerless, in that I don't know where I got the disease from when I was told I had PTB* (Patient 5).

The above quote demonstrates the patient's reaction to his positive PTB result. Such distress is only natural, and as previously seen, it can be exacerbated by the fearful or even hostile attitudes of community members. Conversely, when patients are *not* shunned by their carers/relatives, this can provide them with invaluable practical and psychological support with their families and friends, as all the carers/relatives I recruited were very supportive; this was also confirmed by the carers/relatives during the interviews. The following quotes demonstrate the compassionate attitude of the carers/relatives who were interviewed:

> *People do not run away from him. They come nearer probably because he is the kind of person that doesn't run away from people when they need his affection. He was being supported by members of the family* (Carers/Relatives 1).

A similar view is presented below*:*

> *I and my husband come from loving families that love one another. They have all taken her as their child; they didn't leave me alone in this. We just tell her to cover her mouth when coughing, and since she has been taking her medications, she has stopped coughing* (Carers/Relatives 2).

As demonstrated above, the family members agreed that discrimination and stigma within communities often stem from the fear of infection. These family members supported their loved ones during their illness. They did not run away and did not allow them to stay in an isolated environment.

They cared for them until they were cured, although these carers/relatives also experienced being stigmatised through association with their afflicted loved ones.

> *Most of the challenge the patient faces are stigma. If people around us get to know he has the disease, they will try to keep away from us. They think they may actually have the disease. They don't want to come around us. They are scared* (Carers/relatives 3).

In support of the patient statements above, Carer/relative 3 confirmed that stigma was the main challenge affecting the patients since as soon as the community members get to know that the patient is suffering from the disease, they do not associate with the patient. Although stigma is socially and culturally constructed, the community members fear that they might become infected; therefore, they do not want to have anything to do with the patient's family. These results in the patient being isolated from the community, with the resultant sense of hopelessness frequently adding a mental burden that exacerbates their condition. However, the opposite effect is observed when the family decides to stand by the sufferer, and the support of carers/relatives is immeasurably beneficial to patients.

> *Combining caring with my academic pursuit was really challenging for me. Apart from that, I still care for him; he is my father - he provides for all of us* (Carers/Relatives 4).

Participants from the church FGs confirmed the existence of widespread stigma regarding PTB:

> Participant 1: *Actually, there was a time I was posted to another site to work. A colleague of mine was coughing and was told to go to the hospital for a test, and when he was tested, the result was positive, and he was posted to another place because he had PTB, and other members of the team were not happy to be near him because of the PTB (church FGs).*
>
> Participant 3: *I have no experience, but I have seen people being stigmatised because of PTB.*
>
> Participant 4: *I have not experienced it before, but I have seen cases, by working in the lab during my student training, so we test a lot of those things and see how people stigmatised them.*

> Participant 5: *Nobody has experience, but we have seen cases; as soon as people know someone has PTB, no one associates with him/her; sometimes, they will be removed.*
>
> Participant 6: *I would not be happy if any of my family were suffering from PTB disease; I would be ashamed because of what people may be thinking and saying about my family. The stigma associated with it is very strong in the community* (Church FGs).

The abovementioned participants reported that although they had not personally experienced stigmatisation, they had seen many people affected by the stigma around the disease. Some sufferers were even taken away to prevent the disease from spreading to other community members. Such observations were also evident among participants of the university FGs:

> Participant 2: *Some of the patient's social interaction due to isolation and stigmatisation will affect them badly* (University FGs).

A similar statement was also confirmed by Participant 6 on the effect of PTB on patients:

> Participant 6: *It is a big problem because it affects personal well-being and, social interaction due to isolation and stigmatisation. It will also affect finances. You wouldn't be able to move freely as well* (University FGs).

The above quotes indicated the variety of negative impacts that a PTB diagnosis can have. Social isolation has practical as well as psychological consequences, affecting a patient's financial independence and inability to travel due to a lack of funds for transport. The palace chief who was interviewed gave a perspective on the historical attitudes towards PTB, which unfortunately shows that while it was different in the past, there is still considerable continuity with how sufferers are still regarded:

> *In the past, when anyone developed that disease, they were normally taken to a distant place or behind the house, where a structure was built for them to stay in until either they were cured or died from the disease* (Palace Chief).

The above quote indicates that in the past, PTB patients were physically removed and hidden from the community until they either recovered or died. The effect of isolation through stigmatisation can have similar devastating effects on the patients, as Smith et al.

(2008) found in a study of stigma against TB patients in Addis Ababa, Ethiopia. A total of 10 TB patients were recruited aged 33.7 ± 3.2 years. The study revealed that the most common problem affecting PTB patients in relation to the fear of infection is stigmatisation. Such stigmatisation is rooted in cultural practices and norms. The Akure South community members who were interviewed in this study confirmed that people disassociate themselves from PTB patients due to stigmatisation.

For example, a community-nominated leader supported the chief's opinion in stating that when the patients are suffering from PTB, the community members disassociate themselves, as indicated in the following quote:

> *People will be trying to run away from the people with the disease - that is just because of local belief; they do not want to associate themselves with the people with PTB* (Community-nominated Leader 1).

One attempt to change this practice is the effort on the part of nurses to reduce stigmatisation by giving explanatory health talks:

> *Expect for stigmatisation, and that is one of the things we give them health talk about; it is not something to be ashamed of. Maybe when they come to the clinic and see their friend, they will want to hide; that might even prevent them from coming again* (Nurse 2).

The above statement reported by Nurse 2 indicated that stigma exists; however, it can be prevented through providing health talks. Furthermore, for such talks to have the desired effect of reducing the stigma around PTB, there is a need for health awareness that will promote PTB to the community members through mass media campaigns. The next section presents the consequences of stigma on relationships and marriage for PTB patients.

7.4 THE CONSEQUENCES OF THE STIGMA ON RELATIONSHIPS AND MARRIAGE

This section presents the effect of the stigma on relationships and marriage in regard to PTB patients. It was revealed in the study that the effects of stigma on relationships and marriage among the participants suffering from PTB were a very serious issue; the HCWs and the community members also confirmed how patients were separated and divorced from their loved ones. Due to the fear of rejection, some of the patients were unable to reveal their PTB status to their family and friends. The quote below exemplifies one woman's anxiety about revealing her PTB to her husband:

> *If my husband knew about PTB, he might not end our marriage, but he might not feel good about it* (Patient 1).

In support of the statement of Patient1, another patient also confirmed that PTB can result in marriage being refused:

> *Yes, they can refuse the marriage because it is a serious ailment, as they will want to avoid contracting the disease* (Patient 2).

This statement indicates that some people may not marry PTB patients because the disease is very serious, and people wish to avoid becoming infected:

> *I don't understand that if I am confirmed as being* [PTB] *positive, my wife and children will run away from me; that will be very serious, although it can happen, because I have heard it. In the olden days, when one wanted to marry, relatives would always warn you to beware of the diseases prevalent in the family and not to marry from homes with a history of certain diseases* (Patient 3).

Although this patient had not been confirmed positive yet, his statement provides further evidence of the stigma around marrying into a family with a PTB sufferer. He confirmed that PTB patients were historically ostracised, and he touched on the historical tradition of norms around marriage. If a family had a history of PTB, the other family would not agree to the marriage. The same beliefs were demonstrated by a participant in the church FGs:

> Participant 5: *I would not marry or encourage my child to marry a PTB patient because we all want peace; the symptom of PTB is similar to HIV/AIDS. When you have it, there is no peace, so I would not allow such a marriage… I can't marry him because I can get infected; even if that did not happen, the children we may bring forth can get infected* (Church FGs).

Participant 5 stated that she would not allow her children to marry into a family that had a member with PTB. Having seen or heard of many people who had died from TB in the community, she stressed that she wanted peace in her family, and she did not want to get infected, as this would have a negative effect on the life of the children. Participant 5 suggested PTB can be an inherited disease if a family is already suffering from it. The physical symptoms of PTB can also deter potential marriage partners. The extreme weight loss, persistent coughing, and coughing up of blood associated with the disease do not make TB patients presentable marriage partners.

> Participant 4: *There is no one who will see the disease and want to marry into such family* (Muslim FGs).

For some, if you marry a TB patient, you will be associated with the shame the disease brings.

> *If they are in love with each other, ours is to give advice. With prayer, if they pray together, we have seen cases like that, God can cure the disease. Then they become one, they can marry each other. This God is the only one that can cure every disease* (Church Pastor).

The statement above shows an example of how religious belief can positively affect the attitudes of patients and their community in the context of relationships and marriage.

> *The family will not accept such type of marriage to allow their loved one to marry into a family with that type of disease that kills easily* (Community-nominated Leader 2).

The above quote reported by a community-nominated leader demonstrates the possibility of dying from the disease so that it would be unwise to marry a PTB sufferer.

> *Yes, let's say a man is infected with PTB, the wife may not be happy, and she can think she will become infected; she may not understand - she may leave the husband and break up the marriage. It can lead to divorce. Possibly they might not allow the woman or the man to marry such a person having such an illness. They may think is a transferable disease, and if they give birth to children, they might have PTB* (Receptionist).

In the previous quotes, most of the participants mentioned the effect of PTB on marriage, asserting that a positive diagnosis can lead to divorce. The above statement by the receptionist also confirmed this, and she added that there may also be family and community pressure to discourage marriages between a PTB sufferer and someone who does not have the disease. However, it was community construct that when a person in the family has PTB, people from the other family would not want to marry into that family. A lack of health awareness and inaccurate information about the disease causes people to believe that PTB is hereditary and transferable to children, and this belief adds to the stigma around PTB.

A similar view is presented below by the drug nurse on the impact of PTB on patients:

> *It could affect their work, marriage, and relationship if one of the partners develops the disease and is not able to work and is the breadwinner of the house or does not have the strength to do anything such as cooking for the family; somebody else must be there to take care of the children, so it is going to be a big problem for them* (Drug Nurse).

This drug nurse, who administered patients' drugs, pointed out that PTB imposes a great economic burden on the marriage because the patient does not have the energy to work to support the family. Moreover, the patient cannot perform his/her expected roles in the marriage. Leaving others to perform such duties can result in disputes, and if the infected patient has not disclosed his/her status because of shame or stigma, this can result in divorce. In support of the nurse's statement above, other nurses confirmed that during courtship, if a partner detects the other partner has the infection, the relationship may end.

> *During courtship and you detect that your partner has the infection, some of them might want to end the relationship* (Nurse 2).

A similar view is presented below with regard to a non-infected person getting married to or having a relationship with a PTB sufferer:

> *It does. For example, if a wife has it and the husband is not an understanding type, he may divorce her* (Immunisation Nurse).

The above quotes indicate how difficult it can be for PTB patients to marry into non-infected families as a result of the beliefs and lack of health education and awareness within their community.

> *Some will come here with their husbands who will tell their infected wives that they are divorcing them because of the PTB* (Lab staff).

According to the lab staff member, the partner who is not infected will seek a divorce, although whether this is directly due to community stigma or out of a wish to prevent the spread of infection to their loved ones is unclear. The staff member had at least recognised that PTB is not hereditary:

> *Inasmuch as TB is not inheritable and is treatable, I don't believe it should affect marriages* (Lab Staff).

This lab staff member, knowing that PTB can be treated and is not hereditary, believed that anyone can marry a PTB patient. Although Nurse 2 and Nurse 3 expressed the views of the patients, the nurses too believed that PTB can be cured as long as the infected person adheres to their medication. As revealed in the findings, all the HCWs possessed good knowledge of PTB; however, the problem of transferring their knowledge to the patients and community members raises a concern. Nonetheless, there is a need for the nurses to provide more health education on PTB to patients, so the patients develop more knowledge as well, not only through health talks but on a one-to-one basis either during drug administration or providing PTB treatment to patients.

The doctors interviewed also presented their views on the effect of PTB on patients' marriages and relationships:

> *I haven't seen, but I have heard that someone who suffered from TB died. When the children wanted to marry, the other family referred to them as the ones whose mother died of TB so they can't marry into their family* (Doctor 4).

The statement above confirms that the misconception of PTB as a hereditary illness also influences attitudes towards affected families; the stigma around the disease leads parents to deter their children from marrying into families with PTB sufferers, even if that sufferer is/was of an older generation. This belief results from a lack of health awareness and education within the community; cultural misconceptions are deeply rooted and thus need to be properly and systematically addressed. Below is another view of the impact of PTB on marriage and relationships:

> *It will affect their lives if they do not comply with the instructions. The only time it affects marriage is when the person has a partner who doesn't understand, and he/she thinks it can be transmitted through sexual intercourse and so blames him/her for infidelity* (Pharmacy).

The pharmacy director indicated in the statement above that PTB can affect relationships if the patients do not comply with the doctor's instructions about their treatment. She went on to say that if the partner thinks that she/he can be infected with the disease through sexual intercourse and so blames the partner for unfaithfulness, then it may result in divorce because some of the patients and community members mostly confused

HIV/AIDs with PTB. Most of the community members, patients, and carers/relatives confirmed that a person suffering from PTB will have difficulty in getting further partners. Hence, unless the misconceptions and stigma around PTB are addressed, it may be difficult for the people to understand that PTB should not lead partners to divorce but rather they should support each other and comply with the doctor's instructions to adhere to their drug regimen.

A TH presented similar beliefs about PTB, as reported below:

> *Yes, it has effect, for example, if someone having the PTB disease kiss another person the person will be infected. If the non-infected person is from a good family, they will not agree with themselves getting married, that is why I said it is an inherit condition and the more they marry each other the more the disease will continue spreading and it is not good* (Traditional healers 2).

TH 2 understood that PTB can be transmitted from one person to another; it is an airborne disease, so close proximity would put a non-infected person at risk. However, they also expressed the inaccurate belief that PTB is an inherited disease. The TH's understanding of and beliefs about the disease may be associated with the strong cultural norms and the construction of PTB within a community that overall lacks adequate health education and awareness of the disease. He did not seem to be aware that once a PTB patient has started antibiotic treatment, within a few days, they will no longer be contagious. The risk of transmitting PTB is minimal if the patient is on the right drug; when the patient is not on this drug and their partner has not been immunised, they may be at a high risk of spreading PTB. Beyond that, PTB should not be disruptive to family life, although temporary separation might be required during the initial treatment, which may involve the patient's seclusion to prevent the spread of the disease. In this case, the patient may use separate utensils and have their own separate well-ventilated space. This would only need to be enforced for a few days or, at most, for two weeks. Moreover, PTB is not transmitted genetically. The belief that PTB is hereditary may arise from the observation of the disease most likely being passed from person to person when families live in overcrowded shared accommodations. These misconceptions about PTB on the part of traditional healers, patients, and community members once again point to the need for community-wide health education.

The quote below demonstrates, however, that the fear of PTB is not only a matter of poor education; at a basic level, misgivings about marrying someone with a chronic disease are seen to be quite natural:

> *No matter the education, there would still be misgivings and beliefs about a disease; it's natural to want the best, so, people would rather marry someone with no history of a chronic disease than marry one with even the tiniest bit of history of a disease* (Doctor 3).

The quote above suggests that factors that influence the behaviour of community members towards PTB sufferers are not entirely reducible to cultural misconceptions. As Doctor 3 stated, people would prefer to marry someone without a history of chronic disease for peace of mind in their married life. However, if two people are in love and wish to marry despite one of them having PTB, then awareness of the true nature of the disease becomes a vital element in reassuring the partners that they do not need to end the relationship, provided the sufferer takes his/her medication as directed.

7.5 THE INFLUENCE ON STIGMA OF THE PERCEIVED RELATIONSHIP BETWEEN HIV AND PTB

In this study, the majority of participants held the view that if a person is diagnosed with TB, he/she is likely to have HIV/AIDS. This assumption was triggered mainly by the physical appearance due to the extreme weight loss of the person diagnosed with TB, which negatively influenced the patient's access to health services due to the shame and stigma associated with PTB disease.

> *The patient believed the only way was by prayer, as most people were saying we had HIV/AIDS, and especially because we became thin and weak* (Patient 3).

Strong perceptions linking TB to HIV co-infection seem to be apparent in the community as indicated in the patient3 statement above. The physical frailty shared by HIV and PTB patients led people to associate the two diseases. Nor is HIV the only illness to be popularly conflated with PTB. A study by Nyasulu (2018) on the knowledge, beliefs, and perceptions about TB among community members in Ntcheu, Malawi (16 participants, aged 18 years and over male and female,) identified that the use of figurative language to explain PTB symptoms itself brings shame upon PTB-infected people, as they were referred to as being 'like a person suffering from cholera'.

As indicated in the quote below, there remains a widespread belief that PTB patients are actually suffering from HIV:

> Participant 1: *TB came a long time ago before HIV, so nowadays, it is very rare to be found with TB only. As a result, when one is suffering from TB, automatically the community believes she/he has HIV* (University FGs).

Based on Participant 1's statement, because of a lack of understanding, many people are now suspect that a person having HIV are having PTB at the same time. Edginton *et al.* (2002) found that patients' beliefs have a significant impact on PTB control in a study conducted in a rural district of South Africa, with 302 participants, both male and female, aged 15 years and above. The results revealed a strong perceived relationship between TB and HIV/AIDS, in which people also believed that both diseases were shameful as a result of the connection of HIV to sexual behaviour; this connection was then transferred to PTB sufferers, exacerbating the stigma that they already had to face.

The quote below explains how the community members' belief that PTB is associated with HIV results in stigma and in people not associating with PTB sufferers:

> *Yes, person will be lean, and people will assume the person has HIV which results in the stigma of not being able to associate with community members* (Patient 4).

This illustrates the misconception, based on observation of the symptoms, that any person suffering from PTB is also HIV positive. The significant stigma around HIV is then added to PTB patients by association, thus compounding the stigma to which they were already subject as a consequence of their TB. A study by Dovidio *et al.* (2000) confirmed the level of stigma faced by PTB sufferers and demonstrated that the perceived link to HIV is a major factor preventing PTB patients from accessing healthcare and disclosing their results. As a result, these patients frequently accept that they are different from other people and thus can be shunned and rejected (Goffman 1963). A similar view was reported by Nurse 1 below:

> *There are aspects of stigmatisation especially if the patient's predisposing factor was being immunocompromised, that is HIV. HIV has its own stigma, and this may be a big social problem* (Nurse 1).

In support of the patients’ statements, the nurse also confirmed that many people would not associate with PTB patients, as they assumed they were HIV positive and thus posed a risk of infection. Another reason why PTB patients are isolated, as stated above, is because of the association made between HIV and PTB, as demonstrated in the quote below:

> *Here* [Akure] *PTB is always associated with HIV, and the symptoms are almost similar, and this affects the patient* (Pharmacy).

A few of the community members associated PTB with HIV/AIDS, citing the common physical signs and symptoms shared by both diseases, particularly extreme weight loss. This was evident in the way most community members usually described PTB patients as very emaciated, coughing up blood, and looking like HIV/AIDS patients. Some community members also indicated that they were aware of the fact that PTB and HIV/AIDS are linked, and they usually likened PTB sufferers to those infected with HIV.

> *Because of HIV stigma, many people assumed that PTB patients in this area also having HIV which result in a big social problem. In terms of the risk to the other members of the family, if there is no proper counselling of the family members, they may stigmatize the patient* (Doctor 5).

The above quote reported by a doctor makes clear that the popular association of PTB with HIV/AIDS can deter patients’ families and other community members from associating with the patients and can lead to isolation and a lack of support if there is no proper counselling for the family. The stigma can influence treatment-seeking behaviour, making patients afraid to seek appropriate support. Presented below is the view of another doctor, who attributed the stigma to a lack of health education in the community:

> *Maybe because of a lack of education on the part of the individuals, they are not well informed. They just believe that it is only HIV that can kill. PTB kills, too* (Doctor 5).

The quote above reported by doctor 5 emphasises that patients believed that only HIV can kill and that, in contrast, PTB is not fatal. This misconception might be a factor in explaining why patients should be educated to take their treatment seriously.

The WHO (2008) has stated that stigmatisation is one of the social determinants that affect the ease with which patients access healthcare services. Stigmatisation embedded in community norms and interpersonal attitudes is associated with a particular trait or characteristic which is considered undesirable (Link and Phelan 2001). Undesirable characteristics associated with stigmatisation lead individuals to become furtive about their disease, sometimes to the extent of isolating themselves from their communities. In this study, stigma was identified as a major cause of delay for PTB patients accessing health services. Another issue was the cultural norms embedded within the society that often dictated where sufferers would seek help. For most of the patients, whenever they have any illness, the first person they contact will be a traditional leader, church pastor, or Muslim leader as indicated in Chapter 5: Barriers in Accessing Healthcare Services.

7.6 SUMMARY

The responses from PTB patients, their carers/relatives, community members, and HCWs indicated that several of participants said such ideas were prevalent in the community and are strongly influenced by traditional beliefs, including the belief that PTB is a spiritual attack or a punishment from God. The main beliefs highlighted by the participants were faith in traditional healers and their medicine, religious beliefs, the reluctance or refusal to accept PTB test results, and the belief that PTB has a cultural cause, all of which can make patients prone to fatalism. Some or all of these beliefs are combined to create a stigma towards the disease within the community. Other issues identified are the consequences of stigmatisation for relationships and marriages and the influence of the perceived relationship between HIV and the social impact of PTB on patients. The broad conclusion is that changing community norms and traditional culture will require shifting people’s paradigms about what they perceive to be true and their expectations regarding normative behaviour. Accomplishing this will not be easy because these social norms are deeply rooted in the individual’s beliefs and are thus changing them will be difficult. For change to happen, a range of strategies may be needed, including interpersonal and community dialogue, social mobilisation, and advocacy.

The religious beliefs of the community members have a very strong influence among the Akure South community. In regard to Christian and Muslim beliefs, there are some differences and similarities in the beliefs of both religions; for instance, Christians and Muslims believe in the existence of spiritual powers that operate on the body and mind and can cure disease, and that healing occurs when one draws closer to God. Many Christians have no preference for either a male of female physician when receiving treatment, while according to Muslim beliefs, female patients cannot see a male physician because of their religious beliefs. In Islam, customs prohibit handshakes or any contact between genders (Swihart and Martin 2020).

Perhaps the most important conclusion to be drawn here is the need to link medicine and religion together in the popular consciousness so that barriers to sufferers seeking early help at hospitals and clinics are removed. However, thinking that the traditionally important role of local healers can be reduced easily or quickly is unrealistic. This points to a more immediate need to educate the traditional healers themselves about PTB but not in such a way as to undermine their standing in their own eyes or those of the community more widely.

In the sociocultural context of PTB, issues which include various health and religious beliefs (both of which are often centred on and revealed by the prominent role accorded to traditional healers), the lack of acceptance of PTB test results by the patients, and cultural causes that are associated with the disease were identified. Other findings were the patients' fatalistic beliefs, the consequences of stigmatisation on relationships and marriage, and the influence of the perceived relationship between HIV and PTB.

In this study, fatalistic beliefs were reported to be strongly held by a few of the Akure South community members. This study further confirmed the effect of religious adherence on fatalistic beliefs, as some PTB patients held the notion that their health is beyond their control, and therefore, their illness depends on factors such as luck, fate, or God's power. Other factors that influence the attitudes of PTB patients include the lack of knowledge and understanding of PTB, poor health awareness, cultural beliefs, and stigma. Cultural beliefs that may have been prevalent for centuries are difficult to change overnight. Finally, rejection by the community members and the shame and embarrassment experienced if the community members learn that the individual has PTB may result in the patients' isolation and rejection by their family and friends. This, in turn, often made sufferers approach local traditional healers and church or Muslim leaders for help.

Another problematic factor reported was relationships and marriage are affected by the stigmatisation experienced by PTB patients. The sufferers had to deal with several misconceptions about the relationship between HIV and PTB that them and their families experiencing further stigmatisation. In general, although not exclusively, such misconceptions were more dominant among those community members who were less well-educated and thus may be linked to a gap in knowledge about the aetiology of PTB.

CHAPTER 8: Health promotion and prevention of PTB

Introduction

This chapter presents the information regarding health promotion and the prevention of PTB. Within this theme, several subthemes emerged including community health information, mass media, community outreach programmes, and settings for health promotion and immunisation.

For the purposes of this study, health education and health promotion will be defined. Glanz et al. (2008) defined health education as the process of assisting individuals, acting separately or collectively, to make informed decisions about matters affecting their personal health and that of others. Meanwhile, Naidoo and Wills (2016, p. 58) defined health education as planned opportunities for people to learn about health and to make changes to their behaviour, which includes raising awareness of health issues and factors contributing to ill health, providing information, motivating and persuading people to make changes to their lifestyle for health, and equipping people with the skills and confidence needed to make those changes.

In regard to health promotion, on which this chapter is based, Whitehead (2004) defined health promotion as a process by which the ecologically driven, socio-political-economic determinants of health are addressed, as they affect individuals and the communities within which they interact. Furthermore, Whitehead acknowledged that individuals are not always accountable or responsible for their own health status, and that strong external elements are always in play. Broader determinants of health, such as ecological, cultural, economic and environmental factors, are known to determine the level of health of individuals and communities, and all have political underpinnings within an ‘environmental engineering’ process, on which this study finding was based.

This chapter therefore presents the views of patients, carers/relatives, community members, community leaders, traditional leaders, HCWs, and FG members who were interviewed on health promotion and prevention regarding PTB. Within this theme, several subthemes emerged, including community health information and mass media, community outreach programmes, and settings for health promotion and immunisation. The findings for each subtheme are presented along with a discussion in relation to the literature.

8.1 COMMUNITY HEALTH INFORMATION AND MASS MEDIA

This section highlights the distinction between traditional mass media and digital internet-based communication in relation to this study.

The findings from the project are that a majority of the participants suggested the use of mass media, however, there are two types of mass media communications: traditional mass media and digital internet-based communication. Traditional mass media communication (newspapers, magazines, books, billboards, journals, and other printed materials) was among the first types of traditional media. New types of media now play a major role in disseminating information and entertainment to populations around the world. For example, health awareness campaign messages may need to incorporate new technologies for wider audiences (e.g., the internet, mobile phones and personal digital assistants, Facebook, WhatsApp) however, this may be difficult with traditional media communication as it does not have some of the function of digital media communication.

Digital media is another method that allows professionals to take advantage of easily obtainable, digital internet-based communication which offers the benefits of both mass and interpersonal communication. It can be used both as an awareness and dissemination tool to send messages, distributed through traditional media (For example, radio and television) and as an innovative way to collaborate, co-create content and engage with target audiences (Ungar et al., 2017, Schein, 2011). Chou et al. (2013) ındicated that digital internet-based communication represents a better form of communication than traditional media. Digital media offers more control over the message and is a two-way conversation while traditional media is one-way.

In the case of this project both types of mass media could be useful in communicating PTB health awareness to the Akure South community members. Where TB patients seek care late this could be reduced through digital internet media health promotion and health awareness programs. Barriers to care seeking include lack of money for transport, belief in instant healing from traditional healers, fear of HIV testing, lack of interpersonal skills among health workers and the heavy medication burden. These barriers could be addressed using digital/internet media communication and traditional mass media channel to promote health education and reduce the incidence of TB in the state. People may mistakenly assume that PTB is associated with HIV/AIDS and cannot be cured, which again can be addressed via health promotion programme using digital internet mass communication to show the difference between how HIV/AID and PTB affects human body. These barriers can bring the health services closer to the community, informing the community about PTB and improving the attitudes and behaviour of health workers towards TB patients. The study findings suggests that funding or other incentives may be beneficial for PTB patients to encourage treatment seeking and adherence and reduce reliance on traditional healers.

Most participants considered the potential of community programmes to disseminate information to the community members:

> *The only thing we hear from the television is that when you cough and continue coughing you should visit the hospital. Once you realize you have the disease and have tried other things that did not work, the next point of call should be the hospital. Information on the disease can also be watched through television and radio. This will raise curiosity and awareness amongst the public* (Patient 2).

The statement indicates that there are health promotion messages on the television and radio about the signs and symptoms of PTB, which encourage people to call the hospital. However, the patient acknowledged that some people may seek other remedies first before going to the hospital. Patient 2 further stated that if the sufferers could not be cured and continue to cough, they should visit the hospital. It was also suggested by Patient2 that mass media will be the appropriate channel of raising PTB awareness and information to the community members either through television or radio.

Mass media campaigns are widely used to disseminate information to vast audiences through the use of mass media, such as television, radio, newspapers, the internet, books, posters, and billboards (Wakefield *et al.* 2010). They can play an important role in advocacy, communication, and social mobilisation (ACSM) activities. Media advocacy involves using mass media in communicating TB-related health information to the public so as to raise awareness of TB-related issues and problems (Nglazi *et al.* 2014). Mass media campaigns may also be used to convey behaviour-change messages that aim to change the public’s knowledge, attitudes and practices (Nglazi *et al.* 2014).

Mass media interventions have proven effective in changing individuals’ behaviour and healthcare utilisation, reducing stigma, and raising awareness of the signs and symptoms of TB. Furthermore, they have proven effective in interventions with the possibility to assist in generating knowledge about TB, such as promoting awareness of TB services that exist for TB diagnosis, prevention, and treatment. This also helps with early diagnosis, treatment compliance, and stigma reduction (Nglazi *et al.* 2014).

Receptionist 2 highlighted the need for mass media to promote health education on PTB to the local community.

> *Yes, the radio programme helps people a lot. It will enlighten them about PTB; for local community, it will enlighten them as well as continue to provide education on PTB and how to prevent it and what can be done for those that are infected. I think government and healthcare system still have a lot to do for those people that come to them; they should give them more education on how to look after themselves* (Receptionist 2).

The opinion of Receptionist 2 indicated that mass media can educate the Akure South community members by continually disseminating health information on PTB and the prevention of PTB through radio programmes, and as those who have PTB should be given advice on where to get support.

Similarly, a community doctor highlighted the need for further information and education, specifically regarding maintaining a healthy environment and seeking prompt medical treatment:

> *People should be educated on good hygiene, such as good ventilation, avoiding overcrowding, pasteurising milk, protecting yourself from someone coughing, and seeking immediate medical treatment for illness* (Community Doctor).

As indicated by the quote above, the community doctor emphasised good hygiene awareness, good ventilation, avoiding overcrowding, and pasteurising milk, to prevent and protect people from becoming infected with PTB. It goes further that people with PTB also need to know that PTB is infectious and is an airborne disease that can be easily transmitted through coughing, talking, sneezing, spitting, laughing, or singing. The public need basic information about PTB for a number of reasons, including reducing the spread of the disease and assisting infected persons in seeking help from TB clinic. This suggestion from the community doctor is important because basic hand hygiene with low-cost can prevent the transmission of an infectious disease; if the government can provide such a programme, it will help the people significantly. This information could be relayed through the mass media to the community members, and this may require a policy that will focus on changing both the personal attitudes and the behaviours of the community members.

The pharmacy director stressed the importance of educating the patients because of the side effects of PTB medication:

> *The side effects of the drugs are significant, and some people cannot tolerate them. That is why they need to be educated beforehand about the side effects that might occur, so they know what to expect when they use the drugs and don't get unnecessarily worried* (Pharmacy).

This quote is about the importance of treatment factors, as DOTS requires a long treatment regime and patient education to enhance adherence to the drug regime. This is an issue that needs to be addressed, and the pharmacy director goes further to mention the potential side effects of the drugs on the patients. For example, the pharmacy director reported that the side effects of PTB drugs can be serious and that the patients may not be able to tolerate them. Furthermore, patients' knowledge and beliefs about their illness as well as their motivation to manage it clearly may influence their adherence behaviour.

Cultural factors are associated with misinformation about the medical aspects of the disease and the stigmatisation of persons with TB. Such factors were mentioned by the patients, carers/relatives, and community members in Chapter 5. The limited knowledge about PTB is then a key factor affecting treatment adherence. Although the patient was given a health talk about the importance of completed their medication, because of the way the health talk was delivered, that is, in an open environment where it was very noisy and unconducive, patients were unable to assimilate the message that was delivered. Therefore, there is a need for more education to be put in place to educate the community members and the patients, for example, about the potential side effects of the treatment so that they may not be deterred from continuing with the treatment.

The statement below was reported by patient 3 on mobile phone campaign for PTB.

> *Even though there is no light, you can use the mobile phones that have radio functions to improve on the campaign's messages* (Patient 3).

Patient 3 indicated that given the lack of electricity, mobile phones can be used as an alternative channel to alert people about PTB campaigns. Although mobile phones are used to receive and send voice messages, many people may not have access to such information or there may not be electricity to charge the phone as some people may not be able to afford it. Also, not all the patients or community members can read or write.

According to Armey and Hosman, (2016), there were 187.9 million mobile connections in Nigeria in January 2021, which indicates that mobile phone use is common. The number of mobile connections in the country also increased by 17 million, or 10%, between January 2020 and January 2021. However, although mobile internet access is growing, there are several barriers to accessing mobile phones in Nigeria. Affordability is one major barrier for many internets mobile users in Nigeria. Afolayan et al. (2015) stated that the costs prevent many people from mobile phone ownership in Nigeria and the shortage of electricity supply to the user. Another barrier that needs to be considered in terms of mobile phones is the lower level of education and the lower level of income (poverty), as in Nigeria, the older individuals are less likely to own or be willing to own a mobile phone, as it may be too expensive for them to maintain due to poverty (Afolayan et al. 2015). For instance, a higher education level was associated with a greater likelihood of mobile phone ownership in Nigeria (Afolayan et al. 2015). However, most of the PTB patients had a low education background, so it may be difficult for them to maintain the phone because of the cost. Consequently, disseminating information about PTB via mobile phones may be useful for some community members but may not reach all community members. In support of the findings above, Lee et al. (2018) conducted a systematic review study that investigates the features and usefulness of mobile app-based health promotion programs for the general population; it also revealed that medical and nursing interventions using mobile phones and apps have increased. In particular, mobile app-based health promotion programs are said to be an ideal platform for efficient interventions because such mobile apps provide an easy way to access the target group and are cost-effective compared to phone-based and clinic-based interventions. Presently, mobile phones are the most popular communication tool used in modern society. In addition, mobile apps are used for providing health education information (Lee et al. 2018). Furthermore, Kerr, et al. (2016) also supported the usefulness of mobile phones in self-reporting, monitoring data collection, providing feedback and notifications of visits, as well as ultimately changing health behaviours (Kerr et al. 2016). Taken together, the evidence suggests that the use of mass media, such as mobile phones, is advisable for disseminating information to the Akure South community members. It would seem that a range of mass media, such as television, radio, and mobile phone use is requited if more members of the Akure South community are to be able to receive health information.

The seven participants in the university FGs all agreed that mass media was the most appropriate channel to disseminate information to educate the Akure South community members on PTB, as indicated in the following quote, which is typical of the responses from the FG participants:

> Participant 1: *We all agreed that the level of awareness is a bit low. They do not have awareness of the disease; they need campaigns on the radio and TV to tell people about the disease and where they need to go and get help, like the hospital, and be treated even with minimal amount of money to treat the patients and make them well* (University FGs).

As indicated in the above quote, Participant 1 believed that there was a need for more health awareness to be provided for the community members for them to understand what they need to do. In February 2009, the Department of Health in England launched the Face, Arm, Speech, and Time (FAST) mass media campaign to raise public awareness of stroke, specifically its symptoms and the need for an emergency response; the campaign ran from 9 February 2009 until March 2014. The implementation of this campaign increased public access to stroke-related information, and effectiveness of mass media campaigns also improved the knowledge of stroke signs and symptoms and, more importantly, behaviour (Flynn et al. 2014).

Out of the seven participants in the Muslim women FGs, only one shared her views on PTB prevention:

> Participant 2: *Campaigns should be on the television and radio for people to know where they can go for testing and treatment. More locations of health facilities should also be provided for use by the public. They should go to the hospital for treatment immediately after noticing the symptoms. Treating yourself will be reduced. If they don't have money, tell them that the treatment is free in the hospital* (Muslim women FGs).

This view was supported by Community-nominated Leader 1:

> *Yes, papers TV, radio for those who can read, flyers from street to street and word of mouth. This can be done as they did for smoking advertisement and organise seminar* (Community-nominated Leader 1).

Community-nominated Leader 1 enumerated useful methods of promoting PTB awareness. Mass media campaigns are used to widely disseminate information to vast audiences through such means. Utilising the media in awareness-raising campaigns around PTB can play an important role in educating community members and promoting health activities. Mass media interventions have proven effective in changing individuals' behaviour, as indicated in a study by Nglazi *et al.* (2014). This systematic review assessed the impact of mass media interventions on TB awareness, health-seeking behaviour, and health service utilisation and examined the impact of mass media interventions on stigma and discrimination and delayed TB diagnosis or treatment as well as empowering people affected by TB and mobilising political commitment and resources for TB, all of which are important to curb the spread of TB (Nglazi *et al.* 2014).

The results revealed positive changes in the knowledge, attitudes, awareness, and opinions about TB and health-seeking behaviour intentions for TB as a result of mass media campaigns in South Africa. Changes were reported in TB service utilisation, TB testing uptake, the TB case detection rate, the number of new cases of TB, the number of direct smears processed by laboratories, and TB treatment adherence rates and retention rates. The quote below presents Community-nominated Leader 2's view of mass media campaign on PTB:

> *The government should do more because not everyone will listen to the radio or have access to media (television, radio and social media). Therefore, they have to cater for the needs of these other people by sponsoring house-to-house campaigns with health workers and the use of all media campaigns as well as house-to-house sensitization. Everyone can use a handset, so I think messages can be sent out to people on their mobile phones* (Community-nominated Leader 2).

This quote by Community-nominated Leader 2 stated that the government should do more campaigns from house to house to enlighten people about PTB. Because not everyone will have access to the mass media (television, the internet, and radio), the government needs to cater to the community in other ways, such as by supporting house-to-house awareness raising. Another point raised by the community nominated leader was to set up a mass media campaign using technology (i.e., mobile phones) to send out messages regarding PTB prevention. In Nigeria, most people have a mobile phone but finding the funds for charging the phone and for sufficient credit to enable people to make a call as well as to receive text messages may be difficult. In the light of research on the use of mobile phones to promote health, it may be difficult for the community members in regard to funding when there is no money to pay for credit or no electricity, so the phone may not work.

Taken together, the evidence suggests that the use of mass media is advisable for disseminating information; the methods by which the message should be distributed and how the receiver will digest and utilise it for his/her benefit must be evaluated. As observed during my study observation, most of the nurses in the TB clinic and DOTS have to deal with PTB and several other complicated issues which take up most of their time, and sometimes, HCWs are on strike due to wages not being paid, as indicated in Chapter 5. This makes them unlikely to consider mass media communication since high-burden areas such as Akure South are under-resourced. With insufficient, often underpaid staff, working with poor facilities and often with low morale, new initiatives may not be received enthusiastically. Therefore, this type of environment is not one where innovative communication approaches are likely to flourish.

The quote below presents the view of Nurse 2 on the use of mass media for PTB information.

> *The use of mass media may also assist in addressing the issue of stigmatisation. Presently, the jingle is on radio, but I think it will be good, if it can be posted on the internet, e.g., Facebook, because I know a lot of people will be suffering due to stigmatisation; they will not want to come in for treatment* (Nurse 2).

Nurse 2 suggested the use of mass media to address the issue of stigmatisation, and this can be done on the radio, internet, and Facebook. A similar view was also reported by Nurse 3 below:

> *The community members should be informed either on air, on TV, on radio, about the causes, signs, and symptoms. More importantly, they should advise them to visit the clinic as soon as they start experiencing any of the symptoms* (Nurse 3).

Nurse 3 suggested that TV and radio messages should include information about the causes, signs, and symptoms of PTB and that people experiencing any signs and symptoms of PTB should visit a TB clinic or any nearby hospital for diagnosis and treatment.

> *There are awareness programs going on radio about TB. It will be good if this can be replicated on the television and on Facebook as the stigma may not even allow some to show up. We direct them to TB centres like this place and Comprehensive Health Centres where TB treatment is being offered* (Lab Staff).

The Lab Staff indicated that radio messages are already being provided about TB, but there is a need for such publicity to be included on the television and Facebook to avoid stigmatisation preventing people from seeking help. A similar statement was also reported by Pharmacy Director below:

> *Most times, people listen to radio, and people are glued to the internet now. There are so many ways information can be passed to the people. They do advertisements on television and radio, posters and billboards* (Pharmacy).

As indicated by the pharmacy director, information could be disseminated to people in many ways. These media channels can complement advertisements on posters, radio, and billboards to disseminate information about PTB. However, during my observation in 2016 in both the TB clinic and community DOTS site clinic, there were no PTB posters on the walls to inform the patients and community members attending the hospital. The pharmacy director indicated that television messages are already being provided; therefore, all HCWs should know what sort of health information about PTB is being shared through mass media so they can then reinforce such information with their patients and carers/relatives.

Doctor 3 reported on how information can be disseminated to community members:

> *I would say the airwaves, that is, radio and television. One other thing is that a lot of people make use of smartphones now, so another effective method should be text messages* (Doctor 3).

Overall, the findings indicated that patients, community members, and HCWs were aware and understood that to disseminate health information to the community members through mass media would be useful. Which can be include radio, television and smartphone.

> *What we need as a state presently is awareness creation, that is, massive radio and television jingles for TB like they do for malaria and HIV.*

> *Presently, we have 6 Gene Xpert* [diagnostic machine] in *the state, and they are being underutilised, so, I cannot ask them to provide more machines since the ones on the ground are still underutilised* (Doctor 5).

Doctor 5 also suggested that what the Akure South community needs at present is to create health awareness through a mass media campaign, as with malaria and HIV. However, the doctor also drew attention to a lack and underuse of technical equipment called Gene-Xpert, a CBNAAT (cartridge based nucleic acid amplification test), which is a new tool and a widely accepted diagnostic test for TB. He stated that the hospital has six Gene-Xpert diagnostic machines that were underused. He implied that this was not enough, but he also acknowledged that the present underutilisation of the existing six machines undermined his ability to push for more. This underuse of existing equipment may be related to the lack of resources, such as staff to use the machine, as there was certainly no shortage of patients who could have benefited from PTB diagnosis during my study observation.

8.2 COMMUNITY OUTREACH PROGRAMME

Community outreach workers are employed by the healthcare authority to provide healthcare services to the PTB patients within the Akure South community members. Their main responsibility is to assist and visit the patients in their houses to see if they are taking their medication as prescribed by the doctors, to oversee the welfare of the patients, to support patients that have already been diagnosed and are receiving treatment at the TB clinic, and to raise awareness of the signs and symptoms of PTB so that people can seek help to prevent the spread of the disease.

Out of the five patients interviewed, one reported that community outreach programmes are valuable:

> *They* [community outreach workers] *ought to embark on house-to-house campaigns in the communities in addition to the radio programmes that they run through campaigns by health workers and television campaigns on PTB rather than on face-to-face campaigns with community members* (Patient 1).

The above statement by patient 1 suggested that a house-to-house publicity campaign about PTB should support a radio and television campaign in disseminating and explaining rather than simply distributing information to community members. This is in addition to the role of community outreach workers, which is mainly to support the patients and raise awareness signs/symptoms of PTB to prevent the spread of the disease. However, providing information for people to act on is important, and resources to address the patients’ needs should be available; for example, having sufficient staff to interact with the patients and to assist them in taking their drugs is very important. While this is a worthwhile suggestion, for it to be successful, other factors need to be addressed, such as who will be involved in the campaign. Some of the patients may prefer to be informed about their medication individually because they may not be able to absorb the information otherwise, while others may not care how the information is delivered.

Anderson and Hishtar (2011, p. 9) stated that “communication is about how a message is shared effectively with individuals, groups, and communities, enabling a bottom-up approach to behaviour changes, how policymakers can affect policy changes, and how to plan work collaboratively to facilitate change”. Because community attitudes are so central to individual behaviour, comprehensive public health initiatives, including legislative and [healthcare] approaches, must include a communication strategy that increases health literacy and tackles social norms. Thus, communication in all its forms has an unparalleled role in determining population attitudes and beliefs that can cultivate the perception that healthy living is a society value rather than a personal choice.

As implied by Bronfenbrenner (1992), health outcomes are affected by a wide range of micro- to macro-level factors. For example, McLeroy *et al.* (1988) advocated that in order to address a range of factors that influence health behaviour, interventions are required at multiple levels from the intrapersonal to the policy level. To effect positive health changes, the direction of efforts towards the full scope of factors that affect health is critical. Far too often, health communication campaigns fail to achieve their goals (Neuhauser & Kreps 2014; Snyder *et al.* 2004) because they focus too narrowly on individual-level constructs (Dutta 2008; Neuhauser & Kreps 2003) and ignore the interpersonal, community, and societal contexts in which individuals live.

Communication can be useful in disseminating PTB information to the patients, carers/relatives, and community members through a two-way process of dialogue and participation. This can be employed through education about the disease, awareness-raising programmes and services, and face-to-face discussions. Whatever the means, the goal must be to prompt active thought among the audience such that the community becomes actively engaged in seeking, attending to, and understanding health advice about the disease.

Community-nominated Leader 2 reported that the use of a microphone to educate people would be beneficial, as indicated below:

> *Here people could be informed from community to community by the use of a microphone or megaphone to educate people on these issues of the defect or evil of this killer disease and to inform people that the PTB disease can be prevented* (Community-nominated Leader 2)**.**

This quote above is similar to the previous quote by patient 1, as they both demonstrate how people can be enlightened about PTB from one community to another. In the Nigerian context, microphones or megaphones are commonly used to address the public especially if the event is in an open place or in the market, so people can hear the messages being put across. It was also identified that microphones can be used as a mass-media method of disseminating information to the community members about how PTB can be prevented. Although the message can be sent directly to the community members, the question remains as to how much of the information will be retained and understood. As stated earlier, health communication efforts often fail because of a significant disconnect between what the sender says and how this is received and understood by people in the context of their experience (Dutta 2008).

The use of community outreach workers to raise health awareness in the community was reported by a laboratory staff member:

> *Community outreach programmes: where members of the monitoring and evaluation team for PTB go out to sensitise people on TB* (Lab Staff).

The quote above suggests that community outreach workers can educate the population about PTB. However, the laboratory staff, receptionist, and other leading representatives can aim to ensure that the health awareness and prevention programmes are well integrated into the community.

Further evidence was reported by Receptionist 2 on the need for improved health awareness:

> *The outreach services, healthcare workers to go out to public seminars to talk to people about PTB if there is awareness and the community members that are not interested already can listen; let's just say a lack of interest from the community members can be a barrier. Although there is*

> *a need for healthcare workers to go to school and promote health awareness* (Receptionist 2).

Receptionist 2's statement above supported visiting schools to raise awareness of PTB and suggested that the outreach workers and HCWs should participate in public seminars to promote awareness of PTB as well as speaking to community members. It was also reported that people may not listen, but those that will listen will utilise the information.

The need for more outreach work was also supported by Nurse 1, who suggested the marketplace as an appropriate venue for promoting PTB health awareness, as many people will be present:

> *Going to the markets. We can see everyone in the market, and it is the only place where information can easily be passed on. People who obtain such information from the market will disseminate it when they get to their respective homes and destinations. We need to educate them that if they see any cases like that* [PTB]*, they shouldn't hide nor isolate the patient but should bring the patient to the hospital* (Nurse 1).

Nurse 1 reported that an appropriate place for promoting health awareness is the market, where people can be informed about the disease without any difficulty. The importance of promoting health awareness in the market is that any information disseminated in the market will inevitably be passed on to the family and friends of those who see or hear it directly. This method of disseminating information may help the community to avoid isolating the patients and encourage people to bring those displaying symptoms of PTB to the hospital for treatment.

The importance of community outreach workers in raising awareness of PTB, amongst a range of other diseases, was acknowledged by doctor 2:

> *The community outreach workers are also supposed to be in the field to give a lot of information; this is because they are closer to people. The community outreach programmes involve outreach worker - they also go from house to house to inform and educate the people, and also create awareness through community meetings and gatherings, and church gatherings too. They don't create awareness on only pulmonary TB; they create awareness on other tropical diseases too, and also HIV* (Doctor 2).

As well as enlightening the community members about health education, providing information about PTB, and promoting health awareness by visiting house-to-house, arranging meetings, including church events, may also promote awareness about PTB to educate the public. These forums for community outreach raise awareness not only about PTB but also about other diseases, such as HIV.

Despite Doctor 2’s statement on community outreach workers, whether such services to the community are currently in progress was not clearly indicated. As stated previously, community outreach workers provide services for PTB patients, such as visiting patients’ houses, supporting patients in administering medication, providing health awareness, monitoring patients’ health, and completing daily patient health records. Although Doctor 2 said the services may not in place any longer, the impediments to the success of outreach programmes may include financial difficulties or the lack of staff to carry out the work. During my study observation, one of the doctors told me that the health authority responsible for funding the community outreach workers had not made such funds available. This could mean that the community outreach programme may not be available again due to the economic recession. Furthermore, no effective procedure was in place for assessing the extent to which the community members had absorbed the information or even whether any discernible benefit was derived in terms of the number of people reached or who responded positively to the campaign by, for example, improving their health behaviour. The potential benefits of this outreach programme had therefore not been evaluated. Despite the lack of formal evaluation, the importance of outreach work was recognised as indicated below:

> *The patients come to DOTS centres, which is here. Outreach workers help a lot, and also, putting information on the television, the internet and text messages would be useful in informing people about PTB* (Drug Nurse).

The above statement, reported by the drug nurse, values very highly the work of outreach workers during the time of their services with regard to the dissemination of information. The nurse explained further by saying that messages can also be relayed by television, the internet, and text messages to the community members about PTB.

The laboratory staff member also reported a similar view on promoting health awareness of PTB, as shown below:

> *The best thing is to sensitise our people and create awareness that PTB is just as real as HIV; if you notice you are coughing persistently, please*

> *come to the hospital for treatment. The government should be able to take part; they have been trying their best, which is obviously not enough. They should put more into educating the community* (Lab staff).

The lab staff stressed the importance of informing people that PTB is as real as HIV and that anyone noticing someone coughing should direct him/her to the nearby hospital or TB clinic for treatment. Putting this information on mass media is about raising awareness among the public about this disease, and this would help in supporting the work of the outreach workers. Several participants shared their views on how PTB can be prevented through health awareness via the methods used in immunisation campaigns.

Below is the view of the doctor on the structure of the health system in Ondo state:

> *In terms of the structure, I think it is quite good enough, but in terms of the delivery, there may be a lot of gaps. There are a number of issues peculiar to the Nigerian system; for example, you want to perform an acid-fast bacteri*a *(AFB) test, but if there's no electricity, you wouldn't be able to perform the test, and this would lead to delay* (Doctor 2).

The quote revealed that the health system structure may be good, but the delivery system is poor due to a lack of electricity at times in the state. Armey and Hosman (2016) commented how it is well known that Nigeria is suffering from a shortage of electrical power and most of the time, the country relies on generators for the supply of electricity. Doctor 2 further indicated that if there is an operation to be performed on the AFB test and there is no electricity, the test cannot be performed, which may lead to a delay in diagnosis.

Doctor 3 stressed the importance of educating patients and providing more resources to enhance the provision and mobilisation and to support other organisations (DOTS clinics, HCWs, environmental health officers, NGOs, and public health officers) to improve health education and prevention of the disease within the community:

> *A little bit of encouragement for the patients and more education would enhance the provision and mobilization of resources to address some of the situations. There are also environmental health workers who try to create a better environment for patients like that* (Doctor 3).

Doctor 3 recognised the importance of environmental health workers who can create better housing conditions for the patients within their general environment or locality and stressed that these people should be involved in providing services for the patients.

Although the nurses had indicated in some of their interviews that they supported the patients and created a friendly environment for the sufferers, this was observed to be far from the case. During my study observation, I noticed that the HCWs distanced themselves from the patients to avoid being infected.

Having discussed the importance of community outreach workers in raising awareness of PTB, amongst a range of other diseases, the following section presents the discussion on settings for health promotion and immunisation regarding PTB.

8.3 SETTINGS FOR HEALTH PROMOTION AND IMMUNISATION.

The WHO (2013) defines a setting as the place or social context in which people engage in daily activities in which environmental, organizational, and personal factors interact to affect health and wellbeing. The goal of the settings approach is to create supportive environments for optimal health (Neufeld & Kettner 2014). The most important distinctive attributes of any setting for health promotion are the flexibility, community participation, partnership, empowerment, and equity (Neufeld & Kettner 2014). In the context of this study, a setting for health promotion includes, for example, schools, the marketplace, the royal palace, communities' centres, workplaces and health care settings. The royal palace will be useful to promote health awareness within Akure South communities, where community members will be empowered and educated on the benefits of BCG immunisation as well as on how to protect themselves from PTB.

The statement presented by doctor 1 suggested the importance of children being immunised to prevent PTB.

> *I think one thing that is known about PTB is that it is preventable, and so, if an attempt is made to ensure that every child is immunised, it would be a cheap and effective way to drastically reduce the prevalence of PTB* (Doctor 1).

Doctor 2 requested for people who have not been immunised against PTB to be located.

> *Attempts must be made to find those that are not immunised against the disease on time. Since it has been discovered that there is a synergy*

> *between HIV and TB, there should be a seamless testing of both diseases together. More people should be able to access health care by creating more treatment sites closer to the people* (Doctor 2).

The above statement from doctor 2 indicated that an effort must be made to locate those who are not immunised against the disease. Because of the synergy between HIV and TB, there is a need for testing of both diseases together. To enable more people to access healthcare, more treatment sites should be created closer to where people live. The doctors quoted above suggested the need to locate people in hard-to-reach areas who can then be immunised so that they can be prevented from catching PTB.

The following quote reported on the public health campaign to promote awareness on immunisation:

> [It would be good] *if local government is involved and can be closer to the people like house-to-house or by word of mouth. For example, if the government has spent a lot on immunization through media campaigns yet in the hospital, the turn out for the exercise must have been low to date, we can go beyond that by embedding it and improve on it by including it in the primary school curriculum. The cause of PTB and the predisposing factors are the most powerful information* (Doctor 3).

While Doctor 3 suggested that there is a need for the government to propose embedding education about PTB into the primary school curriculum, it should be noted that not all children go to school because of poverty; some families send their children to learn a trade or to work on the farm. However, it will reach some in conjunction with other methods such as house-to-house and through word of mouth, which the doctor also suggested.

The statement below was made by doctor 4 on individual vaccination during childbirth.

> *Everybody is expected to be vaccinated during childhood; it is part of the national immunisation program. All waiting areas are open areas to minimise the risk of infection to health workers. Masks are also provided for patients that cough seriously; they are also educated on what to do during coughs, for example, to use a handkerchief to cover their mouth. Before a health worker is employed, they are meant to undergo a number of health tests; every health worker is supposed to have a medical examination of fitness. Part of the examination is to check the vaccination*

> *history. If all vaccinations have not been properly done, then the worker gets vaccinated* (Doctor 4).

I can confirm that none of the safety measures mentioned by doctor 4 had been practised or observed during my study observation at the hospital. I did not see any HCWs with materials such as masks to help them carry out their work duties safely. Some of the HCWs mentioned in the interviews that the government does not help them to do their work; nor are there any incentives attached to their work, such as training for staff to go abroad or attending higher education which the government will pay for. Before I travelled to Nigeria for data collection, my supervisor had sent me to Singleton Hospital to collect gloves for the hospital for protection whilst observing in the hospital and interviewing the PTB patients. When I arrived in Nigeria and visited the hospital, I gave the pack of gloves to the doctor in charge. He was very pleased and told me that there was not a single glove in the TB clinic, although he had been trying for months to order them. In addition, I observed that available resources were not being fully utilised:

> *With the current way of managing our cases, we use the fact that it is free to encourage them to tell whoever is coughing around them to come and get free services too. What we need as a state presently is awareness creation, that is, massive radio and television jingles for TB like they do for malaria and HIV. Presently, we have 6 Gene Xpert* (diagnostic machine) in *the state, and they are being underutilized, so, I cannot ask them to provide more machines since the ones on the ground are still underutilized (*Doctor 5).

The statement reported by Doctorc5 stated that the way he and his colleagues encouraged the community members to access PTB services and tell those who may be experiencing a cough to come for free treatment in the hospital. This doctor also acknowledged that what the Akure South community needs at present is to create health awareness through a mass media campaign, as with malaria and HIV.

However, the doctor also drew attention to a lack and underuse of technical equipment. He stated that the hospital has six Gene Xpert diagnostic machines that were underused. He implied that this was not enough, but he also acknowledged that the present underutilization of the existing six machines undermined his ability to push for more.

The nurse below presented her view on how community leaders can participate or engage in disseminating PTB information to the community members:

> *It will be nice to invite all community leaders and health workers for meetings and organised seminars where they can be trained on how to give information to their people about PTB* (Immunisation nurse).

The immunisation nurse suggested that all the community leaders should be invited by the HCWs for a meeting and discussed how they can be trained on the ways PTB information can be disseminated to the community members as well as giving advice to community members about PTB.

> Participant 6: *As for new-born babies, the community needs education on the importance of BCG vaccinations that is recommended to protect and build the immune system and the active body against any disease for a lifetime. Another prevention is to watch out for anybody coughing beside you: tell the person to cover his/her mouth in order to avoid the spread of the disease* (Church FGs).

The above statement reported by Participant 6 suggested about the new-born BCG vaccination to protect and build the baby's immune system active body against any disease. The church FG participant's statement on the BCG vaccine showed the community members need health education on BCG which will help them to know the benefit of the BCG for their new-born babies.

Participant2, in a focus group, stated that she agreed that community members with vaccination education:

> Participant 2: *I agree that the local government should provide community members with vaccination education. To help the childbearing age women to know about it and not for the baby alone; it would also save everybody; at least a reasonable percentage now understand the importance of vaccination and because of that, the knowledge is widely increasing day by day in urban or rural settings* (Church FGs).

As stated earlier, several factors need to be addressed for such a programme to be successful – for instance, the need to establish health promotion in settings such as schools, the marketplace, the king's palace, workplaces, universities, antenatal clinics, hospitals, and prisons, where the message will be disseminated to target the greatest number of vulnerable people. Abuya (2011) carried out a study on the influence of maternal education on child immunisation and stunting in Kenya, with 2,169 participants, both male and female, aged 0–6 months. The study revealed that the mother's knowledge about health, her receptive attitude toward modern medicine, and being able to read the newspapers are significantly related to her children having a complete immunisation record. A similar study by Frost *et al.* (2005) in Bangladesh demonstrated an important link between mothers' attitudes towards modern medicine, maternal education, and child health. Therefore, for child immunisation to be successful among the community members, the mothers' attitudes should be transformed. This will help them understand the importance and benefits of PTB too and make it easier to access the BCG immunisation, as well as educating fathers to seek immunisation services, hence increasing the number of children who will be fully vaccinated against childhood diseases and illnesses including PTB.

A multi-centre study by Adeola *et al.* (2013) explored the BCG status of children diagnosed with TB in Northern Nigeria, with 300 children aged between 1 month and 14 years. The results revealed that 54% of the newly born children did not receive the BCG; an inadequate vaccine supply and the lack of coverage are undoubtedly major drivers for childhood TB. The other main factor identified was the lack of support and motivation among the mothers to bring their babies to health facilities after birth. Delivery at home and low levels of education were significantly associated with the non-receipt of the BCG vaccination. A similar study by Abdulraheem *et al.* (2011), conducted in Nigeria, explored the reasons for incomplete vaccination and the factors behind missed opportunities among rural Nigerian children. The findings revealed that long journeys to and extensive waiting times at the health facility contributed to low immunisation coverage. In addition, no compulsory procedure was in place for every child to be registered, as some of these children had been born at home or in the village. Bryar *et al.* (2018) looked at maximising influenza vaccination awareness and uptake among older adults in Singapore. According to the literature reviewed in the study, individual beliefs, cultural and social factors, and the lack of access to the vaccine are the main barriers to vaccination awareness. Endrich *et al.* (2009) indicated that educational materials should address differences in education levels so that key health messages can be understood regardless of educational background. In addition, outreach workers should visit community members at home to convey information about PTB health awareness.

Various barriers to childhood immunisation in Nigeria imply the need for better planning and intervention to increase BCG uptake. This will involve multicomponent interventions, such as vaccinations at home and community outreach workers assisting in programmes involving community-based participation from grassroots volunteers drawn from the community, who may have more frequent interaction with the community than the HCWs, as Ompad *et al.* (2006) suggested. My study also found the need for more resources from the government or health authorities to increase BCG vaccination among children.

> *What happens is that they could come to churches. They once came for immunisation of children in my church where they distributed leaflets. People should be informed that when they observe certain symptoms, they should come to the hospital, and they should also be informed that the treatment is free. They can also be told that the disease is deadly* (Patient 5).

Patient 5 indicated that promoting immunisation in churches was useful in informing people that PTB exists and can kill. However, the question is whether there was any follow-up by the HCWs to see if most of the congregation do absorbed the messages and utilised to protect themselves.

Carer/Relative 2 reported the need for more health awareness in the community as indicated below:

> *The government need to do more on awareness, especially in the rural areas and with people with HIV/AIDS, who should come for screen test as soon as they are diagnosed with HIV (*Carers/Relatives 2).

The above quote by Carer/Relative 2 is about targeting people with HIV/AIDS to be routinely tested for PTB so that they can be treated at the same time and so prevent the spread of the disease to the wider population and hence reduce mortality and morbidity.

This view was supported by the patients and other community members.

> *It is not yet enough. Health education shouldn't be restricted only to the media; it should be extended to markets and other public places through one-on-one campaigns. It will be better if health officials go round the town to sensitize people. They should use the media and include it in school curricula, local governments, chiefs, and the King's palace. Our*

> *people are local and do not listen or believe until they see evidence, such as an infected person. The media and leaflets can also help* (Patient 4).

As indicated in the quote above, Patient 4 suggested that health education should not be restricted only to the media. Instead, it should be extended to markets and other public places through one-on-one campaigns. This patient went on to say that the HCWs should go around visiting places to promote health awareness on PTB as well as including it in the school curriculum. There should be collaborative work among chiefs and at the King's palace to involve them in the health awareness programme. Similarly, the report presented below by a carer/relative suggests PTB prevention.

> *PTB prevention - I know that there is an immunisation for PTB, maybe we take that as one method of prevention. Secondly if you are PTB patient, take your treatment and try not to spread it to others. I have seen posters too showing how you can prevent TB. If you have any signs and symptoms that pertains to TB, try to report it, or seek help from the HCWs at the hospital* (Carers/Relatives 3).

The quote above from Carer/Relative 3 presents the different ways that PTB can be prevented, by saying that immunisation against PTB can prevent babies and adults from contracting it. It also displayed her awareness that when suffering from PTB, you should take your medication to prevent spreading the disease to others. In addition, this carer/relative confirmed that they had seen a poster that shows PTB can be prevented from spreading if early help is sought at the hospital. Although five carers/relatives participated in the interviews, only one described how PTB can be prevented and the importance of immunisation.

Community-nominated leaders recognised the importance of PTB information being distributed to community members:

> *A leaflet is also good - it can be distributed to the community and the cause of PTB, and the predisposing factors are the most powerful information* (Community-nominated Leader 1).

Community-nominated Leader 1 mentioned the importance of spreading information on the cause and risk factors of PTB. This method may need pictures to demonstrate this to the community members.

A similar view was presented by Community-nominated Leader 2 and Palace Chief below:

> *Prevention control activities, they may not be able to cope. The government need to do more on prevention programs* (Community-nominated Leader 2).

A similar view was reported by Palace Chief below:

> *It is not enough. They need to do more because if the disease should spread, it will cause a lot of problems. If they do not have sufficient prevention control activities, they may not be able to cope. The government needs to do more* (Palace Chief).

According to the community-nominated leader and the palace chief, if not enough prevention control activities are put in place by the government, the HCWs may not be able to cope with the outbreak, which may result in more people becoming infected with the disease. Out of the five interviewed patients, two demonstrated little knowledge of PTB prevention, while others had no such knowledge at all:

> *I don't know how PTB can be prevented* (Patient 1).

The above quote by patient 1 shows a lack of knowledge of PTB prevention. Although this patient was receiving treatment in the clinic where he had contact with HCWs and the opportunity to listen to the health talk, it is noted that most of the patients interviewed were unaware as to how PTB could be prevented. The finding that most of the patients interviewed were unaware of how PTB could be prevented may be the result of a number of factors. First, from my study observation, one of the health talks focused more on treatment and drug adherence and less on prevention. The environment (a busy waiting area) may not have been conducive for the patients to absorb the information. However, the message regarding the need to cover their mouths when coughing or sneezing and not to spit on the floor had been understood:

> *To prevent PTB is very easy: make sure your environment is clean, you do not take too much of alcohol, and be careful about what you eat* (Traditional healer 1).

The statement by Traditional healer 1 concerns promoting hygiene and altering lifestyle behaviours by, for example, ensuring personal cleanliness within the home and avoiding alcohol and unhealthy food. With TH 1, there was limited knowledge in terms of PTB prevention; this shows that it would be difficult for him to give adequate information on how PTB can be prevented, and the other Traditional healer interviewee was unaware of how PTB could be prevented.

> *Only doctors can tell how to prevent PTB. I am not a doctor. It is not my job* (Muslim leader).

The Muslim leader did not think it was his role to know how PTB can be prevented; what he knew was to direct people to the hospital, where they can receive treatment. This is better than giving incorrect information but is a missed opportunity for Muslim leaders and mosques to provide health education and information on disease prevention to the Muslim community.

The church pastor recognised the need to care for and treat the infected people to eradicate the disease:

> *What I know is that we can prevent it by taking care of the infected people. If the infected people can be treated and cured, the infection would be eradicated* (Church pastor).

The pastor knew that PTB can be cured as long as the patient seeks help in time. Such knowledge clearly shows that if any infected patient seeks help from the pastor, he will direct him/her to the appropriate hospital, where the patient will receive proper diagnosis and treatment. The church pastor also demonstrated knowledge that when someone has contact with the infected patient, that person should take care not to become infected. However, more health awareness, especially with respect to immunisation, is needed to avoid people becoming infected.

> Participant 1: *The way Ebola was prevented in Nigeria; the same way TB can be prevented by creating camps for people with PTB in which people will be treated for free and they'll go* (University FGs).

Participant 1 reported that the way Ebola was prevented in Nigeria can be adapted to prevent the spread of PTB to community members by isolating infected people in designated camps. While such an approach would lead to infected patients being further excluded and marginalised, Participant 1 believed that the way Ebola had been handled during the crisis involved the government establishing a health promotion and prevention programme through various organisations, and the use of mass media to educate people about Ebola could be applied to PTB, thus helping to decrease its prevalence.

> Participant 3: *Enlightening the general public on the causes, then we try as much as possible to stay away from things that can cause it. Then we can enlighten them on how to relate with people with PTB to inhibit transmission from one person to another.* (University FGs)

The above statement suggested that by informing people on the causes of PTB will go a long way as well as reducing the PTB transmission.

8.4 SUMMARY

The PTB patients, their carers/relatives, community members and leaders, and HCWs strongly agreed that health education and awareness are vital and that appropriate methods for the dissemination of health messages are required. Many suggested using mass media to build health awareness, although some participants also argued for leaflets, health awareness campaigns, and health education in schools. Overall, the findings revealed that the participants were willing to acquire more knowledge on how PTB can be prevented; therefore, the range of settings where health promotion and disease prevention initiatives can be staged and prioritised within the community – which include religious organisations, marketplaces, and educational institutions – should be expanded.

CHAPTER 9:Discussion, Conclusion and Recommendation

Introduction

The aim of this ethnographic study is to explore the knowledge, attitudes, and health-seeking behaviours of patients, community members, and healthcare workers (HCWs) in relation to pulmonary tuberculosis (PTB) in Akure South, Ondo State, Nigeria. To the best of my knowledge, this is the first ethnographic study conducted on PTB in this region. PTB is an important public health problem; it is a significant cause of morbidity, mortality, and health care expenditure. In order to understand the study findings beyond the narrow confines laid out so far, it is necessary to locate the findings within the wider perspective; therefore, I have drawn upon the health belief model (HBM) (Becker, 1974; Rosenstock, 1974), and the social ecological model (SEM) (McLeroy et al. 1988) to provide a more in depth understanding of the study findings. Furthermore, the limitations and recommendation of the study are also presented in this chapter.

The discussion of the findings is organised in the order of the themes which were identified as indicated below:

- barriers to accessing healthcare services
- knowledge and perceptions of PTB
- socio-cultural context of PTB and
- health promotion and prevention
-

In the theme of barriers to accessing healthcare services, the findings indicated that there were a number of individual factors which influenced health-seeking behaviours. Delays in seeking medical help were influenced by people’s perceptions of the seriousness of PTB, fears of infection, and cultural and religious beliefs, which meant that alternative help was frequently sought initially through self-medication or from traditional healers (Traditional healers) before attending the hospital or DOTS clinic. Other factors were also identified in the findings which related to wider determinants of health; these included the geographical location of the medical facilities and the costs of transportation, which were key barriers especially for those living in poverty. In addition, the stigma associated with PTB resulted in delays in seeking medical help and in gaining additional support, as some patients did not inform their wider family members and friends of their diagnosis because of the fear of being socially isolated or stigmatised. For example, the HBM primarily focuses on individual factors that are consistent with the intrapersonal level of the SEM. However, the HBM constructs aided a deeper understanding of the individual factors which influenced health-seeking behaviours. A number of factors were identified which could not be explained by the HBM, so the SEM was applied to aid understanding of these other factors, which extended beyond the individual.

9.1HEALTH BELIEF MODEL

The HBM was applied to aid understanding of the individual factors that acted as barriers to accessing healthcare services, which also addresses the beliefs of individuals regarding a particular disease, in an effort to understand why some people participate in health-promoting behaviours, and others do not (National Cancer Institute [NCI] 2005). The HBM was originally developed “to explain why so few people were participating in programs to prevent and detect disease”, making it particularly germane to behaviours which would help to eradicate infectious disease (NCI 2005, p. 20).

The HBM focuses mostly on the perceptions of individuals regarding their susceptibility to illness, the severity of that illness, the benefits of the health-promoting behaviour, and the nature of any barriers which exist to carrying out that behaviour (NCI 2005). PTB education, if well-executed, would help to bring individuals’ level of perceived susceptibility in line with reality Wong, (2013). That is, a person who believes that they are not at risk of developing PTB because they are young and healthy is unlikely to seek PTB screening. A well-informed person, however, would be aware that PTB typically remains dormant in a healthy individual, and that testing might be beneficial, even to a healthy person.

These HBM constructs are the perceived benefits and barriers. A person is more likely to proceed with a health-promoting behaviour if they understand its potential benefits (NCI 2005). In this context, awareness that treatment is even possible is not universal; therefore, increasing the awareness that PTB can be cured if it is adequately treated is important. This is particularly vital with PTB, as the treatment is arduous and requires absolute adherence. This last point also relates to perceived barriers; for example, a person’s understanding that treatment will be difficult but that it is accessible and can be completed successfully is critical to continuation of and adherence to treatment Wong (2008).

Additionally, the HBM construct known as "cues to action" is relevant to the PTB context. Cues to action "provide…information, promote awareness, and employ reminder systems" (NCI 2005, p. 21). In the case of this study, some patients were prompted to seek medical help by their family, and especially when members of the family or friends of the patient had previously had PTB as knowing the signs and symptoms of PTB helps to prompt the patient to take action to find a cure. In the case of PTB, it may be imagined that a person who is knowledgeable about the PTB symptoms is more likely to recognise them and seek treatment. Additionally, others are more likely to prompt the infected individual to seek treatment if they possess adequate PTB-related knowledge.

A final HBM construct, and perhaps the most vital in this context, is known as self-efficacy (NCI 2005). Self-efficacy is described as "confidence in one's ability to take action", or whether an individual believes that his or her attempts to engage in a health behaviour will be successful (NCI 2005, p. 21). Increased self-efficacy in turn increases the likelihood that a person will, in fact, perform the behaviours. This construct is therefore critical to the individual's eventual behaviour, and naturally, self-efficacy is a part of several of the other individual-level theories (NCI 2005).

The HBM is useful in the PTB context; however, it does have some limitations, such as the lack of consideration of socio-cultural factors, and it does not take into account how emotions such as anxiety or fear affect rational thought and decision-making, as well as the differences in individual access to and the availability of healthcare-related resources (Boston University School of Public Health [BUPH] 2016). The next section presents the findings of **barriers to** accessing healthcare services.

9.2 BARRIERS TO ACCESSING HEALTHCARE SERVICES.

Within the theme of barriers to accessing healthcare services, three sub-themes were identified: fear of infection, the health-seeking behaviour of PTB patients and delay in seeking treatment, and finally, the influence of poverty on PTB patients' access to healthcare services. The fear of infection revealed by the community members, patients, and carers/relatives of their perceptions on PTB was because they thought it was incurable and it manifests some of the symptoms of HIV/AIDS. Prior to this study, assessing interventions to improve PTB preventive therapy or treatment adherence has been hampered by a lack of knowledge and the community members' beliefs about being infected, which led them to disassociate themselves from the PTB patients. With regard to the health-seeking behaviour of PTB patients and delays in seeking treatment, the findings identified that lack of knowledge and understanding of PTB resulted in patients seeking over-the-counter self-medication and consulting with local traditional healers before visiting a healthcare centre or hospital for treatment. Finally, in the subtheme of the influence of poverty on PTB patients' access to healthcare services, the patients and community members reported some of the factors that influence why the patients were unable to access the services provided for them. These included loss of income and cultural beliefs. It was also revealed in the study that being diagnosed with PTB had financial consequences, as some of the patients were unable to travel to the health centres for treatment or to provide the necessary support for themselves. The perceived susceptibility is explained below:

9.2.1 Perceived susceptibility

According to the HBM, perceived susceptibility is a belief about the possibility of contracting a disease or being harmed by a condition (Chew *et al.* 2002). If people believe that they are susceptible to a particular health condition and its corresponding outcomes, then they are motivated to implement a healthy behaviour (Rosenstock 1966).

For example, in the theme of barriers, one carer/relative did not think her son had PTB, as indicated in the quote by Carer/Relative 2 below:

> *My son had been ill for some time, and we had been using different self-medication both from the chemist and traditional medicine, but there was no cure. Then he started coughing blood, and we took him to the hospital* (Carers/Relatives 2).

The carer/relative sought help in many places to find an effective cure until finally she went to the hospital. Although if she had known that her son had PTB, the fear of the unknown may have prevented her from seeking help at the onset of his illness. The fear of infection also contributes to the attitude and behaviour of HCWs in attending to the patients in a timely and professional manner. The perceived susceptibility in this case shows that the carer/relative did not believe that her son had contracted the disease, so therefore, would not seek treatment at the onset of his illness. Another example of perceived susceptibility identified in the study findings was perception of risk factors and knowledge of signs and symptoms of PTB as discussed in Chapter 6: Knowledge and Perception of PTB and Chapter 5: Barriers to Accessing Health Services, although these findings are not reported in this chapter.

The findings revealed that the health-seeking behaviours of PTB patients and delays in seeking treatment were as a result of their cultural and religious beliefs and their lack of knowledge about PTB. It was found that among the five patients interviewed, four reported that they had sought over-the-counter self-medication and consulted with local traditional healers before visiting the healthcare centre or hospital for treatment. Although the carers/relatives were aware of the conditions of the illness, the type of disease the patients were suffering from was unknown to them for them to seek an appropriate health care centre. The delay in carers/relatives seeking medical help may be understood in relation to the perceived severity/threat of PTB.

9.2.2 Perceived severity/perceived threat

Perceived severity is one's belief about the seriousness of a medical condition and the sequence of events after diagnosis and personal feelings related to those consequences (Janz *et al*. 2002). In addition, perceived severity relates to the individual's understanding of the nature of the disease's symptoms and the associated risk of death (NCI 2005). In relation to PTB, the awareness of the reduction in immune system strength can lead to illness in those who were previously healthy, as well as the existence of drug-resistant strains which are more likely to lead to death.

The HBM suggests that a person is more likely to take action to avoid a potential health risk if they believe contracting the disease would have some negative impact on their life (Janz *et al*. 2002). For example, this study revealed that most of the patients and community members and leaders knew that PTB was a serious disease and that it could be transmitted through being in close proximity to a person with active PTB and that the disease can cause pain, disability, and even lead to death. However, two out of the five patients reported that they thought the disease was incurable and is an inherited disease. These beliefs influenced them in delaying seeking medical help in a timely manner. The findings also revealed that patients believed that contracting PTB can affect their work, income, and family social life, which eventually can lead to poverty.

The way communities perceive the severity of PTB influences people's healthcare-seeking behaviour. In this study, three out of the five patients reported that they did not know that they were experiencing symptoms of PTB. They thought they had a cold or a fever, although a few mentioned PTB symptoms, such as persistent (bloody) cough, weight loss, fever, and night sweats. These findings relate to perceived severity/threat and delays in seeking health care because of the patients' beliefs that they were at risk of hospitalisation, fear of rejection among friends and family and isolation which was mentioned by the patient, healthcare seeking behaviour. However, this quote by patient 1 stated that.

> *I just used a mixture of lime juice, honey, and 'Epa Ijebu'* [traditional medicine]. *I was also eating bitter kola and licking Tom-Tom* [a menthol sweet]. *When none of these worked, I went to the chemist where I was given drugs. The symptoms subsided at this point but then later came back* (Patient 1)

The statement by patient 1 indicated that she/he knew they were not feeling well and needed treatment; therefore, they sought help although not in a right place.

9.2.3 Perceived barriers

This refers to a person facing obstacles to performing a recommended health action. There is wide variation in a person's feelings on barriers, or impediments, which lead to a cost/benefit analysis. The person weighs the effectiveness of the action against the perceptions that it may be expensive, dangerous, (e.g., side effects), unpleasant (e.g., painful), time-consuming, or inconvenient (LaMorte 2018). In the current study, perceived barriers are the potential negative consequences that may result when taking action against PTB.

In the context of this study many barriers were mentioned by the patients, carers/relatives, community members, and HCWs. These included poverty and loss of income and additional costs in terms of transportation to the TB clinic. The fear of infection and the cultural beliefs that PTB was derived from the devil, which led some to consult traditional healers in the process of looking for a cure, resulted in delays in them gaining medical treatment. The belief that PTB is incurable, and that death was inevitable and the inconvenience and time-consuming nature of the treatment for PTB, the fear of infection, and the fear of rejection from the community and social isolation prevented most of the patients from disclosing their PTB test result to their friends, and few disclosed their diagnosis to the family.

The cost of TB diagnosis and treatment is frequently perceived as a barrier to people accessing these services. Although the treatment is free, other costs that the patients incurred during the diagnosis and treatment of their illness included the costs of transportation to the healthcare centre, which was reported as being very expensive. When patients cannot afford nutritious food, this creates a vicious cycle in which effective treatment is less likely to be acquired. However, whether the lack of funds is felt most in relation to food or transport, patients who cannot afford to travel to healthcare centres often have no other choice than to stay at home and seek help from local people or their family. The fear of infection also prevented some patients from seeking appropriate support, as they feared that if community members knew they were suffering from PTB, this may lead to rejection or stigmatisation.

Other issues revealed in the study related to perceived barriers included the challenge of the unwanted side effects of PTB drugs due to the lack of education and knowledge and the inability to read the instructions about the medication as discussed in chapter 6 of knowledge and perception of PTB. In addition, lack of privacy and confidentiality, which some of the patient mentioned during the interviews, and inadequate service provision to support the patients by the HCWs resulted in some of the patients initially seeking help from the traditional healers and religious leaders before accessing the TB clinic. In addition, the lack or shortage of a stable drug supply meant that some patients had to return to collect their medication, which incurred additional costs for the patients or their relatives. Finally, the community members perceived PTB as being associated with HIV/ AIDS, which led to stigmatisation and subsequently created a huge challenge for the patients and their families as discussed in chapter 7. Another perceived barrier was cultural beliefs, which have been discussed in chapter 7.

9.2.4 Perceived benefits

Perceived benefits refer to the evaluative value or sense of efficacy that arises when engaging in health-promoting behaviours to reduce disease risk (Kim & Kim 2020). For example, the community members, patients, and religious leaders demonstrated good knowledge of the signs and symptoms of PTB.

Perceived benefits refer to the belief that a person is more likely to proceed with a health-promoting behaviour if they understand its potential benefits (NCI 2005). In this context, awareness that treatment is even possible is not universal; therefore, increasing the awareness that PTB can be cured if it is adequately treated is important. This is particularly vital with PTB, the treatment for which is arduous and requires absolute adherence. In the context of this study, the perceived benefits would relate to whether community members and leaders, patients and their family and/or carers believed that medical treatment was effective and that PTB was curable.

9.2.5 Cues to action

The HBM suggests that a cue, or trigger, is necessary for prompting engagement in health-promoting behaviours. Cues to action can be internal or external (Champion et al (2008). Physiological cues (e.g., pain, symptoms) are an example of internal cues to action, while external cues include events or information from close others, the media, or health care providers promoting engagement in health-related behaviours (Champion & Skinner 2002). Examples of cues to action include a PTB test, seeking treatment, and the illness of a friend or family member. The intensity of cues needed to prompt action varies between individuals by perceived susceptibility, seriousness, benefits, and barriers. For example, individuals who believe they are at high risk of a serious illness and who have an established relationship with a doctor may be easily persuaded to get screened for the PTB disease after seeing a health care awareness announcement. Furthermore, an individual who believes they are at a low risk for the same PTB disease and also do not have access to TB clinic, may need to visit the Traditional healers or off-medical store in order to get treatment or cure.

Cues to action are the factors that cause someone to change or want to change their health behaviour. For example, the findings indicated that cues to initiate action against PTB were having a family member ill with PTB. In relation to my study findings, the cue to action made the patients seek medical treatment after their symptoms worsened following the use of home or traditional healers' remedies, which prompted them to seek medical care. In addition, some family members prompted their relative to seek medical treatment, whilst some of the religious leaders suggested that people should seek medical treatment.

As stated earlier, the HBM construct known as "cues to action" is relevant to the PTB context. Cues to action "provide…information, promote awareness, and employ reminder systems" (NCI 2005, p. 21). In the case of disease, these may include symptoms of PTB, as well as interpersonal cues from other individuals which prompt the person to seek or continue treatment (NCI 2005). In the case of PTB, it may be imagined that a person who is knowledgeable about the disease's symptoms is more likely to recognize them and seek treatment. Additionally, the family or friends are likely to prompt the infected individual to seek treatment if they possess adequate PTB-related knowledge. The process of getting the community leaders involved in health awareness programmes where patients can gain knowledge on PTB, for example, via the mass media or people talking or giving information, may itself serve as a cue to action in this instance.

9.2.6 Self-efficacy

According to the HBM, self-efficacy focuses on a person's confidence in their ability to successfully perform the recommended action (Campbell 2004). If a person is not confident of their ability to successfully perform a recommended behaviour, change will not occur. This study revealed that some of the patients felt depressed and guilty about having PTB; they were afraid of being a burden on their family or friends. Such negative feelings seemed to be intensified by non-disclosure and, in some cases, self-chosen social isolation. Some patients concealed their PTB diagnosis to avoid distress and discrimination and instead maintained levels of isolation.

This is because culture plays a major role in health-related behaviours (Carrol 2007). According to Naidoo (2006), an individual’s behaviour is often guided by the cultural context within which they live, so the patients and the community members may not adopt TB preventive behaviour because of their cultural values, and this may hinder the process of eliminating PTB. That said, people are rational thinkers who, when provided with the knowledge about the causes, signs, and symptoms of PTB, the severity of the illness and their susceptibility to it, will modify their health seeking behaviours and seek medical help.

9.2.7 Summary

In the theme of barriers to accessing healthcare services, three subthemes emerged: fear of infection, the health-seeking behaviour of PTB patients and delays in seeking treatment, and the influence of poverty on PTB patients’ access to healthcare services. Within each theme, subthemes were also identified. Under the theme of fear of infection, the following subthemes emerged: patients’ and carers’/relatives’ perceptions of the fear of infection, the attitude and behaviour of HCWs. The sub-themes in the health-seeking behaviour of PTB patients and delays in seeking treatment were lack of knowledge and understanding of PTB, and cultural and religious beliefs. The sub-themes of the influence of poverty on PTB patients’ access to healthcare services were loss of income, cost of transportation to the TB clinic, and cost of food and medication.

The findings in this theme of barriers to accessing healthcare services and the sub-themes identified various factors regarding why patients delayed seeking timely medical help. It was also revealed that income loss as well as costs of transportation, food, and medication can place a considerable financial and economic burden on PTB patients and their households to the extent that patients would not be able to support themselves during their illness. Although TB care is supposedly free of charge, patients/households have to make significant out-of-pocket payments in their pathway to diagnosis and treatment.

In many cases, such delays led to serious complications and made the illness more difficult to treat. The factors associated with patients’ delay in seeking healthcare are largely due to a lack of understanding of and knowledge about the disease, particularly with regard to whether it is curable or not. Other major factors are cultural norms and religious beliefs. Better health promotion and education for the Akure South community members that will inform them of the true nature of PTB and where to get help as soon as possible shall be discussed in the health promotion and prevention chapter. This theme concluded that the HMB can be used to aid the understanding of the above factors that influence the behaviour of the community. The next section presents the findings from the theme of knowledge and perceptions of PTB.

9.3 KNOWLEDGE AND PERCEPTIONS OF PTB.

Introduction

In this section, findings related to the knowledge of sign/symptoms, cause and risk factors, cure and treatment of PTB are discussed. The findings from this study on the knowledge and perceptions of PTB, are better understood through applying the conceptual framework of the SEM developed by McLeroy *et al.* (1988). Knowledge, attitudes, communication, and beliefs are typical examples at the intrapersonal, interpersonal, and organisational levels of influence. The limited knowledge identified in this study among the PTB patients regarding the signs and symptoms of PTB may have impeded their access to treatment, which then led to poor prognoses because of the lack of an early diagnosis and the associated timely treatments. Knowledge of the disease may be an important intrapersonal influence on behaviour, which can be addressed with a variety of intervention strategies, such as health promotion programmes, educational programmes, mass media, support groups, organisational incentives, or peer counselling, which will enlighten the community and patients about the signs and symptoms of the disease. In addition, I had observed that the level of communication between the patients and the HCWs was poor at the health centre. The interpersonal level of the SEM can help in understanding this problem. Interpersonal relationships have a major influence on health behaviours; these relationships include patients consulting HCWs, social influence from friends and family, and norms within social networks about their health conditions. Should a poor relationship among these factors exist, the patients may encounter difficulty in seeking help. However, if HCWs' knowledge about the risk factors of PTB can be communicated to the public, then perhaps PTB can be eradicated in Nigeria or at least greatly reduced. The reasons for HCWs not transferring their knowledge to the community include the lack of encouragement by higher authorities, as indicated by the doctors who mentioned that the government does not fully support the TB programme;

most of the funds were donated from other countries, and the government’s focus is on HIV/AIDS instead of PTB. In the context of this study, interpersonal factors can be used to channel information about the disease to the community members and patients. The following section explains the factors and the causes of PTB.

It was identified from the study findings that the inadequate knowledge of PTB demonstrated by PTB patients, their carers/relatives, and community members can be improved through the intensification of health education about PTB disease. The campaign needs to be targeted at the patients, the community members, and the HCWs. HCWs who have knowledge about the disease should educate their patients and community members about the factors and the causes that influence the risk of PTB. It was revealed that the level of knowledge as to whether or not PTB is curable varied among the interviewed patients. Some believed that PTB could be cured, while others did not. Out of five patients, two believed PTB is curable while three patients were unaware that PTB is curable, and one was not sure that it can be cured. In additional, the lack of knowledge about PTB meant the patient was unable to demonstrate how PTB is treated; for example, among the five PTB patients, none was able to demonstrate how PTB is treated. This shows the lack of health education and health awareness among the patients. Even after diagnosis and being provided with a health talk by the nurses, the patients interviewed reported that they knew little or nothing about the treatment nor about the available drugs.

Another problem identified was that two-thirds of the patients, carers/relatives, and community members interviewed had no knowledge of whether PTB is curable. Among the patients and carers/relatives who participated in the interviews, two of the patients and one of the carers/relatives displayed a total lack of knowledge about whether the disease is curable despite having sought help and having been diagnosed, and despite the fact that both patients were taking medication at the time of the interview. The community members’ (community-nominated leaders, chief, church pastor) level of understanding that PTB is curable was generally very good. However, only two men and one woman in the Muslim FGs knew that PTB is curable. The other Muslim members believed that the disease cannot be cured even if it is properly managed and if the sufferers adhere to the treatment. Of the church and university FGs participants, a majority believed that PTB can be cured. Notwithstanding this, the community members still need health education and awareness to assist them.

With regard to PTB treatment, the majority of patients and carers/relatives had no knowledge at all, even though the patients were prescribed or being administered medication at the time of the interviews. The university FGs demonstrated good knowledge of the treatment of PTB. However, community-nominated leaders', the palace chief's and religious leaders' knowledge of PTB treatment was poor, displaying no understanding of PTB's treatment, albeit most understood the importance of seeking prompt medical help. If these leaders' level of knowledge could be improved, they could use their position in the community at community events and through religious services to reinforce positive messages about the curability and treatment of PTB.

The only participant among the community members interviewed who demonstrated good knowledge of PTB treatment was a retired nurse in the Muslim FGs. This indicates that within the local community, there may be individuals who have a good knowledge of PTB and who could be mobilised to act as informal health promoters within their communities. All the HCWs had good knowledge of the PTB treatment, which was due to their educational background and clinical experience. The following section presents how SEM helps in aiding the understanding of the study findings.

These findings about the knowledge of the Muslim FG and church FG regarding the curability of PTB indicate that there is need for these religious organisations to be educated about the disease in order that they can then, in turn, improve the health of the wider Akure South community members by promoting accurate information about PTB. Utilising church communities and other religious organisations to promote health education to the community members is very important since such religious organisations are visible, respected, and credible in the community. Pastors provide congregational leadership not only for spiritual matters but also for social action and community outreach, and they could thus be a vital conduit for information through religious and wider social networks (Bhebhe *et al.* 2014).

9.3.1 Intrapersonal level

Some of the Akure South community members who had taken part in the study had limited or poor knowledge of PTB. Knowledge and behaviour fall under the SEM category of intrapersonal factors. The poor knowledge of PTB, especially among the patients and their carers/relatives, was influenced by various factors. For instance, some of the patients or carers/relatives interviewed had no standard education that could have helped them to identify the signs/symptoms, risk factors, and cause as well as the cure and treatment of PTB, which resulted in certain behaviours whereby some had not disclosed their PTB results to their family or friends, as they did not want to be stigmatised or rejected by the community because of social norms and the fear of infection.

The social norms underpinning the belief that PTB is derived from the devil, as indicated in chapter 5 barriers to accessing healthcare services where the Muslim leader stated that PTB is from devil and cannot be cured, deterred most of the community members from having contact with the patients, which resulted in some patients and their families feeling isolated. Furthermore, many PTB sufferers did not understand why they should visit the TB clinic since they could contact Traditional healers more easily. Some patients knew that Traditional healers may not provide instant cures, but they believed that they would receive less attention at the TB clinic, as the doctors may not attend to them and that they would be seen only by nurses and other HCWs. Furthermore, these patients avoided seeking healthcare out of the fear of being misunderstood or discriminated against. Thus, HCWs need to know and understand the impact that culture can have on a patient's PTB knowledge. Other reasons for limited or poor knowledge of the signs and symptoms of PTB include the lack of health education. Although some patients were able to identify some signs and symptoms of PTB, the majority of the patients had not received a secondary education. Some of the patients and their carers/relatives could not read or write; neither could they follow the doctors' instructions, understand or identify the signs and symptoms of PTB, act promptly at the onset of their illness, or seek help at the appropriate places without delay. The lack of education among the patients resulted in delays in seeking diagnosis and treatment from HCWs as well as problems with adherence to medication and healthcare recommendations. Proper health education for PTB patients and carers/relatives can help them to accept their condition, provide them with the confidence needed to stand up to stigmatising behaviours from others, and decrease self-stigmatisation (Rafferty 2005). Such education would also help to improve the early recognition of symptoms and subsequent reporting to the hospital for early diagnosis and treatment initiation. Traditional attitudes and religious beliefs also influenced the patients', carers'/relatives', and community members' behaviour towards the disease. Therefore, those with limited knowledge of PTB need to be educated on PTB health awareness, which will enable them to reduce the risk of exposure to TB.

The intrapersonal level of the SEM helps aid understanding of many of the findings in this subtheme. These factors relate to knowledge, attitudes, beliefs and behaviour, but as indicated above, among the five patients who participated in the study, only one had full knowledge that PTB can be cured, while three others had no knowledge at all. The remaining participant was not sure if PTB is curable or not. Similar degrees of knowledge were found among the carers/relatives: out of five carers/relatives, three were able to demonstrate good knowledge, one was not sure, and the other one had no knowledge. As demonstrated above, unawareness that PTB is curable led to a delay in accessing health care. Although some carers/relatives acquired knowledge from the nurses while at the hospital, the lack of systematic health education within the Akure South community contributed to a generally very poor level of knowledge about PTB's curability and treatment. The patients' lack of knowledge may also have been partly due to the debilitating and demoralising effect of the illness itself, as well as a lack of education or support from the HCWs. Some of the community members, however, particularly the community leaders and some of the carers/relatives, did have a good knowledge of PTB's curability, and most of the community members who participated in the interviews on PTB's curability demonstrated some knowledge. Concerning the treatment of the disease, most of the participants did not have knowledge, but the most knowledgeable among them was Participant 5, who demonstrated good knowledge of both treatment and curability due to her educational background and experience as a retired nurse.

At the interpersonal level, the lack of effective communication was a factor which influenced knowledge of the treatment for PTB. The majority of the participants had no knowledge of the disease, despite the fact that the nurse had delivered a health talk. However, this could be because the talk was delivered in a waiting area where there were a lot of distractions, as was the case of those that I observed, or it could be because the way the nurse delivered the talk inhibited the patients' understanding.

Other factors that can influence the lack of knowledge of PTB's curability and treatment by the patients and community members are a lack of training/ skills among the HCWs, cultural beliefs, and a lack of trust in orthodox medicine and in HCWs' services.

These findings indicate that in the clinic, the care of the patients was mainly the responsibility of the nurses and the receptionists, who had the most contact with the patients, while the doctors had limited direct contact. The lack of communication between patients and doctors needs to be addressed because if the doctors, whose knowledge, of course, is very good, had more exposure to the patients, they would be able to enhance the knowledge of the patients and of their carers/relatives who will be attending the clinic.

9.3.2 Interpersonal factors

On interpersonal factors, two categories were identified: communication between patients and HCWs and the influence of family and friends. The first factor was identified as poor in this study. Communication is critical for effective healthcare because without proper means of communication, the patients may find it difficult to describe the illnesses they have, and doctors or nurses may not be able to recommend or diagnose the patients, prescribe the right medication, or send the patients for PTB tests. In addition, the role of HCWs is to ensure that the patients are provided with proper care that will sustain them during their illness. This study identified that HCWs, especially doctors, are knowledgeable about PTB signs and symptoms, but generally, poor communication exists between the HCWs and the patients in regard to the disease. Communication also ultimately reflects the dynamics of the relationship between the HCW and the patient. HCW–patient communication can affect trust, patient satisfaction, and treatment adherence; without effective communication from both sides, poor uptake of assistance and/or delays in service delivery are expected. With proper communication, however, HCWs will have more time to educate or share information about PTB with the public and with their patients.

The study identified that some of the carers/relatives who supported the PTB patients also have generally poor knowledge of the disease’s signs and symptoms because of the lack of health education. Those who have little knowledge, however, can be a positive influence on the patient’s behaviour. Interpersonal relationships with family and friends are a source of influence on health-related behaviour. For example, significant others are an important influence in patients’ decisions to seek treatment and adhere to treatment recommendations.

On the interpersonal level, in regard to this study, communication between patients and HCWs as well as family members and peers can be improved. For instance, if the health organisations and the community members collaborate and provide provisions for health, PTB, and stigma awareness for the community members and PTB patients, this will improve the community’s behaviour. In addition, the SEM supported the view that counselling and discussing the effects of the disease with family members and communicating with the sufferers will help them gain more knowledge and understanding of their disease, which will improve their treatment. The HCWs should also ensure that this knowledge is transferred to the patients and community members for them to support themselves.

9.3.3 Community level

At the community level, an individual interacts with different environments, including groups of people who have a normative influence on their life. This study identified that the main factor influencing the lack of knowledge of signs and symptoms of PTB was the lack of health awareness among the community members despite the limited knowledge of some community members who had acquired such information from nurses at the hospital. A critical problem is that no health awareness programmes on the disease were in place for community members, which made it difficult for them to seek help or assist others. Therefore, health awareness on PTB should be promoted to the community members through settings other than hospitals, such as religious organisations. Religious leaders can preach at churches and mosques to their members about health awareness and help remove the stigma of having contact with PTB sufferers. This may also affect the patients’ health-seeking behaviour at the onset of their illness. The promotion of health awareness can also be included in university syllabi.

9.3.4 Organisational level

The organisational level focuses on the healthcare structure and services delivery as well as the special challenges faced by patients, community members, and HCWs in regard to knowledge of the signs and symptoms of PTB. Although some doctors and nurses possess sufficient knowledge about the disease, such knowledge is not being communicated to the community members because of their heavy workload. During my study observation, I had noticed that the patients had access to the nurses but not to the doctors. Different aspects of PTB knowledge can be acquired either through health awareness, health education, or one-to-one discussions with the HCWs during treatment. This lack of patient access discouraged patients from gaining further information about their disease. Because of their heavy workloads, the nurses had limited time to spend with each patient and did not offer them information about PTB except in the open space of the TB clinic. These findings also indicated that the service provided by the doctors and nurses was inadequate, as the doctors had not made themselves available and shifted their tasks to the nurses and other HCWs.

This resulted in patients receiving inadequate treatment; in most cases, the patients suffering from PTB were not examined and diagnosed properly. Consequently, effective collaboration between and among existing non-governmental organisations and PTB control efforts as well as timely and appropriate social service referrals for individuals with PTB are urgently needed. This would play an important role in efforts to successfully eliminate PTB, as would mobilising the HCWs to promote health initiatives by providing information about PTB by educating the community about the disease. Communication through media and posters in the hospital environment and public places can also enlighten the patients and increase their knowledge of PTB. Proper awareness of PTB by the HCWs allows for more effective treatment and may result in HCWs becoming more engaged in encouraging patients to adhere to such treatment. Better-educated HCWs are also more likely to enforce the segregation of TB patients from others, especially those with HIV/AIDS, thus reducing the likelihood of transmission and co-infection.

The inadequate knowledge of PTB demonstrated by PTB patients, their carers/relatives, and community members can be improved through the intensification of health education about the disease. The campaign needs to be targeted at the patients, the community members, and the HCWs. HCWs who have knowledge about the disease should educate their patients and community members. Therefore, more health awareness programmes that will promote health education on PTB within the Akure South community are needed.

9.3.5 Summary

The findings regarding knowledge of the signs/symptoms, causes/risk factors, and cure and treatment of PTB revealed limited knowledge on the above factors. For instance, three out of the five PTB patients showed a lack of knowledge about curability, while the other two patients believed that it could be cured. As expected, all HCWs were knowledgeable about the cure and treatment of PTB. They generally regarded it as another disease, which, though it may have serious effects if untreated, is certainly curable.

Among the community members, palace chief, community-nominated leaders, and religious leaders interviewed, one third believed that PTB could not be cured, whilst the remainder demonstrated knowledge that PTB is curable. As regards PTB treatment, community members overall demonstrated a lack of knowledge. Only the HCWs demonstrated a good knowledge of both the cure and treatment of PTB. Regarding the knowledge of treatment of PTB, out of the five patients, none could demonstrate a good knowledge of PTB treatment. In the university FG, out of seven participants, only three were able to demonstrate good knowledge of PTB treatment. In the Muslim FGs, only one participant demonstrated good knowledge of PTB treatment, and she was a retired nurse. The church FGs demonstrated good knowledge of PTB treatment. Finally, other community members, i.e., the palace chief, community-nominated leaders, and religious leaders, demonstrated only very limited knowledge. This lack of adequate education, resulting in poor knowledge of PTB, needs to be addressed.

9.4 SOCIO-CULTURAL CONTEXT PTB

Introduction

The responses from PTB patients, their carers/relatives, community members, and HCWs indicated that most of the participants were strongly influenced by traditional beliefs, including the belief that PTB is a spiritual attack or a punishment from God. The main beliefs highlighted by the participants were faith in traditional healers and their medicine, religious beliefs, the reluctance or refusal to accept PTB test results, and the belief that PTB has a cultural cause, all of which can make patients prone to fatalism. Some or all of these beliefs are combined to create a stigma about the disease within the community. Other issues identified are the consequences of stigmatisation on relationships and marriage and the influence of the perceived relationship between HIV and the social impact of PTB on patients. The findings were applied to three levels of the SEM, namely, the intrapersonal, interpersonal, and community levels. The broad conclusion is that changing community norms and the traditional culture will involve shifting people's paradigms about what they perceive to be true and their expectations regarding normative behaviour. This may be difficult to accomplish because these social norms are deeply rooted in one's beliefs and are thus difficult to change. For change to happen, various strategies may be required, including interpersonal and community dialogue, social mobilisation, and advocacy.

The religious beliefs of the community members have a very strong influence in the Akure South community. Possibly the most crucial conclusion that can be drawn from this finding is the need to link medicine and religion in the popular consciousness; this will help remove the barriers to sufferers seeking early help at hospitals and clinics. However, it is not realistic to assume that it will be easy or quick to reduce the traditionally important role of local healers. This also indicates the more immediate need to educate the healers themselves about PTB; however, this should be done in such a way that their standing in their own eyes or those of the community more widely is not undermined.

In the sociocultural context of PTB, several issues, which include various health and religious beliefs (both of which are often centred on and revealed by the prominent role accorded to Traditional healers), the lack of acceptance of PTB test results by the patients, and cultural causes for the stigma associated with the disease, were identified. Other findings were the patients' fatalistic beliefs, the consequences of stigmatisation on relationships and marriage, and the influence of the perceived relationship between HIV and PTB. In this study, fatalistic beliefs were found to be strongly held by the Akure South community members. This study further confirmed the effect of religious adherence on fatalistic beliefs, as some PTB patients held the notion that their health is beyond their control, and therefore, their illness depends on factors such as luck, fate, or God's power. Other factors that influence the attitudes of PTB patients include the lack of knowledge and understanding of PTB, poor health awareness, cultural beliefs, stigma, and the lack of information about the disease. Cultural beliefs that may have been prevalent for centuries are difficult to change overnight. Finally, rejection by the community members and the shame and embarrassment experienced if the community members learn that they have PTB may result in the patients' isolation and rejection by their family and friends. This, in turn, often leads sufferers to approach local Traditional healers and church or Muslim leaders for help.

Another problematic factor reported was the influence of stigmatisation on relationships and marriage. The sufferers had to contend with misconceptions about the relationship between HIV and PTB that further stigmatised them and their families. In general, although not exclusively, such misconceptions were more prevalent among less well-educated members of the community and thus may be connected to a gap in knowledge about the aetiology of PTB. Finally, the impact of PTB on patients' physical condition as well as their mental and social well-being was acknowledged.

The SEM shows that the knowledge, beliefs, and perceptions of individuals are influenced by interactions among family, friends, community members, health systems, and policies. The three levels of the SEM most relevant to aid the understanding of the findings are the intrapersonal, interpersonal, and community levels. In broad terms, the intrapersonal level was seen to relate to the themes of health and religious beliefs, including fatalism, cultural beliefs, and traditional norms; the interpersonal level to the effect of stigma on marriage and other relationships; and the community level to PTB stigma and associated stigma with HIV/AIDS. These will aid in understanding the factors that influence the socio-cultural context in which PTB is experienced by patients, carers/relatives, community members and leaders, and HCWs, which are explained with three levels of SEM below.

9.4.1 Intrapersonal level

The intrapersonal level of the SEM focuses on individual behaviour, knowledge, attitudes, and religious beliefs. This study identified various beliefs that influenced patients' attitudes and behaviour. Traditional beliefs led to some patients visiting Traditional healers or spiritualists rather than modern clinics. Many patients demonstrated a strong belief that people first visit Traditional healers because only they can cure the disease. In the SEM, the intrapersonal and interpersonal levels often overlap in practice. Either way, the consequences of inadequate knowledge or negative attitudes towards treatment can be severe. The lack of acceptance of PTB test results by the patients also result in a delay in the treatment of the disease.

The participants’ religious beliefs also influenced their health behaviours. Several nurses stated that religious beliefs can be a barrier to patients taking their medication since they attributed developing PTB to a higher power as a way of coping with and accepting their condition. Another issue identified by the doctors was that many patients were reluctant to accept that they had PTB; even though their test results were positive, they still believed it was the result of a spiritual attack. Therefore, they sought traditional medicine, went to church, or contacted a Muslim leader for spiritual healing instead of immediately seeking treatment from the hospital. The impact of religious beliefs on the community and the patients is significant, as religious adherence was one of the main issues that influenced the patients’ decisions not to seek help with their PTB. Some believed that the disease was a punishment from God for what they must have done previously. This belief creates or strengthens the mind-set that the disease is a death sentence or can only be averted through prayer or other forms of spiritual intervention.

The way the patients, carers/relatives, and community members perceived PTB greatly influenced their healthcare-seeking behaviours. This study reported limited knowledge and understanding of the disease and the lack of belief in HCWs’ treatment and diagnosis. Several participants placed their trust in traditional healers and spiritualists as they believed that only they can cure their illness, sometimes complaining about the long duration of orthodox medicine treatment. Many community members also thought PTB to be incurable and hereditary. These misconceptions about the disease, its aetiology, and its treatment are rooted in traditional beliefs that have been embedded in the community for centuries and are thus unlikely to be transformed quickly.

The implications of these findings may be far-reaching for the provision of culturally sensitive TB prevention and treatment and the promotion of early diagnosis and treatment adherence. To reduce the prevalence of PTB, doctors and nurses may need to identify cultural factors that exacerbate negative perceptions of PTB and explore how these affect family and other social relationships. Education regarding PTB needs to be provided to communities and patients, and system-wide policies need to be put in place to protect patient privacy and to provide culturally sensitive care.

An individual's knowledge with respect to health in general as well as to a specific illness is important in enabling the sufferer to assist themselves. Accurate knowledge and understanding promote positive health-seeking behaviour, understanding of the diagnosis, understanding of treatment initiation, treatment adherence, and general interactions with HCWs. In this study, greater knowledge, understanding, and health awareness of PTB will assist the patients and community members in seeking help from TB clinics at the onset of their illness. This will improve some of the misconceptions associated with the disease and reduce the sufferers' dependence on Traditional Healers.

9.4.2 Interpersonal level

Interpersonal influences focus on the behaviour of the patients, their family and friends, and HCWs. Various factors may be present at this level, including the impact of PTB on the patient's quality of life, the degree of support from friends and family, and positive attitudes predicated on the knowledge that, once cured, the patient will be healthy and able to enjoy a high quality of life within the community's social networks. This level also encompasses the support that patients receive from HCWs.

When such positive awareness is not present, however, the consequences can be dire. The lack of belief that drugs prescribed by HCWs can heal the patients makes them seek out Traditional healers or spiritual leaders for help. The failure to seek appropriate medical treatment causes the patients' condition to worsen and, in many cases, may lead to death. Some patients also refuse to accept that they have PTB even after they have tested positive for the disease. This is crucial, as sufferers who do not receive appropriate treatment are unable to carry out productive lifestyles and can become susceptible to other diseases.

The role of the carers/relatives of PTB patients is to provide social support while the patient receives treatment. At the interpersonal level, family members, friends, and other close peers form informal social networks that provide support to their loved ones and encourage them to access health services to be diagnosed and treated in a timely manner. However, this depends on a number of factors, including the level of health awareness within the support networks. In this study, the carers/relatives confirmed that they helped patients to access healthcare. They reminded the patients to take the drugs according to the advice of their medical doctors. They did not distance themselves from the patients, although they advised them to cover their mouths when coughing. The majority of the interviewed carers/relatives said that they were there to support their loved ones. One mother admitted that she did not leave her son on his own but always took him to the hospital for treatment.

The findings also reported issues affecting the PTB patients' marriages and other relationships. Some female patients reported that they did not disclose their PTB results to their husbands for fear of what they may do. One doctor stated that it is common for the spouses of PTB patients to seek divorce. In these cases, both the patient and the spouse should receive counselling to be reassured that the disease is curable as long as they follow the doctor's instructions. Spreading the message that 48 hours after a patient starts to receive treatment, they cannot infect another person is also crucial. Hostile reception at clinics could be an additional cause of patients relying on Traditional healers instead.

9.4.3 Community level

This study identified many misconceptions and beliefs about PTB on the part of patients, carers/relatives, and community members and leaders which influence whether and when treatment is sought and what form of treatment is pursued. These beliefs included cultural norms and traditional and fatalistic beliefs. These beliefs impeded people from accessing healthcare facilities, thus delaying diagnosis and treatment. Other beliefs identified in the study include the opinion that the disease is caused by the devil or evil spirits, which leads sufferers to put their faith in prayers to God for healing. Some patients and carers confirmed that most people living in rural areas do not believe in orthodox medicine, as services in these areas, for example, to have their children immunised at an early age to prevent them from contracting the disease, are often unavailable. The most notable gap in knowledge was found in the relationship between HIV/AIDS and TB. The community members also believed that the stigma associated with PTB made many people shun PTB sufferers since they are automatically thought to be HIV/AIDs patients.

At the community level, an individual interacts with different environments, including social networks, community support, patients, and other groups of people who have a normative influence on their lives. Strong community perceptions linked PTB to HIV, making PTB a stigmatised disease. The physical frailty shared between AIDS and PTB patients led people to suspect that the two diseases are interchangeable. Furthermore, the use of figurative language to explain PTB signs is in itself stigmatising. This may fuel community perceptions towards PTB patients and determine how the community responds to the threat of PTB.

Another contributing factor is the lack of health awareness and education about PTB, as a majority of the patients in this study had received only primary-level education. The belief that PTB is inherited stigmatises PTB patients further and leads to the mistaken assumption, for example, that someone from a family with a history of PTB must not marry into a non-PTB family, as the disease will continue to spread from one person to another within the family and the wider community. Thus, many community members believed that PTB sufferers must not marry into non-infected families. This belief was also promoted by Traditional healers. As most patients visit Traditional healers, determining whether health education programmes targeted at Traditional healers could positively affect TB treatment and prevention would be helpful and could significantly improve the community members' knowledge about PTB. For instance, many Muslim members believed in fatalism and that their destiny was in Allah's hands, as reinforced by their Muslim leaders. This emphasises the importance of sensitively addressing the fatalistic beliefs held in Islamic communities to encourage prompt presentation at a medical facility and adherence to medical treatment.

The present cultural norms of the Akure South community need to be changed; the people's paradigms that determine what they perceive to be true and their expectations regarding normative behaviours contribute to many widespread misconceptions about PTB. These cultural norms are deeply rooted and difficult to change because they are embedded in informal family and peer networks. Such informal networks are capable of either supporting or opposing larger cultural norms. To change these norms, various approaches may be required to shift present negative cultural norms towards positive cultural norms through interpersonal and community dialogue, social mobilisation, and advocacy. For example, the misconceptions that PTB is inherited should be challenged and can be addressed through health education programmes or mass media campaigns.

In regard to the stigma associated with PTB and HIV/AIDs, the stigma around PTB was seen to have a negative effect on health-seeking behaviour and adherence to treatment. The subject of stigma can be broken down as follows: the stigma of association with HIV, self-stigma, the consequences of stigma, and stigma caused by the lack of knowledge. Many patients, carers/relatives, and community members and leaders mentioned that the symptoms and signs of PTB are similar to those of HIV, leading them to assume that TB patients have HIV as well.

Self-stigmatisation can be defined as 'a reduction of an individual's self-esteem or self-worth caused by the individual self-labelling herself or himself as someone who is socially unacceptable' (Vogel *et al.* 2006, pp. 325–337). Patients felt depressed and guilty about having PTB; they were afraid of being a burden on their family or friends. The impact of stigma on patients can cause negative feelings that may be intensified by non-disclosure and self-imposed isolation. Three out of five patients did not disclose their PTB status because of shame, discrimination, or rejection by the community and family. The patients wished to protect their families from PTB stigma as well as protect themselves from being stigmatised by their family and friends or by community members.

9.4.4 Summary

The responses from PTB patients, their carers/relatives, community members, and HCWs indicated that most of the participants are strongly influenced by traditional beliefs, including the belief that PTB is a spiritual attack or a punishment from God. The main beliefs highlighted by the participants were faith in Traditional healers and their medicine, religious beliefs, the reluctance or refusal to accept PTB test results, and the belief that PTB has a cultural cause, all of which can make patients prone to fatalism. Some or all of these beliefs are combined to create a stigma towards the disease within the community. Other issues identified are the consequences of stigmatisation on relationships and marriage and the influence of the perceived relationship between HIV and the social impact of PTB on patients. The findings were applied to three levels of the SEM, namely, the intrapersonal, interpersonal, and community levels. The broad conclusion is to change community norms and traditional culture, it will be necessary to shift people's paradigms about what they perceive to be true and their expectations regarding normative behaviour. Achieving this will not be easy; this is because such social norms are deeply embedded in the individual's beliefs and, therefore, any change will be difficult to accomplish and will require various strategies, such as interpersonal and community dialogue, social mobilisation, and advocacy.

The religious beliefs of the community members have a very strong influence in the Akure South community. Perhaps the most important conclusion to be drawn here is the need to link medicine and religion together in the popular consciousness so that barriers to sufferers seeking early help at hospitals and clinics are removed. However, thinking that the traditionally important role of local healers can be reduced easily or quickly is unrealistic. This points to a more immediate need to educate the healers themselves about PTB but not in such a way as to undermine their standing in their own eyes or those of the community more widely.

In the sociocultural context of PTB, various issues, including several health and religious beliefs (both of which are often centred on and revealed by the prominent role accorded to Traditional healers), the patients' refusal to accept PTB test results, and the stigma associated with the disease based on cultural causes were identified. Other findings included the patients' fatalistic beliefs, how relationships and marriage are affected by stigmatisation, and the effect of the perceived relationship between HIV and PTB. This study revealed that fatalistic beliefs were strongly held by the Akure South community members. In addition, it further confirmed the effect on fatalistic beliefs of religious adherence; this is because some PTB patients thought that they had no control over their health, and therefore, their illness depends on a range of other factors including luck, fate, or the power of God. Other factors that can affect the attitudes of PTB patients include the lack of knowledge and understanding of PTB, the lack of information about the disease, stigma, poor health awareness, and cultural beliefs. It is extremely difficult to change cultural beliefs that may have been prevalent for centuries. Finally, patients may experience and rejection by their family and friends and by the community members as well as shame and embarrassment if the community members find out that they have PTB. Hence, sufferers often turn to local Traditional healers and church or Muslim leaders for help.

Another problematic factor reported was the influence of stigmatisation on relationships and marriage. The sufferers had to cope with misconceptions about the relationship between HIV and PTB; this led to further stigmatisation of them and their families. In general, it was the less well-educated members of the community who held such misconceptions and therefore there may be a link with a gap in knowledge about the aetiology of PTB. Finally, the effect of PTB on physical condition of patients as well as on their mental and social well-being was acknowledged.

The SEM shows that the individuals' knowledge, beliefs, and perceptions are affected by interactions among family, friends, community members, health systems, and policies. The three levels of the SEM that are most relevant to facilitate the understanding of the findings are the intrapersonal, interpersonal, and community levels. Speaking broadly, the intrapersonal level related to the themes of health and religious beliefs, including fatalism, cultural beliefs, and traditional norms, while the interpersonal level related to how stigma affected marriage and other relationships, and finally, the community level related to the stigma of PTB, and the stigma associated with HIV/AIDS. These will help explain the factors that affect the socio-cultural context in which patients, carers/relatives, community members and leaders, and HCWs experience PTB.

CHAPTER 10: Health promotion and prevention of PTB

Introduction

In this chapter regarding the views of patients, their carers/relatives, community members and leaders and HCWs regarding health promotion and prevention of PTB, various factors have been identified in this subtheme of health promotion and PTB prevention, which include community health information, community outreach programmes, mass media, settings for health promotion and immunisation, and the prevention of PTB. The findings revealed the need for more publicity for the PTB programme on television and radio should be seriously considered. This type of message will require the government, NGOs, and other organisations to work together to eradicate this disease. Furthermore, television could present health education programmes about PTB to raise public awareness about its signs and symptoms. This would educate the public on its cause: a microorganism rather than, as is most commonly perceived, the ‘evil eye’, Satan, and witchcraft. Furthermore, the method can be adopted as a PTB awareness campaign in Akure South, where the health professionals should provide more information to the community members about how PTB is an airborne disease which can be cured if treatment is sought in time, as well as providing health information to the patients and community members by distributing leaflets to the patients on their arrival at the clinic or placing such leaflets on the clinic notice board; it will go a long way to help the community members.

However, sufficient services (i.e., staff) must meet the increased demand for testing and treatment; otherwise, this would raise people’s expectations, and they may incur long delays in being diagnosed and treated. With respect to PTB, mass media interventions have the potential to assist in generating knowledge about the disease and promote awareness of existing services for PTB diagnosis, prevention, and treatment to assist with early diagnosis, treatment compliance, and stigma reduction. For instance, church-based health promotion interventions can be utilised to reach the Akure South community members and have great potential for increasing the knowledge of the patients and community members about PTB. The lack of knowledge about the treatment and curability of PTB that has been preventing patients and community members from seeking help may be reduced through the provision of health education programmes that involve such religious organisations. Currently, the Church is gaining or reclaiming an important role in promoting health and wholeness whereby spiritual, physical, and mental health can all be promoted. It is important that pastors should be able to communicate effectively with church congregations and work collaboratively with them if Church members are to become a conduit for the provision of community-focused health services. In addition, other issues that can be discussed through the religious institutions may include poor hygiene and lifestyle, wellbeing, overcrowded accommodation, and sanitation. Church leaders could embed these subjects into their sermons and preach them in the church to the community members to enlighten them as to how to prevent the disease from spreading among the wider communities.

10.27.1Intrapersonal level

The intrapersonal level focuses on individuals' knowledge of PTB and helps the individual to understand how susceptible they are to the disease, how serious the disease is, and the overall threat of the disease. Such knowledge is not enough to change attitudes most of the time, but it helps significantly by influencing individuals' key attitudes and decisions. For instance, this study identified that community members need more help with PTB hygiene education, drug usage, immunisation, and with the signs, symptoms, causes, and risk factors of PTB to improve prevention of the disease. At this level, interventions may seek to promote changes in the knowledge, attitudes, skills, or intention to comply with behavioural norms that will help promote good health. Likewise, hygiene education is needed for the patients to prevent the spread of the disease. Hygiene education is a planned approach to preventing transmissible diseases, especially diarrheal diseases and TB, through the widespread adoption of safe hygiene practices. Appleton and Sijbesma (2005) indicated that hygiene promotion encourages all hygienic conditions and behaviours that can contribute towards good health. Good hygiene practices are theoretically capable of reducing most instances of infection with pathogens transmitted by the faecal–oral route or airborne diseases such as TB. In this study, several participants suggested that hygiene education should be introduced to both the community members and the patients to reduce the spread of the disease in the wider population. Indeed, hygiene education is essential to combat PTB and can be achieved through educational programmes directed at individuals and groups as well as through the distribution of information leaflets, workshops, and lectures to the HCWs to enable them to educate the community members. The recognition of the signs and symptoms of PTB must be addressed through community education. Health education measures should include education campaigns on PTB signs and symptoms, both on television and radio, although some information is already being transmitted via these channels. Other useful routes include mobile phones, social media, newspapers, organised events, and displays of pictures of PTB symptoms. This message should be communicated to the community members either individually or in groups.

10.27.2Interpersonal level

The interpersonal level of the SEM refers to the social influence of friends, family, and norms within social networks (McLeroy *et al.* 1988). Interpersonal relationships have major influences on health behaviours, including consulting healthcare providers. In the context of this study, family and friends can help in making decisions, give advice regarding the treatment process, or encourage the patients to take their drugs regularly. The study participants frequently mentioned the need for drug regimen adherence for the patients. In addition, some of the patients did not know the side effects of the drugs, as some of them could not read the instructions on the packaging; mostly, the drugs were administered by the nurse in the hospital. Therefore, providing education about what the drugs contain, and their side effects may help to give the patients time to prepare themselves for the drug when receiving treatment. Making this information available to a patient’s family and friends so that they would know what to expect in terms of treatment and potential side effects would also be helpful. For instance, at the interpersonal level, some findings were related to the relationship between the HCWs and the patients. Those with the most knowledge (i.e., doctors, who have the least contact with the patients) need to have proper relationships with the patients and their carers/relatives.

10.27.3Community level

At the community level, multiple factors affecting PTB health promotion and prevention were identified, including the presence of the disease in one’s community. The social context of risk perception is often ignored but is important for infectious diseases, where people may worry about infecting others as well as getting sick themselves. The socio-cultural beliefs, norms, and risks that the disease may bring may require community collaboration in promoting health awareness and education that will include how PTB can be prevented through the collaboration of other organisations in promoting health awareness.

The purpose of community collaboration in this context is to allow all the HCWs, community leaders, and NGOs to work together as a whole to promote health awareness and to develop programs and projects that will improve the health of the community members, including through agencies that can contribute towards healthy living (CDC 2018). This will involve liaising with policymakers, schools, and various organisations working towards health improvement. These measures will allow everyone to know about common health issues and work together to combat and even eliminate PTB. In this study, the findings indicated support for a house-to-house awareness-raising campaign about PTB, involving outreach workers performing their duties in promoting health awareness to the community members of Akure South. A range of formats and channels for disseminating health information includes leaflets, flyers, radio, television, and the internet. In addition, the study participants suggested a wide range of settings for health promotion – which include churches, mosques, and the king's palace – as well as involving Traditional healers and extending the promotion and education of health information to the marketplace. In addition, community members could acknowledge PTB sufferers who have completed treatment and could present their experiences with the disease so that the community will understand what they are going through and inform PTB patients that the disease is treatable. This can be accomplished through dramas about PTB as well as advertisements on the signs and symptoms of the disease to demonstrate that PTB is a bacterial disease and to counter the belief that PTB is caused by the devil. Community participation will increase knowledge about the disease; the community members can also offer help with tailoring prevention campaigns to meet the specific needs of the community. Experts or specialists in tribal health can offer their expertise in screening and give practical PTB advice to sufferers so that they will know what to do at the onset of their illness. To change this paradigm of norms, a need exists for a community dialogue to inform the local people that PTB can be cured through social mobilisation and the proper advocacy of orthodox medicine. Without these solutions, challenging beliefs that have been passed on for generations may be difficult.

10.27.4Prevention of PTB

Naidoo and Wills (2016) stated that disease prevention covers multiple actions, not only to prevent the occurrence of disease but also to arrest its progress and reduce its consequences once established. They related these actions to health promotion, which they categorise into primary, secondary, and tertiary stages. The primary stage is directed towards preventing the initial onset of ill health. The second stage seeks to change unhealthy behaviours or to shorten the period of ill health and its progression, for example, by using educational and motivational strategies to increase physical activities or stress reduction. Tertiary prevention seeks to limit the effects of a chronic condition and enhance a person's quality of life by the use of, for example, effective rehabilitation therapy. Such levels of prevention are useful in the context of this study. For example, at the primary prevention level, the patients or community members must have clear knowledge of what PTB is and how it can be prevented. At the secondary prevention level, the patient needs to know where to find help and support for managing and treating the disease and to seek medical support. At the tertiary level, the treatment needs to be administered and adhered to for a period of six months with the support of family and friends.

The study identified the need for immunisation education in the Akure South community as well as widely available immunisation methods to reduce the prevalence of the disease. In developing countries, one major drawback to getting children immunised is that the school health system is not robust enough to verify the immunisation status of the children. Those who have not yet been immunised must come forward given the discovered synergy between HIV and TB; both diseases should also be seamlessly tested. The participants suggested the need for more people to have access to healthcare by creating more local treatment sites. Equally, health education that will promote use of the BCG vaccine to the community members with government subsidies for child-bearing mothers is needed so they can bring their babies to the hospital for vaccination.

10.27.5Organisational level

This level focuses on how people in different sectors can be reached, ranging from HCWs to DOTS centres, NGOs, and other private organisations which collaborate to promote health education about PTB. In the context of this study, the organisational level relates most readily to how information will be disseminated among the community members through both direct counselling and mass media. At the organisational level, the factors that need to be addressed include long queues of patients caused by the lack of staff. The study identified that the staff had not been paid for months as well as there being a shortage of community outreach workers, a focus on medical treatment rather than prevention, the absence of health promotion information in the hospital, and health talks being delivered in busy waiting areas and thus distracting the patients. Laverack (2013) defined mass media as a collective process of technologies that are intended to reach a large audience via mass communication, including printed materials, radio, television, and the internet. Employing mass media is an effective method to reach a large number of people and to target specific population groups. This method offers a low-cost option for communicating at the local, national, and international levels. Mass media is an attractive option for health promoters because it can be used to reach a large number of people quickly and cheaply.

10.27.6Policy level

The health care services in Nigeria are provided at three levels, namely, primary, secondary and tertiary. The local government level is responsible for the primary level of care, state government for the secondary level of care and provision of technical guidance to the local government authority (LGAs), and the federal government is responsible for the tertiary level of care as well as policy formulation and technical guidance to the state level. Public policy factors focus on the governing bodies in charge of PTB promotion, treatment, and prevention. Such bodies do this by establishing agencies and laws at every government level and considering the implications of government policies on the behaviours of individuals, groups, communities, and organisations, with special emphasis on issues relating to government commitment, funding, and healthcare infrastructure policies. Government commitment and funding from governmental entities, from the federal to the local level, play a critical role in TB-related services. From federal-level research funding to service delivery at local health departments, TB control is affected significantly by policy decisions. Given these arrangements, better understanding of the policy process and greater engagement of decision makers with those working in TB control may lead to improvement in TB services. In the context of this study, various factors require the government's participation for PTB to be effectively controlled in Akure South. These require funding for health promotion and prevention initiatives that will provide health education and awareness to the community members. The TB policy needs to go further to focus on early case finding and proper case management for long-term physical and socio-economic effects, integration of TB services into the general healthcare services, promotion of public-public-private partnerships, and behavioural change, communication collaboration with bilateral and multi-lateral partners, and to ensure there is a functional commodities management system and human resource development. The existence of strategic plans and guidelines for TB control, policy coordination framework, clarity of roles of different actors, and donor funding facilitate

TB control. Several guidelines and strategic plans have been developed for TB control, in which the policies set clear priorities, and define roles and performance targets as well as shared long-term goals for TB care and control. The findings from this present study support the WHO’s need for bold policies and supportive systems as stated in pillar 2 of the END TB strategy for TB care and prevention (John 2019). However, the existence of a policy coordination framework did not translate to effective coordination in practice in the Nigerian healthcare system, because, although the plans were costed, funding gaps persisted due to low public spending and the unpredictable release of funds by all tiers of government (John 2019). For instance, as suggested by the doctors who participated in the interviews, there is a need for an immunisation guideline policy of the BCG vaccine, which also stressed the importance of vaccination for the babies’ health regarding the prevention of PTB. Although a policy is in place for BCG immunisation, issues such as an inconsistent supply of the vaccine impedes its already-low uptake.

This study identified a significant gap in the role of the government regarding PTB health promotion and prevention among Akure South community members in Ondo State in Nigeria. This gap needs to be addressed due to lack of health awareness and knowledge of PTB. Secondly, the PTB patients, their carers/relatives, community members and leaders, and HCWs strongly agreed that health education and awareness are vital and that appropriate methods for the dissemination of health messages are required. Many suggested using mass media to build health awareness, although some participants also argued for leaflets, health awareness campaigns, and health education in schools. Overall, the findings revealed that the participants were willing to acquire more knowledge on how PTB can be prevented; therefore, the range of settings where health promotion and disease prevention initiatives can be staged and prioritised within the community – which includes religious organisations, marketplaces, and educational institutions – could usefully be expanded.

10.28 REVIEW OF THE AIM AND OBJECTIVES.

Aim: The aim of this study is to investigates the knowledge, attitudes, and health-seeking behaviours of patients, HCWs, and community members that comprises (Palace chiefs, religious leaders, traditional healers), regards to PTB in Akure South, Ondo State, Nigeria.

10.28.1Objectives

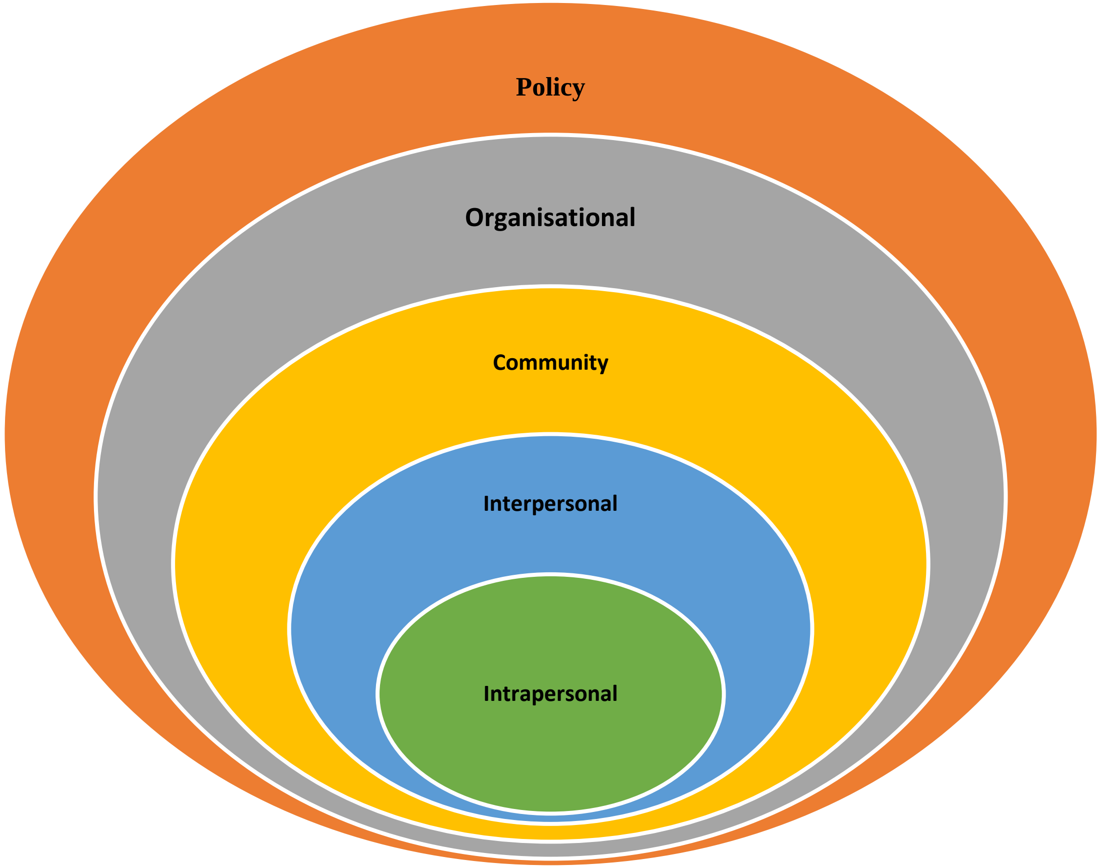
- to investigate the knowledge and perceptions of Akure South community members regarding PTB
- to identify the barriers and facilitators to accessing PTB treatment provided for the Akure South community
- to explore the attitudes and beliefs of HCWs working at PTB hospitals and clinics towards their patients
- to investigate the knowledge, culture, and beliefs of local traditional healers regarding PTB
- to identify information sources used by the Akure South community members regarding PTB
- to inform the development of a future health promotion program on PTB to raise awareness for the Akure South community

This section reviews the aim and objectives of the study and considers how the findings from the study meet the aim and objectives as they address the multiple factors that influence the knowledge, attitudes, and health-seeking behaviour of patients, HCWs, and community members towards PTB. The findings of this study revealed gaps in the community members' knowledge on PTB. The majority of the patients had very limited knowledge of PTB, as only a few knew the cause of the disease. On the other hand, the HCWs were knowledgeable about PTB, while the doctors had the most knowledge but had only limited direct contact with the patients because of the fear of infection. Although TB treatment is free in Nigeria through donor funding support, some of the patients stated that poverty kept them from accessing healthcare facilities. They faced serious challenges in attaining such access because of the locations of the DOTS clinics, and many times, they had no money to pay for transportation to these clinics, which delayed them seeking treatment. Other barriers reported were the lack of food, as they had to eat after taking the drugs to avoid potential side effects. Nutrition has much to do with supporting the body's ability to fight the infection, which poses a problem because the patient's socioeconomic status limits how well they fare with their treatment. In addition, most of the patients lived in overcrowded accommodation and poor living conditions, which contributed to the spread of the disease in the family. All these factors need to be considered in the case of PTB patients. However, knowledge of PTB is an important part of the solution because if people know the causes and symptoms of the disease, they will be better informed and better motivated to visit a TB treatment centre as soon as the need arises. More importantly, better knowledge of PTB will mitigate the social stigma generally associated with the disease, which is one of the causes of patients' delay in seeking treatment. Nonetheless, unless the health determinants of patients and community members are addressed, the state may encounter difficulty in eradicating PTB.

Other findings indicated that the majority of the participants wanted more information about PTB. Their preferred channels for communication were mass media, including television and the radio. Thus, PTB information could be transmitted through radio, television, newspapers, mobile phones, the internet, and other technologies to raise awareness among the Akure South community members. However, any TB control programme that would promote health awareness within the community members should also recognise the urgent need to reduce the stigma attached to TB in society. The Ministry of Health should address community norms and the traditional culture to shift people's paradigms about what they perceive to be true, their frequent consultations with Traditional healers (e.g., the belief that PTB is caused by the devil or witchcraft), and people's expectations regarding normative behaviour. These social norms are deeply rooted in long-standing community beliefs and thus changing them will be extremely difficult.

10.29 THE SUMMARY OF THE MAIN FINDINGS

This figure below presents the summary of the study findings. I have elaborated on some of the findings in the boxes at the various levels to make it clear what the issue is; for example, the majority of the patients had very limited knowledge of PTB, as only a few knew the cause of PTB. On the other hand, the HCWs had significant knowledgeable about PTB. As was to be expected, the doctors had the most knowledge about PTB, but their direct contact with the patients was limited due to the fear of becoming infected. Among the patients and the community members, there were issues of poverty; this resulted in patients and their carers/relatives having insufficient funds to access healthcare centres due to them not being able to pay the transport fare. In addition, due to the limited knowledge about PTB, many of the patients would approach Traditional healers for a cure and would prefer to depend on the traditional medicine, even though this would exacerbate the patient's condition. The cultural beliefs held by many of the community members state that PTB is a disease that comes from the devil and that, therefore, only the traditional medicine can cure PTB; this means many patients consult the traditional healers for a cure and consequently, there is a delay in the diagnosis and effective treatment of PTB



- Immunisation policy (i.e. lack of policies that require childhood immunisation)
- Health system structure and policy (i.e. accessibility to and geographical locations of DOTS clinics, allocation of resources)
- Funding for health initiatives that will raise health awareness and provide education about PTB
- Sufficient and stable vaccine supply
- Reimbursement of healthcare staff
- Addressing poverty

- Need for more training and recruitment of staff
- Poor communication between HCWs and patients
- Treatment and service delivery (e.g. how well PTB services are provided to a patient, how to reduce delays in attending to patients and relatives)
- More health pomotion and dissemination of information about PTB

- Use of traditional medicine
- Cultural norms and beliefs and stigma regarding PTB
- Community participation through mass media

- Family support (i.e.by carers/relatives)
- Cultural beliefs (among family and friends)
- Stigma affecting marriage and other personal relationships

- Hygiene
- Attitudes toward PTB
- Fear of infection
- Stigma
- Religious beliefs
- Income
- Knowledge about PTB and its cause, signs, and symptoms

Figure 11: *Summary of the findings in accordance with the SEM. Source: McLeroy et al. (1988)*

As indicated above, the study revealed various factors that influenced why some of Akure South community members could not access the healthcare services provided for them. The factors that influence the disease and its transmission must be well understood to develop a suitable strategy to seek to eradicate PTB among the Akure South community members.

This social basis for the spread and control of PTB is as important as practical matters, for example, the problems of physically accessing healthcare services. Personal attitudes and behaviour are important both within communities and among HCWs. The findings suggest that multiple methods are needed to address them (McLeroy *et al*. 1988). Therefore, I used the SEM as an overarching model to aid understanding of my findings because I have used other models too such as the HBM. The SEM is deemed appropriate, as a person's behaviour is influenced by social, cultural, economic, and environmental factors, as the findings from this study in Akure South revealed.

According to Nyambe *et al.* (2016) stated that the SEM targets five levels of influence for health-related behaviours and conditions: intrapersonal (individual) factors for individual characteristics, such as developmental history, knowledge, attitudes, behaviour, self-concept and skills; interpersonal processes (primary groups), such as social networks and support systems; institutional (organizational) factors for social institutions with organizational characteristics and rules and regulations for operation; community factors for relationships among organizations, institutions, and networks; and finally, public policy factors for local, state, and national laws and policies (McLeroy *et al.* 1988). The assumption is that people both influence and are influenced by those around them. In the case of this study, interventions informed by the SEM target multiple levels and are expected to be more effective than those which focus only on one level (Haughton *et al.* 2015). The SEM addresses the complexity of a community's experience on multiple levels, which includes the environment itself since institutions and neighbourhoods are embedded in larger social and economic structures; the environmental context may influence the health of individual people differently depending on their unique beliefs and practices and it highlights the need for interventions at various levels to address the complex issues of PTB in Akure South. Although the WHO strategy from 2016-2035 is to provide integrated, patient-centred care and prevention, yet in this study, the findings indicated that the care being provided was neither integrated or patient-centred. In addition, the DOTS strategy to ensure a regular supply of anti-TB drugs, which was to have been achieved by 2005, was still not evident in the PTB and DOTS clinics where I carried out my observations. Therefore, the SEM was considered appropriate to interpret the findings of this study, and it identified multiple factors influencing the community members' behaviour toward PTB as indicated in Figure 11.

10.29.1Intrapersonal level

At the intrapersonal level, the significant knowledge of PTB amongst the community members, the patients, and their carers/relatives (in terms of general health awareness and specific knowledge about PTB signs and symptoms) is reported. This limited knowledge was influenced by various factors, such as the fear of infection, stigma, and religious beliefs. Some of the patients reported that poverty prevented them from using healthcare facilities because of the lack of funds for transportation. In addition, most of the carers/relatives did not possess a standard of education that could have helped them to identify the signs/symptoms of PTB. For some patients, this resulted in the practice of non-disclosure of their PTB status to their family or friends for fear of stigmatisation arising from the community regarding the disease. Therefore, health awareness of PTB must be addressed through community education. Health is an important aspect of human life and encompasses all activities aimed at ensuring the protection of the body from disease and promoting good habits. WHO (2006) define Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. To achieve this and to enable individuals to be healthy, health education is important. High-quality health services should be widely available and accessible to all those who need them. Furthermore, health education should not solely aim to change peoples' behaviour and make them healthy; various health determinants must also be considered such as social, economic, and environmental factors, as well as poverty and education.

The social norms underpinning the belief that PTB is derived from the devil and cannot be cured must be addressed. Most of the community members interviewed reported the existence of this belief, which resulted in some patients and their families feeling isolated. Other factors include the belief in traditional medicine and the social stigma associated with PTB. The limited knowledge of PTB demonstrated by patients, their carers/relatives, and community members can be improved through the intensification of health education about the disease. In addition, there is a need for improvement in housing conditions and hygiene among the community members.

10.29.2Interpersonal level

At the interpersonal level, the following factors were identified: cultural beliefs (among family and friends), poor communication between patients and HCWs, and the influence of family and friends in seeking medical help and supporting them with drug regimen adherence. Communication between patients and HCWs was identified as a major problem because of the lack of contact between doctors and nurses and patients given the fear of infection. The ability to communicate effectively is critical for effective healthcare because without it, patients may find it difficult to describe the type of illness they may have, and doctors or nurses may not be able to diagnose the patients and prescribe the right medication or send the patients for PTB tests. Therefore, effective communication is a fundamental element that helps to shape the patient–HCW relationship and foster trust. In addition, the role of HCWs is to deliver patient care and ensure that patients are provided with effective treatment and support that will sustain them during their illness. The study identified other factors, such as family support, which aided in accessing treatment and recovery (i.e., carers/relatives); cultural beliefs among family and friends; and the stigma associated with PTB, which was identified as influencing personal relationships and future marriage changes. Other factors were that stigma was also influenced by misconceptions regarding the cause of PTB, such as that the disease was believed to be hereditary and that all PTB patients had HIV/AIDS. Finally, the doctors had only limited contact with the patients. It would better if there could be direct contact between doctors and patients and their carers/relatives to improve communication and enhance the patients' knowledge of their disease and its treatment.

10.29.3Organisational level

The organisational level focuses on the healthcare structure and service delivery as well as special challenges faced by patients, community members, and HCWs. many patients in need of testing and treatment were not seen in a timely manner given the shortage of staff in the clinic. Doctors and nurses were also observed to have less direct contact with the patients because of the fear of infection. Delays in service delivery were also noted – for example, a shortage of drugs in the hospital meant patients had been sent home without the required drugs and had to visit the hospital again, thus incurring additional costs. The dissemination of information about PTB was another issue due to the absence of information centres where PTB information could be requested, and this contributed to the lack of knowledge about the cause, signs, and symptoms of the disease. Although the doctors and some of the nurses possessed sufficient knowledge about the disease, such knowledge was not communicated to the community members because of their heavy workload. The lack of equipment was another observed issue; for instance, during data collection, no masks were available for the HCWs. I had brought masks from Wales (as one of the hospitals had requested from my supervisor in Swansea), which were given to the director of the Hospital for the HCWs' use. The director confirmed that masks were presently unavailable and that he had placed an order for them months previously but that none had been delivered. Adequate resources decrease the exposure of HCWs to the disease and may help to minimise their fear of infection. The resulting sense of security may help to improve their attitudes and behaviours towards the patients. Thus, when these concerns are addressed, this may help to boost the patients' confidence in accessing healthcare services and reduce the stigma attached to the disease in the community.

HCWs occupy highly respected positions in their communities, so their attitudes towards PTB can influence the way society perceives the disease. This was apparent in the many instances where the community members' stigmatising behaviours were mirrored by those of the HCWs. The study revealed various factors that influenced the negative behaviour of HCWs towards PTB patients, such as poor communication between doctors and nurses and patients with their carers/relatives because of the fear of infection, the lack of equipment and protection, and a shortage of human resources. During data collection, I observed a shortage of staff in the clinic to attend to the patients; many patients had to wait in long queues despite coming to the clinic in time for treatment. As for equipment, the hospital lacked the necessary infrastructure because of insufficient funds from the government. For instance, the Ziehl–Neelsen staining procedure for conventional microscopic sputum acid-fast bacilli (AFB) was used to detect PTB, so patients were requested to produce sputum samples for testing. The other method was by X-ray machine, but one of the doctors reported that it had been out of service for a long time because of the lack of maintenance. This lack of health promotion information in the hospital and clinic was important; although health talks were provided by the nurses, the environment was not conducive to patients absorbing the information being conveyed. Furthermore, the lack of equipment and infrastructure and the shortage of human resources places barriers in providing adequate services to the patients and to the community as a whole.

10.29.4Policy level

The findings from this study identified the following factors as relevant at the policy level: inadequate BCG immunisation policy (i.e., a lack of policies that require BCG immunisation), the poor structure of the health system (i.e., the geographical locations and accessibility of DOTS clinics), and the poor allocation of resources. The number of TB clinics in the state is limited, and the geographical locations of TB clinics must be improved to provide better accessibility for the community members. The findings also indicated a health education, health promotion, and public health campaigns to raise awareness of the signs and symptoms of PTB that will emphasise on PTB curable to treated patient is require+. In addition, there is a need for the Ministry of Health to set up strategies aimed at increasing access to healthcare services through community-based interventions that target the elimination of barriers to healthcare services, such as more locations of DOTS clinics, better allocation of resources, and more HCWs being recruited to meet the community demand. The government needs to focus more on health promotion and prevention especially the immunisation policy, which will address the need for a sufficient and stable vaccine supply to prevent child death.

There is a need to address the barriers to timely and quality healthcare services, which will significantly contribute towards accelerating the reduction of the prevalence of PTB. The insufficient supply of vaccines and drugs for the patients indicates the lack of funding by the government, which increases the prevalence of the disease among the community members. In addition, there is a need for the government to provide funding for health initiatives that will raise health awareness and provide education about PTB in schools, colleges, and universities as well as reimbursement of healthcare staff to meet the local community demand and address poverty among the community members.

10.29.5 Limitations and challenges of the Social Ecological Model

The challenge of the SEM is due to the several core levels of process that are interlinked with each other, and so its complex nature makes SEM programs more expensive and difficult to implement in a community setting. Indeed, using he SEM to plan interventions in a large community may be difficult because of the cost involved. The lack of motivation for change in the SEM means it may be difficult for people to believe that they are at risk of the disease. This may make it hard for people who have no insight into how much the disease will affect them and their friends and family.

Although the SEM has been confirmed to be useful in developing health programs, several challenges to its implementation have been identified. For instance, the major challenge is that, in order to develop the most effective interventions, multiple levels of the SEM must be revisited and addressed. As all the core levels link to each other, they must all be revisited to ensure that the intervention plan is successful; this can be costly and time-consuming, and more money is needed for each intervention level to be utilized. In regard to intervention co-ordination and monitoring of the SEM project, there is a need for all the SEM level stages to be altered concurrently to prevent conflict with between the different levels.

10.29.6 Strengths of the study

To my knowledge, this is the only ethnographic study of its kind to use qualitative methods to explore in depth the knowledge, attitudes, and behaviour of a range of stakeholders regarding PTB within the Akure South community in Ondo State, Nigeria. Three methods of data collection (e.g.,interviews, focus group and participant observation) from such stakeholders enabled triangulation of the data. This approach enhanced the understanding of the issues surrounding PTB by taking account of in-depth and varied data sources. This study contributes considerably to the understanding of many aspects of PTB, particularly the knowledge and healthcare-seeking behaviour of PTB patients and community members as well as the issues facing HCWs in this setting. It documents first-hand information about the experiences of patients and other members of the community. It also explores the role of cultural beliefs, traditional norms, and traditional healers’ perspectives in the local understanding of and responses to PTB.

10.29.7Community level

At the community level, an individual interacts with different environments, including groups of people who have a normative influence on their lives. This study identified the lack of health awareness among community members as the main factor influencing the lack of knowledge of the cause, signs, and symptoms of PTB. However, some community members had acquired such information from the nurses while they were in the hospital caring for ailing family members. A critical problem is that there is no health awareness programme in place for community members to educate themselves, which makes it difficult for them to seek help or assist others. Thus, promoting health awareness about PTB to community members is vital, and this will entail going beyond hospital visits and publicising accurate information about the disease in other community forums, such as religious organisations. The religious leaders interviewed had reasonable knowledge of PTB, while the palace chiefs and community leaders had limited knowledge about PTB but were all willing to direct community members to seek medical treatment. However, most the time, the patients would first seek to use the traditional medicine for initial treatment, which led to delays in seeking medical help at the onset of the patient’s illness.

Other findings identified in the study were the cultural norms and beliefs, and the stigma regarding PTB as well as community participation through mass media. The cultural belief of the community members regarding PTB were that they assumed PTB is a disease from the devil and that therefore, the only way PTB can be cured is through the TH’s medicine or by going into the mountains to pray to God for healing. The stigma associated with PTB means many people refuse to associate themselves with PTB patients, as they link PTB with HIV/AIDs, and this resulted in many patients not disclosing their PTB test result to their family and friends due to the fear of isolation and rejection. To combat this, religious organisations could be useful settings for health promotion, and such organisations and Traditional healers could work together with community outreach workers to promote awareness of PTB among community members. Religious leaders can also include this in their preaching in churches and mosques, which may also help to lift the stigma for people who are afraid of having contact with PTB sufferers.

10.29.8 Limitations of the study

First, the study did not cover the most remote and inaccessible areas of the state including rural areas. Second, the study did not include anyone without PTB who did not seek treatment nor people who were not native to Akure South. However, I would argue that none of these limitations affected the study, as the sampling strategy adopted snowball and purposive sampling and sought to access participants who were knowledgeable and experienced regarding PTB rather than a representative sample of the wider population (Mason 2002). Although the limitation of snowball sampling may be over-representation of individual with numerous social connections share are similar characteristics.

10.29.9 Recommendation

Various factors at each level of the SEM influenced the community members' behaviours, which impeded them from accessing healthcare services in a timely way. Poor awareness, poverty, the shortage of human resources, cultural norms, and religious beliefs were identified as the most important factors hindering efforts to combat PTB. Therefore, the government needs to provide funds to increase the number of outreach workers who support PTB patients at home, increase the number of HCWs to reduce their workload, and enhance opportunities for collaboration among community members, HCWs, NGOs, religious leaders, and Traditional healers to promote the prevention of PTB. In addition, the issues of stigma and HIV–TB co-infection need to be addressed. The impact of stigma on patients can cause negative feelings that may be intensified by non-disclosure and self-imposed isolation. The patients did not want to be a burden and wished to protect their families from the PTB stigma as well as protecting themselves from being stigmatised by family, friends, and community members.

Furthermore, some of the Akure South community members have only limited knowledge, whilst others have good knowledge of PTB; community collaboration will allow them to work together as a whole to promote health awareness about the disease. More initiatives are needed that will change people's attitudes towards PTB and provide and fund agencies that can contribute towards healthy living (CDC 2018). With regard to PTB prevention, the community members need to be informed about hygiene practices that will reduce their likelihood of becoming infected and of transmitting the disease. Naidoo and Wills (2016) stated that disease prevention covers multiple actions, not only to prevent the occurrence of the disease but also to arrest its progress and reduce its consequences once established. In addition, the community members must be reminded that PTB is curable, and this may also help to reduce the stigma.

The findings also revealed reported shortages of human resources and insufficient BCG vaccines. The government must allocate more funds to pay HCWs and supply more BCG vaccines and drugs for hospital use. Finally, public health programmes paid for by the government and the donors should make the dissemination of information about PTB a priority within Ondo State for effective PTB control and prevention and to complement existing interventions.

10.30 PROPOSED RECOMMENDATIONS ACCORDING TO THE VARIOUS LEVELS OF THE SEM AND HBM

This proposed is recommended for the policymakers, the Ministry of Health in Nigeria, and future research. PTB is a complex issue which needs interventions at multiple levels if its prevalence to be reduced. Many of the proposed recommendations will require additional funding. Currently, treating the number of people infected with PTB incurs high costs. Therefore, policymakers should include the following in their policies.

10.30.1Policy level

More work is needed to intensify public health campaigns and to increase the coverage on immunisation in hospitals, PTB clinics, and community DOTS clinics to make the DOTS strategy acceptable and more appealing to the community members. The government should focus more on health promotion and prevention that will address barriers to timely and quality healthcare services, which will significantly contribute towards accelerating the reduction of PTB prevalence in Akure South. For instance, the findings from the FG discussion identified limited knowledge of PTB. It was identified in the finding that there is a need for the government to make health education mandatory in schools, colleges, and universities, this will aid in decreasing the stigma associated with PTB and increase the likelihood that people who suspect they may have the disease will seek treatment. Public health programmes paid for by the government and donors should prioritise the dissemination of information about PTB within Ondo State for effective PTB control and prevention to complement existing interventions.

10.30.2 Organisational level

Diagnosis via microscopy, Xpert, and X-ray services and treatment via DOTS facilities should enable universal access to TB services. Such resources should also be allocated to provide better resources for HCWs (including appropriate equipment and sufficient staff to manage the number of people seeking diagnosis and treatment). Communication needs to improve between HCWs and patients, which may be facilitated by improved staff training, and the staff should be properly immunised against PTB. Advice and information should be provided about PTB drugs in the form of posters and improved health talks, with more focus on prevention to ensure that such information is clear. It was observed that patients were having to be turned away from the clinics and that there were long queues for the service, so there is a need to review the staffing requirements of the clinics and hospital PTB clinics to ensure that sufficient staff are provided to meet the demand. HCWs should seek to work in collaboration with community members, NGOs, religious leaders, and traditional healers to promote PTB prevention.

10.30.3 Community level

Deficiencies in health awareness in relation to cultural norms and traditional beliefs among community members need to be addressed. Improved communication and trust between communities and healthcare providers may encourage people to seek medical care at the onset of the illness and adhere to treatment regimens, even if they are difficult or demanding. Education on the stigma associated with PTB may increase the likelihood that people who suspect they may have the disease will seek treatment.

With regard to social and cultural beliefs, partnerships between local and government entities can help educate community members on the misconceptions and traditional beliefs about PTB. The Akure South community members have limited knowledge of PTB, which highlights the need for community collaboration to promote health awareness about the disease. With regard to PTB prevention, the community members need to learn about hygiene practices that will reduce the likelihood of them becoming infected. The community should also recognise that PTB is curable, which will also help to reduce the stigma.

10.30.4 Interpersonal level

HCWs should be more compassionate and caring towards PTB patients so as to improve interpersonal relationships and communication. They should also possess integrity and sensitivity, paying close attention to the patients' impressions of the illness and underpinning health beliefs. Doctor–patient consultation can help promote understanding of the patients' perceptions of the illness and health-seeking behaviour. Overtly challenging the patients' health beliefs can result in treatment non-adherence and failure.

10.30.5 Intrapersonal level

Better health education is necessary for the community on the signs and symptoms of PTB as well as the stigma and negative attitudes towards PTB patients. Health initiatives and campaigns need to be targeted at both patients and community members. When PTB patients are educated about the disease, their improved knowledge may aid the course of treatment.

10.30.6 Recommendations for future research

A number of possible future avenues can build on or extend this research.

- Future research could consider hard-to-reach areas, including rural areas, as well as including more traditional healers and their roles in regard to PTB.

- The healthcare-seeking behaviours of other ethnic groups, states, or populations need to be explored.

- The issues of stigma and HIV–TB co-infection requires more investigation, as the impact of such stigma on patients has caused negative feelings that are intensified by non-disclosure and self-imposed isolation.

- Different types of treatment in various social and economic contexts need to be compared in terms of traditional and other forms of local treatment.

10.30.7 Contributions to knowledge

This study contributes considerably to the understanding of many aspects of PTB, particularly the views of PTB patients, their carers/relatives, community members, and HCWs in Akure South. It has documented first-hand information about the experiences of patients and other members of the community. It has also explored the role of cultural beliefs, traditional norms, and traditional healers' perspectives on the local understanding of and responses to PTB. I hope that this study's findings will be of help in informing future health awareness and public health campaigns regarding PTB to reduce the prevalence of this disease in Akure South.

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Appendix A: literature review table

Number	Author and country	Aim and purpose of study	Sample size and characteristic	Research design and data collection	Findings and result	Methods	The strengths and limitations of the studies.
1	Abebeet et al (2010) in southwest Ethiopia	Aim: To describe the knowledge about and stigma towards TB and how that knowledge and stigma affected their health-seeking behaviour.	A sample of 476 participants, aged 15 and above who had experienced coughing for two weeks.	Across sectional survey	The result revealed that the participant health-seeking behaviour was poor. The health seeking behaviour was affected by gender, education, marital status and knowledge about the cause of TB.	Pretested questionnaire	In this study there were limitations, first the study did not utilised focus group discussion to triangulate the study findings Which could have eliminated the fundamental biases arising from the use of a single method. Secondly, the stigma questionnaire was not validated. Although using an existing questionnaire will save time and resources, a questionnaire that measures the construct of interest may not be readily available, or the published questionnaire is not available in the language required for the targeted respondents. Therefore, it is advisable to a develop new questionnaire or translate an existing one into the language of the intended respondents in order to capture in depth data. In overall there were strengths identified in the study which include the gaps in knowledge about the cause of TB, inappropriate health care seeking behaviours that related to stigma and delay in TB treatment. In addition, the aim of the study was met and the method of data analysis was good as it provided full explanation of the findings.

Number	Author and country	Aim and purpose of study	Sample size and characteristic	Research design and data collection	Findings and result	Methods	The strengths and limitations of the studies.
2	Ayuo et al (2008) in Western Kenya	Objective: To determine the length of delays from onset of symptoms to initiation of treatment of pulmonary tuberculosis (PTB).	A sample size of 230 patients, aged 16 and 80 years old. The participants comprised 148 males and 82 females. In which 102 patients came from urban, and 128 patients came from rural setting.	Cross sectional survey	The findings revealed that cough was the commonest symptoms reported by the patients. The result identified that the older patients having low household income were significantly associated with delay.	Questionnaire	The study has potential limitations; the study was carried out in a referral hospital and only patients who presented themselves or those who were referred were included, therefore it would be illogical to generalise the findings to the whole country. Secondly duration of symptoms was self-reported even though we confirmed from the patient notes thus lending itself to recall bias. Apart from the limitation the study was well structured, with a good standard of sample size and the aim of the study was me.
3	Bati et al, (2013) in Itang Special District, Gambella Region, South Western Ethiopia	Objective: To assess the level of TB knowledge, attitudes and practices of rural communities of Itang Special District of the Gambella Regional State of Ethiopia.	The total sample size of 422 participants both male and female age 19 to 60 years plus.	Cross sectional survey	The overall result revealed that, the study participants had displayed limited correct information about the causative agent of TB and the main symptom of PTB. The study revealed there were considerable proportion of the study participants who had unfavourable attitude towards TB patients. which could potentially create ground for stigmatization of TB patients in the communities.	Questionnaire	The study met the aim, and the sample size was standard, there were good, response rates from the participants.
Number	**Author and country**	**Aim and purpose of study**	**Sample size and characteristic**	**Research design and data collection**	**Findings and result**	**Methods**	**The strengths and limitations of the studies.**

4	Banerjee et al, (2004) in Andhra Pradesh, India	Aim: To 1) examine the diagnostic and treatment practices for TB by traditional healers; 2) understand health seeking behaviour for TB amongst tribal groups; 3) evaluate the acceptability of traditional healers to public health workers; and 4) assess ways of achieving collaboration of traditional healers in the TB Programme.	A sample of 120 Traditional healers	Interview survey.	The result revealed that the traditional healers were used by the community members and revealed that traditional healers were encouraged to provide services on PTB to the community.	In-depth interview	The study was well structure with good response rates from the participants

Number	Author and country	Aim and purpose of study	Sample size and characteristic	Research design and data collection	Findings and result	Methods	The strengths and limitations of the studies.
5	Daniel et al, (2019) in Ethiopia	Aim: To better understand TB-related knowledge, attitudes, and practices (KAPs) and generate evidence for policy and decision-making.	Sample of 3,463 with age between 18 and over plus, male and female	cross-sectional survey	The result indicated inadequate knowledge about its transmission of PTB	interview	The important of this study was that it is the first national-level survey in Ethiopia that explored different population groups in accessing knowledge, attitudes and practice in regard to TB. The limitation of the study is that it did not include two pastoralist regions which limit its generalizability.
6	Dodor, (2008) in Ghana	Aim: to explore and understand TB stigma and to elucidate how it operates in the community setting and healthcare system to affect the motivation of people to seek help when suffering from TB as well as adhering to prescribed treatment regimens, and Objectives: To determine how the activities and attitudes	A sample of 121 participants both male and female aged between 21 and 45 years old.	Qualitative research approach	The findings of this study have demonstrated that the main cause of stigmatisation of TB and those who suffer from the disease in this urban district in Ghana is fear of infection	The study used form of data collection techniques (data triangulation) by combined focus group and individual interview to promote the understanding of how TB stigma is constructed in different ways in different contexts.	The study was well structure with good response rates from the participants. However, there are limitation identified in the study. The Ghana health system relies on passive case finding for the diagnosis of TB, that is, individuals with symptoms suggestive of TB, self-reporting to health facilities for investigations and diagnosis. It is therefore possible that community members with very obvious symptoms suggestive of TB may fail to report to the health facility, for fear of being stigmatized and this may result to delay in The TB diagnosis and treatment.

		of health professionals expose TB patients to stigmatization in the community.					

Number	**Author and country**	**Aim and purpose of study**	**Sample size and characteristic**	**Research design and data collection**	**Findings and result**	**Methods**	**The strengths and limitations of the studies.**
7	Eshetu et al, (2016) in Northwest of Ethiopia	Aim: To investigate the level of modern health care seeking practice in the rural community and factors associated with it. .	A total of 29,735 eligible individuals participated in the study, aged 15 years and above. Both male and female.	community-based cross-sectional study	The result revealed A total of 29,735 illegible individuals participated in the study of whom the majority were male, 15,833 (53.2%). Out of those study participants, 663 (2.2%) individuals were fund to be pulmonary tuberculosis suspects. The prevalence of PTBC suspects among male and female participants was 1.3 and 3.3, respectively. The median age (IQR) of PTBC suspects was 37 (32–45 years). Majority of PTBC suspects were females (68.8%), married (71.9%), and Orthodox Christian followers (74.1%). Furthermore, the study indicated that the majority of pulmonary tuberculosis suspects had visited modern health care facility; however, the proportion of respondents who had taken traditional measures was still higher as compared with some other districts.	A structured questionnaire collected via a face to face interview an interview with structured questionnaire	The data collection instrument such as questionnaire were carefully designed based on the literature and the study aim. The data analysis was performed using SPSS version 20 software to analysis the study data finding. The result was calculated and displayed clear instruction. The only limitation of this study was the study design It could have be better if other design different from cross-sectional was used which could have confirm definitive cause and effect relationship among the participants.

8	Esmael et al, (2013) in Ethiopia	Aim: to assess the knowledge, attitude, and practice of patients toward TB in the Eastern Amhara region of Ethiopia.	Sample size 422 participants both male and female aged 18 and above.	Cross sectional study	The result revealed that majority of the patients knew that TB transmission was facilitated by crowded conditions (84.6%) and that PTB was contagious (73.0%) while more than half of the patients incorrectly associated PTB transmission with strangers as comparted to family members.	interview	The study was well structure with good response rates from the participants
9	Hossain et al. (2015), Bangladesh.	Objective: is to examine the knowledge of TB among newly diagnosed TB cases and community controls to assess factors associated with poor knowledge in order to identify programmatic implications for control measures.	240 cases of TB and 240 control Persons ≥ 15 years of age.	TB prevalence survey	The overall result revealed that community controls had more than 3 times, “poor knowledge of TB compared to TB cases.	Structured interview and questionnaire	The study met the aim and it was well structured. However, the there were limitation to in the study. The main limitation of the study is that it was conducted in those sites where the prevalence survey was carried out, potentially “sensitizing” the study population for TB. If anything, this effect would be expected to have reduced the differences between the TB cases and community controls.
10	Huddart et al, (2018), in India	Aim: To examine how TB knowledge and infection prevention behaviors change over the course of treatment. .	Sample size 6,031 patients both male and female aged 14 years and above	Cross sectional study	The findings revealed that patients at the beginning of TB treatment demonstrated moderate knowledge of TB. The study indicated that since their treatment are not contagious at the end of their treatment there are likely for the patients to report prevention behaviours. Therefore, the study suggested that	structured questionnaire and interview	The findings were well structure but difficult to understand as many figures were present which is not well explain at the beginning. The limitation of this study is the study design adapted; it could have been better if longitudinal survey was used.

					It will be advisable if a longitudinal TB knowledge surveys that cover the contagious period to be utilised to describe whether patients receiving DOTS are engaging in transmission prevention behaviour when it is most important.		
11	Kaona et al, (2004) in Ndola, Zambia	Aim: To Assessed knowledge of tuberculosis transmission among patients on medication and the factors which affect non-adherence to tuberculosis treatment	A sample of 400 participants	A household-based survey	Showed that there was poor knowledge about the need to complete the treatment regimen. As the study identified that TB patients on treatment did not adhere to their treatment schedules, when they started feeling better.	structured questionnaire	The study addresses the aim, and the findings were well presented and explained. They were good response rates from the participants
12	Khandoker et al (2011) in Bangladesh.	Aim: To investigate the level of knowledge about the transmission of TB among married women in Bangladesh.	Sample of 10996 participants aged 15-49 year.	Cross sectional survey.	The study revealed that 7% of the women were aware of the transmission of TB. The finding therefore suggested that there is a need for more health education initiative to be provide for the Bangladesh as their level of knowledge about TB transmission and misconceptions is very poor among women. This study also underscores the importance of designing and implementing	structured questionnaire	The main strengths of this study include the use of a large, nationally representative sample, use of sophisticated statistical analyses and simultaneous assessment of TB knowledge and misconceptions using different categories. However, they were limitation reported in the study which include the inability to comment on cause-and-effect relationships, as data from a cross-sectional study were used, and the questionnaire contained a limited number of questions.

					appropriate programmes and interventions based on education and media to disseminate TB knowledge in the general population, particularly among women.		
13	Khan et al, (2020) in Pakistan.	Aim: To explored knowledge, awareness and health-seeking behaviour regarding tuberculosis in rural district of Khybe Pakhtunkhwa Pakistan.	A sample of 526 participants for quantitative method and five focus group for qualitative study.	Mixed method approach was used.	The study revealed that the knowledge of spread of TB was poor, also there was a gap in knowledge of BCG as patients did not mention BCG vaccination as a method of prevention for TB.	Focus group discussion and semi structured interview.	The study was well structure with good response rates from the participants
14	Kigozi et al, (2017) in South Africa	Aim: To accessing knowledge, attitudes and infection control practices of patients attending PHC facilities.	Sample size 507 participants	cross-sectional survey	The result revealed that patient's knowledge concerning the cause of TB and route of transmission was very poor.	questionnaire	A limitation of this study is that the results are all based on self-reports by patients. Some patients might have felt obliged to present themselves in a positive light, thereby responding to questions in a manner that would be viewed favourably by others. Also, the convenient sampling of patients limits the generalisability of results. In regard to the analysis of the data, the result was well presented and good response rates from the participants.
15	Marahatta et al, (2020) in Western Nepal.	Objective: To explore the factors affecting the access to the health services, diagnosis and the treatment completion for TB patients in central and western Nepal.	Sample size of 69 participants both male and women aged 20 to 69 years old.	Semi structured interview	The finding revealed many of the participants visited traditional healers first, due to lack of health awareness.	In depth interview	The study was well structure with good response rates from the participants

16	Mangesho et al, (2007) in Mpwapwa district,central Tanzania	Aim: To determine the knowledge, attitudes and practices as regards to TB and its treatment in Mpwapwa District, in Central Tanzania.	A sample size of 1080 participants both male and female, aged 21-72 years old.	cross-sectional survey	Result identified low knowledge on the causes and the transmission of tuberculosis.	fieldworker-administered questionnaires	The study was well structure with good response rates from the participants
17	Mbuthia et al, (2018) in Kenya	Aim: Explore the knowledge and perception of tuberculosis among a pastoralist community in Kenya.	Sample size of 61 PTB patients, both male and female.	Qualitative study	The findings revealed that majority of participants have knowledge of PTB.	interview	The study was well presented, and the aim of the study were met
18	Mesfin et al., (2005) in Ethiopia	Aim: To assess knowledge of pulmonary tuberculosis and to determine level of acceptance regarding village-based tuberculosis treatment using volunteers among the general public.	sample of 838 adults	cross-sectional survey	The mean and median knowledge score of respondents about pulmonary tuberculosis (PTB) was 5.24 and 6.67 (maximum score of 10)	questionnaire	The study was well presented, and the aim of the study were met, As well as good response rates from the participants.
19	Mesfin et al, (2009) in Ethiopia	Aim: To assess patterns of PTB patients' health seeking behaviour, the percent of patients who delayed seeking treatment and the risk factors for patient delays from onset of symptoms to seeking care at a public health facility, in Ethiopia.	A sample of 924 participants in whom 42% tested negative and 58% tested positive.	A cross sectional survey.	The result indicated that out of 924, 537 (58%) were smear positive and 387 (42%) were smear negative; 413 (45%) were female; 451 (49%) were rural residents; and the median age was 34 years. It was also revealed that the proposition of the others sought help initially from other sources.	Questionnaire	The study was well structured and presented. The aim of the study was met. However, there were limitation identified in the study which includes the low specificity of the diagnostic methods (radiography and clinical features) used to detect sputum smear negative PTB could potentially lead to misdiagnosis of patients. Because of atypical clinical presentations among cases with HIV co-infection, the probability of introducing bias could be high. The other potential limitation may arise from patients' inability to recall the exact date of onset of symptoms based on which the study outcomes were measured.

20	Mukhtar et al, (2012) in North -east Libya	Aim: of this study was to assess the general public’s knowledge towards TB in the Northeast Libya.	A sample size of 1,500 participants both male and female. Age 18 to 60 years.	Cross essential survey.	The finding indicated the knowledge of TB among the sample was poor.	Questionnaire	The The study is unique because of the large sample and first of its kind in Libya. In addition, the results from the current study exposed limited knowledge and momentous misconceptions about TB among study participants. Furthermore, the aim of the study was met
21	Mushtaq et al., (2011) in Pakistan's	Aim: of this study was to explore inequities in knowledge, attitudes and practices regarding tuberculosis (TB) among the urban and rural populations of Punjab province Pakistan.	The sample size of 1,080 participants within the two provinces (432 urban and 648 rural).	cross-sectional survey	The study revealed poor knowledge regarding TB. The deficit was greater in the rural areas in all aspects. The knowledge regarding symptoms (OR 2.03, 95% CI 1.59-2.61), transmission (OR 1.93, 95% CI 1.44-2.59), prevention (OR 2.24, 95% CI 1.70-2.96), duration of standard treatment (OR 1.88, 95% 1.41-2.49) and DOTS (OR 1.84, 95% CI 1.43-2.38) was significantly higher in the urban areas (all $P < 0.001$). Although a majority of the subjects (urban 83.8%, rural 81.2%) were aware of the correct treatment for TB, less than half (urban 48.1%, rural 49.2%) were aware of the availability of the diagnostic facility and treatment free of cost. In overall the result indicated that there was poor knowledge of TB among the participants.	semi-structured questionnaire	The study does have some limitations. In Pakistani culture, females are sometimes not allowed by the family heads to be interviewed by an unknown male. The data collection teams did not have female interviewers and male interviewers were not allowed to interview females in some households that resulted in the gender disproportion among those interviewed.

22	Mweemba et al. (2008) in Zambia.	Aim: To determine knowledge, attitude and compliance with TB treatment by PTB patients attending chest clinic at a tertiary hospital.	A convenience sample of 104 pulmonary PTB patients (aged 18-66 years) receiving health care at chest clinic of a tertiary hospital in Lusaka, Zambia.	descriptive quantitative design	The study revealed that A total of 104 respondents aged 18 to 66 years took part in the study. Forty-nine percent were female, 51.9% were married and 42.3% had primary education only. About half of the respondents (49%) had no monthly income and majority of those with no income were female. Two thirds of the respondents (76%) lived in high-density areas. Half of the respondents (49%) had average knowledge of TB treatment. Majority of the respondents (89.4%) had positive attitude towards TB treatment.	structured interview	The study was well presented, and the aim of the study were met, As well as good response rates from the participants.
23	Noe et al, (2017) in Ethiopia	Aim: To determine the level of knowledge, attitudes and practices regarding TB care among HCWs in a rural area in Southern Mozambique.	A sample of 170 healthcare workers both male and female which included the medical technicians (medical professionals	Questionnaire	The findings revealed that the majority of the healthcare workers had poor knowledge of TB as well as lacked knowledge of the cause TB.	Self-reporting questionnaire	This study has several limitations. Firstly, the external validity might be affected by its cross-sectional analysis and relatively small sample size. Seventy per cent of the population in Southern Mozambique lives in rural areas, as such, we believe the Manhiça District might be a reliable reflection of the rest of the region. Secondly, the semi-qualitative analysis approach may have resulted in sections of data being misinterpreted due to thematic aggregation. Thirdly, practice

			who attended technical college) and nurses and doctors				competency was approximated by self-reporting, rather than direct observation, which may overstate adherence to guidelines.
24	Nyasulu et al, (2018), in Ntcheu district, Malawi	Aim: To explore adult men's and women's perceptions of TB, how they constructed their understanding, attitude and knowledge, and to establish how they experienced the disease itself within the context of biomedical health-seeking behaviour and within the community, society, and family in a rural community in Ntcheu district Malawi.	A sample of 24 participants which comprised of 16 individual in-depth interviews and eight focus group discussions. Both male and female aged 18-49 years.	Interview	The findings revealed there were differences in the level of knowledge and perception about TB. For instance, the group of those who had TB were more knowledgeable, but there was knowledge gap in term of TB spread and symptom.	Semi structured interview.	The study, its main limitation pertained to access to research participants, due to a fuel crisis in the country, which might have led to selection bias. In addition, limited responses could have been obtained due to the sensitive nature of TB and its association with HIV infection, which carries high levels of stigma and discrimination, and also its negative implications on marital relationships. Lastly, the study was conducted in three villages of one rural community, making it difficult to generalize the findings to other settings.
25	Shrestha et al, (2017) in Nepal.	Aim: To assessed knowledge, attitudes, and practices (KAP) among HCWs on TB IC.	A sample size of 190 HCWS which includes physicians, nurses, community health care workers (CHWs) [health assistants, axillary health workers, axillary nurse midwives,	cross-sectional	The study findings indicated that the majority of the HCWs knowledge and practices on TB infection control were very poor. Although the majority of them were aware of TB signs and symptoms and transmission routes.	Questionnaire	The study was well structured and presented the aim of the study was met, being the first study on HCWs' KAP regarding TB IC in Nepal. The findings was very important in that it can serve as a baseline to design effective interventions to address the challenging issue of IC in relation to the possible threat of drug resistance and TB/HIV coinfection in the country. However, the limitation of the study was the small proportion of sample population that made it difficult to make the findings generalizability. Another limitation is the TB IC practices in the study that were self-reported based on the anonymous questionnaires rather than observation

			and clinic assistants], laboratory and X-ray technicians, administration staff (administration and logistic staff, and TB volunteers), ward attendants and support staff.				
26	Singh et al, (2002), *in* India	Aim: To Adherence to tuberculosis treatment: lessons from the urban setting of Delhi, India	Sample of 208 adults within the ages of 16–70 years	cross-sectional	It was revealed that most of the participant demonstrated negative attitudes towards the TB patient due to lack of knowledge of TB	structured interview	The study was well presented, and the aim of the study were met, As well as good response rates from the participants.
27	Oo, et al, (2020) in Yangon Myanmar	Aim: aimed to assess the underlying reasons for the delay in care-seeking among patients with TB in Yangon, Myanmar.	Sample of size of 346 participants aged 18-50 years plus	cross-sectional design	The findings revealed that patients care-seeking delay was 66.8% among patients with TB. While non-delay total led 33.2% which indicated that there is a need for intensive TB control activities within the study community.	Semi-structured interview	The study had some limitations. As the study was conducted only in the region having high TB caseload and located in downtown Yangon, the results may not be representative of other low endemic areas nor the whole country. Some people might seek treatment soon after onset of TB-like symptoms firstly at other healthcare providers rather than a TB center. However, the study met the aim and there was good rate of response. The study findings reported that to avoid any pathology of extrapulmonary TB and MDR-TB and to potential confounding factors, those patients were also excluded

							in this study, so the results were solely representative of pulmonary TB cases.
28	Odusanya and Babafemi, (2004) in Nigeria	Aim: To determine the patterns of delay amongst tuberculosis patients seen at a tuberculosis clinic in Lagos, Nigeria	A sample of 141 patients with an average age of 29.5 years.	Longitudinal	The result findings indicated that one hundred and sixteen (82%) had positive smears. One hundred and seventeen (83%) delayed their seeking help from health facilities longer than one month after the onset of symptoms. The median patient delay was eight weeks; median doctor delay was one-week, median treatment delay was one week, and the median total delay was 10 weeks. Doctor delay was observed in 19 (13%) patients. Patient delay was the most frequent type of delay observed and was the major contributor to the overall total delay. Patient delay was not significantly associated with patients' socio-demographic characteristics such as age, gender and educational level.	Questionnaire	The study was well presented, and the aim of the study were met, As well as good response rates from the participants.
29	Oluwadare et al,(2010) in	Aim: aimed at exploring the health seeking behaviour of	A sample of 117 participants,	quantitative	The result revealed that 10 in-depth interviews were also conducted	Questionnaire	This study was well presented, and the aim of the study were met, As well as good response rates from the participants.

	Ekiti State Nigeria	TB patients also as proxy for understanding the treatment choice of HIV positive persons	55% male and 45% female. The study adopted snowball method for selection of participants.		among the patients and health workers. The mean age of male respondents is 36 years and 22 years for female; about 155 are not married while 60% and 51% of female and male respectively are either divorced or widowed. This high marital separation is related to the stigma and death due to AIDS or TB. 32% of the female and 20% of male have no formal education. And most earn less than equivalent of US$2 per day. More than 20% of male and 10% of female access TB treatment centre until after two months of the onset of the symptoms, 1/3 after the third month. Male also use public medicine while female access more traditional care. The major factors are perceived cost of treatment and privacy due to fear of stigma. Gender and level of education of respondents are most significantly related to treatment choice of TB patients.		

30	Peltzer, Mngqundaniso and Petros, (2006) in South Africa	Aim: To investigate the HIV/AIDS/STI and TB knowledge, beliefs and practices of traditional healers in KwaZulu-Natal, South Africa.	A purposive sample of 233 traditional healers, 75% were female and 57% male aged 45 years and above.	cross-sectional study	The findings revealed that 95% of traditional healers had good knowledge of TB and 81% had knowledge of transmission of TB. Furthermore, the study revealed that South Africa recognized the role of traditional healer in the community.	A semi-structured questionnaire was developed from the literature and a key interview were conducted among the participants.	The study was well analysed and presented. There was high rate of response. The study met it aim.
31	Salaniponi et al, (2000) in Malawi	Aim: To determine the proportion of PTB patients who had visited traditional healers prior to diagnosis.	A sample size of 770 patients, 374 men and 396 women with an average age of 35 years.	cross-sectional study	The result reported that 32% of the patients in Malawi had visited traditional healers before visiting HCWs	A structured questionnaire was administered.	The important of the study was that findings revealed that more patients visited traditional healers frequently and before the PTB could be diagnosed in the healthcare centers.
32	Samargandi et al., (2012) in Jeddah, Saudi Arabia	Aim: To assess the level of public general knowledge regarding pulmonary tuberculosis in the city of Jeddah.	A sample of 436 participants both male and female age 12 to 72 years old, 65 (38.9%) were students and 154 (36.3%) were employees.	A ross-sectional self-administrated questionnaire-based study was conducted at three main shopping centers in Jeddah city	The result findings revealed that the majority (73%) of candidates were relatively well educated or completed high school. 53.3% of the candidates assumed had sufficient knowledge regarding tuberculosis. 36% were unaware that lungs were the primary organ affected, over half (50.9%) denied it is an infectious disease, and almost half (47.4%) were unaware of effective treatment. The mean score of the level of knowledge for the whole group was 5.20	questionnaire	The study revealed some limitation in the study, although the sample size of this study was convenient, however, better sample randomization may further eliminate bias speculation. Furthermore, the sample was taken from three shopping centers in one city in Saudi. Arabia and therefore, not a fair representative of the Jeddah or the whole country. In addition, a self-developed invalidated questionnaire was used which may affect the accuracy of the data collected. Using a validated questionnaire would give more robust results in the future. Having said that the study addressed the aim, and the analysis of the data is well presented.

					out of 11 (SD Â± 2.95); 39% scored less than 4. Females scored better than males, 5.55 and 4.69 out of 11, respectively. The findings therefore indicated the level of the participant knowledge of PTB is very low and there is a need for public awareness of pulmonary TB.		
33	Seid and Metaferia, (2018) in Ethiopia	Aim: To assess length of delays and analyse predictors of treatment delay of newly diagnosed TB patients in Northern Central Ethiopia.	A sample size of 382 participants both male and female, aged 18 to 55 years.	A health facility based cross sectional study was conducted from April1, 2016 to January 30, 2017.	In this study there were various delay reported for example the median patients', health systems and total delay was 30 days, 6 days and 36 days, respectively. The late patient health seeking behaviour was the major contributor of total delay. About 35.1, 41.1 and 47.4% of patients had prolonged health system's, patients', and total delay, respectively. Older age, having larger family size in a household, practicing self-medication, were significant predictors of prolonged patients' delay. Initial visit of general practitioners and multiple healthcare visits were significant	A standardized questionnaire, adapted from a previous validated WHO questionnaire was used for the collection of socio-demographic, clinical and other related information. Questionnaire	This study was well presented, and the aim of the study were met, As well as good response rates from the participants.

					predictors of prolonged health system's delay.		
34	Singh et al, (2019) in Delhi	Aim: To assess the knowledge and attitude towards tuberculosis	A sample of 208adults (114 males and 94 females) aged 16-70 years.	A cross-sectional	The result revealed that the Literacy rate was 28.4%. Only 174 (83.6%) heard of tuberculosis mainly from neighbours (64.9%) and friends (62.1%). Only 2.3% knew that TB was caused by a germ. Literates were more aware than illiterates regarding some signs and symptoms of TB. Only 12.6% knew about the duration of treatment for 6-8 months and 1.7% knew about preventive role of BCG. In addition, the evident from the findings that 71% respondents agreed upon isolating TB patients from the family, 74.1% on avoiding the patient in food sharing, on quitting job by the patient (33%), prohibiting marriage of the patient (27.6%), shunning him from attending social functions (18%),	questionnaire	This study was well presented, and the aim of the study were met, As well as good response rates from the participants.
35	Sima et al, (2019) in Ethiopia	Aim: assess the role of traditional healers in the detection and referral of	A sample size of 22 traditional	A pilot intervention study	The result indicated that most of the traditional healers have knowledge	Interview	This study was well presented, and the aim of the study were met, As well as good response rates from the participants.

		active TB cases in a pastoralist community.	healers aged 31-60 years		of signs/symptoms. They referred 24 presumptive TB cases to nearby health facility of which 13 were confirmed to be TB positives and ten completed treatments.		
36	Semiha et al, (2011) in Turkish	Aim: To describe the level of knowledge and attitudes of Turkish nursing and midwifery students regarding tuberculosis to understand and determine whether there is a need for improvement in nursing and midwifery education regarding tuberculosis.	A sample of 615 students in their first, second, third and fourth years.	cross-sectional,	The findings showed that the student attitudes towards TB were negative. Only 5.9% of the students would not mind caring for TB patients. Overall findings show that only those who have TB training showed positive attitudes towards caring for TB patients.	Questionnaire	The findings from the study addresses the aim and the response rate was good the data analysis was well presented. Having said that there was limitation in the study, such as the sample that consisted mostly of first-year students. Since the curriculum does not include courses about tuberculosis in the first year, the level of knowledge was generally low. Also, the number of male students was low, so it was not possible to generalize the findings in terms of gender.
37	Temesgen and Demissie, (2011) in Northwest Ethiopia.	Aim: to assess TBIC knowledge and practices among health professionals working in hospitals in the Amhara region of Northwest Ethiopia	A sample of 313 healthcare professionals (doctors and nurses). 153 (48.9%) males and 160 (51.1%) females, aged between 20 to 60 years.	A health institution-based hybrid design	The result revealed that out of the 313 participants only 18,8% had received training and for those that were trained 74. 4% were found to have sufficient TBIC knowledge, and 63.2% were found to employed proper TBIC knowledge.	self-administered a questionnaire	The study addressed the study aim but there was no other similar study for the study to be compare with and the study did not include observation as a data collection method, that could have given more accurate findings.
38	Ukwaja et al (2013) in Nigeria	Aim: To assess healthcare-seeking behaviour and delay in treatment of pulmonary TB patients and identify the determinants of the	A sample of 450 patients, age 15 years and above, male and female.	A cross-sectional study of adult new pulmonary TB patients notified to	The findings revealed that two-thirds (78%) of the participants sought treatment more than four weeks after the onset of their	Interview with a standardised questionnaire was used. Which was administered	This study met the aim, and there was a good rate of response. However, there were various limitation to the study. Firstly, the study was conducted in a rural, high TB/HIV under-resourced setting. The study findings may not be

		delay in treatment of pulmonary TB in the rural Nigeria.		theNational Tuberculosis Control Programme (NTP)by three rural (two mission/one public) hospitals.	symptoms. The overall findings revealed that the proportion of patients who had sought treatment more than four weeks after onset of TB symptoms was higher in Nigeria compared to other countries.	in English and Igbo language depending on the patient’s preference.	generalisable to all settings. It would be valuable to obtain data on settings with different cultural and socio-economic characteristics. Secondly the TB treatment delays, questions was relying on patient recall. Although it was reduced during the data collection to ensured that patient were seen immediately after initiated TB treatment, for recall efforts. Another limitation is that we do not report on patient knowledge and stigma, and its effects on TB treatment delay.

Number	Author and country	Aim and purpose of study	Sample size and characteristic	Research design and data collection	Findings and result	Methods	The strengths and limitations of the studies.
39	Villa et al, (2015) in Vanuatu	Objective: to assess knowledge, attitudes and practice of traditional healers who treat lung diseases and tuberculosis (TB), including their willingness to collaborate with the national TB programme.	A snowball sample of nineteen traditional healers of whom 19 were male and one was female.	Mixed methods approach	The result identified that the cause of delay to treatment by the patients was due to consultation with traditional healers as the traditional healers were well known in Vanuatu.	Questionnaire and semi structured interview	Although the result was well presented but there was limitation in the study, due to a small sample of 19 traditional healers in Vanuatu, and the results may not be generalisable to all traditional healers in Vanuatu. Another limitation was not enough data were collected on knowledge, attitudes, and beliefs about TB for more accurate information.
40	Verhagen et al, (2010) in Tanzania	Aim: To perform an in-depth interview to gain insight into the factors underlying treatment-seeking behavioural patterns in TB patients in Sumve, Mwanza region, Tanzania	A sample of 28 recently diagnosed TB patients, 18 were males and 10 females, aged 18 -70 years old, and four traditional healers took part in the study,	A qualitative survey design	The study findings revealed that the patients believed that TB was caused by either god or witchcraft curses. Other findings revealed from the study were health system delays that were mainly due to diagnostic delays.	Semi-structured interview	There were several limitations reported in the study. Such as They recall bias during the participants provided retrospective responses. Secondly, possibility that traditional healers might have been given desirable answers at the time of the interview. Finally, the low specificity of the diagnostic methods (radiography and clinical features) used to detect sputum-smear-negative pulmonary TB could potentially lead to the misdiagnosis of patients
41	Wandwalo and Morkve, (2000) in Tanzania	Aim: To investigate factors responsible for delay, both from the onset of symptoms to diagnosis, and from diagnosis to commencement of therapy.	A sample of 300 patients aged 18 and above. In which the The majority were out-patients, with only 33 (11%) inpatients	Cross sectional descriptive study	The study revealed that one -third of the patients had first visited traditional healers after the onset of symptoms.	Interview	This study was well presented, and the aim of the study were met, As well as good response rates from the participants.
42	Wondawek and Ali, (2019) in Ethiopia	Aim: To determine the magnitude of delays in treatment-seeking and risk factors among pulmonary tuberculosis suspected patients in	The study adopted a convenience sampling technique with a sample of 598	cross-sectional survey	The findings revealed that there was delay in treatment seeking behaviours among TB suspected patients. The study also revealed that	Structured questionnaire	The important of this study was the substantial factors identified in the delay of TB treatment seeking among TB suspected patients. Having said that there is limitation reported in the study such as recall bias. and study design, since cross sectional was adopted, it may

		health facilities located in Adama, Ethiopia.	participants, both male and female, aged 15-65 years and above.		the majority of patients delay in seeking treatment was among participants who lacked information on TB.		be difficult to establish temporal relationship between cause and effect.

Appendix B Invitation letter

Dear Sir/madam,

My name is Margaret Akinbileje a M.Phil student in public health at Swansea University, United Kingdom Wales. I am conducting a research study on the knowledge, attitudes, and health seeking behaviours of patients, healthcare workers and community members in relation to pulmonary tuberculosis (PTB) in Akure, Ondo State, Nigeria. With your permission, I would like to invite you to join one of my group discussions; your participation in my M.Phil study will help inform the development of a health promotion programme for patients about PTB and help to improve the health of Akure South community in relation to PTB prevention and control.

The groups will consist of community members, students from the university, and members from different religious backgrounds. The discussion venue will be in Akure community hall. However, if you prefer the group discussion in an alternative place this can be arranged, and your travel expenses will be reimbursed. The group discussion will last for approximately one and half hours including refreshments and debriefing. With your permission the discussion will be tape-recorded. If you would like to take part, in the research study, it will be appreciated, but your participation is entirely voluntary. If you agree to take part, you will be asked to sign a consent form. You are free to withdraw at any time without giving a reason. I would be grateful if you could read the information sheet and if you wish to participate, please return the slip provided within the next fourteen days. If you have any further questions, please contact me at the address below.

Thank you for considering this information.

Margaret Akinbileje
College of Human and Health Science
Swansea University
Email: [redacted]k Mobile: ……………………….

Appendix C: Participant reply to slips

Please complete this slip and return it to the box provided or call me on mobile number below

I am willing to participate in this study (Please tick) []

If you are interested in the study and would like to hear more, I will contact you once you have signed and returned the repl slip. I will contact you and with more information about the study, date, venue and time of the group discussion. Please write your details below.

Contact details

Name: ………………………………………………….
Telephone number at home /work (if appropriate)
Mobile: ……………………………………………………
Email address: …………………………………………….
I would like you to contact me (please tick)
Morning [ ]
Afternoon [ ]
Evening [ ]
Any preferred dates and time: ………………………………………
Researcher name: Margaret Akinbileje
Mobile number: [redacted]

SAFETY / QUALITY

7) Is the mobile number for a phone used only for the research?

Yes, after the research the number will be changed.

Thank you for showing interest in this research.

Appendix D: Participant Information Sheet

Introduction

I would like to invite you to take part in a research study on the knowledge, attitudes and health seeking behaviours of patients, healthcare workers and community members towards Pulmonary Tuberculosis (PTB) in Akure, Ondo State, Nigeria.

Researcher:

My name is Margaret Akinbileje, a M.Phil. student in public health at Swansea University Wales, UK. Before you decide whether to take part, I would like you to understand, why the research is being done and what it would involve for you. Please take time to read the following information carefully.

What is the purpose of the study?

The purpose of this study is to explore the knowledge, attitudes and health seeking behaviours of patients, healthcare workers and community members regarding Pulmonary Tuberculosis (PTB) in Akure. In particular, to identify the barriers and facilitators to people accessing health care, in order to inform the development of a health promotion programme for patients to raise awareness of PTB and its treatment.

Why have I been invited?

You have been selected to take part because I am recruiting people from the local community, from marketplaces, the university, offices and community organisations to participate in this study. I would like to invite you to join one of my group discussions; your participation in my M.Phil study will help inform the development of a health promotion programme for patients about PTB and help to improve the health of Akure South community in relation to PTB prevention and control.

Do I have to take part?

Taking part in the research will be very helpful but is entirely voluntary. It is up to you to decide when you have read the information sheet. If you agree to take part, I will ask you to sign a consent form. You are free to withdraw at any time without giving a reason.

What will happen to me if I take part?

If you consent to take part, you will be contacted by me to arrange a date and venue for the group discussion. The group will consist of approximately 6-8 other community members, including students from the university, and members from different community organisations. The discussion venue will be in Akure community hall. However, if you prefer the group discussion in an alternative place this can be arranged, and your travel expenses will be reimbursed. The group discussion will last for approximately one and half hours and with your permission will be tape-recorded. During the discussion you will be provided with refreshments.

What are the benefits of the research to the participants?

There are no immediate benefits for you, although having the opportunity to discuss and relate some of your experiences and concerns may be of some benefit to you. However, it is expected that the information gained from this study will be used to develop a health promotion programme for patients about PTB and help to improve the health of Akure South community in relation to PTB prevention and control.

Will there be any harm to participants?

Whilst it is not anticipated that you would be distressed through participating in this study, if this did occur then I would discontinue the data collection and seek to provide support. I will have the contact details of sources of support, such as hospital doctors and nurses and non-governmental organisations (NGO) which can offer assistance to any of the group members who may become distressed.

What about confidentiality?

All information will be kept confidential. Your name will not appear in any reports arising from this project. All tapes will be stored separately from details of name and address and only seen by me. I will use pseudonyms for all names in order to protect your identity. Tapes will be wiped once transcribed data is no longer in use and data will be destroyed five years after the research is completed and published.

Has the study been reviewed and approved?

Yes, the study has been approved and reviewed by the ethics committee of the College of Human and Health Sciences, Swansea University in United Kingdom and the Ministry of Health in Nigeria.

What happens with the results of this study?

The results of this study will be used to write my M.Phil thesis. When the study is completed, the report will be submitted to Swansea University for my M.Phil award. I will also use it for conference presentations as well as for developing a health promotion programme for raising health awareness about PTB for the Akure South community.

How can I contact you for further information?

If you decide to take part in the study, I would be grateful if you would please complete the enclosed reply slip. If you have any further questions, please contact me at the address below. Thank you for considering this information.

Margaret Akinbileje
College of Human and Health Sciences
Swansea University
Email:
Mobile: ……………………….

9) Need to add the supervisor's name and contact details to the Participant Information Sheets.

Professor Joy Merrell and DR Louise Condon

Appendix E: Participant Information Sheet for Healthcare workers

Introduction statement of researcher

I would like to invite you to take part in a research study on the knowledge, attitudes and health seeking behaviours of patients, healthcare workers and community members towards Pulmonary Tuberculosis (PTB) in Akure, Ondo State, Nigeria.

Researcher Name:

My name is Margaret Akinbileje, a M.Phil student in public health at Swansea University Wales, UK. Before you decide whether you need to take part, I would like you to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully.

What is the purpose of the study?

The purpose of this study is to explore the knowledge, attitudes and health seeking behaviours of patients, healthcare workers and community members regarding Pulmonary Tuberculosis (PTB) in Akure. In particular, to identify the barriers and facilitators to people accessing health care, in order to inform the development of a health promotion programme for patients to raise awareness of PTB and its treatment.

Why have I been invited?

I am recruiting people from the community to participate in this study, and you are being invited because of your experience of working as, as a health care worker for the PTB hospital and community clinics. Your participation in my M.Phil study will help inform the development of a health promotion programme for patients about PTB and help to improve the health of Akure South community in relation to PTB prevention and control.

Do I have to take part?

Taking part in the research is entirely voluntary. It is up to you to decide when you have read the information sheet. If you agree to take part, I will ask you to sign a consent form. You are free to withdraw at any time without giving a reason.

What will happen to me if I take part?

If you consent to take part, you will be contacted by me to arrange a date and venue for an interview. The interview can be conducted in the privacy of your own home or hospital premises. However, if you prefer to be interviewed in an alternative place this can be arranged and your travel expenses will be reimbursed. The interview will last for approximately one hour and with your permission will be tape-recorded. You will be asked about your experiences of caring for patients with PTB and your views as to the barriers and facilitators for people with PTB to access health care.

What are the benefits of the research to the participants?

There are no immediate benefits for you, although having the opportunity to discuss and relate some of your experiences and concerns may be of some benefit to you. However, it is expected that the information gained from this study will be used to develop a health promotion programme for patients

about PTB and help to improve the health of Akure South community in relation to PTB prevention and control.

Will there be any harm to participants?

Whilst it is not anticipated that you would be distressed through participating in this study, if this did occur then I would discontinue the data collection and seek to provide support. I will have the contact details of sources of support, such as the occupational health department of the hospital and non-governmental organisations (NGO) which can offer assistance to any participant who may become distressed.

What about confidentiality?

All information will be kept confidential. Your name will not appear in any reports arising from this project. All tapes will be stored separately from details of name and address and only seen by me. I will use pseudonyms for all names in order to protect your identity. Tapes will be wiped once transcribed data is no longer in use and data will be destroyed five years after the research is completed and published.

Has the study been reviewed and approved?

The study has been approved and reviewed by the ethics committee of the College of Human and Health Sciences, Swansea University in United Kingdom and from Ministry of Health Nigeria.

What happens with the results of this study?

The results of this study will be used to write my M.Phil thesis. When the study is completed, the report will be submitted to Swansea University for my M.Phil award. I will also use it for conference presentations as well as developing a health promotion programme for raising health awareness about PTB for the Akure South community.

How can I contact you for further information?

If you decide to take part in the study, I would be grateful if you would please complete the enclosed reply slip. If you have any further questions, please contact me at the address below. Thank you for considering this information.

Margaret Akinbileje

College of Human and Health Science

Swansea University

Email:[redacted]

Appendix F: Participant Consent Form

Full title of study: A study of the knowledge, attitudes, and health seeking behaviors of patients, healthcare workers and community members in relation to Pulmonary Tuberculosis (PTB) in Akure, Ondo State, Nigeria.

Researcher Name: Margaret Akinbileje
Position: M.Phil student from Swansea University, Wales, UK
Reason for data collection: M.Phil Thesis

Please select the appropriate box

Statement of Consent	Box
I confirm that I have read and understand the information sheet dated **DD/MM/YY** for the above research study.	
I have had the opportunity to consider the participant information sheet, ask questions and my questions have been answered to my satisfaction by the above researcher.	
I understand that my participation is voluntary and that I am free to withdraw from the research study above at any time without giving a reason, and if I choose to withdraw, my information(data) will remove from the study and will not be used.	
I understand that the interview will be tape-recorded. Anonymised direct quotes may be used within the study. I have been informed that it will not be possible to discover my identity from the written thesis report or publications.	
I have been guaranteed that my data will be held confidentially, stored in a locked cabinet in a locked room and only the researcher (Margaret Akinbileje) will have access to them.	
The researcher (Margaret Akinbileje) has informed aware that the overall findings may be submitted for publication in a scientific journal, or presented at scientific conferences.	
I agree to take part in the above research	

Participant

Name of Participant: …………………………………………………………..

Signed: ……………………………………………………………………

Date: …………………………………………………………………..

Researcher
Name of Researcher: ……………………………………………………

Signed: ………………………………………………………………….

Date: ……………………………………………………………………

Appendix G: Semi-structured interview topic guide for traditional healers

Initial activities

- Greet participant
- Explain the purpose of the study
- Respond to any questions from the participant
- Give the participant consent form to read and sign

INTRODUCTION

- Permission to use the audio tape recorder and the right to withdraw at any time will be explained
- No right or wrong answers

KNOWLEDGE OF PULMONARY TUBERCULOSIS (PTB)

- Tell me about PTB in Akure?
- What is your experience of PTB?
- How do you view your role as a Traditional Healer in the context of PTB and other diseases?

Probe: - know someone with PTB

Is PTB different from other diseases?

Methods (e.g. herbs) used for treating PTB

Can it be cured or not?

-Do patients use both medical treatment and traditional medicine?

- If you cannot cure your patients with PTB what do you do?

Probe: refer to hospital or their home.

As traditional healer what do you do when you are not well yourself?

Probe: - will you visit the local clinic

Hospital

Another Traditional healer

PTB TREATMENT BARRIERS

-What are the barriers faced by PTB sufferers in relation to treatment and cure?

- What do you tell PTB positive patients about the cause of PTB?

Probe: from God or devil

What do you tell PTB positive patients about their drugs?

Probe: safe or not safe,

Continue with drugs or not.

PTB PREVENTION AND EDUCATION

- What do you think can be done to cure PTB?
- What is your opinion of the current medical treatment of PTB?
- What do you think about collaboration between Traditional Healers and Medical Doctors?
- What would you like the Nigeria government to do to ensure that traditional healers are given a role in the fight against PTB?
- **SHARING HEALTH INFORMATION**

- Where do you get your information on PTB from?

Probe: from your ancestors or others

CULTURE AND BELIEFS

- Do culture and beliefs on PTB affect the way people seek for help?

  Probe: Tradition, Norms, social interaction,

  Practice, attitude toward people with PTB

- How does cultural competence have influences on PTB sufferer?

- How do people perceive PTB sufferers?

- Probe: Practice and attitude towards people with PTB

Any other comments you would like to make

Can I please contact you for further information if needed?

Thank you so much for your participation in this interview.

Appendix H: Semi-structured interview topic GUIDE FOR community leaders

Initial activities

- Greet participant
- Respond to any questions from the participant
- Give the participant consent form to read and sign

INTRODUCTION

- Present the research aim
- Permission to use the audio tape recorder and the right to withdraw any time will be explained
- No right or wrong answers

KNOWLEDGE OF PULMONARY TUBERCULOSIS (PTB)

- Tell me about PTB in Akure?

Probe:
Is it common?

- How do people know they have it?

Probe: Symptoms, diagnosis
Causes
Treatment
Serious or not
How it is spread

- What is your experience of PTB?

Probe: Known people who have/had it (self, relatives, friends, hospital patients)
Looked after people who have it
Know people having/ had treatment

- Do you know of people who have died?

Probe: Is that common nowadays

- Do you know if they received support during their PTB illness? If yes

Probe: where and from whom
If no, why was there no support?

ATTITUDE OF PEOPLE TOWARD PTB SUFFERERS

- How would you feel if you were told you had PTB?

- How does having PTB affect people's life?

Probe: Relationships
Family commitments
work
Income
Housing
Transport
Exclusion from society

HEALTH SEEKING BEHAVIOUR

- Is PTB currently a problem in your local area?
- Who do you think is at highest risk for PTB?
- Do you think that local beliefs and culture affect how people look after themselves and seek help when they have PTB?

Probe: Is shame a major issue?

- What help is available for people with PTB?

Probe: Friends, Family, Hospital, Doctors Nurses
Elders, traditional healers, Media/online
Others

TRADITIONAL HEALERS

- What do you know about the work of traditional healers?

Probe: Provide healing services
Cure PTB and other diseases
Complement or an alternative to medical care

- What have you heard traditional healers telling patients about the causes of PTB?

Probe: Punishment from God or witchcraft.

PTB TREATMENT BARRIERS

- What are the barriers faced by the PTB sufferers in relation to treatment and cure?

Probe: Poverty
Support
Transport to treatment Centre
Lack of information
Cultural issues
Health care system

VIEWS ABOUT PTB SERVICES

- What do you think about the services offered to PTB patients?

Probe: Healthcare worker’s attitude towards patients
Waiting time for treatment

PTB PPREVENTION AND EDUCATION

- Do you know how PTB can be prevented?
- What information have you seen about PTB?
- Do you think that the PTB prevention and control activities provided by local government improve the knowledge of the community or not?
- What are the most appropriate methods for PTB education for the Akure South community members?

Probe: TV
Newspapers
Internet
Word of mouth

- **SHARING HEALTH INFORMATION FOR PTB**

- Where do people go to find out more about PTB?

Probe: Hospital, Healthcare Centre
Information Centre
Doctors, Nurses
Traditional healers
Elders
Local organisation
Friends
Family
Media/online and others

- What sort of information is the most helpful?

Probe: From Leaflets,
Health professionals
Radio and TV
Internet

Any other comments you would like to make

Closing questions
May I contact you again for further information if needed?

Thank you for participating in the interview.

Appendix I: Topic guide for group discussions

Initial activities

- Welcome participant
- Respond to any questions from the participants
- Give the participant consent form to read and sign

INTRODUCTION

- Present the research aim
- Permission to use the audio tape recorder and the right to withdraw any time will be explained
- No right or wrong answers
- Agree ground rules

KNOWLEDGE FOR PULMONARY TUBERCULOSIS (PTB)

- Tell me about PTB in Akure?

Probe: Is it common?
How do people know they have it?

Probe: Symptoms, diagnosis
Causes
Treatment
Seriousness
How it is spread

- What is your experience of PTB disease?

Probe: Known people who have/had it (self, relatives, friends, hospital patients)
Looked after people who have had it before
Know people having/ had treatment
Know of people who have died
Is that common nowadays?

- Do you know if they receive support during their PTB illness? If yes

Probe: where and from whom

ATTITUDE OF PEOPLE TOWARD PTB SUFFERERS

- How would you feel if you were told you had PTB?
- How does having PTB affect people’s life?

Probe: Relationships, marriage
Family commitments
Income
Work
Housing
Transport
Exclusion from society

HEALTH SEEKING BEHAVIOUR

- Is PTB currently a problem in your local area?

- Who do you think is at highest risk for PTB?

- Do you think that local beliefs and culture affect how people look after themselves and seek help when they have PTB?

Probe: Is stigma (shame) a major issue?

- What help is available for people with PTB?

Probe: Friends, Family, Hospital, Doctors Nurses
Elders, traditional healers, Media/online
Others

TRADITIONAL HEALERS

- What do you know about the work of traditional healers?

Probe: Provide healing services
Cure PTB and other disease
Complement or alternative to medical care

- What have you heard the traditional healers telling patients about the causes of PTB?

Probe: Punishment from God or witchcraft.

PTB TREATMENT BARRIERS

- What are the barriers faced by the PTB sufferers in relation to treatment and cure?

Probe: Poverty
Support
Transport to treatment Centre
Lack of information
Cultural or Health system

VIEWS ABOUT PTB SERVICES

- What do you think about the services offered to PTB patients?

Probe: Healthcare worker’s attitude
Waiting time for treatment

PTB PREVENTION AND EDUCATION

- Do you know how PTB can be prevented?
- Do you think that the PTB prevention and control activities provide by local government improve the knowledge of the community or not?

Probe: - why or why not?

- What are the most appropriate methods for PTB education for the Akure South community members?

Probe: - TV
Newspapers
Internet
Word of mouth

- **SHARING HEALTH INFORMATION**

- Where do people go to find out more about PTB?

  Probe: - Hospital, Healthcare centre
  Information centre
  Doctors or Nurses
  Traditional healers
  Elders
  Local organisation
  Friends
  Family
  Media/online and others

- What sort of information is the most helpful?

Probe: - Leaflets,
-Story telling
-Health professionals
- Radio and TV

- What key messages about PTB would encourage you seek help?

Any comments you would like to make

Closing questions

May I contact you again for further information if need be?
Thanks for participating in the interview.

Appendix J: Semi-structured interview guide for healthcare workers

Initial activities

- Greet participant
- Respond to any questions from the participant
- Give the participant consent form to read and sign

INTRODUCTION

- Present the research aim
- Permission to use the audio tape recorder and the right to withdraw any time will be discussed
- No right or wrong answers

KNOWLEDGE OF PULMONARY TUBERCULOSIS (PTB)

- Tell me about PTB in Akure?

Probe: is it common

- How do people know they have it?

Probe: Symptoms, diagnosis
Causes
Treatment
Serious
How is it spread

- Where do people go to get information about PTB?

Probe: From government, friends and family, doctors, nurses, clinics, TV, internet

- What is your experience of PTB as healthcare worker?

Probe: personally
Professionally (how long have you worked in PTB wards or hospital)

- What are the common practices in diagnosing, treating and providing care to PTB patients?

Probe: Can PTB be cured?
What are the risks of getting PTB or chances of infecting others?
What is the best treatment for PTB?

ATTITUDE OF PEOPLE TOWARDS PTB

- If you are told you have PTB how would you feel?

- How does having PTB affect people's lives?

Probe: Relationship, marriage
Family commitment
Work
Income
Housing
Transport
Exclusion from society

- What education and/or training have you had on PTB?

Probe: What was the training?
How long was the training for?
Who delivered it?
Did it meet your needs? If not, why not?
How has it affected your practice?

VIEWS ABOUT PTB SERVICES

- What do you think about the services offered to PTB patients?

Probe: Healthcare worker's attitudes towards patients.
Waiting time for treatment

PTB TREATMENT BARRIERS

- What are the barriers faced by PTB sufferers in relation to treatment and cure?

Probe: Poverty
Support
Transport to treatment Centre
Cultural issues
Health care system

PTB PREVENTION AND EDUCATION

- What do you think are the barriers to PTB education for Akure South community members?

  Probe: social, culture and/or language barriers
- Have you been involved in PTB prevention/health programme before? If yes

Probe: Type of health programme
Who are the people involved?
Who delivered it?
What has been the impact on PTB?

- What important information should be included?

- Do you have any current education programme about PTB? If yes

Probe: What do you think about it?
How long?

Who delivers it? Group or individual

- What are the most appropriate methods for PTB education for the Akure South community members?

Probe: TV
Newspapers
Internet
Words of mouth
PTB education programme

HEALTH SEEKING BEHAVIOUR

- What help is available for people with PTB?

Probe: Friends, Family, Hospital
Doctors, Nurses
Elders, Traditional healers
Media/online and others

- Do you think that local beliefs and culture affect how people look after themselves and seek help when they have PTB?

Probe: Traditional healers

TRADITIONAL HEALERS

- What you know about the work of traditional healers?

Probe: Providing healing services cure PTB and other diseases.

Complement or alternative to medical care

Medication types (herbs)

Do you recommend PTB patients to them?

- Do you think that traditional healers can be used in a complementary way to medicine in relation to PTB treatment?

- **SHARING HEALTH INFORMATION**

As a healthcare worker where do you direct people to get information on PTB?

Probe: TV or newspapers, internet, health Centre or hospital.

Where do people go to find out more about PTB?

Probe: Friends, Family, Hospital
Doctors, Nurse, Elders
Media/online
Local organisation and others

Any other comments you would like to make

Can I contact you for further information if needed?

Thank you for taking part in this interview

Appendix K: Semi-structured interview topic guide for carer/relative

Initial activities

- Greet participant
- Respond to any questions from the participant
- Give the participant consent form to read and sign

INTRODUCTION

- Present the research aim
- Permission to use the audio tape recorder and the right to withdraw any time will be explained
- No right or wrong answers

KNOWLEDGE FOR PULMONARY TUBERCULOSIS (PTB)

Tell me about your experience of having PTB?

Probe: getting diagnosed, seeking help from whom?

- How did you know you had PTB?

Probe: Symptoms, diagnosis
Causes
Treatment
Serious
How it spread.

- Is there any lot of information about it?

Probe: From government, from friends or family

- What has been your experience of social interaction with different people such as hospital staff?

Probe: Known people who have/had PTB,
Relatives, friends, hospital staff

ATTITUDE OF PEOPLE TOWARD PTB SUFFERERS

- How do you feel as a PTB patient?

- What are your comments about the support you have received during your PTB illness?

Probe: where and from whom and how adequate is that?

- How does having PTB affect your life?

Probe: Relationship
Family commitment
Income
Work

Housing
Transport
Exclusion from society

HEALTH SEEKING BEHAVIOUR

- Is PTB currently a problem in your local area?
- Who do you think is at highest risk for PTB?
- Do you think that local beliefs and culture affect how people look after themselves and seek help when they have PTB?

Probe: Is stigma (shame) a major issue?

- What help is available for people with PTB?

Probe: Friends, Family, Hospital, Doctors Nurses
Elders, traditional healers, Media/online
Others

TRADITIONAL HEALERS

- What do you know about the work of traditional healers?

Probe: Provide healing services
Cure PTB and other diseases
Complement or alternative to medical care

- What have you heard traditional healers telling patients about the causes of PTB?

Probe: Punishment from God or witchcraft.

Would you advise people with PTB to visit a traditional healer?

PTB TREATMENT BARRIERS

- What are the barriers faced by the PTB sufferers in relation to treatment and cure?

Probe: Poverty
Support
Transport to treatment Centre
Lack of information
Cultural or Health system

SATISFACTION ABOUT PTB SERVICES

- What do you think about the services offered to PTB patients?

Probe: Healthcare worker’s attitude towards patients,
Waiting time for treatment

PTB PPREVENTION AND EDUCATION

- Do you know how PTB can be prevented?
- Do you think that the PTB prevention and control activities provide by local

government improve the knowledge of the community or not?

Probe: why or why not?

- What are the most appropriate methods for PTB education for the Akure South community members?

Probe: TV
Newspapers
Internet or level of education

- **SHARING HEALTH INFORMATION FOR PTB**

- Where do people go to find out more about PTB?

Probe: Hospital, Healthcare Centre
Information Centre
Doctors, Nurses
Traditional healers
Elders
Local organisation
Friends
Family
Media/online and others

- What sort of information is the most helpful?

Probe: Leaflets,
Health professionals
Radio and TV

What information would be helpful to you and for other patients with PTB?

Any other comments you would like to make

Closing questions

May I contact you again for further information if needed?

Thank you for participating in the interview.

Appendix L: Semi-structured interview guide for PTB patients

Initial activities

- Greet participant
- Respond to any questions from the participant
- Give the participant consent form to read and sign

INTRODUCTION

- Present the research aim
- Permission to use the audio tape recorder and the right to withdraw any time will be explained

THE ROLE OF THE CARERS/RELATIVES

- What is your relationship to the patient?
- How long have you been caring for the patient?
- As a carers /relative what do you do to support the patient?
- What is your experience as a carers/ relative?
- Do you receive any support of any kind? If yes

Probe: From where, who and how adequate is that?

- How long has the illness affect the patient?

Probe: 1month, 3month, 1year or more

-What other challenges do you face when caring for your relative?

KNOWLEDGE ON PULMONARY TUBERCULOSIS (PTB)

- Tell me about PTB in Akure?

Probe: Is it common?

- Do you think PTB can be cured?

ATTITUDE OF PEOPLE TOWARD PTB SUFFERERS

- What are your views about people's behavior towards your relative during their PTB illness?
  - As a family carers/relative what is your experience of social interaction with different people such as hospital staff?

Probe: Known people who have/had PTB, Relatives, friends, hospital staff

- How does having PTB affect you and your relative's life?

Probe: Relationship
Family commitment
Work
Income
Housing
Transport
Exclusion from society

HEALTH SEEKING BEHAVIOUR

- Is PTB currently a problem in your local area?
- Who do you think is at highest risk for PTB?
- Do you think that local beliefs and culture affect how people look after themselves and seek help when they have PTB?

Probe: Is stigma (shame) a major issue?

- What help is available for people with PTB?

Probe: Friends, Family, Hospital, Doctors Nurses
Elders, traditional healers, Media/online
Others

TRADITIONAL HEALERS

- What do you know about the work of traditional healers?

Probe: Provide healing services
Cure PTB and other diseases
Complement or alternative to medical care

- What have you heard traditional healers telling patients about the causes of PTB?

Probe: Punishment from God or witchcraft.

Would you advise people with PTB to visit a traditional healer?

PTB TREATMENT BARRIERS

- What are the barriers faced by the PTB sufferers in relation to treatment and cure?

Probe: Poverty
Support
Transport to treatment Centre
Lack of information
Cultural or Health system

SATISFACTION ABOUT PTB SERVICES

- What do you think about the services offered to PTB patients?

Probe: Healthcare worker's attitude towards patients, Waiting time for treatment

PTB PPREVENTION AND EDUCATION

- Do you know how PTB can be prevented?
- Do you think that the PTB prevention and control activities provided by local government improve the knowledge of the community or not?

Probe: why or why not?

- What are the most appropriate methods for PTB education for the Akure South community members?

Probe: TV
Newspapers
Internet or level of education

- **SHARING HEALTH INFORMATION FOR PTB**

- Where do people go to find out more about PTB?

Probe: Hospital, Healthcare Centre
Information Centre
Doctors, Nurses
Traditional healers
Elders
Local organisation
Friends
Family
Media/online and others

- What sort of information is the most helpful?

Probe: Leaflets,
Health professionals
Radio and TV

Any other comments you would like to make

Closing questions
May I contact you again for further information if needed?

Thank you for participating in the interview

Appendix M: Semi-structured interview guide for healthcare workers

Initial activities

- Greet participant
- Respond to any questions from the participant
- Give the participant consent form to read and sign

INTRODUCTION

- Present the research aim
- Permission to use the audio tape recorder and the right to withdraw any time will be discussed
- No right or wrong answers

KNOWLEDGE OF PULMONARY TUBERCULOSIS (PTB)

- Tell me about PTB in Akure?

Probe: is it common

- How do people know they have it?

Probe: Symptoms, diagnosis
Causes
Treatment
Serious
How is it spread

- Where do people go to get information about PTB?

Probe: From government, friends and family, doctors, nurses, clinics, TV, internet

- What is your experience of PTB as healthcare worker?

Probe: personally
Professionally (how long have you worked in PTB wards or hospital)

- What are the common practices in diagnosing, treating and providing care to PTB patients?

Probe: Can PTB be cured?
What are the risks of getting PTB or chances of infecting others?
What is the best treatment for PTB?

ATTITUDE OF PEOPLE TOWARDS PTB

- If you are told you have PTB how would you feel?

- How does having PTB affect people's lives?

Probe: Relationship, marriage
Family commitment
Work
Income
Housing
Transport
Exclusion from society

- What education and/or training have you had on PTB?

Probe: What was the training?
How long was the training for?
Who delivered it?
Did it meet your needs? If not, why not?
How has it affected your practice?

VIEWS ABOUT PTB SERVICES

- What do you think about the services offered to PTB patients?

Probe: Healthcare worker's attitudes towards patients.
Waiting time for treatment

PTB TREATMENT BARRIERS

- What are the barriers faced by PTB sufferers in relation to treatment and cure?

Probe: Poverty
Support
Transport to treatment Centre
Cultural issues
Health care system

PTB PREVENTION AND EDUCATION

- What do you think are the barriers to PTB education for Akure South community members?

  Probe: social, culture and/or language barriers
- Have you been involved in PTB prevention/health programme before? If yes

Probe: Type of health programme
Who are the people involved?
Who delivered it?
What has been the impact on PTB?

- What important information should be included?

- Do you have any current education programme about PTB? If yes

Probe: What do you think about it?

How long?
Who delivers it? Group or individual

- What are the most appropriate methods for PTB education for the Akure South community members?

Probe: TV
Newspapers
Internet
Words of mouth
PTB education programme

HEALTH SEEKING BEHAVIOUR

- What help is available for people with PTB?

Probe: Friends, Family, Hospital
Doctors, Nurses
Elders, Traditional healers
Media/online and others

- Do you think that local beliefs and culture affect how people look after themselves and seek help when they have PTB?

Probe: Traditional healers

TRADITIONAL HEALERS

- What you know about the work of traditional healers?

Probe: Providing healing services cure PTB and other diseases.

Complement or alternative to medical care

Medication types (herbs)

Do you recommend PTB patients to them?

- Do you think that traditional healers can be used in a complementary way to medicine in relation to PTB treatment?

- **SHARING HEALTH INFORMATION**

As a healthcare worker where do you direct people to get information on PTB?

Probe: TV or newspapers, internet, health Centre or hospital.

Where do people go to find out more about PTB?

Probe: Friends, Family, Hospital
Doctors, Nurse, Elders
Media/online
Local organisation and others

Any other comments you would like to make
Can I contact you for further information if needed?

Thank you for taking part in this interview

Appendix N: Semi-structured interview topic guide for carer/relative

Initial activities

- Greet participant
- Respond to any questions from the participant
- Give the participant consent form to read and sign

INTRODUCTION

- Present the research aim
- Permission to use the audio tape recorder and the right to withdraw any time will be explained
- No right or wrong answers

KNOWLEDGE FOR PULMONARY TUBERCULOSIS (PTB)

Tell me about your experience of having PTB?

Probe: getting diagnosed, seeking help from whom?

- How did you know you had PTB?

Probe: Symptoms, diagnosis
Causes
Treatment
Serious
How it spread.

- Is there any lot of information about it?

Probe: From government, from friends or family

- What has been your experience of social interaction with different people such as hospital staff?

Probe: Known people who have/had PTB,
Relatives, friends, hospital staff

ATTITUDE OF PEOPLE TOWARD PTB SUFFERERS

- How do you feel as a PTB patient?

- What are your comments about the support you have received during your PTB illness?

Probe: where and from whom and how adequate is that?

- How does having PTB affect your life?

Probe: Relationship
Family commitment
Income
Work

Housing
Transport
Exclusion from society

HEALTH SEEKING BEHAVIOUR

- Is PTB currently a problem in your local area?
- Who do you think is at highest risk for PTB?
- Do you think that local beliefs and culture affect how people look after themselves and seek help when they have PTB?

Probe: Is stigma (shame) a major issue?

- What help is available for people with PTB?

Probe: Friends, Family, Hospital, Doctors Nurses
Elders, traditional healers, Media/online
Others

TRADITIONAL HEALERS

- What do you know about the work of traditional healers?

Probe: Provide healing services
Cure PTB and other diseases
Complement or alternative to medical care

- What have you heard traditional healers telling patients about the causes of PTB?

Probe: Punishment from God or witchcraft.

Would you advise people with PTB to visit a traditional healer?

PTB TREATMENT BARRIERS

- What are the barriers faced by the PTB sufferers in relation to treatment and cure?

Probe: Poverty
Support
Transport to treatment Centre
Lack of information
Cultural or Health system

SATISFACTION ABOUT PTB SERVICES

- What do you think about the services offered to PTB patients?

Probe: Healthcare worker’s attitude towards patients,
Waiting time for treatment

PTB PPREVENTION AND EDUCATION

- Do you know how PTB can be prevented?
- Do you think that the PTB prevention and control activities provide by local

government improve the knowledge of the community or not?

Probe: why or why not?

- What are the most appropriate methods for PTB education for the Akure South community members?

Probe: TV
Newspapers
Internet or level of education

- **SHARING HEALTH INFORMATION FOR PTB**

- Where do people go to find out more about PTB?

Probe: Hospital, Healthcare Centre
Information Centre
Doctors, Nurses
Traditional healers
Elders
Local organisation
Friends
Family
Media/online and others

- What sort of information is the most helpful?

Probe: Leaflets,
Health professionals
Radio and TV

What information would be helpful to you and for other patients with PTB?

Any other comments you would like to make

Closing questions

May I contact you again for further information if needed?

Thank you for participating in the interview

Appendix O: Questionnaire

SECTION A: General and Demography Questionnaire

6) The demographic questionnaire is not referred to in the application. Provide an explanation for the use of this data.

The data will be used to explore and compare if there are any age, gender and socio-economic differences in regard to knowledge, attitude and behaviour regarding PTB. This data may help to inform and tailor health promotion programmes and public health campaigns.

1. Please state your name and Location.

Name of Researcher: Margaret Akinbileje

Position: M.Phil student in public health at Swansea University Wales UK.

Purpose of data collection: M.Phil Thesis

Please read before completing the questionnaire

2. Please indicate your age group (Tick as appropriate)

A. 18-29 ☐

B. 30-39 ☐

C.40-49 ☐

D.50-59 ☐

E.60 years and above ☐

3. What is your gender?

A. Male []

B. Female []

4.) MARITAL STATUS: Single [] Separated/divorced [ ] Widowed [ ] Married [ ]

5. **EDUCATIONAL LEVEL:** No formal education [] Primary [] Secondary school []

Undergraduate [] Higher diploma education [] post-graduate []

6. **0CCUPATION:** Employed [] Unemployed [ ] Retired [ ] Homemaker [ ]

7. Please indicate which of the groups listed below is closest to your household earnings in the last year? Please choose either monthly or annual amount; whichever is closest in NAIRA.

	Monthly	**Annually**
☐	0 – 10,000	0 – 120,000
☐	10,001- 15,000	120,001-180,000
☐	15,001 – 20,000	180,001-240,000
☐	20,001 - 25,000	240,001-300,000
☐	25,001-30,000	300,001-360,000
☐	30,001 or above	360,001 or above

Thank you for completing this questionnaire

Appendix P: Debriefing information

Thank you for coming and taking part in this research study that aims to explore the knowledge, attitudes and health seeking behaviours of patients, healthcare workers and community members regarding Pulmonary Tuberculosis (PTB) in Akure. In particular, the study seeks to identify the barriers and facilitators to people accessing health care, in order to inform the development of a health promotion programme for patients to raise awareness of PTB and its treatment.

If you would like me to send you the copy of the report once the project is completed, please do not hesitate to let me know either by phone, email or post whichever way is easier for you.

Furthermore, I would like to say thank you for your time. In case you have any questions regarding the study please contact me at the address below.

College of Human and Health Sciences
Swansea University
Email:
Mobile: ……………………………………………………………..

Appendix Q: Letters of Approval to Conduct Research

FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE
SCHOOL OF ENVIRONMENTAL TECHNOLOGY,
Department of Quantity Surveying

Vice Chancellor
PROFESSOR ADEBIYI G. DARAMOLA, *Fnaae*
B.Sc (Ife), M.Sc., Ph.D (Ibadan)

Head of Department:
DR. O. A. AWODELE
B.Tech, M.Tech (QS) Akure,
Ph.D (HW.Scotland) MNIQS, RQS, APM.

P. M. B. 704, Akure, Ondo State, Nigeria.
Tel:+2348076767011

21st April, 2016

Mrs. Margaret Akinbileje,
College of Humanity and Health Sciences,
Swansea University,
Singleton Park,
Swansea,
SA28PP Wales.

RE-REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Yours on above subject matter refers.

I am glad to convey the approval of the department on your request for permission to conduct your research with our students in the Department of Quantity Surveying, Federal University of Technology, Akure.

We noted that the focus group will consist of 24 members of which out student from department will be part of the group. More importantly, your assurance that there will be no risk or disturbance during the running of your study to the student, the Department and University environment at large.

On this note, I wish to assure you of our un-alloyed support and readiness to provide a conducive environment for you to conduct your research with our student within the campus.

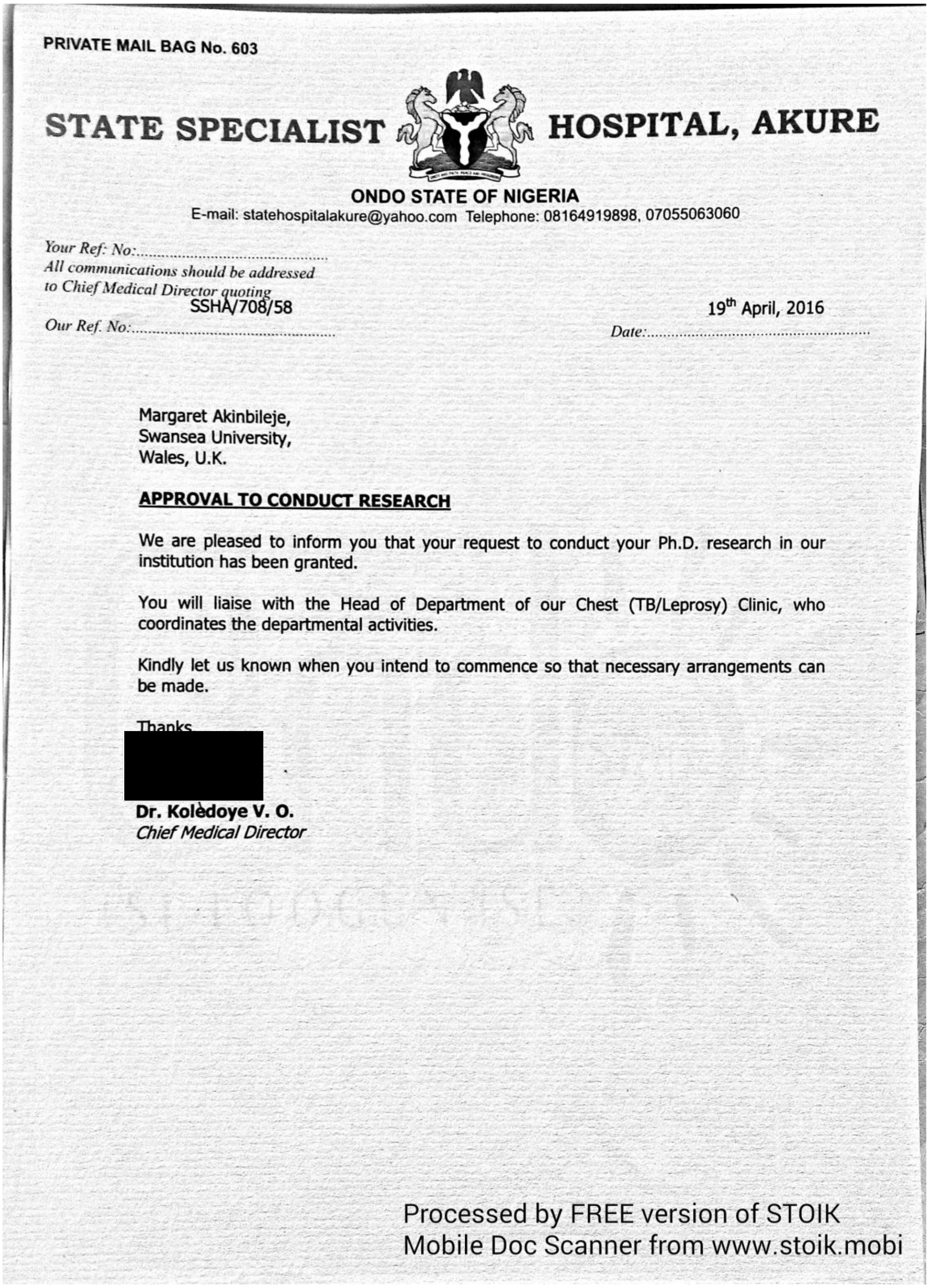
Wishing you very best of luck in your study.

Thank you.

[redacted]

Dr. O.A. Awodele *MNIQS, RQS.MAPM*
Head of Department

HOD
QUANTITY
SURVEYING



PRIVATE MAIL BAG No. 603

STATE SPECIALIST HOSPITAL, AKURE

ONDO STATE OF NIGERIA
E-mail: statehospitalakure@yahoo.com Telephone: 08164919898, 07055063060

Your Ref: No:..
All communications should be addressed
to Chief Medical Director quoting
Our Ref. No: SSHA/708/58

Date: 19th April, 2016

Margaret Akinbileje,
Swansea University,
Wales, U.K.

APPROVAL TO CONDUCT RESEARCH

We are pleased to inform you that your request to conduct your Ph.D. research in our institution has been granted.

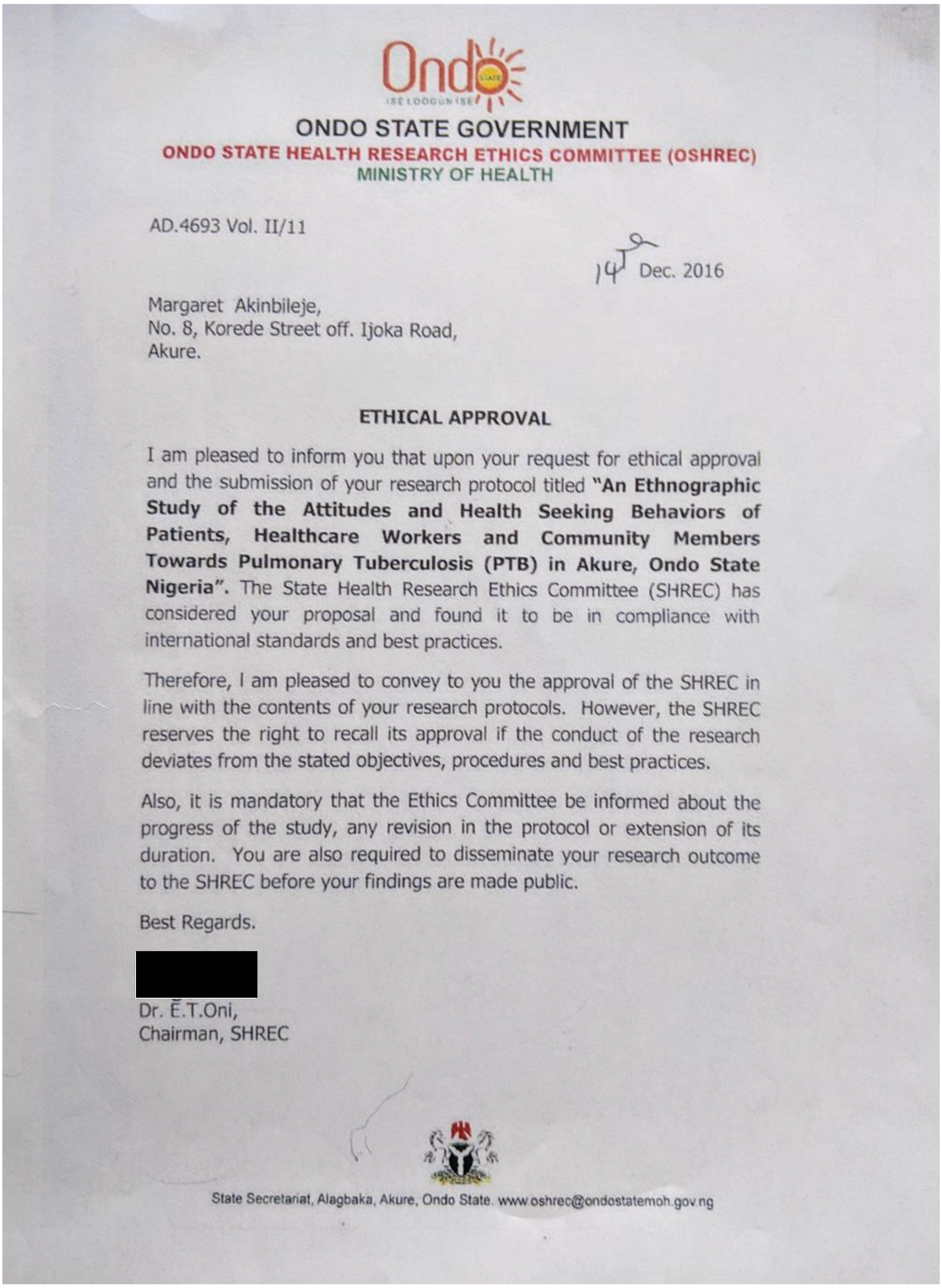
You will liaise with the Head of Department of our Chest (TB/Leprosy) Clinic, who coordinates the departmental activities.

Kindly let us known when you intend to commence so that necessary arrangements can be made.

Thanks

[redacted]

Dr. Kolèdoye V. O.
Chief Medical Director



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ISẸ LOOGUN ISẸ
ONDO STATE GOVERNMENT
ONDO STATE HEALTH RESEARCH ETHICS COMMITTEE (OSHREC)
MINISTRY OF HEALTH

AD.4693 Vol. II/11

14th Dec. 2016

Margaret Akinbileje,
No. 8, Korede Street off. Ijoka Road,
Akure.

ETHICAL APPROVAL

I am pleased to inform you that upon your request for ethical approval and the submission of your research protocol titled **"An Ethnographic Study of the Attitudes and Health Seeking Behaviors of Patients, Healthcare Workers and Community Members Towards Pulmonary Tuberculosis (PTB) in Akure, Ondo State Nigeria".** The State Health Research Ethics Committee (SHREC) has considered your proposal and found it to be in compliance with international standards and best practices.

Therefore, I am pleased to convey to you the approval of the SHREC in line with the contents of your research protocols. However, the SHREC reserves the right to recall its approval if the conduct of the research deviates from the stated objectives, procedures and best practices.

Also, it is mandatory that the Ethics Committee be informed about the progress of the study, any revision in the protocol or extension of its duration. You are also required to disseminate your research outcome to the SHREC before your findings are made public.

Best Regards.

[redacted]

Dr. Ẽ.T.Oni,
Chairman, SHREC

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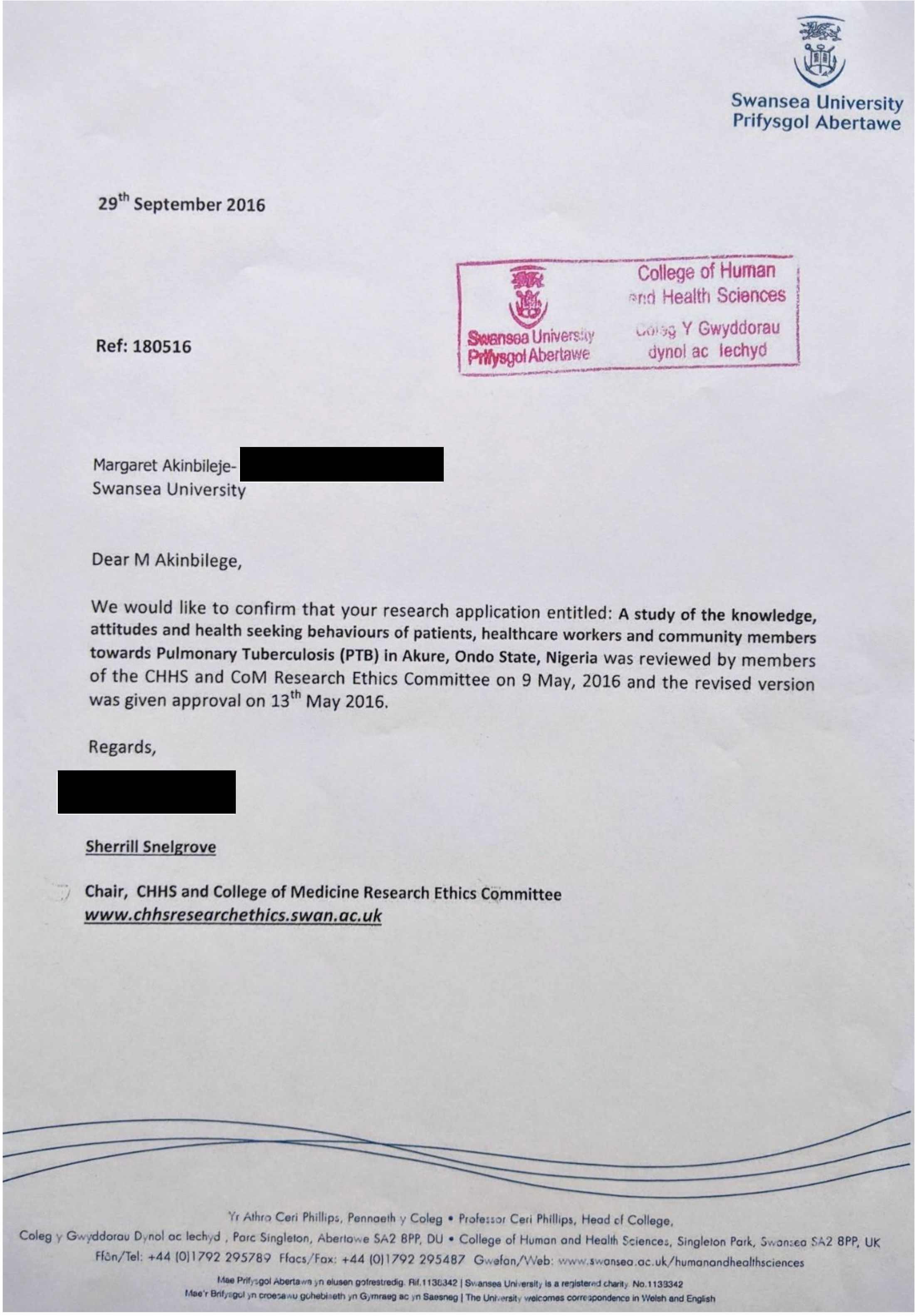

Swansea University
Prifysgol Abertawe

29th September 2016

College of Human
and Health Sciences
Coleg Y Gwyddorau
dynol ac Iechyd
Swansea University
Prifysgol Abertawe

Ref: 180516

Margaret Akinbileje-[redacted]
Swansea University

Dear M Akinbilege,

We would like to confirm that your research application entitled: **A study of the knowledge, attitudes and health seeking behaviours of patients, healthcare workers and community members towards Pulmonary Tuberculosis (PTB) in Akure, Ondo State, Nigeria** was reviewed by members of the CHHS and CoM Research Ethics Committee on 9 May, 2016 and the revised version was given approval on 13th May 2016.

Regards,

[redacted]

Sherrill Snelgrove

Chair, CHHS and College of Medicine Research Ethics Committee
www.chhsresearchethics.swan.ac.uk

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Mae Prifysgol Abertawe yn elusen gofrestredig. Rif.1138342 | Swansea University is a registered charity. No.1138342
Mae'r Brifysgol yn croesawu gohebiaeth yn Gymraeg ac yn Saesneg | The University welcomes correspondence in Welsh and English

Appendix R: Research study Poster on Pulmonary Tuberculosis in Akure South Community Ondo State Nigeria.

[redacted]

A study of the knowledge, attitudes, and health seeking behaviours of patients, healthcare workers and community members in relation to PTB in Akure, Ondo State, Nigeria.

Researcher Name: Margaret Akinbileje I am a M.Phil student in public health at Swansea University Wales, UK.

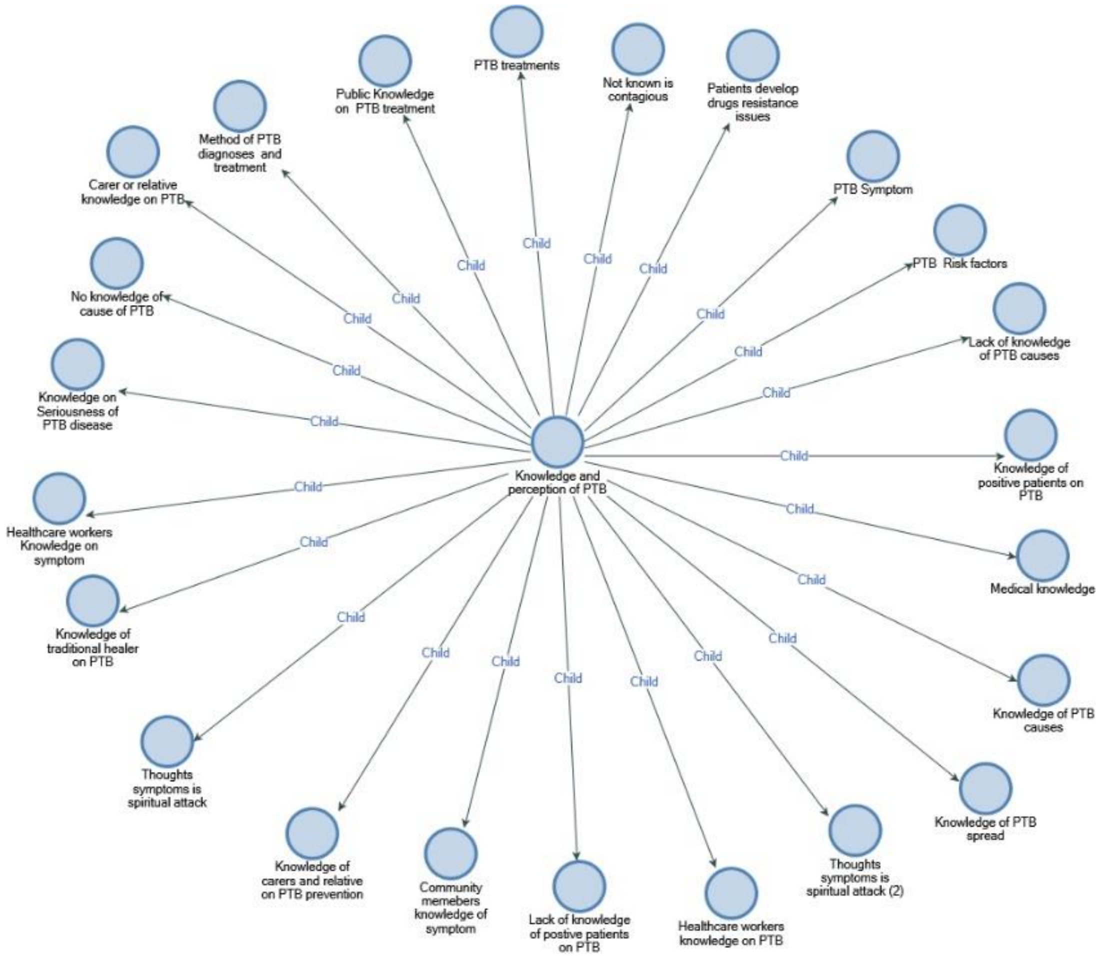
As part of my study, I will be observing what is taking place here in outpatient department from day to day. I will be observing what health information is freely available or given to patients and how patients use it.

The study has been approved by the ethics committee of the College of Human and Health Sciences, Swansea University in United Kingdom, and the Ministry of Health in Nigeria. In addition, the Permission of the Director of hospital has been granted. If you want to know more or are interested in taking part in the study, then please contact me at the address below:

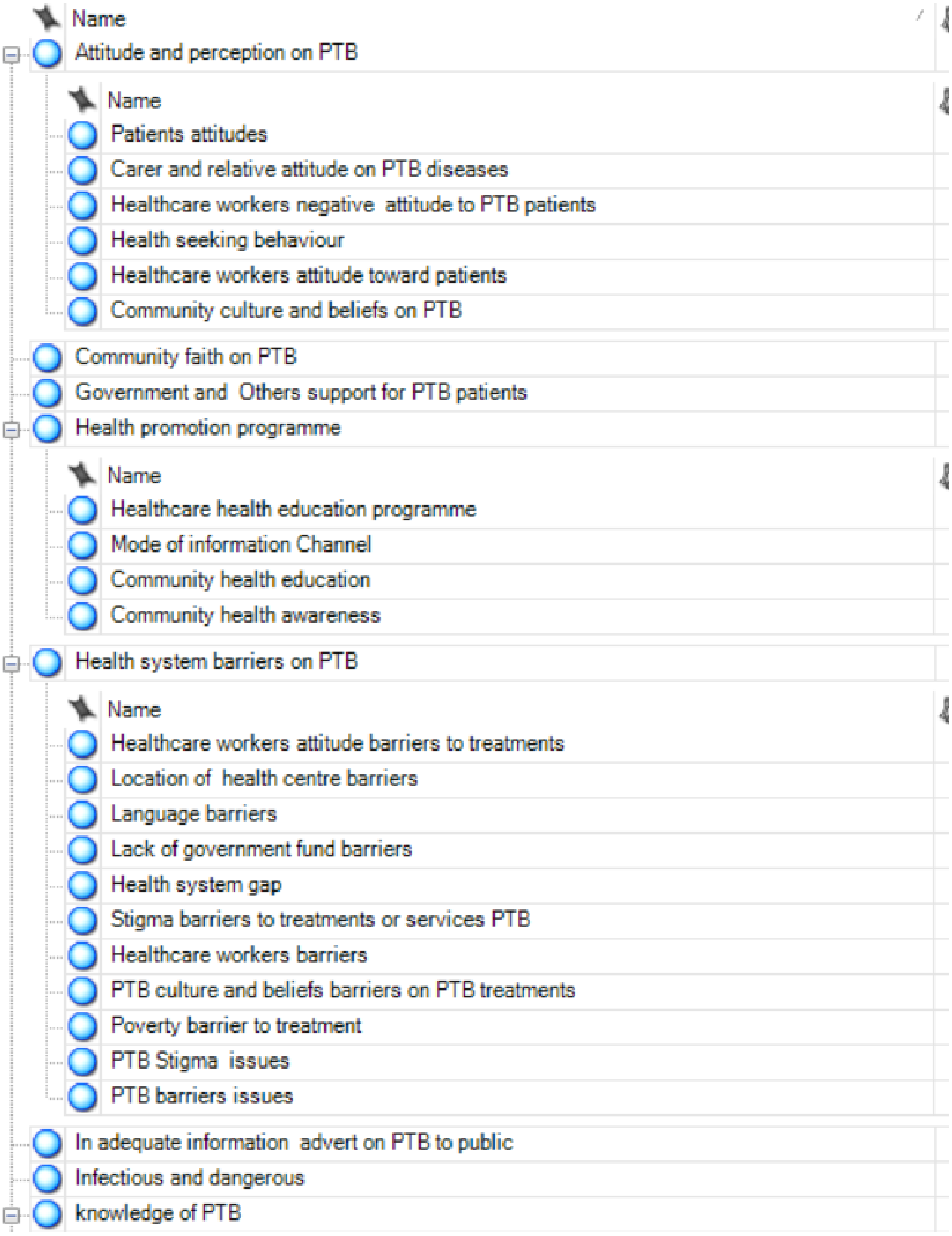
Margaret Akinbileje

Email address:
Mobile: ………………….
Thanks for your time

APPENDIX S: NVivo coding process.

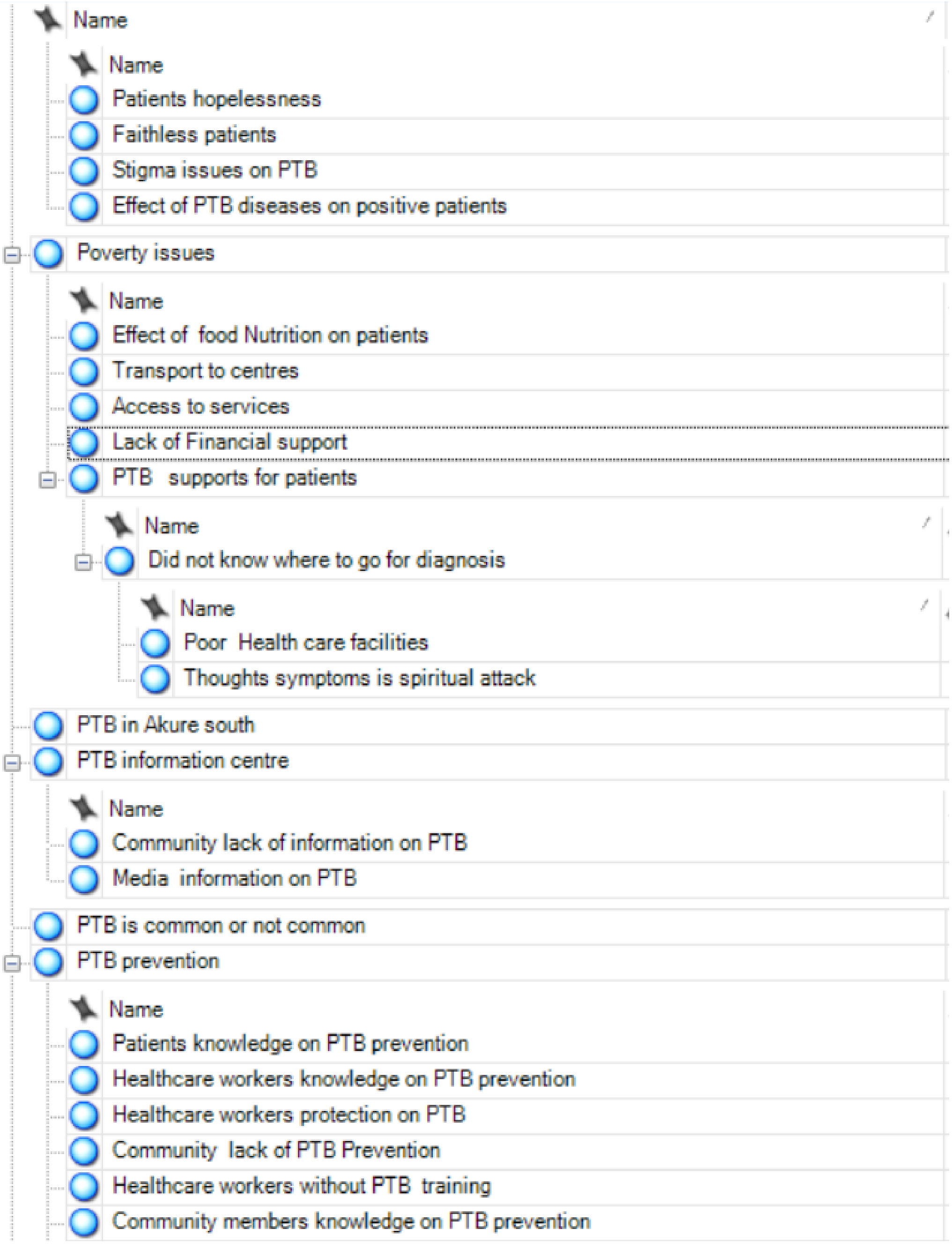


The themes generated from the NVivo codes and the NVivo step by step codes



Name

- Attitude and perception on PTB
  - Name
  - Patients attitudes
  - Carer and relative attitude on PTB diseases
  - Healthcare workers negative attitude to PTB patients
  - Health seeking behaviour
  - Healthcare workers attitude toward patients
  - Community culture and beliefs on PTB
- Community faith on PTB
- Government and Others support for PTB patients
- Health promotion programme
  - Name
  - Healthcare health education programme
  - Mode of information Channel
  - Community health education
  - Community health awareness
- Health system barriers on PTB
  - Name
  - Healthcare workers attitude barriers to treatments
  - Location of health centre barriers
  - Language barriers
  - Lack of government fund barriers
  - Health system gap
  - Stigma barriers to treatments or services PTB
  - Healthcare workers barriers
  - PTB culture and beliefs barriers on PTB treatments
  - Poverty barrier to treatment
  - PTB Stigma issues
  - PTB barriers issues
- In adequate information advert on PTB to public
- Infectious and dangerous
- knowledge of PTB



- Name
  - Name
  - Patients hopelessness
  - Faithless patients
  - Stigma issues on PTB
  - Effect of PTB diseases on positive patients
- Poverty issues
  - Name
  - Effect of food Nutrition on patients
  - Transport to centres
  - Access to services
  - Lack of Financial support
  - PTB supports for patients
    - Name
    - Did not know where to go for diagnosis
      - Name
      - Poor Health care facilities
      - Thoughts symptoms is spiritual attack
- PTB in Akure south
- PTB information centre
  - Name
  - Community lack of information on PTB
  - Media information on PTB
- PTB is common or not common
- PTB prevention
  - Name
  - Patients knowledge on PTB prevention
  - Healthcare workers knowledge on PTB prevention
  - Healthcare workers protection on PTB
  - Community lack of PTB Prevention
  - Healthcare workers without PTB training
  - Community members knowledge on PTB prevention

APPENDIX T: Participant Interview transcribe form Yoruba to English and English to Yoruba

Women Muslim focus group interview Yoruba to English

Question: Please tell me what you know about PTB in Akure?

Answer:

Participant1: What I know about PTB disease is that people having the disease look very thin and the disease eat the blood of the person having the disease so if care is not taken and the disease is eating up the person the person will eventually die. Or go to the hospital to see the doctor for testing and given medication and stated using it. The disease is not something you can hid.

Participant2: You know if the disease is in the body the person will be coughing, if the disease is too long in the body it will damage the lung. If the disease damages the lung the next thing is dead. It is advisable to take care of the disease before it reaches that level.

Participant3: PTB is not a good disease in the body when the person is cough, he/she will be thin and not be able to eat very well.

Participant4: The disease is not good in the body if someone has it the person will not be able to talk or stay where there frying food is prepared because it will go to the throat and the person will started coughing and he/she will not be comfortable.

Participant5: What I Know is not something that is good for the body. The cough is not something that is very good. If you see someone having the cough you will know the person will not have free movement and not comfortable in the body. There is nothing that person can do to make him/her comfortable. If the person is coughing some time the person will be coughing blood, unless care is taken and proper treatment to cure the PTB disease the person will die. At that stage, the curing of the disease may be difficult only God can help. Even, if the person stays near people, people will be running away from him/her, no one would like to eat with him/her, and the person will be thinking what is happening to him/her. The person must have proper care and as well as prayerful to God to cure the disease.

Participant6: The disease is not a good thing to happen to someone body because anybody that has it will not be able to do anything.

Participant7: Another issue is that whoever has the PTB disease, It can spread it to another person. If someone cough near people, the people near them can catch it when that person cough. The disease is not good at all therefore people should take care of it before it spread to all the body.

Question: How did people know that they have the disease?

Answer:

Participant1: The person may not know but if the person is coughing and coughing for long time and used medication and do not go the person should go to the hospital and see doctors for test and if the doctors do various tests and the result come out positive that means the person is having PTB. But if someone is having cough for a long time and the person is losing weight then people will advise him /her to see doctor then the doctor will ask questions to find out how long the person have been suffering from the PTB disease. Then the doctor will open a card for him/her and send the person for test and if the test come out positive then the doctor will place him/her on medication. If the patient is using the drug regularly as prescribe by the doctors the disease will be cure. But some people may not care and those who wanted to get well use the drug and if the drug finish, and the PTB is not cure the person will go back to see the doctor again and the doctor will recheck him/her and recommended another drug.

Participant2: How people know they have PTB is because there are many coughs exist, but as for PTB cough is very different and strong and loud unlike other cough, when PTB patients cough they cough like when a dog is barking. It will be very strong because they will be using all their energy to cough that will make them know that he/she is having PTB. And may God not allow us to encounter the disease.

Participant4: The cough is different as it has been described by others. PTB is a very strong disease and differ from other diseases. Some cough can be cure with palm oil, but in case of PTB it will not go, and the person will be cough and cough continuously and is difficult from other cough. Although people use Tom, Tom but the cough did not go that mean is a PTB cough, because the person will be powerless the same time very thin, and people will be wondering that this your cough is not a normal cough and that you need to see doctor and the doctor will carry out test and if positive he/she will be place on treatment or medication.

Question: What do you know that causes PTB?

Answer:

Participant 1: The cause of PTB may be difficult to say because is not because of a particular food they eat that cause the disease or water they drink that causes it is only God that know it. We do not know, the only people that can know the causes is the professional doctors. They are the people who can tell the causes of PTB. All other participants agreed.

Question: Is PTB a serious disease?

Answer:

Participants: yes, is a serious disease, within two minutes that person with PTB cough the people around him/her will be worried and they themselves will be breading like someone who is about to die, and the person will be sweeting all over his/her body and the eyes will be red.

Question: How does PTB spread?

Answer:

Participants: Most of the time doctors normally say that as we are standing like this, if a person with PTB cough and do not cover his/her mouth as PTB is an airborne disease, the air will carry the droplet any if anybody inhaled it the person will catch it. Again, people with PTB cannot share the same spoons, cups with other people, and people should not be close with them to afford contacting the disease, as it is very dangerous.

Question: Please can you tell me if you know people that have PTB before?

Answer:

Participants: I don’t know anybody that have the disease, but when I was working as a nurse, I work in TB department and have contact with many patients with PTB both men, women and children. Anybody can catch the disease. For those that have the disease, when they come to the hospital to the doctors whatever the doctor recommended for them, they use it but some may be injected and some may be inform of tablets or water. Whatever their test say is what they will prescribed for them. Generally, the normal test they ask them to do is to give them three containers to take home for three days. The first day in the morning is to put their sputum in the first container and covered it, same the second day and the third day and bring it to the hospital for testing. If the result come out either positive or negative the doctor may send the patient to the old hospital for more test. If the test is now positive, then the doctors will place the patients on treatment. The treatment of the drug may be three or more months to use the drug. In most cases when the patients come to the hospital, they look very thin and haggard.

Question: Is PTB disease common in Akure area?

Answer:

Participant2: It is not common.

Participant1: We can say it is common because Akure is a metropolitan place, Akure is the capital of Ondo state, at the same time many people come from different places some are refered from small hospital in where they leave to see doctors in order to receive proper treatments. Therefore, we cannot say is not common in Akure. Because different people are here in Akure. For example, in the state specialist hospital in the morning many PTB patients both men, women, young and old are pack there receiving treatments.

Participant3: The people with PTB that their condition is not too bad and they can go and see the doctor they will be cure. But those that stay at home and no good care will die. I have seen PTB patients that are cure and it’s don’t take more than two months before the patients was cure.

Participant 4: Yes, is common in Akure, if someone go to state hospital, they will know their common. Because of many patients in the hospital, and some are having it but they will not come out.

Other participants: we both agreed that some patients will not have enough money to buy the drugs and some will die due to poverty.

Participant1: Before the government was given them free drug but now individual patient has to buy the drug by him/herself. In some cases when the patients go to the chemistry to by the drugs, the drugs may not available, in order to take care of themselves they will find alternative methods of treatment. In some cases, if the patients are many, they can ask them to donated money for the healthcare workers to go and buy the drugs for them and dis tribute it to them to take home and use. The major problem is money, and some people may not have the money to pay for the drugs, that is the problem. Therefore, poverty is no 1 problem.

Question: Is there any help for the PTB patients

Answer:

Participants: Yes, we can say but they are help for them, some people wanted to render help if they have money to render the help and for those who did not have the capability what can they do? As stated early on, for some time now, everybody is just managing, those who are working for government there was no monthly payment, if not because of that everybody could have gather together and contribute for the PTB patients to assisted them with their drug. But when there is none what can we do?

Question: If you are told you have PTB what will you do?

Answer:

Participant1: If it happens, there is nothing anybody can do than to pray for God to help. If it happened to someone am sure helper from right and left will come to assist.

Participants: they all agreed to the above.

Question: **If it happens will the patients tell the relatives**

Answer:

Participants: Is the family that need to be inform first, because is the family who will support them. They cannot hide it the disease, mostly is the family that help most, especially the family that are rich they will take them to the hospital for treatment. Although some people may not want people to know they may be hiding it from people at the end of the day if the family knowns they will still help by sending him/her to the hospital in order to assist.

Participant5: Even though they try to hide it people will still know, not only PTB disease patients that does that the HIV too are trying to hide their disease too. Because of the stigma associated with it. Thus, people should know hiding is not the best option, by trying to let people know will help the patients. Even, people may know another alternative medicine that may be different from the hospital medicine that can also cure the disease if it is detected earlier.

Question: If one family with PTB disease, will the other family without PTB disease allow to marry from that family?

Answer:

Participants: All the participant**s** agreed that the family without the disease wouldn’t allow their family to marry from the PTB family. Even if they married and have children and the family get to know they will ask them to divorce. They will not agree the family to marry from such family.

Question: Do you know if PTB patients will allowed to stay or leave with people or attending meeting with people?

Answer:

Participants: It will be difficult even if people did know, the patients will be ashamed in that he/she may be thinking that people may already know and to be with people or talk to people may be difficult because of the stigma.

Participant1: In my work place an incident happy to my work colleague who had PTB without anybody knowing. One day at work the lady was seriously ill and she collapse, and she was rushed to the ward for treatment it was during the investigation on TP and various test performed on her that was discovered that she had PTB. She was sent to another hospital for treatment after her treatment she requested for transfer to another hospital as she was ashamed to come back and work with her colleagues due to the stigma associated to the PTB.

Question: Do you know if PTB is a problem in Akure?

Answer:

Participant1: Yes, it is a problem. But if people can come out and see doctors it will not be a problem. If the people can take their treatment seriously, but if he/she is trying to hide the disease it will be a problem.

Question: What are the risk factors of PTB?

Participant: All the participants I do not know what the risk factor of PTB are

Question: what about dirty places, overcrowded accommodation?

Answer:

Participants: Yes, all the participant agreed that dirtiness and overcrowded can be a risk factor

Question: Do you think local beliefs and culture affect how people look after themselves or seek help when they have PTB?

Answer:

Participant1: Shame is the most major problem why people do not want to go and seek help, if people know they will not help them because of fear of infected.

Participant 2: If it happens in the family no members of the family would like to eat or share anything with the infected person. They will not tell the patients but indirectly they will try to run away from the patient. Another problem is that if someone is having the PTB and tell someone is having it, that person will tell others and even encourage people not to go near the parson, that is why many people don’t bother to tell anybody than the doctor.

Question: What alternative help can the PTB patients receive?

Answer:

Participants: Other help will be from native doctor who are very good in curing PTB disease by using native herbs and concussion. Other diseases such as HIV can also be cure with native medicine.

Question: Can the patients get help from the doctors and nurses?

Answer:

Participants: Yes, they can also get help from people with traditional healers.

Question: What do you know about traditional healers?

Answer:

Participant1: The traditional healer are very good, God created them to cure diseases by using leaf and herbs when they missed everything together it also cure all those bad diseases. But some people know the cure of all these diseases but some of them are not genue and those that are genue are very difficult to find. Some of them are liars, what they want is just to eat people money and they cannot cure the disease.

Question: Do you beliefs the traditional healers can cure the PTB disease and it would not come back?

Answer:

Participants: Yes, some can cure PTB totally and it will not return. Some of their drugs are like the hospital ones, some of them are too expensive and their medication may not work, and some may not charge any money, they will ask the patients to come back if the drug work and come and give him anything he/she want.

Question: what do you think of the collaboration between traditional healers and orthodox medicine in curing PTB disease?

Answer:

Participant2: Yes, they can work together but mostly the doctor do not want to work with traditional healers. Because they do not want patients to use traditional healers medicine with their drugs, they will not accept. But the patients can stay in the hospital use the doctor drug and when he/she get back home he/she can use the traditional healer medicine to cure the PTB disease. In some cases when doctor can not cure patient’s illness the doctors will advise the patients family to take the patients home and try alternative medicine like traditional healer’s herbs.

Participants: all agreed that if patient treatment is not improving the doctor will call the patient’s relative that they should take the patients home to try another native doctor treatment. If they do not want the patient to die.

Question: What do you hear traditional healers saying is the cause of PTB?

Answer:

Participants: No. The causes of the disease may be natural from the body, is not cause witchcraft or devil.

Participant4: There is no doctor that can said so is only the traditional healers that can say so.

Participant5: what doctor can say is that if there is someone among the family that practices witchcraft and delay the patient treatment healing, the doctor can tell the nurses not to allow the particular person to come in.

Question: How will the doctors know that the particular person is practicing witchcraft?

Answer:

Participants: Some doctors will know because so of them have a spiritual power to see thing.

Participant1: for example, one lady from Idanre, she was pregnancy waiting to have baby, she has been in labour to deliver her baby, but she couldn’t then the family brought her to the hospital, when she got there, as a normal practice in the hospital only the husband is allowed to enter the labour room. Immediately the husband was called in the mother of the pregnancy woman remove her head tie and tied it round her waist and she was greeting everybody, but the nurses notice that the woman behaviour was strange, she was standing by the window, and she was told to leave the window side, she left and later came back again. The nurse and doctors notice that the particular place where the woman came from was very bad area in relation to witchcraft practices. The people in that area will make sure that whoever they bring into the hospital die before they go back, they have seen many instances like that. Therefore, they decided to write prescription for her to go to a far place and get the medicine. As she left the hospital not up to 3minutes the lady in the labour room delivered.

Question: What are the barriers facing by the PTB sufferers in relation to treatment and cure?

Answer:

Participants: Poverty is no1 barrier. Lack of money to pay for food and medication for example a lady was ill and came to the hospital for treatment after seeking the doctor she went back home with her hospital card and doctor prescription given to her, on her way home she collapses and die just because there was no money to buy the drug and food to keep her going.

Question: Can lack of information be a barrier?

Answer:

Participants: Yes, if people did not have knowledge of the disease, it will be difficult to seek help.

Question: What help is available for PTB patients, or do you think that the help the government is doing now is ok or not?

Answer:

Participants: The help they are offering the patients at present is not enough, they need to render more help for the patients.

Question: Do you know how PTB can be prevented?

Answer:

Participants: The only way is to ensure there are medication for patients because if they are cure there will be no spread of PTB. Another point is money.

Question: Do you think that the way the government is educating Akure community is good enough?

Answer:

Participants: As the government is telling people that the disease is out there, what they need to do is to make sure there is a drug available for the patients to use. Some people may think that drug is available on get to the hospital he/she may be told there is no drug.

Question: Do you not think that the government should put a poster outside for people to see with messages written this disease will not kill if you get help and go to the hospital for treatment in time?

Answer:

Participants: That is how it should be if they can do that it will be better and go from house to house and let people know that the treatment is free and people should go to the hospital for treatment.

Question: where will people go to find out about PTB information?

Answer:

Participants: People should listen to radio, TV everybody will hear or go to hospital.

Question: Those that are admitted in the hospital are they in the same ward with people with TB?

Answer:

Participants: No, they were not in the same ward they were separated. They ward are different.

Question: what type of information do you think will be helpful for people to know about this PTB disease?

Answer:

Participants: The information that will be helpful is to cover your mouth when cough all these are in health talk.

Thanks everybody for your participation in this interview. This is the end interview.

Interview with Traditional healer Akure Yoruba to English

Question: Please can you tell me what you know about PTB in Akure?

Answer: PTB is a disease that can be cure, is a dangerous disease as well as provided you do not expose yourself it will be cure.

Question: What is your experience as traditional healer in this PTB disease?

Answer: My experience is that the disease can be inherited or not inherited, the more you expose yourself the more the disease go up.

Question: How do you see your role as a chief and traditional healer in the context

of PTB disease?

Answer: As I said earlier, I do cure the disease, I use alternative therapy.

Question: Is it only PTB you can cure, or do you cure other diseases as well?

Answer: I do cure other diseases.

Question: Which other disease do you cure?

Answer: Thank so much, if a woman is having leprosy and come to me to cure, I can do it, as well as Fibroid, and other disease I can cure.

Question: What type of medicine do you use to cure those diseases?

Answer: I do go to my farm to cut leaf or uproot of leaf and other leaf and missed them together and give it to the person the person will be cure.

Question: You told me it can be cure did the people having the disease belief the disease can be cure?

Answer: Yes, they belief it can be cure if they take the medicine. I cure many diseases.

Question: When you cannot cure the patients where do you referrer them to?

Answer: If I cannot cure them I referrer them to the hospital.

Question: Do you know if those patients that come to you use Orthodox medicine and traditional medicine together?

Answer: I do not know because people may like to go to the traditional healer first and other may like to go to the hospital.

Question: Can they missed both traditional healer and orthodox medicine together?

Answer: They can but some medical doctor will not allow as they say it cannot agree with traditional healer medicine, it depend on the patients.

Question: As a traditional healer what do you do when you are not well yourself?

Answer: I will look after myself, I will prepare leaf and Agbo and drink and I will be well.

Question: If those leaf and Agbo cannot cure you what will you do?

Answer: It will cure me, I know for sure I will be cure. I know to the extend it will cure me.

Question: Do you need to go to the hospital for help?

Answer: I do not need to go to the hospital for help, I have cure someone with short of blood before I know how to restore people blood back in case they are short of it.

Question: What are the barriers face by the PTB sufferers in relation to treatment and cure

Answer: money

Question: What do you tell the PTB patients about the causes of their PTB diseases?

Answer: Whenever, I give them medicine to cure their illness I will tell them what they need to eat and what they must not eat.

Question: Do you tell them this is a punishment from God or from witchcraft?

Answer: As I have said before, that some people inherited it why some of the illness is natural I mean just come.

Question: How do you measure the medicine you give to your patients?

Answer: Is that why many people say that herbalist medicine has no measurement. We measure it with a glass of cup why some will be use with a spoon.

Question: Do you know how PTB can be prevented?

Answer: Thank very much, to prevent PTB is very easy, make sure your environment is clean, you do not take too much of alcohol and be careful about what you eat.

Question: What do you think about collaboration between traditional healers and orthodox medicine to cure PTB?

Answer: Medical doctors must have knowledge of traditional healer medicine with that they will be able to cure any diseases that come to them. They should understand the traditional healer type of leaf and herbal concoctions, and combine with their medicine so that they can cure any disease that come to them. The doctor medicine can cure but not finally but the herbal concoctions can cure PTB and it will never return.

I have said before about leprosy, if I prepare the drug and for someone with the disease, he/she will be vomit lizard and the person will be cure immediately unless orthodox medicine that will take time before the person will be cure.

Question: Do you know if PTB has effect on people marriage?

Answer: Yes, it has effect, for example if someone having the PTB disease kiss another person the person will be infected.

Question: Please tell me if neighbour want to marry from the family of people having PTB, will the family without PTB marry to that family?

Answer: If they are a good family, they will not agree with themselves, that is why I said it is an inherit and the more they marry each other the more the disease will continue spreading and it is not good.

Question: What do you think that Nigeria government should do for traditional healers to have a role in fighting the PTB disease?

Answer: Thank so much, the government does not belief in traditional medicine, suppose they do they could have employee traditional healer to work with doctors in curing PTB and other diseases. They do not belief we have been using traditional medicine before our father.

Question: Where do you get your power and knowledge to cure patients from?

Answer: I inherited it from my father.

Question: Where do you get your information, you use for your herbal and concoctions, is it from your father as well?

Answer: Yes, from my father, when I was young I was asked to help my father to do all those things.

Question: He teach you all about the traditional medicine practices?

Answer: Yes, he thought me everything.

Question: Do you think local belief and culture affect how people look after themselves and seek help when they have PTB?

Answer: Yes, people beliefs that bad people can send PTB to them, that is why people should be careful.

Question: Can PTB affect people social interaction with other people?

Answer: Yes, it is very dangerous disease because if the infected person cough and another person inhale it that person will be infected. That is why is necessary that when they cough they must cover their mouth as PTB is an infectious disease.

Question: what do you think about the attitude of healthcare workers to PTB patients?

Answer: Some of the healthcare workers are very bad and the way they do to the patients make many not want to go back to the hospital. Again, must of the people do not want people to know that they were having the diseases because of stigma and the more they keep themselves in the house the more is dangerous for them.

Question: They complained that the doctors and nurse stigma ised them, they don't want to help them is that true?

Answer: Yes, they do not want to go near them that what the patients says.

Thanks, this is the end of the interview.

ORO IKADI: IFORO JOMI TORO ORO PELU AWON AKOPA

Iforo jomi toro oro awon obinrin Musulumi alafojusun.

Ibeere: Jowo so fun mi ohun ti o mo nipa PTB ni Akure?

Olukopa Akoko: ohun ti mo mo nipa arun PTB ni wipe, awon ti won ba ni arun yi man gbe gidi gan nitori, arun yi maa ngbe eje awon ti won ba ni, eyi ti o si lee ja si ku fun irufe eni be bi won ko ba se amojuto re tabi kin irufe eni ma lo si ile iwosan lati lo yoju si awon dokita fun ayewo ati ogun pelu alaye bi won o ti lo. Arun yi ki se ohun ti enikeni le gbe pamo sabe aso.

Olukopa keji: Eniyan yio mo bi arun yi ba wa ni ago ara re nitori iru eni be yio ma wuko. Arun yi a si maa ba opa emi je bi o ba ti pe lara eniyan. Bi opa emi ba si ti baje, iku loun ti o kan. Idi re ti o fi se pataki ki eniyan se itoju arun yi ki o to de ipele nla.

Olukopa keta: PTB ki se arun to dara rara nitori, bi enia ba n wuko, be ni yio maa gbe, ti ko si ni ile jeun daradara.

Olukopa Kerin: Arun yi ko dara ninu ago ara eniyan, nitori eni ti o ba ni arun yi ki le soro tabi lee duro nibiti won ba ti n din ounje nitori, eefin ounje naa yio o gba ona ofun eni naa ti yio si bere si ma wuko, ti ara iru eni be ko si ni le mo.

Olukopa Karun: Oun ti mo mo ni wipe arun naa ko dara ni ago ara. Eni be yo ma wuko, iko wiwu ko se oun to dara. Bi a ba ri eni ti iko na nyo lenu, iru enia be ko ni ni ominira ara re tabi ki ara re le le, ko si si oun ti a le se lati mu ki ara re le. Iru eni be nigba miran ti o nba n wuko a maa po eje, bi itoju ko ba si si fun iru eni be, iru eni be le ku. Itoju arun yi ni iru ipele yi a ma l'agbara to si je wipe owo iranlowo Olorun ni oun gbogbo ma n wa. Awon eniyan a maa sa fun awon to ba lugbadi arun yi bi won tile n gb'iyanju lati sun mo awon eniyan, to si je ero oun to le sele si won ni yio gba okan won. Awon eniyan wonyi a maa nilo itoju to peâye ati adura fun iwosan ninu arun yi.

Olukopa Kefa: Arun yi ki se oun ti o dara ti o ye lati sele si ago ara eniyan nitori eni to ba lugbadi re ko ni le se ohunkohun.

Olukopa keje: Ohun afiyesi miran ni wipe, enikeni to ni arun PTB le tan ka si awon elomiran. Bi eni be ba wuko, awon to ba wa ni ayika re le ti ibe gbe iko naa. Arun yi ko dara, lo se se pataki ki awon eniyan se amojuto ara won ki o to tan ka gbogbo ara won.

Ibeere: Bawo ni awon eniyan se maa n mo wipe awon ni arun yi?

Idahun:

Olukopa Kinni: Eniyan le ma mo wipe oun ni arun yi sugbon bi eniyan ba wa n wu'ko lera lera ti o si ti lo egboogi ti ko si si ayipada, iru eni be ni lati lo si ile iwosan, lati ri awon dokita fun oniruru ayewo. Bi esi ayewo ba wa fi idi re mule wipe eni naa ni arun PTB, a je wipe eni be ni arun naa niyen. Bi eniyan ba ti n wuko fun igba pipe ti o si n ru, nigba naa ni awon eniyan si gba eni be ni amoran lati lo ri awon dokita ti won o si bi lere igba ti arun PTB ti n da laamu, leyin eyi, ni won o fun ni kaadi ti won o si ran lo lati lo se awon ayewo orisirisi. Ti ayewo ba si fidi arun naa mule wipe o nbe l'ago ara eni bee, nigba naa ni awon dokita yio bere itoju re nipa kiko ogun fun. Bi iru eni be ba wan lo ogun re dede, arun naa yio san, bi o tile je wipe, awon kan wa ti won maa n dagunla, sugbon awon ti won ba fe ni iwosan, won a maa lo oogun won tan bo ti to ti won o si pada lo si odo dokita fun atunyewo ati ogun miran bi arun naa ko ba i ti san.

Olukopa Keji: Bi awon enyan yio se mo wipe awon ni arun PTB ni wipe won o maa eyi to yato si awon iru iko ti o wa. Iko ti won yio dabi gbigbo aja. Iko ti won yio le, nitori gbogbo agbara won ni won on maa fi wu. Nipa bayi, eniyan yio mo wipe ohun ni arun PTB. Ki Olorun ma se je ki a ri iru arun yi.

Olukopa keta: Iko eyi yato gegebi awon yoku mi ti se se alaye re, PTB je arun to gbepon ti o si yato si awon arun yoku. Bi awon eniyan n tile nlo epo pupa lati dewo aisan iko gbogbo, eyi ko ni nkan se nipa PTB, nitori, eni naa yio maa wu'ko leralera. Iko ti tomtom ko ba ti gbo, je ti PTB nitori, iru eniyan bee ko ni l'agbaa pupo bee ni yio si maa ru, yio wa je iyalenu fun awon eniyan wipe iko eyi ki se lasan ti won yio si gba eni na ni iyanju lati lo ri dokita. Bi dokita ba si fi idi aisan naa mu'le wipe bee lori, won sib ere itoju fun iru eni bee.

Ibeere: Ki lo mo to je okunfa PTB?

Idahun:

Olukopa Kinni: Okunfa PTB soro die lati so ntori ki se ounje kan pato lo ma nfa tabi omi ti eniyan ba mu, Olorun nikan lo ye, ko ye eniyan. Awon to tun le ri nkan so lori re ni awon akose - mose dokita. Awon wonyi lo le so okunfa PTB. (Gbogbo awon akopa to ke gba be).

Ibeere: Nje PTB je arun to le to bee?

Idahun:

Olukopa: Bee ni, PTB je arun to lagbara nitori, laarin bi iseju meji, eni naa yo ma wu'ko debi pe eni to ba wa ni ayika re yio wa ni iberu bojo ti awon pelu yio ma mi helehele bi eniti o fe ku. Eni naa fun ra re yio si ma laagun ni gbogbo ara re ti oju re yio si pon.

Ibeere: Bawo ni PTB se ntan kale?

Idahun:

Olukopa: Ni opolopo igba ni awon dokita ma se lalaye wipe bi a ti jo pejo yi, bi alarun PTB kan ba wa laarin wa ti o si wu'ko, awon ti yio ko yio po nitori arun naa ma nba afefe rin ni. Nitori na ni alarun yi ko se le ba awon eniyan pin ohun ounje tabi sun mo awon eniyan poju lo nitori wipe o lewu.

Ibeere: Nje e le so fun wa eikan ti e mo to ni arun yi?

Idahun:

Olukopa: Emi ko mo eniti o ni arun yi, sugbon nigbati mo je osise ni ile iwosan ni eka ti iko gbemigbemi (TB) ni mo ti se alaba pade awon alaisan wonyi l'okunrin, l'obinrin, l'omode ati agba. Ko si eniti ko le lugbade arun yi. Bi enikeni ba si nii ti won si to awon dokita wa ti won se ayewo fun won, oogun ti won ba ti so wipe ki won lo ni won maa nlo, bi o tile je wipe awon kan le gba abeere ti awon si lee je ogun onikoro tabi olomi.

Lopo igba, ayewo ti o wopo ti won ma nse fun won ni ki won ko agolo meta fun won lo si ile wipe ki won fi ito tabi kelebe enu won si inu agolo ekini ni ojo akoko, agolo ikeji ni ojo keji ati agolo iketa ni ojo iketa ki won si gbe won pada wa si ile iwosan fun ayewo. Esi ayewo na yio so boya beeni tabi beeko ni dokita yio gunle lori lati tun ran won lo si ile iwosan miran fun ayewo. Bi esi ba wa je beeni, nigba naa ni dokita yio to wa bere itoju fun alaisan naa. Lilo ogun le gba alaisan naa ni osu meta tabi ju bee lo, sugbon nigbati won ba koko wa, irisi won ma nje pe eniti o ti ru ti ko si wu'ni lati wo.

Ibeere: Nje arun PTB wo po ni ilu Akure nibi?

Idahun:

Olukopa keji: ko wopo

Olukopa kinni: a le so wipe o wopo nitori Akure je agbegbe nla ti o fi aaye opo ise aje ti osi tun je olu ilu ipinle Ondo. Bee ma ni awon ile iwosan kereje kereje a ma dari awon alaisan wa ri awon dokita nihin fun itoju to pe'ye. Nitori eyi, a o le so wipe arun naa ko wopo ni Akure nitori ogooro awon eniyan ti n wo ilu akure wa. Apeere miran, ni ile iwosan ti ikosemose, ni e o ti ri ogunlogo awon eniyan ti won ko ara won jo lati gba itoju fun arun PTB.

Olukopa keta: Awon alaisan PTB ati ipo won ni ki se nkan buburu bi won ba lo gba itoju to pe ye, won o san, eniti o ba kan bo ara re mo'le ni o le ku. Mo ti ri alaisan PTB ri ti won se itoju re to si san laarin osu meji.

Olukopa Kerin: Beeni, won wopo ni Akure, bi eniyan ba lo si ile iwosan ijoba ipinle, eniyan yio ri won ni'be, bo tile je wipe awon kan ki jade sita.

Awon Olukopa toku: Gbogbo wa ni a gba wipe awon kan ko le ni owo lati ra ogun arun naa, nitori naa ni o se je wipe awon kan yio ku nitori ise.

Olukopa Kinni: Saaju akoko yi ni ijoba ti maa nko ogun ofe fun won, sugbon nisisinyi, olukaluku ni n se itoju ati ra ogun ara re fun ra re. Nigba miran, ni awon alaisan ki ri awon ogun yi ra ni awon ile itaja ogun ti awon osise ilera asi gba won ni imoran lati da owo jo ki won le lo bawon ra po ti won o si pin fun won.
Isoro to ga ju fun won ni owo nitori elomiran le ma ni owo lati ra oogun. Ise je isoro won alakoko.

Ibeere: Nje iranlowo wa fun awon alaisan PTB?

Idahun: Beeni, A le so wipe iranlowo wa fun won bo tile je wipe opolopo awon ti won fe owo iranlowo ni apa kun. Gegebi a ti so tele, opolopo ni won sa n ro ra n dogbon si oro ara won nitori owo, awon ti won o ba tun se edawo gegebi osise ijoba ni owo osu ko je deede. Ti ko sisi ohun ti enikeni le se.

Ibeere: Kini iwo yio se bi won ba so fun o wipe o ni arun PTB?

Idahun:

Olukopa: To ba ti sele, ko sohun ti enikeni le se si mo ju ki eniyan bere si gbadura si Olorun fun iranwo. Mo si mo pe bi o ba sele, iranlowo yio dide si eniyan lotun ati losi.

Awon olukopa: Gbogbo won f'enu ko si idahun akoko yi.

Ibeere: Bi o ba sele, nje alaisan yi yio so fun awon ebi re?

Idahun

Awon Olukopa: Awon ebi lo ye ki won koko gbo nitori awon ni won o ran won lowo. Won o le fi eni naa si ipamo nitori awon ebi won ni yio ran won lowo julo, papa bi iru ebi bee ba je olowo, awon ni won o gbe won lo si ile iwosan fun itoju. Nitooto, awon kan le ma fe ki awon eniyan ki won ko mo, ti won o si ma fi pamo fun won, sugbon sibesibe, nigbati won ba mo, won o si gbe won lo si ile iwosan fun itoju.

Olukopa Karun: Bi won tile fi pamo, awon eniyan yio si mo. Ki si se awom alarun PTB nikan lo maa nfi arun won pamo, awon to ni HIV na ma nfi arun won pamo nitori itiju. Si eyi, o se pataki ki awon eniyan mo wipe fifi aisan won pamo ko dara, bikose wipe ki won je ki awon eniyan mo, nitori elomiran tun le mo oogun miran ti ki se ti oyinbo ti o le wo aisan na san bi won ba tete mo.

Ibeere: Nje ebi ti won ko ni arun PTB gba ki awon to ni arun naa fe lati idile won?

Idahun:

Awon Olukopa: Gbogbo awon olukopa f'enu ko wipe awon ebi ti won ko ni arun naa ko le gba ki ebi won lo fe lati ebi ti won ni arun naa. Koda bi won ba ti gbeyawo ti won si ti bimo fun ara won, won o kan nipa fun won lati tuka. Won o ni gba lati fe'ra won.

Ibeere: Nje e mo boya awon eniyan yio gba ki eniyan to ni arun PTB gbe pelu awon eniyan tabi ba won se ipade?

Idahun:

Olukopa: Yio le die, koda, bi awon enia naa ko ba mo, itiju wipe bo'ya awon eniyan wonyi ti mo yio mu ki irufe enibe ri bi oun to le lati ba won yo'ku pejo tabi b'awon soro.

Olukopa Kinni: Isele kan sele nibi ise si okan lara awon osise w to ni arun PTB ti enikeni ko si mo. Ni ojo kan, arabirin yi se aisan gidigidi kan debi wipe o daku. Nigbati won gbe digbadigba wo yara itoju ti won si se oniruru ayewo fun de PTB ni won to mo wipe o ni arun PTB t won sig be lo ile iwosan miran fun itoju. Leyin to gbadun tan, oun tikarare ni o ko iwe pe ki won gbe oun lo si ile iwosan miran nitori itiju ati egan aisan naa ni biba awon akegbe re sise.

Ibeere: Nje e mo boya arun PTB je isoro ni ilu Akure?

Idahun:

Olukopa Kinni: Beeni, isoro lo je, sugbon bi awon eniyan ba le jade lati wa ri awon dokita, ko ni je isoro mo bi won ba le fi owo to dara mu itoju won, sugbon yio je isoro nla bi won ba ngbiyanju lati fi arun naa pamo.

Ibeere: Ki ni awon ewu to so po mo arun PTB?

Idahun:

Olukopa: Gbogbo awon olukopa so wipe awon ko mo awon ewu to so po mo arun PTB.

Ibeere: Ki le ti ri si awon ibi idoti, ati ibi olopo ero julo?

Idahun:

Awon Olukopa: Gbogbo awon olukopa ni won gba wipe ibi idoti / egbin ati ibiti ero ba ti po ju si lo je ewu fun PTB

Ibeere: Nje e ro wipe igbagbo ninu ibile ati ninu asa ni se pelu bi awon eniyan ti ntoju ara won tabi wa iyanju ti won ba ni PTB?

Idahun:

Olukopa: Itiju ni olori isoro ti awon eniyan ko ni fe lo wa iranlowo, nitori bi awon eniyan ba mo, won o ni fe lugbagi arun naa.

Olukopa: Bi o ba sele ninu idile, ko si enikeni ninu idile naa ti yio fe lati ba eni be se ohunkohun. Lai so fun enibe taara won o ma fi iwa won sa fun iru enibe. Isoro miran ni wipe, bi eni to ba ni arun yi ba so fun enikan, eni na ni yio ma tan oro na ka ti yio si ma gba awon to ku niyanju lati sun mo iru eni be. Idi re ti awon eniyan ko fe bikita lati so fun enikeni yato si dokita.

Ibeere: Iranlowo miran wo ni alaisan PTB ri gba?

Idahun:

Olukopa: Iranlowo miran ti o le wa lati odo awon onisegun ibile ti won mo bi a ti se iwosan arun PTB nipa lilo ewe ati egbo. Awon arun bi arun kogbgoogun (HIV) ni a le lo ona abalaye lati wosan.

Ibeere: Nje awon alaisan le ri iranlowo gba lodo awn dokita ati awon Noosi?

Idahun:

Olukopa: Beeni, won si le ri iranlowo lodo awon onisegun ibile.

Ibeere: Kini e mo nipa awon onisegun ibile?

Idahun:

Olukopa: Awon onisegun ibile je eniyan daadaa. Olorun da won lati ma wo aisan pelu ewe ati egbo nigba ti won ba ko won po. Sugbon bi awon kan ti se mo bi ati se nwo aisan san, awon ti ki se ojulowo onisegun po to si wa je ki o soro lati ri awon ti o je ojulowo nitori opo lo je opuro, onijibiti ni opolopo won ti won ko si mo nipa ati lo ewe ati egbo igi fun iwosan arun kankan.

Ibeere: Nje e gbagbo wipe awon onisegun ibile le wo aisan PTB san ko ma de tun gberi mo?

Idahun:

Olukopa: Beeni, awon kan le wo aisan PTB patapata lai tun gberi mo ti ogun won si dabi ti ile iwosan igba lode, bo tile je wipe awon oogun won miran ma ngbowo lori ti egbogi won si le ma sise rara. Awon kan si le ma gba owo ti won o so wipe ki alaisan na si ma lo naa ko pada wa fun won lounkohun ti won ba ni ti ara re ba ti ya tan.

Ibeere: Ki ni ero yin lori ibasepo awon onisegun ibile ati dokita lori iwosn arun PTB?

Idahun:

Olukopa Keji: Beeni, won le jo sise papo, sugbon awon dokita ki fe sise po pelu awon onisegun ibile nitori won ki fe ki awon alaisan lo oogun ibile papo pelu ti won, won o ni gba. Sugbon alaisan le wa ni ile iwosan ko si lo oogun ti won to ba si de ile ko pada wa lo oogun ibile lati wo aisan PTB. Nigba miran ni awon dokita ma ngba awon alaisan miran ni iyanju lati lo fi owo ile to awon arun kan ti won ko ba le yanju.

Awon Olukopa: Gbogbo won gba wipe bi alaisan kan ko ba yi pada, awon dokita ma n pe awon ebi won lati dan ona ibile wo bi won ko ba fe ki iru eni be ko ku.

Ibeere: kini awon onisegun ibile pe ni okunfa aisan PTB?

Idahun:

Olukopa: okunfa aisan le ma je owo awon elemi okunkun, o le je pe o kan wa bee.

Olukopa kerin: Ko si dokita kan ti o le so bikose awon onisegun lo le so okunfa re.

Olukopa karun: Ohun ti dokita le so ni wipe ki won ma se je ki ebi alaisan kan se idiwo fun iwosan alaisan.

Ibeere: Bawo ni awon dokita yio se mo elemikemi ti o se ise ibi?

Olukopa: Awn onisegun ibile ti o daju yio mo nitori won ni agbara lati ma ri awon nkan ijinle.

Olukopa kinni: Fun apeere, ni ojo kan, arabinrin kan ni ilu idanre to je oloyun to nreti ojo ikunle re ni omo mu ti ko si le bi ki awon ebi re to gbe wa si ile iwosan ti won si tele awon igbese ti a ma tele fun ibimo ti won si fi aaye gba oko re nikan lati wo yara ibimo. Kete leyin ti oko re wolo ni iya alaboyun yi tu gele ori to si san bo ibadi re to si nki awon eniyan kiri. Kete ti awon osise ilera kiyesi eyi ni won le kuro ni oju ferese ti o duro si, leyin eyi ni iya na lo ko si pada wa. Leyin naa ti awon oseise ilera wa mo ibiti iya na ti wa gegebi ibi buruku to je wipe iwa ika kun owo won. Eyi si je wipe o ti je lemolemo won ni agbegbe na wipe bi aboyun ti won ba gbe wa ko ba ku, won ko ni lo, ni won ba ko ogun fun wipe ko lo ra a ni ibi jijina, iseju meta si akoko ti iya na kuro lo ra ogun na ni arabinrin bi omo naa laisi ewu.

Ibeere: Kini awon idiwo to n d'ojuko awon ti arun PTB nyo l'enu niti itoju ati iwosan?

Idahun: Idiwo akoko. Ailowo lowo fun ounje ati egbogi. Fun apeere, arabinrin kan saare, o si wa si ile iwosan fun itoju. Leyin ti o ti ri dokita tan, o pada lo si ile re pelu kaadi ati iwe oogun ti won ko le lowo. Bi o ti n lo ni o subu lule to si ku nitori ko ni owo lowo lati ra ogun ati ounje ti yio gbe ro.

Ibeere: Nje aini iroyin to peye le je idiwo bi?

Idahun: Beeni, bi awon eiyan ko ba ni oye arun ti o nyo won l'enu, yio nira die lati wa iranwo.

Ibeere: Iru iranlowo wo lo wa fun awon ti won ni PTB, abi e ro wipe iranlowo ti ijoba nse lowolowo yi ti to abi beeko?

Idahun: Iranlowo ti won nse fun awon alaisan ni lowolowo yi ko to, won nilo lati sa ipa si.

Ibeere: Nje e mo bi a se le d'ena arun PTB?

Idahun: Ona abayo kan soso to wa ni wipe ki a ri wipe oogun wa fun awon alaisan, nitori bi won ba ti gba iwosan, ko tun ni si itankale PTB. Omiran naa ni owo.

Ibeere: Nje e ro wipe bi ijoba ti se nse da awon ara Akure l'eko dara to?

Idahun: Bi ijoba ti se n se ipolongo wipe aisan nbe l'ode lo ye ki won tun se ipese ogun fun awon alaisan. Opolopo le ro wipe ogun nbe ni ile iwosan, ki won de ibe lati ma se ri ogun.

Ibeere: Nje ero wipe o ye ki ijoba te iwe si ode ki won le kakakiri fun awon eniyan le ri iroyin wipe aisan ko ni pa o bi o ba wa iranlowo, to si lo si ile iwosan ni akoko?

Idahun: Bo ti se ye ko ri niyen, bi won ba le se be yio dara. Ati bi won ba le maa lo lati ojule de ojule ti won o si ma je ki awon eniyan mo wipe ofe ni itoju ki awon eniyan lo si ile iwosan fun itoju.

Ibeere: Nibo ni awon eniyan le ti mo nipa arun PTB?

Idahun: Ki awon eniyan teti si redio, ero amounmaworan tabi ki won lo si ile iwosan, won o gbo nibe.

Ibeere: Nje awon ti won da duro si ile iwosan ni yara kanna pelu awon ti won ni TB (Iko gbemigbemi)

Idahun: Rara, won ko si ni yara itoju kanna, won wa ni aaye olukuluku.

Ibeere: Iru imoran wo l'ero wipe yo wulo fun awon eniyan lati mo nipa arun PTB?

Idahun: Imoran ti yio wulo fun awon eniyan ni ki won ma bo enu won bi won ba nwuko, gbogbo nkan wonyi je oro Pataki fun ilera.

E seun gbogbo eniyan fun didarapo mo iforo takuroso yi. Opin re naa re.

Iforo jomitoro oro pelu onisegun ibile ni Akure

Ibeere: Nje e le so oun ti e mo nipa PTB ni Akure?

Idahun: PTB je aisan ti o se wosan bi o tile je wipe o lewu sugbon bi eniya ko ba ti fi ara re d'asa, bi eniyan ba si ni, o see w'osan.

Ibeere: Kini iriri yin gegebi onisegun ibile pelu arun PTB?

Idahun: Iriri mi ni wipe o sese ki eniyan j'ogun re, eniyan si le ma j'ogun re. bi eniyan ba se fi ara re d'agunla ni aisan na yo se maa po si.

Ibeere: Bawo le se ri ara yin gegebi oloye ati onisegun ibile lori itoju arun PTB?

Idahun: Gegebi mo ti se so tele wipe mo n wo awon orisirisi aisan san pelu ona abalaye.

Ibeere: Nje arun PTB nikan ni e ntoju abi awon aisan miran mi wa ti e tun ntoju?

Idahun: Mo ma n toju awon aisan miran

Ibeere: Awon aisan wo le tun se itoju re?

Idahun: E se pupo, bi obirin ba ni ete a ma n se itojure, bee pelu ni a nse itoju iju ati awon aisan miran.

Ibeere: Awon iru egbogi wo le ma nlo lati wo awon aisan yi san?

Idahun: Mo ma nlo si oko mi lati lo ja ewe ati wa egbo eyi ti a o se papo ti a si lo fun enibe ti yio si san.

Ibeere: E so wipe egbogi yi ma nwo awon eniyan san, nje awon eniyan naa gbagbo wipe arun na le san?

Idahun: Beeni, won gbagbo pe bi awon ba ti lo awon egbogi na ara awon yio ya.

Ibeere: Nibo le ma ndari awon ti e ko ba le wo san lo?

Idahun: Bi nko ba le wo enikeni san, ile iwosan lo kan ti a ma n dari won si.

Ibeere: Nje e le so boya awon alaisan ti won nwa sodo yin ma nlo ogun oyinbo papo pelu ti ibile?

Idahun: Mi o mo nitori, awon elomiran le yan lati koko ya ile onisegun ibile ti awon miran yio si gba lati gba ile iwosan oyinbo lo.

Ibeere: Nje won le lo ogun ibile ati ti Oyinbo papo?

Idahun: Won le lo won papo, sugbon awon dokita ko fi aye gba iru re nitori won so wipe awon ko ni fowosowopo pelu awon onisegun ibile.

Ibeere: Gegebi onisegun ibile, kini igbese yin ti eyin pelu ba saare?

Idahun: Ma se itoju ara mi. Ma wa ewe maa si pese agbo fun ara mi, maa lo, ara mi yio si ya.

Ibeere: ki le o se bi awon ewe ati agbo ti e ba lo ko ba sise?

Idahun: Yio sise, yio mu mi lara da, mo mo daju wipe yio wo mi san ni.

Ibeere: Nje e nilo lati lo si ile iwosan fun iranlowo?

Idahun: Ngo nilo lati lo si ile iwosan fun iranlowo. Mo ti wo eniti eje re ko to san ri, nitori na, mo mo bi a ti nda eje pada s'ipo.

Ibeere: Kini awon idiwo ti ndojuko awon ti arun PTB ba nyo l'enu latari itoju ati iwosan?

Idahun: Owo

Ibeere: Nje e o so fun won wipe ijiya lati odo olorun ni tabi ise aye?

Idahun: Gegebi mo ti so tele wipe, awon kan j'ogun re ni, ti awon kan de wa bee.

Ibeere: Nje e mo bi a ti se le de'na PTB?

Idahun: E se pupo, lati de'na PTB rorun, jeki ayika re mo, mase mu oti amupara, ki o si kiyesi awon ohun ti o ma je.

Ibeere: Kinni erongba yin lori ifowosowopo awon onisegun ibile ati dokita lori itoju arun PTB?

Idahun: Awon dokita ko gbodo ni oye ogun awon onisegun ibile, iru ewe ti won ja papo ati agbo ki won to le lo lati toju aisan ki aisan nitori ogun oyinbo ma nwo aisan san l'erefe sugbon ogun ibile maa now arun PTB san patapata ti ko si ni pada wa mo.

Mo ti so tele nipa warapa wipe, bi mo ba pese ogun fun eniti o ba ni aisan yi, iru eni bee yio po alangba ti ara re yio si ya lesekese. Eyi si yato si ogun oyinbo to ma npe ki eni bee to gba iwosan.

Ibeere: Nje e mo bi arun PTB ba ni ipalara lori igbeyawo?

Idahun: Beeni, fun apeere, bi eni to ba ni arun PTB ba ni ifenukenu pelu elomiran, eni be naa yio ni.

Ibeere: Jowo bi alabagbe ba fe fe lati idile ti won ti ni arun PTB, nje awon ebi ti ko ni arun na le fee won?

Idahun: Bi won ba je eniyan rere won ko nigba laarin ara won nitori niwon ti won ba se nfe ara won ni arun naa yio se ma po si nitori aisan to maa ran ni.

Ibeere: Kile ro wipe o ye ki ijoba Nigeria se fun awon onisegun ibile lori igbiyanju lati se'gun arun PTB?

Idahun: E se pupo, ijoba ko gbagbo ninu oogun ibile nitori bi be ko, won ba ti gba awon onisegun ibile lati ma sise pelu awon dokita oyinbo lori wiwo arun PTB ati awon arun miran. Won o gbagbo wipe oogun ibile ni a ti n lo saaju awon nigba aye awon baba wa.

Ibeere: Nibo ni eyin ti ri agbara ati imo lati ma fi to'ju awon eniyan?

Idahun: Mo j'ogun re lati odo baba mi.

Ibeere: Nibo ni e ti ri gbogbo awon imo ti e nlo fun awon agbo ati aseje yin, se lati odo baba yin naa ni?

Idahun: Beeni lati odo baba mi. nigbati mo ti wa l'omode ni won ti maa nran mi lo lati ran won lowo lori awon nkan wonyi.

Ibeere: Se ohun lo ko yin nipa ise isegun?

Idahun: Beeni oun lo ko mi ni ohun gbogbo.

I**beere**: Nje e lero wipe igbagbo ninu iseese ati anise pelu bi awon ti n se itoju ara won ti won ba ni arun PTB?

Idahun: Beeni, awon eniyan gbagbo wipe awon eniyan buburu le fi arun naa se eniyann nitori na lo se ye ki eniyan ma sora re.

Ibeere: Nje arun PTB le se akoba fun ibasepo pelu awon eniyan?

Idahun: Beeni, o je aisan to l'ewu pupo nitori bi eni ti o ba ti ko arun naa ba wuko ti elomiran si mi emi naa s'inu, irufe eni bee naa yio ko arun naa, idi re ti o fi se Pataki ki alarun PTB maa bo enu won ti won ba n wuko.

Ibeere: Bawo ni e se ro bi iwa awon onise ilera se gbodo ri si awon alarun PTB?

Idahun: Iwa opo awon osise ilera ni o buruju si awon alarun PTB, idi re ti opo won kii fe lati pada lo si ile iwosan, bakan naa ni awon alarun naa ki fe ki awon eniyan mo wipe won ni arun naa nitori oju ti awon eniyan yio ma fi wo won, nitori naa ni won se maa nfi ara won pamo si inu ile, eyi ti o si lewu julo.

Ibeere: won so wipe awon dokita ati noosi ma nfi oju aisan naa wo won, won ki si fe ranwonlowo, nje bee ni?

Idahun: Beeni, won ki fe lo sunmo odo won, nkan ti awon alaisan yin so ni yi.

Esee, eyi ni opin iforojomotoro oro.

ORO IKADI: IFORO JOMI TORO ORO PELU AWON AKOPA

Iforo jomi toro oro awon obinrin Musulumi alafojusun.

Ibeere: Jowo so fun mi ohun ti o mo nipa PTB ni Akure?

Olukopa Akoko: ohun ti mo mo nipa arun PTB ni wipe, awon ti won ba ni arun yi man gbe gidi gan nitori, arun yi maa ngbe eje awon ti won ba ni, eyi ti o si lee ja si ku fun irufe eni be bi won ko ba se amojuto re tabi kin irufe eni ma lo si ile iwosan lati lo yoju si awon dokita fun ayewo ati ogun pelu alaye bi won o ti lo. Arun yi ki se ohun ti enikeni le gbe pamo sabe aso.

Olukopa keji: Eniyan yio mo bi arun yi ba wa ni ago ara re nitori iru eni be yio ma wuko. Arun yi a si maa ba opa emi je bi o ba ti pe lara eniyan. Bi opa emi ba si ti baje, iku loun ti o kan. Idi re ti o fi se pataki ki eniyan se itoju arun yi ki o to de ipele nla.

Olukopa keta: PTB ki se arun to dara rara nitori, bi enia ba n wuko, be ni yio maa gbe, ti ko si nii le jeun daradara.

Olukopa Kerin: Arun yi ko dara ninu ago ara eniyan, nitori eni ti o ba ni arun yi ki le soro tabi lee duro nibiti won ba ti n din ounje nitori, eefin ounje naa yio o gba ona ofun eni naa ti yio si bere si ma wuko, ti ara iru eni be ko si ni le mo.

Olukopa Karun: Oun ti mo mo ni wipe arun naa ko dara ni ago ara. Eni be yo ma wuko, iko wiwu ko se oun to dara. Bi a ba ri eni ti iko na nyo lenu, iru enia be ko ni ni ominira ara re tabi ki ara re le le, ko si si oun ti a le se lati mu ki ara re le. Iru eni be nigba miran ti o nba n wuko a maa po eje, bi itoju ko ba si si fun iru eni be, iru eni be le ku. Itoju arun yi ni iru ipele yi a ma l'agbara to si je wipe owo iranlowo Olorun ni oun gbogbo ma n wa. Awon eniyan a maa sa fun awon to ba lugbadi arun yi bi won tile n gb'iyanju lati sun mo awon eniyan, to si je ero oun to le sele si won ni yio gba okan won. Awon eniyan wonyi a maa nilo itoju to peâye ati adura fun iwosan ninu arun yi.

Olukopa Kefa: Arun yi ki se oun ti o dara ti o ye lati sele si ago ara eniyan nitori eni to ba lugbadi re ko ni le se ohunkohun.

Olukopa keje: Ohun afiyesi miran ni wipe, enikeni to ni arun PTB le tan ka si awon elomiran. Bi eni be ba wuko, awon to ba wa ni ayika re le ti ibe gbe iko naa. Arun yi ko dara, lo se se pataki ki awon eniyan se amojuto ara won ki o to tan ka gbogbo ara won.

Ibeere: Bawo ni awon eniyan se maa n mo wipe awon ni arun yi?

Idahun:

Olukopa Kinni: Eniyan le ma mo wipe oun ni arun yi sugbon bi eniyan ba wa n wu'ko lera lera ti o si ti lo egboogi ti ko si si ayipada, iru eni be ni lati lo si ile iwosan, lati ri awon dokita fun oniruru ayewo. Bi esi ayewo ba wa fi idi re mule wipe eni naa ni arun PTB, a je wipe eni be ni arun naa niyen. Bi eniyan ba ti n wuko fun igba pipe ti o si n ru, nigba naa ni awon eniyan si gba eni be ni amoran lati lo ri awon dokita ti won o si bi lere igba ti arun PTB ti n da laamu, leyin eyi, ni won o fun ni kaadi ti won o si ran lo lati lo se awon ayewo orisirisi. Ti ayewo ba si fidi arun naa mule wipe o nbe l'ago ara eni bee, nigba naa ni awon dokita yio bere itoju re nipa kiko ogun fun. Bi iru eni be ba wan lo ogun re dede, arun naa yio san, bi o tile je wipe, awon kan wa ti won maa n dagunla, sugbon awon ti won ba fe ni iwosan, won a maa lo oogun won tan bo ti to ti won o si pada lo si odo dokita fun atunyewo ati ogun miran bi arun naa ko ba i ti san.

Olukopa Keji: Bi awon enyan yio se mo wipe awon ni arun PTB ni wipe won o maa eyi to yato si awon iru iko ti o wa. Iko ti won yio dabi gbigbo aja. Iko ti won yio le, nitori gbogbo agbara won ni won on maa fi wu. Nipa bayi, eniyan yio mo wipe ohun ni arun PTB. Ki Olorun ma se je ki a ri iru arun yi.

Olukopa keta: Iko eyi yato gegebi awon yoku mi ti se se alaye re, PTB je arun to gbepon ti o si yato si awon arun yoku. Bi awon eniyan n tile nlo epo pupa lati dewo aisan iko gbogbo, eyi ko ni nkan se nipa PTB, nitori, eni naa yio maa wu'ko leralera. Iko ti tomtom ko ba ti gbo, je ti PTB nitori, iru eniyan bee ko ni l'agbaa pupo bee ni yio si maa ru, yio wa je iyalenu fun awon eniyan wipe iko eyi ki se lasan ti won yio si gba eni na ni iyanju lati lo ri dokita. Bi dokita ba si fi idi aisan naa mu'le wipe bee lori, won sib ere itoju fun iru eni bee.

Ibeere: Ki lo mo to je okunfa PTB?

Idahun:

Olukopa Kinni: Okunfa PTB soro die lati so ntori ki se ounje kan pato lo ma nfa tabi omi ti eniyan ba mu, Olorun nikan lo ye, ko ye eniyan. Awon to tun le ri nkan so lori re ni awon akose - mose dokita. Awon wonyi lo le so okunfa PTB. (Gbogbo awon akopa to ke gba be).

Ibeere: Nje PTB je arun to le to bee?

Idahun:

Olukopa: Bee ni, PTB je arun to lagbara nitori,laarin bi iseju meji, eni naa yo ma wu'ko debi pe eni to ba wa ni ayika re yio wa ni iberu bojo ti awon pelu yio ma mi helehele bi eniti o fe ku. Eni naa fun ra re yio si ma laagun ni gbogbo ara re ti oju re yio si pon.

Ibeere: Bawo ni PTB se ntan kale?

Idahun:

Olukopa: Ni opolopo igba ni awon dokita ma se lalaye wipe bi a ti jo pejo yi, bi alarun PTB kan ba wa laarin wa ti o si wu'ko, awon ti yio ko yio po nitori arun naa ma nba afefe rin ni. Nitori na ni alarun yi ko se le ba awon eniyan pin ohun ounje tabi sun mo awon eniyan poju lo nitori wipe o lewu.

Ibeere: Nje e le so fun wa eikan ti e mo to ni arun yi?

Idahun:

Olukopa: Emi ko mo eniti o ni arun yi, sugbon nigbati mo je osise ni ile iwosan ni eka ti iko gbemigbemi (TB) ni mo ti se alaba pade awon alaisan wonyi l'okunrin, l'obinrin, l'omode ati agba. Ko si eniti ko le lugbade arun yi. Bi enikeni ba si nii ti won si to awon dokita wa ti won se ayewo fun won, oogun ti won ba ti so wipe ki won lo ni won maa nlo, bi o tile je wipe awon kan le gba abeere ti awon si lee je ogun onikoro tabi olomi.

Lopo igba, ayewo ti o wopo ti won ma nse fun won ni ki won ko agolo meta fun won lo si ile wipe ki won fi ito tabi kelebe enu won si inu agolo ekini ni ojo akoko, agolo ikeji ni ojo keji ati agolo iketa ni ojo iketa ki won si gbe won pada wa si ile iwosan fun ayewo. Esi ayewo na yio so boya beeni tabi beeko ni dokita yio gunle lori lati tun ran won lo si ile iwosan miran fun ayewo. Bi esi ba wa je beeni, nigba naa ni dokita yio to wa bere itoju fun alaisan naa. Lilo ogun le gba alaisan naa ni osu meta tabi ju bee lo, sugbon nigbati won ba koko wa, irisi won ma nje pe eniti o ti ru ti ko si wu'ni lati wo.

Ibeere: Nje arun PTB wo po ni ilu Akure nibi?

Idahun:

Olukopa keji: ko wopo

Olukopa kinni: a le so wipe o wopo nitori Akure je agbegbe nla ti o fi aaye opo ise aje ti osi tun je olu ilu ipinle Ondo. Bee ma ni awon ile iwosan kereje kereje a ma dari awon alaisan wa ri awon dokita nihin fun itoju to pe'ye. Nitori eyi, a o le so wipe arun naa ko wopo ni Akure nitori ogooro awon eniyan ti n wo ilu akure wa. Apeere miran, ni ile iwosan ti ikosemose, ni e o ti ri ogunlogo awon eniyan ti won ko ara won jo lati gba itoju fun arun PTB.

Olukopa keta: Awon alaisan PTB ati ipo won ni ki se nkan buburu bi won ba lo gba itoju to pe ye, won o san, eniti o ba kan bo ara re mo'le ni o le ku. Mo ti ri alaisan PTB ri ti won se itoju re to si san laarin osu meji.

Olukopa Kerin: Beeni, won wopo ni Akure, bi eniyan ba lo si ile iwosan ijoba ipinle, eniyan yio ri won ni'be, bo tile je wipe awon kan ki jade sita.

Awon Olukopa toku: Gbogbo wa ni a gba wipe awon kan ko le ni owo lati ra ogun arun naa, nitori naa ni o se je wipe awon kan yio ku nitori ise.

Olukopa Kinni: Saaju akoko yi ni ijoba ti maa nko ogun ofe fun won, sugbon nisisinyi, olukaluku ni n se itoju ati ra ogun ara re fun ra re. Nigba miran, ni awon alaisan ki ri awon ogun yi ra ni awon ile itaja ogun ti awon osise ilera asi gba won ni imoran lati da owo jo ki won le lo bawon ra po ti won o si pin fun won.

Isoro to ga ju fun won ni owo nitori elomiran le ma ni owo lati ra oogun. Ise je isoro won alakoko.

Ibeere: Nje iranlowo wa fun awon alaisan PTB?

Idahun: Beeni, A le so wipe iranlowo wa fun won bo tile je wipe opolopo awon ti won fe owo iranlowo ni apa kun. Gegebi a ti so tele, opolopo ni won sa n ro ra n dogbon si oro ara won nitori owo, awon ti won o ba tun se edawo gegebi osise ijoba ni owo osu ko je deede. Ti ko sisi ohun ti enikeni le se.

Ibeere: Kini iwo yio se bi won ba so fun o wipe o ni arun PTB?

Idahun:

Olukopa: To ba ti sele, ko sohun ti enikeni le se si mo ju ki eniyan bere si gbadura si Olorun fun iranwo. Mo si mo pe bi o ba sele, iranlowo yio dide si eniyan lotun ati losi.

Awon olukopa: Gbogbo won f'enu ko si idahun akoko yi.

Ibeere: Bi o ba sele, nje alaisan yi yio so fun awon ebi re?

Idahun

Awon Olukopa: Awon ebi lo ye ki won koko gbo nitori awon ni won o ran won lowo. Won o le fi eni naa si ipamo nitori awon ebi won ni yio ran won lowo julo, papa bi iru ebi bee ba je olowo, awon ni won o gbe won lo si ile iwosan fun itoju. Nitooto, awon kan le ma fe ki awon eniyan ki won ko mo, ti won o si ma fi pamo fun won, sugbon sibesibe, nigbati won ba mo, won o si gbe won lo si ile iwosan fun itoju.

Olukopa Karun: Bi won tile fi pamo, awon eniyan yio si mo. Ki si se awom alarun PTB nikan lo maa nfi arun won pamo, awon to ni HIV na ma nfi arun won pamo nitori itiju. Si eyi, o se pataki ki awon eniyan mo wipe fifi aisan won pamo ko dara, bikose wipe ki won je ki awon eniyan mo, nitori elomiran tun le mo oogun miran ti ki se ti oyinbo ti o le wo aisan na san bi won ba tete mo.

Ibeere: Nje ebi ti won ko ni arun PTB gba ki awon to ni arun naa fe lati idile won?

Idahun:

Awon Olukopa: Gbogbo awon olukopa f'enu ko wipe awon ebi ti won ko ni arun naa ko le gba ki ebi won lo fe lati ebi ti won ni arun naa. Koda bi won ba ti gbeyawo ti won si ti bimo fun ara won, won o kan nipa fun won lati tuka. Won o ni gba lati fe'ra won.

Ibeere: Nje e mo boya awon eniyan yio gba ki eniyan to ni arun PTB gbe pelu awon eniyan tabi ba won se ipade?

Idahun:

Olukopa: Yio le die, koda, bi awon enia naa ko ba mo, itiju wipe bo'ya awon eniyan wonyi ti mo yio mu ki irufe enibe ri bi oun to le lati ba won yo'ku pejo tabi b'awon soro.

Olukopa Kinni: Isele kan sele nibi ise si okan lara awon osise w to ni arun PTB ti enikeni ko si mo. Ni ojo kan, arabirin yi se aisan gidigidi kan debi wipe o daku. Nigbati won gbe digbadigba wo yara itoju ti won si se oniruru ayewo fun de PTB ni won to mo wipe o ni arun PTB t won sig be lo ile iwosan miran fun itoju. Leyin to gbadun tan, oun tikarare ni o ko iwe pe ki won gbe oun lo si ile iwosan miran nitori itiju ati egan aisan naa ni biba awon akegbe re sise.

Ibeere: Nje e mo boya arun PTB je isoro ni ilu Akure?

Idahun:

Olukopa Kinni: Beeni, isoro lo je, sugbon bi awon eniyan ba le jade lati wa ri awon dokita, ko ni je isoro mo bi won ba le fi owo to dara mu itoju won, sugbon yio je isoro nla bi won ba ngbiyanju lati fi arun naa pamo.

Ibeere: Ki ni awon ewu to so po mo arun PTB?

Idahun:

Olukopa: Gbogbo awon olukopa so wipe awon ko mo awon ewu to so po mo arun PTB.

Ibeere: Ki le ti ri si awon ibi idoti, ati ibi olopo ero julo?

Idahun:

Awon Olukopa: Gbogbo awon olukopa ni won gba wipe ibi idoti / egbin ati ibiti ero ba ti po ju si lo je ewu fun PTB

Ibeere: Nje e ro wipe igbagbo ninu ibile ati ninu asa ni se pelu bi awon eniyan ti ntoju ara won tabi wa iyanju ti won ba ni PTB?

Idahun:

Olukopa: Itiju ni olori isoro ti awon eniyan ko ni fe lo wa iranlowo, nitori bi awon eniyan ba mo, won o ni fe lugbagi arun naa.

Olukopa: Bi o ba sele ninu idile, ko si enikeni ninu idile naa ti yio fe lati ba eni be se ohunkohun. Lai so fun enibe taara won o ma fi iwa won sa fun iru enibe. Isoro miran ni wipe, bi eni to ba ni arun yi ba so fun enikan, eni na ni yio ma tan oro na ka ti yio si ma gba awon to ku niyanju lati sun mo iru eni be. Idi re ti awon eniyan ko fe bikita lati so fun enikeni yato si dokita.

Ibeere: Iranlowo miran wo ni alaisan PTB ri gba?

Idahun:

Olukopa: Iranlowo miran ti o le wa lati odo awon onisegun ibile ti won mo bi a ti se iwosan arun PTB nipa lilo ewe ati egbo. Awon arun bi arun kogbgoogun (HIV) ni a le lo ona abalaye lati wosan.

Ibeere: Nje awon alaisan le ri iranlowo gba lodo awn dokita ati awon Noosi?

Idahun:

Olukopa: Beeni, won si le ri iranlowo lodo awon onisegun ibile.

Ibeere: Kini e mo nipa awon onisegun ibile?

Idahun:

Olukopa: Awon onisegun ibile je eniyan daadaa. Olorun da won lati ma wo aisan pelu ewe ati egbo nigba ti won ba ko won po. Sugbon bi awon kan ti se mo bi ati se nwo aisan san, awon ti ki se ojulowo onisegun po to si wa je ki o soro lati ri awon ti o je ojulowo nitori opo lo je opuro, onijibiti ni opolopo won ti won ko si mo nipa ati lo ewe ati egbo igi fun iwosan arun kankan.

Ibeere: Nje e gbagbo wipe awon onisegun ibile le wo aisan PTB san ko ma de tun gberi mo?

Idahun:

Olukopa: Beeni, awon kan le wo aisan PTB patapata lai tun gberi mo ti ogun won si dabi ti ile iwosan igba lode, bo tile je wipe awon oogun won miran ma ngbowo lori ti egbogi won si le ma sise rara. Awon kan si le ma gba owo ti won o so wipe ki alaisan na si ma lo naa ko pada wa fun won lounkohun ti won ba ni ti ara re ba ti ya tan.

Ibeere: Ki ni ero yin lori ibasepo awon onisegun ibile ati dokita lori iwosn arun PTB?

Idahun:

Olukopa Keji: Beeni, won le jo sise papo, sugbon awon dokita ki fe sise po pelu awon onisegun ibile nitori won ki fe ki awon alaisan lo oogun ibile papo pelu ti won, won o ni gba. Sugbon alaisan le wa ni ile iwosan ko si lo oogun ti won to ba si de ile ko pada wa lo oogun ibile lati wo aisan PTB. Nigba miran ni awon dokita ma ngba awon alaisan miran ni iyanju lati lo fi owo ile to awon arun kan ti won ko ba le yanju.

Awon Olukopa: Gbogbo won gba wipe bi alaisan kan ko ba yi pada, awon dokita ma n pe awon ebi won lati dan ona ibile wo bi won ko ba fe ki iru eni be ko ku.

Ibeere: kini awon onisegun ibile pe ni okunfa aisan PTB?

Idahun:

Olukopa: okunfa aisan le ma je owo awon elemi okunkun, o le je pe o kan wa bee.

Olukopa kerin: Ko si dokita kan ti o le so bikose awon onisegun lo le so okunfa re.

Olukopa karun: Ohun ti dokita le so ni wipe ki won ma se je ki ebi alaisan kan se idiwo fun iwosan alaisan.

Ibeere: Bawo ni awon dokita yio se mo elemikemi ti o se ise ibi?

Olukopa: Awn onisegun ibile ti o daju yio mo nitori won ni agbara lati ma ri awon nkan ijinle

Olukopa kinni: Fun apeere, ni ojo kan, arabinrin kan ni ilu idanre to je oloyun to nreti ojo ikunle re ni omo mu ti ko si le bi ki awon ebi re to gbe wa si ile iwosan ti won si tele awon igbese ti a ma tele fun ibimo ti won si fi aaye gba oko re nikan lati wo yara ibimo. Kete leyin ti oko re wolo ni iya alaboyun yi tu gele ori to si san bo ibadi re to si nki awon eniyan kiri. Kete ti awon osise ilera kiyesi eyi ni won le kuro ni oju ferese ti o duro si, leyin eyi ni iya na lo ko si pada wa. Leyin naa ti awon oseise ilera wa mo ibiti iya na ti wa gegebi ibi buruku to je wipe iwa ika kun owo won. Eyi si je wipe o ti je lemolemo won ni agbegbe na wipe bi aboyun ti won ba gbe wa ko ba ku, won ko ni lo, ni won ba ko ogun fun wipe ko lo ra a ni ibi jijina, iseju meta si akoko ti iya na kuro lo ra ogun na ni arabinrin bi omo naa laisi ewu.

Ibeere: Kini awon idiwo to n d'ojuko awon ti arun PTB nyo l'enu niti itoju ati iwosan?

Idahun: Idiwo akoko. Ailowo lowo fun ounje ati egbogi. Fun apeere, arabinrin kan saare, o si wa si ile iwosan fun itoju. Leyin ti o ti ri dokita tan, o pada lo si ile re pelu kaadi ati iwe oogun ti won ko le lowo. Bi o ti n lo ni o subu lule to si ku nitori ko ni owo lowo lati ra ogun ati ounje ti yio gbe ro.

Ibeere: Nje aini iroyin to peye le je idiwo bi?

Idahun: Beeni, bi awon eiyan ko ba ni oye arun ti o nyo won l'enu, yio nira die lati wa iranwo.

Ibeere: Iru iranlowo wo lo wa fun awon ti won ni PTB, abi e ro wipe iranlowo ti ijoba nse lowolowo yi ti to abi beeko?

Idahun: Iranlowo ti won nse fun awon alaisan ni lowolowo yi ko to, won nilo lati sa ipa si.

Ibeere: Nje e mo bi a se le d'ena arun PTB?

Idahun: Ona abayo kan soso to wa ni wipe ki a ri wipe oogun wa fun awon alaisan, nitori bi won ba ti gba iwosan, ko tun ni si itankale PTB. Omiran naa ni owo

Ibeere: Nje e ro wipe bi ijoba ti se nse da awon ara Akure l'eko dara to?

Idahun: Bi ijoba ti se n se ipolongo wipe aisan nbe l'ode lo ye ki won tun se ipese ogun fun awon alaisan. Opolopo le ro wipe ogun nbe ni ile iwosan, ki won de ibe lati ma se ri ogun.

Ibeere: Nje ero wipe o ye ki ijoba te iwe si ode ki won le kakakiri fun awon eniyan le ri iroyin wipe aisan ko ni pa o bi o ba wa iranlowo, to si lo si ile iwosan ni akoko?

Idahun: Bo ti se ye ko ri niyen, bi won ba le se be yio dara. Ati bi won ba le maa lo lati ojule de ojule ti won o si ma je ki awon eniyan mo wipe ofe ni itoju ki awon eniyan lo si ile iwosan fun itoju.

Ibeere: Nibo ni awon eniyan le ti mo nipa arun PTB?

Idahun: Ki awon eniyan teti si redio, ero amounmaworan tabi ki won lo si ile iwosan, won o gbo nibe.

Ibeere: Nje awon ti won da duro si ile iwosan ni yara kanna pelu awon ti won ni TB (Iko gbemigbemi)

Idahun: Rara, won ko si ni yara itoju kanna, won wa ni aaye olukuluku.

Ibeere: Iru imoran wo l'ero wipe yo wulo fun awon eniyan lati mo nipa arun PTB?

Idahun: Imoran ti yio wulo fun awon eniyan ni ki won ma bo enu won bi won ba nwuko, gbogbo nkan wonyi je oro Pataki fun ilera.

E seun gbogbo eniyan fun didarapo mo iforo takuroso yi. Opin re naa re.

Iforo jomitoro oro pelu onisegun ibile ni Akure

Ibeere: Nje e le so oun ti e mo nipa PTB ni Akure?

Idahun: PTB je aisan ti o se wosan bi o tile je wipe o lewu sugbon bi eniya ko ba ti fi ara re d'asa, bi eniyan ba si ni, o see w'osan.

Ibeere: Kini iriri yin gegebi onisegun ibile pelu arun PTB?

Idahun: Iriri mi ni wipe o sese ki eniyan j'ogun re, eniyan si le ma j'ogun re. bi eniyan ba se fi ara re d'agunla ni aisan na yo se maa po si.

Ibeere: Bawo le se ri ara yin gegebi oloye ati onisegun ibile lori itoju arun PTB?

Idahun: Gegebi mo ti se so tele wipe mo n wo awon orisirisi aisan san pelu ona abalaye.

Ibeere: Nje arun PTB nikan ni e ntoju abi awon aisan miran mi wa ti e tun ntoju?

Idahun: Mo ma n toju awon aisan miran

Ibeere: Awon aisan wo le tun se itoju re?

Idahun: E se pupo, bi obirin ba ni ete a ma n se itojure, bee pelu ni a nse itoju iju ati awon aisan miran.

Ibeere: Awon iru egbogi wo le ma nlo lati wo awon aisan yi san?

Idahun: Mo ma nlo si oko mi lati lo ja ewe ati wa egbo eyi ti a o se papo ti a si lo fun enibe ti yio si san.

Ibeere: E so wipe egbogi yi ma nwo awon eniyan san, nje awon eniyan naa gbagbo wipe arun na le san?

Idahun: Beeni, won gbagbo pe bi awon ba ti lo awon egbogi na ara awon yio ya.

Ibeere: Nibo le ma ndari awon ti e ko ba le wo san lo?

Idahun: Bi nko ba le wo enikeni san, ile iwosan lo kan ti a ma n dari won si.

Ibeere: Nje e le so boya awon alaisan ti won nwa sodo yin ma nlo ogun oyinbo papo pelu ti ibile?

Idahun: Mi o mo nitori, awon elomiran le yan lati koko ya ile onisegun ibile ti awon miran yio si gba lati gba ile iwosan oyinbo lo.

Ibeere: Nje won le lo ogun ibile ati ti Oyinbo papo?

Idahun: Won le lo won papo, sugbon awon dokita ko fi aye gba iru re nitori won so wipe awon ko ni fowosowopo pelu awon onisegun ibile.

Ibeere: Gegebi onisegun ibile, kini igbese yin ti eyin pelu ba saare?

Idahun: Ma se itoju ara mi. Ma wa ewe maa si pese agbo fun ara mi, maa lo, ara mi yio si ya.

Ibeere: ki le o se bi awon ewe ati agbo ti e ba lo ko ba sise?

Idahun: Yio sise, yio mu mi lara da, mo mo daju wipe yio wo mi san ni.

Ibeere: Nje e nilo lati lo si ile iwosan fun iranlowo?

Idahun: Ngo nilo lati lo si ile iwosan fun iranlowo. Mo ti wo eniti eje re ko to san ri, nitori na, mo bi a ti nda eje pada s'ipo.

Ibeere: Kini awon idiwo ti ndojuko awon ti arun PTB ba nyo l'enu latari itoju ati iwosan?

Idahun: Owo

Ibeere: Nje e o so fun won wipe ijiya lati odo olorun ni tabi ise aye?

Idahun: Gegebi mo ti so tele wipe, awon kan j'ogun re ni, ti awon kan de wa bee.

Ibeere: Nje e mo bi a ti se le de'na PTB?

Idahun: E se pupo, lati de'na PTB rorun, jeki ayika re mo, mase mu oti amupara, ki o si kiyesi awon ohun ti o ma je.

Ibeere: Kinni erongba yin lori ifowosowopo awon onisegun ibile ati dokita lori itoju arun PTB?

Idahun: Awon dokita ko gbodo ni oye ogun awon onisegun ibile, iru ewe ti won ja papo ati agbo ki won to le lo lati toju aisan ki aisan nitori ogun oyinbo ma nwo aisan san l'erefe sugbon ogun ibile maa now arun PTB san patapata ti ko si ni pada wa mo. Mo ti so tele nipa warapa wipe, bi mo ba pese ogun fun eniti o ba ni aisan yi, iru eni bee yio po alangba ti ara re yio si ya lesekese. Eyi si yato si ogun oyinbo to ma npe ki eni bee to gba iwosan.

Ibeere: Nje e mo bi arun PTB ba ni ipalara lori igbeyawo?

Idahun: Beeni, fun apeere, bi eni to ba ni arun PTB ba ni ifenukenu pelu elomiran, eni be naa yio ni.

Ibeere: Jowo bi alabagbe ba fe fe lati idile ti won ti ni arun PTB, nje awon ebi ti ko ni arun na le fee won?

Idahun: Bi won ba je eniyan rere won ko nigba laarin ara won nitori niwon ti won ba se nfe ara won ni arun naa yio se ma po si nitori aisan to maa ran ni.

Ibeere: Kile ro wipe o ye ki ijoba Nigeria se fun awon onisegun ibile lori igbiyanju lati se'gun arun PTB?

Idahun: E se pupo, ijoba ko gbagbo ninu oogun ibile nitori bi be ko, won ba ti gba awon onisegun ibile lati ma sise pelu awon dokita oyinbo lori wiwo arun PTB ati awon arun miran. Won o gbagbo wipe oogun ibile ni a ti n lo saaju awon nigba aye awon baba wa.

Ibeere: Nibo ni eyin ti ri agbara ati imo lati ma fi to'ju awon eniyan?

Idahun: Mo j'ogun re lati odo baba mi.

Ibeere: Nibo ni e ti ri gbogbo awon imo ti e nlo fun awon agbo ati aseje yin, se lati odo baba yin naa ni?

Idahun: Beeni lati odo baba mi. nigbati mo ti wa l'omode ni won ti maa nran mi lo lati ran won lowo lori awon nkan wonyi.

Ibeere: Se ohun lo ko yin nipa ise isegun?

Idahun: Beeni oun lo ko mi ni ohun gbogbo.

I**beere**: Nje e lero wipe igbagbo ninu iseese ati anise pelu bi awon ti n se itoju ara won ti won ba ni arun PTB?

Idahun: Beeni, awon eniyan gbagbo wipe awon eniyan buburu le fi arun naa se eniyann nitori na lo se ye ki eniyan ma sora re.

Ibeere: Nje arun PTB le se akoba fun ibasepo pelu awon eniyan?

Idahun: Beeni, o je aisan to l'ewu pupo nitori bi eni ti o ba ti ko arun naa ba wuko ti elomiran si mi emi naa s'inu, irufe eni bee naa yio ko arun naa, idi re ti o fi se Pataki ki alarun PTB maa bo enu won ti won ba n wuko.

Ibeere: Bawo ni e se ro bi iwa awon onise ilera se gbodo ri si awon alarun PTB?

Idahun: Iwa opo awon osise ilera ni o buruju si awon alarun PTB, idi re ti opo won kii fe lati pada lo si ile iwosan, bakan naa ni awon alarun naa ki fe ki awon eniyan mo wipe won ni arun naa nitori oju ti awon eniyan yio ma fi wo won, nitori naa ni won se maa nfi ara won pamo si inu ile, eyi ti o si lewu julo.

Ibeere: won so wipe awon dokita ati noosi ma nfi oju aisan naa wo won, won ki si fe ranwonlowo, nje bee ni?

Idahun: Beeni, won ki fe lo sunmo odo won, nkan ti awon alaisan yin so ni yi. Esee, eyi ni opin iforojo motoro oro.

Appendix U: Thematic grid

Project theme	Subtheme	Data	Participants
Barriers to accessing healthcare service	Fear of Infection	“Our community perceive PTB as a very scary disease mainly because it is highly transmittable and often associated with HIV/AIDS and the work of evil spirits. This is hugely cultural beliefs that impedes on timely visitation of hospital by patients suffering from the disease. I have for example witnessed cases of terminally ill patients who unfortunately could have be treated well and healed from the PTB. Towards this end, there are many cases of unnecessary deaths among PTB patients in my area” “If the infection is seen to be very serious, such a person can be told to sit outside. Such an individual will even be told to pack his mat (prayer mat) so as not to spread the infection. We always pray that any illness that will be terrible should not befall us. When such an infected person gets better, he can come back. We at leadership level, however, interact with patients and encourage them to seek treatment and follows doctors’ advice”	Community-Nominated Leader 1. Muslim leader. Palace chief 1.

		"Before the arrival of the foreigner (British doctors), PTB patients were always banished from the community, which regarded them as an abomination in the traditional society" "The community members regarded PTB as the work of evil spirits. The fact that their community members did not have a clear idea about PTB infection led them to avoid socializing with PTB patients regardless of their treatment history"	Doctor 1.
	Health Seeking Behaviour of PTB Patients and delays in seeking treatment	"I thought I had malaria. I was treated for malaria but the symptoms I felt persisted, I then came for a malaria test, the result of which was negative. It was then that I started experiencing cough. I was tested for PTB at the time and the result came out positive. I have been receiving treatment from that time"	PTB patient 3.
		"Illiteracy is still there because some of patients do not even know the symptoms of PTB let alone diagnosing it. So, the aspect of public enlightenment is necessary for the community members on [PTB] are on top of it but it is not adequate"	Community nominated leader 1.
		"I just used a mixture of lime juice, honey, and 'Epa Ijebu' [traditional medicine]. I was also eating bitter kola and licking	PTB patient1.

		Tom-Tom [a menthol sweet]. When none of these worked, I went to the chemist where I was given drugs. The symptoms subsided at this *point but then later came" back"*	
		"In this environment, before people come to the hospital, they would have tried so many things, like visiting pastors and using herbs, and when they don't see any improvement, they come to the hospital"	Pharmacy staff.
	The influence of poverty on PTB patients' access to healthcare services	"I was a trader before my sickness and was travelling around the country selling, but because of the sickness, my business has collapsed. I have no money and I have exhausted all my savings to access treatment	PTB patient 1.
		"For those that work in an office, if people know of the disease the sufferer will be advised to go home and not to come back until the disease is cured. For a person selling food, people will not go near her to buy"	HCW receptionist1
		"I agree the patient will lose their job and people will be talking about them and the community members will run away because of fear of infection as they see the disease as contagious".	University FG discussion

		“The kind of help that comes that I have seen are from relatives. They donate things; contribute money, mainly that’s it. The government and NGOs donate drugs community doctor”.	Community doctor.