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Paper:
Alanazy, W., Rance, J. & Brown, A. (2019). Exploring maternal and health professional beliefs about the factors that affect whether women in Saudi Arabia attend antenatal care clinic appointments. *Midwifery, 76*, 36-44.
http://dx.doi.org/10.1016/j.midw.2019.05.012

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You can find the full paper at:
https://www.sciencedirect.com/science/article/pii/S0266613819301202

Abstract

Objective: Effective antenatal care is important for the health and wellbeing of pregnant women and infants. However, in Saudi Arabia, attendance rates are low, increasing the risk of negative birth outcomes. The aim of this research is to understand the beliefs of pregnant women and health professionals about the factors leading to these low attendance rates.

Methodology: A qualitative exploratory study-using semi structured face-to-face interviews. Interviews were conducted exploring (a) attitudes to the use of antenatal care by pregnant Saudi women, (b) beliefs of women regarding the value of antenatal care and (c) perceived barriers to attendance.

Setting: Data were collected from three hospitals in two regions of Saudi Arabia.

Participants: Women at any stage of their pregnancy attending for antenatal care or ultrasound, women attending postnatal clinic, and health professionals (obstetricians) who support women during pregnancy and birth.

Findings: Although mothers viewed antenatal care as important for maternal and infant health, several barriers to attending care were identified by mothers and professionals. These factors were classified into three themes: physical barriers (e.g. lack of transport), low maternal education, and inadequate healthcare facilities (including negative staff attitudes and poor communication). These factors were exacerbated by the beliefs of partners and family. Notably, the theme of low maternal education was raised only by health professionals, whilst the theme of staff attitudes and communication was raised only by mothers.

Key conclusions: Barriers to antenatal care exist at the personal, social, socioeconomic and health services level. Some health professionals may be unaware of the importance of their communication style. Interventions to improve attendance must be multifaceted rather than focussing on individual women alone.

Implications for practice: Barriers for women attending antenatal healthcare must be addressed in order to increase attendance rates. Specific practice-based interventions may involve changing the time or location of services and exploring changes to staff communication with women.

Key words: Missed appointments/Non-attendance, Maternal health, antenatal care, barriers, Riyadh city, Saudi Arabia

Highlights

- Social, cultural and health beliefs affect whether women in Saudi Arabia attend Antenatal care.
- Perceptions of reasons for low attendance differ between women and health professionals
- Women identify personal barriers, family factors, and staff attitude as the most significant deterrents to attend care.
- Health professionals perceive women have a lack of understanding of the importance of care, affected by low education
- The results can help policy makers to understand how changes to care provision could increase attendance

Background

Globally, over 30, 000 women die each year during pregnancy and childbirth (Alkema et al., 2016) predominantly as a result of pregnancy and birth related complications (Alkema et al., 2016). Reducing these figures is a global priority, and increasing provision of antenatal care is a critical part of this (WHO, 2016). Antenatal care (ANC) can decrease the rate of both maternal and infant morbidity and mortality by allowing early identification and treatment of complications (WHO, 2014). It allows practitioners to support and monitor maternal and infant health through medical screening, checking for signs of abnormality and providing nutrition and health education (Roberts, 2015b). ANC also assists more widely by preparing women for birth (Fagbamigbe and Idemudia, 2015) and helping them to understand how to care for their infants after birth (Ayiasi et al., 2014).

The World Health Organization therefore recommends that pregnant women should start to receive ANC within the first four months of pregnancy (Andrew et al., 2014). However, globally, access to ANC and attendance at ANC clinics is low. In many developing regions, women are dying from complications that are often identifiable and treatable, due to a lack of access or attendance at antenatal clinics (Fagbamigbe and Idemudia, 2015). For example, antenatal care allows the early signs of obstetric hemorrhage to be identified (NICE, 2008). However, these early signs often go unidentified due to lack of care, leading to obstetric hemorrhage accounting for 25–30% of all maternal deaths (Walfish et al., 2009, Say et al., 2014, Takai et al., 2017) . Likewise, early identification of pre-eclampsia, which is the second leading cause of maternal death (Say et al., 2014), can enable treatment (Bezerra Maia et al., 2012). Improving attendance at ANC clinics would help to reduce these figures through allowing pregnancy complications to be identified, monitored and treated (Titaley et al., 2010).

In 2001, the World Health Organization presented a new ANC structure that recommended at least four ANC visits for a low risk pregnancy. However, despite recommendations, while 86% percent of pregnant women worldwide attend at least one appointment, only 62% make four or more visits. In developing regions, attendance is much lower. In sub Saharan Africa only 52% of women attended four or more visits, with just 46% in South Asia doing so (UNICEF, 2016).

Saudi Arabia has a high maternal death rate of 24 in 100,000, alongside a still birth rate of 12.9%, which is highest in rural and poorer regions (Ministry Of Health in Saudi Arabia , 2015). Low antenatal care attendance in the region is likely contributing to this. Whilst 97% receive some form of ANC (World Bank, 2016), many attend only one appointment or miss others, with estimates that the non-attendance rates in public hospitals are up to 30% (El-Din et al., 2008). More recent research found that in one study whilst 85% of women attended their first appointment, 15% never attended again (Ramisetty-Mikler et al., 2018). A similar failure to attend rate was seen in a cross sectional study with 1617 pregnant or new mothers, with 16.4% of mothers stating they did not regularly attend their appointments, with 3.6% failing to attend at all (Habib et al, 2017). Finally, in another study, jut 41% of women attended four or more of their antenatal appointments (Al-Ateeq et al., 2013).

Low attendance is not purely due to perceptions of its importance. Research exploring maternal attitudes to ANC in Saudi Arabia finds that the majority of women believe it is important (Nigenda et al, 2003; Habib et al, 2017). However, despite this, non-attendance is common.

In terms of understanding barriers to attending care, the research is sparse in Saudi Arabia. Two studies have highlighted that women are more likely to attend care if their caregiver is female or if a woman is present in the (Al-Nuaim et al., 1998, Nigenda et al., 2003). However, this research is now over 15 – 20 years old. Another more recent qualitative study in Riyadh suggested that factors such as a lack of supplies and medical equipment, alongside lack of respect from primary health care center staff, were given as reasons for missed appointment (Almalki, 2014).

Understanding in more depth the factors that affect ANC appointment attendance in Saudi Arabia is vital in providing care that fits women's needs. The aim of this study was therefore to explore the perceptions of Saudi pregnant women and their health care professionals as to why women do not attend ANC clinics.

Methodology

Study Design

A simple qualitative descriptive approach was used for this study (Sandelowski, 2000, 2010)

Participants

Participants included antenatal (n=14) and postnatal women (n= 7) and health professionals working with pregnant and new mothers (n = 9). All participants were recruited from three main hospitals in Saudi Arabia: Alyammamah hospital (AH)(7 women, 3 health professionals), King Fahad Medical City (KFMC)(10 women, 4 health professionals) and King Khalid Hospital (KKH) (4 women, 2 health professionals). Hospitals from both urban and rural locations were chosen to ensure wider participation by women from different demographic backgrounds.

Maternal inclusion criteria: Saudi pregnant women aged 18+ in any trimester who had missed one or more antenatal care visits. Exclusion criteria: Serious pregnancy or existing maternal or infant health complications, inability to consent.

Health professional inclusion criteria: Health professionals who support women during the antenatal period (due to antenatal healthcare delivery in Saudi Arabia, this meant only obstetricians would meet inclusion criteria).

Ethical considerations

Ethical permission for the study was firstly gained from a University Research Ethics Committee. Additionally, access approval was acquired from the administration of the three health care facilities (Research Ethical Committee in ministry of health in Saudi Arabia).

Setting

The study was carried out at three medical facilities in Saudi Arabia. Two of the hospitals, King Fahad Medical City and Al Yamamah Hospital, were located in Riyadh the capital city, whilst King Khalid Hospital is located in the rural region of Majmaah city, 200 kilometers from Riyadh. King Fahad Medical City is the largest medical organization in Saudi Arabia. It

offers specialized hospital services for women, including ANC in the facility's ultrasound department. The obstetrics department provides care for 4000 to 5000 deliveries per year (Wahabi et al., 2016). The hospital receives women from all over the region, with some travelling more than 100 km to reach the hospital because there is mal-distribution in health care service in Saudi Arabia due to geography (Almalki et al., 2011). King Khalid has a capacity of 204 beds, and also serves more than 8 rural areas through 8 primary care centres (MOH, 2017).

In Saudi Arabia, the Ministry of health follows NICE guideline s that every mother should attend for an initial booking appointment, an early scan and be seen by a consultant in the first trimester. Women are then offered visits at 16 weeks, 2 to 3 appointments in the second trimester, then every two-week in third trimester. Antenatal care is delivered mainly by physicians with no clear policy reinforcing continuity of care (MOH, 2012). Partners and children are not encouraged to attend appointments of the birth (Jahlan et al., 2016).

Materials

Data were collected via semi -structured interviews, using an interview schedule that allowed for further prompts and probes when new ideas were raised. For mothers, the questions explored women's attitudes towards and perceptions of ANC clinics in order to understand the barriers to not attending appointments. For health professionals, questions explored similar themes, to understand their perceptions of why women did not attend ANC appointments (table one).

Procedure

Data was collected in the Arabic language since although all the participants understood Arabic, only approximately 10% of those in rural regions could understand the English language. Maternal data was collected during ANC clinic hours in the three health care facilities, specifically choosing the first ultrasound scan appointment as this is the appointment most heavily attended by pregnant women in Saudi Arabia (Wahabi et al., 2014). Postnatal women were recruited from the postnatal ward.

Potential participants were given a study information sheet and asked to contact the researcher if they wished to find out more and take part. The researcher was based in a nearby private room, and health professionals referred participants who fit within the inclusion criteria and who voluntarily agreed to take part to her. The interviews took place in these private rooms or postnatally by the mother's bedside if preferred.

For professionals, study information sheets were distributed to relevant health professionals in the hospitals, with the researcher's contact details to use if they wished to take part. The interviews with health professionals took place in private rooms, staff offices and, if there was a need for privacy, in the on call room.

In all cases, the participants who requested an interview were given a further opportunity to read the study information sheet and ask any questions before signing a consent form. The maternal interviews lasted between 20 and 25 minutes and those with professionals lasted for approximately 30 minutes. The interviews were recorded after seeking the participant's permission. At the end of the interviews, the participants were thanked, debriefed and given the opportunity to ask further questions.

Data Analysis

Data were transcribed immediately after concluding the interviews. Initial transcription was conducted in Arabic and then translated, with 10% of transcripts checked by a further bilingual reviewer. Transcripts were read and re read to identify smaller themes, then grouping these smaller sub themes into larger sub themes (Braun & Clarke, 2014). An example of how the analysis moved from raw data to sub theme, to theme is shown in table two.

The principles of Lincoln & Guba (1985) were used to establish validity and reliability. Credibility was enhanced through triangulation between data from three hospitals and two participant groups. Transferability was enhanced by providing detailed information about the study setting, sample size and data collection techniques. Dependability was ensured through two researchers coding the data. Initial coding was completed by one researcher, with a second reviewing themes and sub themes. Agreement was found in over 90% of cases. Where disagreement occurred, themes were discussed until agreed. Confirmability

was enhanced by providing supporting participant quotes, and outlining the data coding process (Bryman, 2016; Nowell et al, 2017).

Findings

Twenty-one women participated in the interview with a mean age of 32.48 (SD: 4.76), with a range from 21 to 39 years. Further details of maternal demographic background can be found in table three.

For the health professionals, all of those who participated were obstetricians as the three hospitals follow an obstetrician led care system. The participants had between 4 and 35 years of experience in practice. Most of the participants were specialist obstetricians who had worked for more than four years in the obstetrical department (55.6%).

Overall, five key themes were identified in the data: maternal attitudes and beliefs about the importance of care, personal issues, ANC clinic facilities, staff attitudes and knowledge, and maternal education. The first two (maternal attitudes and beliefs about the importance of care and personal issues) were raised by both the women and the professionals. However, the women only raised staff attitudes, knowledge, and ANC clinic facilities, with professionals alone raising the concept of maternal education. All themes and sub-themes are shown in table four. All participants are identified by their category (e.g. mother or health professional), participant number and location of hospital abbreviated (KKH = King Khalid hospital; AYH = Al Yamamah Hospital; KFMC = King Fahad Medical City)

1. Maternal Attitudes and beliefs about the importance of care

Both the women and the professionals held the view that maternal attitude towards the importance of care mattered. The mothers raised a number of issues, such as believing appointments to be unnecessary or only needed in emergencies. These factors were reflected in the professionals' interviews. The concept that maternal attitudes were also affected by close others, such as friends and family, was also raised by both groups.

Appointments as unnecessary

Eight Women often viewed many of the appointments as unnecessary and not important. The key appointment that was viewed as important was typically the first ultrasound, but they felt that others were unnecessary as long as the mother attended if she had complications.

'Some, not all, because sometimes I feel no need to go monthly to the doctor, not while I'm well and my baby is moving very well'. (Mother five -KFMC)

'I think the ultrasound is more important than the others because afterwards you will be sure that your baby is normal'. (Mother twenty-one -KKH)

This was reflected in the responses of the professionals who recognized that women often didn't view all the appointments as important and would select specific ones to attend. The most commonly attended appointments were those that involved scans or allowed the woman to book where she would deliver her baby.

''The main reason is their belief that it is not important to attend if the baby's movement is normal and they are feeling well'. (Health professional eight - KKH)

'Yes, in the third trimester more than the others because they want to book a place for the delivery'. (Health professional nine – KKH)

Care as for emergencies

Both the mothers and professionals raised the idea that mothers saw ANC appointments as something to attend only in an emergency. Mothers would attend if a problem arose and the professionals noted that high risk women were more likely to attend if they understood the complications they were facing.

'No, because I do not believe that all visits are important. If I feel pain, I will go to the hospital'. (Mother fourteen - AYH)

'Yes, the high-risk women are more likely to be committed to their visits'. (Health professional nine - KKH)

However, in some cases, mothers were making judgments about what constituted an important appointment based on their own beliefs rather than what staff advised them, even in the case of complications.

I will tell you the truth - I'm not concerned because my baby has good movement and I do not have any signs that make me worry, so I'm a bit lazy. My appointment is weekly because I'm a diabetic patient, but I don't need to attend weekly'. (Mother Eighteen –KKH)

'I don't need to attend all the appointments. I didn't attend some appointments, such as thyroid screening, because they are every 2 weeks. In the end, I did not attend, and I did not even take my medication'. (Mother one – KFMC)

Influence of others

The mothers and professionals both discussed how maternal attitudes were often heavily influenced by the attitudes of the woman's mother and husband. The husband often decided whether an appointment was deemed important enough to take his wife to, and given that women are not allowed to drive themselves (see theme below), this impeded their attendance.

'No, to be honest with you, my mother told me there is no need to go to hospital every month unless you have pain. The important thing is to do the ultrasound to be reassured about my baby's health'. (Mother eleven - AYH)

'I can remember one of my patients telling me that her husband does not believe that it's important to attend antenatal clinic monthly because his mother delivered without help and in the desert'. (Health professional three – KFMC)

2. Accessibility and family duties

Secondly, both women and professionals identified a number of personal factors that prevented or dissuaded women from attending ANC appointments. These included aspects such as transport difficulties, difficulty having time off work and competing family or childcare responsibilities. These factors were often influenced by theme one – a view that

appointments were not really necessary so mothers didn't view them as important enough to overcome these challenges.

Transport

Both the women and the professionals raised transport issues. The women indicated that since they were not allowed to drive by law and had no access to public transportation, they had to rely on their husbands, family members or friends to drive them to the ANC clinic. Distance from the hospital played a key role here, as did the work commitments of family and friends who might drive them.

'Oh sister, sometimes I do not have transportation and sometimes there are personal circumstances, but the most difficult thing is transportation '. (Mother twenty one –KKH)

'Actually, I ask my patients sometimes, and they tell me for social reasons, for example, their husband refuses to bring them '. (Health professional one – KFMC)

Employment

A second factor recognized by both the mothers and the professionals was employment making it difficult to attend, especially as clinics were often a long distance away and were often only held between the hours of 8am and 4pm. This factor intertwined with their reliance on others to take them to appointments as men were not given time off work for such appointments.

'I cannot waste my time in government hospitals while I have a responsibility to work'. (Mother six – KFMC)

'Actually, I ask my patients that sometimes, and they tell me for social reasons, for example, their husband refuses to bring them or he cannot get time off from his work'. (Health professional one - KFMC)

Family and child responsibilities

Family responsibilities also represented a key barrier. Women discussed how family events and expectations to priorities family often prevented them from attending.

'*A lot of difficulties. Firstly, the travelling from one place to another place. My husband forces me to go to see his family in the southern region every month, and I stay there for two weeks or more. That's also why I miss my appointments'. (Mother fourteen-AYH)*

'I missed a lot of my appointments because I was travelling from Qassim to Riyadh to see my family; that's why I missed my appointments'. (Mother seventeen - AYH)

Childcare responsibilities

Childcare was also a key issue raised by both mothers and professionals , with women often not having anyone who could care for their child for the day. This was exacerbated by other factors, such as transportation, distance from the hospital and waiting times in clinics.

'Also, my children do not have anybody with them'. (Mother fifteen – AYH)

'Family issues like not having anybody to mind the kids at home'. (Health professional two – KFMC)

3. Antenatal care clinic facilities

The third theme was related to facilities at the clinics and was notably only raised by mothers. They viewed poor, or a lack of, facilities as a reason not to attend, attributing little value to the appointments based on this. Long waiting times were perceived as an additional waste of time, with women who could afford it preferring to seek private care.

Lack of specialized facilities

Mothers highlighted how sometimes they attended a specific clinic but that the clinic was unable to give them full care due to a lack of specific facilities at that location. Women felt that it was not worth travelling so far to not receive full care.

'They do not have any facilities. They give medication, but they cannot do anything else. That's why they refer patients to the big hospital in Riyadh. [Makes angry sound] I do not know why they opened it. If they do not have facilities, they should at least provide

transportation; some women do not have anybody to take them to Riyadh'. (Mother twelve - AYH)

Waste of time

Women also raised the fact that they attended appointments for very little to happen, feeling that this was not worth their time or travelling expenses.

'Oh sister, do you know the difficulties when you are pregnant, diabetic and sitting in the car for two hours to see the doctor, and in the end they just check the baby's pulse? [Upset] It really is so difficult'. (Mother twelve - AYH)

Others reported how they often had to spend up to a full day at ANC clinics, waiting around for different small things to happen. They felt that better organization would make appointments faster.

'The antenatal appointments take such a long time, so there is no way to be back that early'. (Mother thirteen – AYH)

'I waited a long time on the last visit, and then I had to leave the hospital without seeing the doctor… I was very angry'. (Mother seventeen - AYH)

Preference for private care

Poor facilities led women who could afford to pay for private care to choose to move to the private health care system as they believed they would get access to better facilities and a higher standard of care.

'Oooh, in the beginning I applied for this hospital (king Fahad medical city), and they refused to register me, and then I applied again, and then they accepted my application. But I went to a private hospital. That's why I did not care if they registered me or not, because I was following up with a private centre. I did all the blood screening and the ultrasound, but I will come here for the delivery because my previous delivery was a caesarean section'. (Mother three – KFMC)

'I did not come from far away and wait for a long time in the clinic to check the fetal heart rate because I can pay 50 Riyal to check it in a private center'. (Mother thirteen - AYH)

4. Staffing factors

A fourth key area, again raised by the mothers alone, was the impact of staff attitudes and knowledge upon women's decisions. Almost a third of mothers raised the idea that staff attitudes and interactions affected their attendance at appointments; dismissive, uncaring or pressurising behaviour stopped women from wanting to attend.

Dismissive staff

Women discussed the idea of uncaring staff dismissing their concerns or not letting them ask questions of their own. Women reported that staff often did not build a relationship with them, forgetting who they were in between appointments.

'Do you know that they ask the same questions every visit? "What is your parity? When was your last period?" [Angry voice] I swear to God, the same questions every visit. Instead of them repeating questions, let us ask our own questions of them. They do not see you as a human being who needs care; they are very rude and badly behaved'. (Mother fifteen - AYH)

'I waited two to three hours! And when I saw the doctor and told her about my concerns, she did not care at all. In Arabic, she ignored what I said. She said,"normal, everything is normal", and she did not give me time to ask questions. She wanted to finish and take in the next patient. In addition, the Saudi nurse with her was also very rude. This is the reason I was upset after my antenatal clinic visit. You know, they are not attentive in their appointments. They do not care that you are pregnant'. (Mother fifteen -AYH)

'*The staff attitude. Do you know, I came from far away to see the doctor, and when I entered his office, before I sat down, he asked me to lie on the bed, and then he checked the baby's heart rate and told me that everything was okay? "You can go now", he said'. (Mother thirteen– AYH)*

Pressurising staff

Others discussed how, related to the factor above, staff tried to scare or pressure them into having interventions without explaining why or what would happen. This led to women feeling frightened and unsure of what to do.

'I have not attended all. I am afraid of the health staff, the doctors and nurses. Sometimes you come to check your and your baby's health, and they shock you by telling you that you are in danger. And from my experience from a previous delivery, they told me I was going to die if I did not have a caesarean section'. (Mother ten -KFMC)

'Nothing at all. You come to your appointment to check your own and your baby's health. Then suddenly, they make you afraid, telling you a lot of things that make you feel that you are dying soon. It would be better to sit at home for two or three months without stress.' (Mother five-KFMC)

'I am afraid of the doctor. I did not attend the last two appointments, and I did not use my insulin, so he will shout at me'. (Mother twelve - AYH)

Poor care

A number of women also raised the idea that they did not trust the information and care that the staff gave them because they had been given inconsistent advice by different staff members or incorrect advice that led to a misdiagnosis and potential increased intervention.

'*They diagnosed me wrong in the last pregnancy. They told me that my baby was breech and could not be delivered normally. I came to the emergency department when I felt pain, and the cervix was 6 cm, and, thank God, I delivered normally. [Pauses] I cannot trust them at all'. (Mother fifteen -AYH)*

5. Maternal education level

This final theme was raised only by the professionals. Professionals felt that maternal low education was a key driver of nonattendance for two main reasons: lack of understanding and belief that other influences affected health.

Lack of understanding

The professionals believed that maternal education level was a key reason, feeling that mothers with a lower education did not understand the importance of attending.

'From my experience the non-educated women are less likely to attend'. (Health professional six–AH)

'Actually, I think many things prevent them. Maybe it's social reasons, being unaware of the importance of attending appointments and also the non –educated'. (Mother eleven –AH)

Belief in other influences

The professionals also raised the idea that mothers with a lower education often believed that other factors would influence their health, such as supernatural powers or religion.

'I think the less educated women, some Saudi women believe that nothing will happen to us that God did not write to them, and mostly they are uneducated women'. (Health professional seven- AH)

"Many things… being uncaring; in fairness, some women say that God will help them so there is no need for a hospital, and the transportation, but God is protecting us.' (Health professional six – AH)

Discussion

The main objective of this study was to explore maternal and professional beliefs on the barriers that deter pregnant Saudi women from attending ANC appointments. The findings will be of interest to those working to increase maternal ANC clinic attendance and ensure that women feel better supported and able to attend.

Despite antenatal care being freely available in clinics, both groups identified a series of barriers to attendance, including attitudes and beliefs, personal barriers, clinic factors, staff attitudes and maternal education. Notably, although both the professionals and the mothers raised the first three themes, they differed on the remaining two. Whilst mothers identified clinic factors and negative staff attitudes as deterring them, professionals did not recognize this as an issue. Instead, the professionals believed maternal low education was responsible – a factor not raised by mothers.

Firstly, in a theme raised by both mothers and professionals, women were missing their appointments or not attending antenatal care clinics due to the view that antenatal care in government hospitals is a waste of time, too short or of no benefit to them. Consequently, pregnant women who can afford it prefer to follow up their pregnancy in private health care centers as there is greater flexibility for appointment times, reflecting previous findings by Almalki (2014). Duration of appointment is also an issue. In one study by Habib et al. (2011) found that generally only one physician is in attendance per clinic, leading to a long wait yet the mean duration of the appointment was just 10.3 minutes.

However, not all women are able to afford this private care, leaving them at risk of complications not being identified. Others will only attend if they feel it strictly necessary, reflecting research in Pakistan, which identified many women only attend appointments if they had pain or a lack of fetal movement (Finlayson and Downe, 2013) However, these signs can be too late as a warning, preventing early intervention (Beauclair et al., 2014).

Related to this was the strong influence of the women's and their relative's beliefs upon whether they attended ANC appointments. Women described how their family or partner did not believe appointments were important and so discouraged or prevented them from attending. This is a common finding in many countries. In one study in Tanzania, women described how if their family was not supportive, they would not take care of the children so the woman could not attend (Gross et al., 2012)The findings of research on pregnant women in Rwanda (Hagey, 2012), and Malawi (Roberts, 2015a) was similar. Women could not attend because their partner would not allow it or refused to take them to appointments.

Women and professionals also identified a number of personal barriers, including transport, childcare, family responsibilities and work. These factors were often intertwined with family attitudes as women were reliant on others to attend clinics. For example, in Saudi Arabia, women are not allowed to drive themselves, instead having to rely on others, meaning they could not attend a clinic that was a distance away unless someone took them. The transport issue in Saudi Arabia has been identified as an obstacle in attending appointment in previous research, both for antenatal care attendance in Riyadh (Almalki, 2014) and other health issues, such as diabetes (Khan et al., 2012). This issue is not limited to Saudi Arabia;

worldwide the most common reason for poor attendance is the need to travel a large distance (Roberts, 2015a)

Work was another issue raised, and this was compounded by the transport and distance issues. Women often had to seek permission from their place of work for an entire day off, and even if they had permission, their husband or other family member would also need time away from work to take them. There is no specific policy in Saudi Arabia regarding taking time off for ANC appointments, and this is often dependent on the work director's decision whether to give time off or not. According to AlGilany (2008), Saudi women who are employed are less likely to attend their antenatal care appointment than non-working women, and they tend to begin antenatal care later than other women do. This supports previous research in Mozambique by Chapman (2003) who found that women would not be paid or have their duties reduced if they took a day off. This was reflected in research in Malawi (Roberts, 2015a) and Rwanda (Hagey, 2012)

Notably, two of the themes raised by women – poor antenatal clinic factors and negative staff attitudes – were not recognized by the health professionals, suggesting either disbelief, disagreement or a lack of awareness of the importance of these factors. Clinic factors, such as disorganization, time taken and poor services offered, were all identified as barriers, reflecting previous research in Saudi Arabia (Almalki, 2014) and also in other regions, such as Guinea (Andrew et al., 2014) and Malawi (Roberts1 et al., 2015). This factor of course interacts with other issues, such as needing childcare and time away from work, as women do not believe attending is worth their time, the effort and the re-organization of other responsibilities.

Women also felt that they were not listened to or treated with respect or dignity, increasing their feeling that the clinics were not worth attending. Only one study conducted in Saudi Arabia has explored this issue, finding similar themes (Almalki, 2014); however, in other countries and cultures, the attitudes and communication approach of staff have proved to be important. For example, McMahon et al. (2014) discussed how women felt that staff treated them harshly and made them afraid, leading them to turn away from health care. The women were also dissatisfied with the scant information given to them by the staff. They felt that the service given was less than they needed, which affected their interest in

attending antenatal care appointments. This reflected previous work in Cape Town, South Africa (Abrahams et al., 2001) and in Lebanon (Kabakian-Khasholian et al., 2000) and in Jordan (Hijazi et al., 2018) which identify how low quality of care, including the information given to pregnant women, can strongly affect willingness to engage in maternal health care.

Conversely, staff believed that low maternal education was affecting attendance, despite women not identifying this as a barrier. Many research studies do indicate that a woman's education level is considered to be factor affecting antenatal care visits because education increases women's power, autonomy and capability to make decisions (Simkhada et al., 2008, Bloom et al., 2001, Muyunda et al., 2016). Women with a low education are less likely to attend and be committed to attending ANC appointments (Al-Ateeq et al., 2013, Gloria, 2010). However, even if this is true, this research shows that there are many further barriers to women attending care.

The findings have important implications for policy makers and care providers. The issue of poor attitudes towards antenatal care of both the pregnant women and those around them highlights the need for public health interventions targeted at the wider population to help increase understanding of the importance of accessing ANC on a regular basis. If maternal education is affecting the decision to attend, new ways of working with women should identified to support them in understanding why attendance is importance for the health of their baby and themselves. Instead of simply identifying that education is an issue, interventions to ensure education is widespread should be developed to educate and empower women to participate in their healthcare.

Making changes to birth care would also be beneficial. An increased numbers of clinics in more locations may reduce the time needed to travel and be spent at appointments. Improving the services delivered and equipping antenatal facilities so they are able to facilitate high quality care would encourage more women to attend. Instigating policies to allow paid time off work for ANC appointment attendance and tackling barriers, such as women not being able to transport themselves to appointments, would likely have a key impact. As a part of these improvements, the subject of staff communication should be approached, ensuring that all staff understand the importance of positive communication

with women and the impact this can have upon attendance and therefore maternal and infant health.

Further research is needed to investigate the relationship between factors contributing in missing antenatal care appointment and the outcome of pregnancy.

The research does have its limitations. Data was not collected from all clinics across Saudi Arabia and therefore may be skewed towards the attitudes of those in the selected clinics. Notably, of course, it did not reach those who never access antenatal or postnatal care, although the first ultrasound scan clinic is attended by almost all women (95%). Only women and professionals who were most interested in participating may have volunteered, although this is an issue across health and social care research in general. It is also possible that women felt that they had to give the 'correct' answers to the researcher as she may have been seen as someone in power. However, given the number of barriers that women raised, including identifying staff barriers, it was felt that women gave open and honest responses.

In conclusion, the research indicates that whilst women and professionals both recognize the importance of ANC, a large number of factors lead to diminished attendance in the Saudi population. Working to tackle these barriers at a public health level would likely increase attendance, improving the health and wellbeing of mothers, infants and the future population.

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Table one: Maternal and health professional interview schedules

Mothers

1. Have you attended all your appointments so far? Which ones? Which have you missed? (for postnatal women: Did you attend all your appointments in pregnancy? Which ones? Which did you miss?)
2. Do you think attending hospital appointments is important? Why?
3. Do you think any appointments are more important than others? Why?
4. Is attending appointments difficult for you at all? How? (For postnatal women: Was attending appointments difficult for you at all? How?)
5. What do you think stops some women attending hospital appointments?
6. Do you think you will plan to attend all future appointments? (N/A for postnatal women). If not, what might stop you attending future appointments?
7. Is there anything that you think would help women attend hospital appointments?

Health professionals

1. How many women in your care attend all their hospital appointments?
2. Do women miss or come late to appointments?
3. Are women more likely to attend certain appointments?
4. Are women more likely to attend appointments in different trimesters?
5. Do women take the full time of their appointment?
6. Why do you think women do attend appointments?
7. Are there any groups of women that you think are more likely to attend appointments?
8. Why do you think women don't attend appointments?
9. Are there any groups of women that you think are less likely to attend appointments?
10. Do you have any ideas about what would encourage women to attend appointments?
11. Do you think it is important that all women attend their appointments?
12. Do you think some appointments are more important to attend than others?

Table two: Showing data analysis process from raw data to sub theme to theme

Raw data	Sub theme	Description	Theme
'Oh sister, sometimes I do not have transportation and sometimes there are personal circumstances, but the most difficult thing is transportation'.	Transport	Women are unable to transport themselves to the hospital	Personal factors

Table three: Maternal demographic background

Identifier	Sub group	N	%
Age	19 - 24	2	9.5%
	25 - 34	9	42.8%
	35 - 44	10	47.6%
	45+	0	0
Education	Primary	3	14.3%
	Intermediate	2	9.5 %
	Secondary	4	19%
	University's degree	12	57.1%
Occupation	Employee	6	28.6%
	Student	1	4.8%
	Housewife	14	66.7%
Region	Riyadh	14	66.7 %
	Rural area	4	23.8%
	Other cities	2	9.5 %

Table four: Themes arising in interviews with mothers and health professionals

Theme	Sub theme	Mothers	%	Professionals	%
Maternal attitudes and beliefs	Many appointments unnecessary	4	19 %	1	11.11%
	Care is for emergencies	9	42.8%	1	11.11%
	Influence of others	4	19%	3	33.3%
Personal factors	Transport	10	47.6%	4	44.4%
	Employment	4	19%	2	22.2%
	Family commitments	6	28.5%	1	11.11%
	Childcare	2	9.5%	1	11.11%
ANC facilities	Lack of specialist facilities	3	14.2%	0	0
	Waste of time	3	14.2%	0	0
	Prefer private care	6	28.5%	1	11.11%
Staff factors	Dismissive attitudes	8	38%	0	0
	Pressurising staff	5	23.8%	0	0
	Poor care	8	38%	0	0
Maternal education	Lack of understanding	0	0	6	66.6%
	Belief in other influences on health	1	4.7%	1	11.11%