

Exploration of Healthcare professional's engagements and experiences toward people who use New Psychoactive Substances in statutory, non-statutory, and private addiction and mental healthcare services

Abstract

Purpose. New Psychoactive Substance (NPS) use in mental health and addiction healthcare services are a common co-morbidity. This paper explored the survey responses with Healthcare professional's (HCPs) engagements and experiences toward people who use NPS in five healthcare services.

Design. A theoretically adapted online survey design explored the engagements and experiences of participants toward people who use NPS across (n=3) community and (n=2) rehabilitation mental health and addiction healthcare services consisting of (n=1027) service users.

Findings. A total of 92 participants (of 120 participants) completed the survey and 28 did not. Most (56.33%) reported neutral to poor experiences and engagements and a lack of NPS-related policies, procedures, and educational training. Participants (99 percent) recognised the harmful effects of NPSs and (87 percent) requested clinical assessment procedures. The participants are unable to identify and manage acute intoxication by NPS, lack knowledge of NPS adverse effects and requested NPS-specific training on drug legislation.

Research implications: The sample may not be representative with the broader United Kingdom population. The study's methods are comparable to similar research surrounding NPS in healthcare services. Similar studies may advance the findings.

Practical implications: The implications for practice include NPS awareness trainings, educational updates through seminars and conferences. Participants requested clearer NPS assessment, referral, and management processes. Several policy-making and procedural opportunities exist to ensure a better health outcome for people who use NPS.

Originality: This is the first theoretically adapted survey to explore participant's engagements and experiences with people who use NPS in addiction and mental health settings.

1. Introduction

New Psychoactive Substance (NPS) pose challenges for drug consumers and healthcare professionals (HCPs) working in primary care, secondary care, and tertiary healthcare services. This described '*growing worldwide epidemic*' (Shafi et al., 2020, pg.1) poses difficulties for drug control policy, difficulties in NPS drug detection and increases in toxicity, resulting in overdose and death. Worldwide, Governments, laboratories, and partner organisations reported 1,230 NPSs to the United Nations Office on Drugs and Crime and Early Warning Advisory (EWA). In November 2023 141 countries, territories and regions identified one or more NPS per week (UNODC, 2024). However, Arillota et al (2020) suggests 4,204 NPSs are available using the NPS 'web searching' finder tool, thus, remain undetected and unrecorded by government organisations. Furthermore, challenges include a lack of NPS-related knowledge of HCPs, healthcare services including hospitals, mental health services and community drug and alcohol services surrounding the effects and harms (Sajwani et al., 2023; Shafi et al., 2020). This may contribute towards a lack of systematic recording of NPS harms across different healthcare services and encourage loopholes due to the less legal liability. In the United Kingdom, 9.5% of people aged 16 to 59 years (approximately 3.1 million people) reported using a drug in the last 12 months according to the Office for National Statistics, (2024). In March 2023, nitrous oxide is the common source of drugs used by people aged 16 to 59 years (37%) in comparison to obtained traditional illicit substances (cannabis, heroin, and cocaine) through a neighbour, friend, or colleague (45.7%). 12.1% of people reported to access illicit substances (including NPSs) through a drug dealer on the street. Some of the NPSs include: mephedrone (stimulant based drugs) and Gamma-butyrolactone (GBL) or Gamma-hydroxybutyric acid (GHB). Lastly, 1.3% of people aged 16 to 24 years used a dissociative NPS, namely, nitrous oxide in 2023 and Lysergic acid diethylamide (LSD) and magic mushrooms increased by 1% compared with the year ending March 2020 (0.7%) (ONS, 2024).

NPS diverse effects

The ONS (2024) state that NPSs mimic the effects of traditional illicit substances including heroin, cannabis, ecstasy, or cocaine. Traditional drugs are available in different forms including powders, crystals, tablets, liquids, and herbal. Some of these NPSs can fit into several categories. Firstly, cathinone are stimulant-based NPSs, for instance, Khat (leaves

chewed to cause a stimulant effect) and novel synthetic opioids (NSO) that are opioid-based NPSs, (nitazenes; strong opioid). Secondly, there are synthetic cannabinoid receptor agonists (SCRAs), (Spice; synthetic cannabis that mimic tetrahydrocannabinol) and dissociative NPSs (nitrous oxide; that produce feelings of detachment). Thirdly, synthetic empathogens such as MDAI (5,6-methylenedioxy-2-aminoindane) mimic MDMA (3, 4-methylenedioxymethamphetamine) that produce feelings of emotional openness. Lastly, synthetic depressants (2M2B) can cause effects of the central nervous system and synthetic psychedelics (stimulants and hallucinogenic-based drugs) such as N, N-dimethyltryptamine (DMT) (Adley et al., 2023; European Monitoring Centre for Drugs and Drug Addiction, 2023). The adverse effects of NPS use range from paranoia, psychosis, seizures to death (Chiappini et al., 2021; Corkery et al., 2022; di Giannantonio et al., 2020; Hughes et al., 2018; UNODC, 2023).

NPS detection

Concerns are voiced by HCPs surrounding the identification, detection, lack of NPS -related healthcare policies and frequent changes in drug policy (Department of Health, 2021; EMCDDA, 2023). The Dame Carol Black independent review of drugs (Black, 2021) suggests that HCPs working in hospitals, mental health, and addiction settings require more funding to reduce NPS mortality. Furthermore, HCPs need more training on the short and long-term physiological effects of NPS and available treatments. Inevitably, NPS- related education should provide evidence-based interventions for people who use NPS. Healthcare services should consider implementing NPS-related policies and procedures associated with sexual health problems, cardiac, respiratory, neurological, psychological, and psychiatric comorbidities to improve health outcomes.

In the clinical setting, urine drug screening (UDS), oral/ fingerprint identification and blood samples are utilised for the qualitative analysis of acute drug toxicity presentations. However, some of these rapid immunoassay screening testing mechanisms (UDS) cannot identify NPS (Grafinger et al., 2020). Typically, hospital-based laboratories can screen for NPS but these analytical methods are sporadic and highly specialised. For example, Gas chromatography-mass spectrometry (GC-MS) or liquid chromatography-mass spectrometry (LC-MS) permits the identification of one class or category of NPS. Although, these NPS analysis tools are valuable, they are expensive, time consuming and unsuitable for the addiction and mental health services but useful for the forensic setting. Mullin et al. (2023) facilitated the first NPS

drug-checking service with handheld Raman spectroscopy in a community addiction centre. Notably, a small sample size (n=13), the study confirmed the possible suitability of screening NPS in community drug and alcohol services. Notwithstanding these results, HCPs may consider scientific laboratory procedures to establish NPS use in consultation with their medical lead (Guirguis et al., 2020; Salomone et al., 2020).

Aims

The paper explores the engagements, experiences, and intentions of HCPs toward people who use NPS in different healthcare services. The specific aim of this research is to provide:

- (a) An exploration of HCPs attitudes and behaviour in response to people who use NPS (utilising a human behavioural model).
- (b) A description of HCPs experiences in response to users of NPS in different healthcare sectors.
- (c) An exploration of HCPs perceptions of their knowledge toward people who use NPS, legislation, and drug policy.

Theoretical framework to explore HCPs engagements

The Theory of Reasoned Action by Fishbein's and Ajzen, (1975) is a widely accepted theory of human behaviour and explains the relationship between attitudes and behaviours within human action (diagram 1). Moreover, people's behaviour may be determined by their intentions to perform a behaviour based on their attitudes, norms, and beliefs (Bhochhibhoya & Branscum, 2018). The theory can help better explain and predict how HCPs respond and behave towards people who use NPS. For example, if a person who uses illicit substances believes that NPS is harmful and perceives that their friends disapprove of NPS use, they are less likely to use NPS.

The theory predicts that people may act in a way that is consistent with their attitudes and norms. For instance, if attitudes towards NPS use is positive, individuals may be more intending to engage in NPS use. If their subjective norms are difficult (disapproved by friends) people are less likely to engage in NPS use. The model is instrumental in addressing these studies aims and research questions and is shown in diagram 1.

DIAGRAM 1 HERE X

1. Method

Design. The study design is an online (Jisc) survey design using a purposive sample.

Participants. The participants (consisting of HCPs) are purposively included in this study if working in a mental health or addiction healthcare service. The eligibility criteria included UK-based HCPs working in statutory, non-statutory, and private healthcare services consisting of (n=1027) service users, including people who use NPS.

Recruitment. We recruited participants in five healthcare service providers across metropolitan London, Hertfordshire, Essex, and Norfolk. The healthcare services consisted of (3) addiction community, (1) addiction rehabilitation, and (1) mental health rehabilitation. The research and development teams consisting of research managers, research officers and service management ensured the recruitment of HCPs through email, posters, and online blogs. We shared the survey link through the R & D teams. To protect anonymity, we did not collect information on the names of the services or the locations where the participants worked. The link took HCPs directly to the survey Participant Information Sheet and could provide consent by ticking a checkbox. Consenting HCPs could then access the survey anonymously and did not collect any details.

Questionnaire. A draft survey is created in Jisc online surveys. The 18 questions are aligned to the theory of reasoned action to help better understand the experiences and intentions of HCPs who engage people who use NPS (Fishbein & Ajzen, 1975). A Cronbach's alpha value of 0.65 of 18 items are recorded, as some of the cases could not be accounted for, due to the descriptive nature of the content needed for this study.

Pilot review: The initial version of 30 questions were pilot reviewed by the non-statutory and statutory private healthcare services. The statutory healthcare service did not require a pilot study or review of the questionnaire (Appendix 1). Ten HCPs consisting of service managers, clinical leads and expert panel members recommended edits (grammatical recommendations and wording the questions) and a reduction in the thirty items. A time range of five minutes is required to complete the questionnaire. The final questionnaire has eighteen items. The introduction of the questionnaire summarises the rationale of the study to find out about Hcps attitudes, beliefs, and intentions to treat people who use NPS in different services through initial probing questions. The survey was live between March 2019 and 31st July 2019.

Questions included:

- Age, role, gender, experience.
- Whether participants have contact with people who use NPS
- Whether participants have knowledge surrounding NPS legislation, the effects of NPS and their beliefs surrounding NPS.
- Whether participants would assess a person who uses NPS differently during an assessment.
- Whether participants intend to intend to engage with people who use NPS.

In the main survey questions, 3 open text questions invited the HCPs to comment on the NPS related trainings, assessment, and treatment.

Ethics approval. Anglia Ruskin university's research ethics committee panel reviewed the project, and approval to conduct this study is issued. Five anonymised addiction and mental health service departments provided research passports and institutional ethical approval. The health research authority approved the project (ID 242695).

Sample size. A purposive sampling approach ensures HCPs are recruited based on the characteristics and purpose of the study, namely, exploring the experiences and engagements with people who use NPS. A sample size calculation ($n=77$) is completed earlier in the study. We considered this an exploratory study to recruit a sample of 90 HCPs in three different healthcare sectors, therefore, 30 HCPs in each healthcare sector.

Statistical methods: The analysis of the quantitative the data is conducted in IBM SPSS version 26. Descriptive statistics determined the frequencies surrounding engagements and experiences of HCPs. Nominal, ordinal, and numerical data are coded into categories enabling the first author (DS) to check the online responses, and frequencies and to subject the data to basic statistical analysis in the form of frequencies (%) and numbers (n). The use of descriptive statistics helped establish a trend, pattern, and understanding of the current engagements and responses of HCPs who encounter people who use NPS in healthcare services. The free-text responses are cut and pasted into a Microsoft word document and placed under emerging themes. This is an undemanding task as the data are limited to singular sentences or brief phrases.

2. Results

2.1 Description of the participants

Of the 120 HCPs that participated in the survey, 92 (77 percent) completed the survey (with consent) and confirmed working in either an addiction or mental healthcare service. A total of 28 (23 percent) did not complete the survey (Table 1). It is evident that HCPs are under pressure in their healthcare roles, therefore, have limited time to engage in research. Even if HCPs chose to engage, they may have been emotionally exhausted which may be why not all responses are completed. They are aged between 18-67 years of age and have an approximate normal distribution with a mean of 42.5 years. Most of the HCPs are 51% female (n=47) 46.7% are male (n=43) and 2.3% (n=2) did not disclose their gender. In terms of professional roles, most of the HCPs identified as recovery workers (45%). There are 14 (16 percent) registered mental health nurses; four (5 percent) working in addiction settings as medical staff; ten (11 percent) therapists; three managerial (3.5 percent); three senior staff (3.5%); two other allied healthcare professionals (2 percent) and twelve other staff (14%) including psychologists (Questions 1-4, Appendix 1).

2.2 Perceptions of experiences and engagements with people who use NPS

The survey responses are in appendix 1 (Question 5). We asked the HCPs to report on their experiences and engagements with people who use NPS. Most (42 percent) of the HCPs indicated that they have possessed little experience working with people who use NPS compared to some (23 percent). This is the 'norm' across different healthcare services. HCPs are asked how frequently they meet people who use NPS. Most (45.2 percent) HCPs reported sometimes, in comparison to never (40.3 percent) of HCPs. Initially, most HCPs reported a neutral experience (56.33 percent) in their engagement and experience of working with people who use NPS compared to a negative experience (23 percent). The variations in the experience of HCPs may have affected their motivations and intentions to treat people who use NPS (diagram 1). Furthermore, HCPs are asked if people who use NPS are easier to work with compared to people who use drugs and alcohol, for example, opioid and illicit substance use. Most (29 percent) are neutral in their response and (28 percent) disagreed (Table 1).

2.3 Comparing the experiences of HCPs across the different healthcare services

Of 92 HCPs, only 87 HCPs (94.5 percent) reported their experience and engagement of people who use NPS are between very positive to very negative. Of the 34 HCPs based in the statutory (national health service) most (44 percent) reported being neutral in their experience of people who use NPS compared to a negative experience (35 percent). Only a small number of HCPs (12 percent) reported a positive experience in their experience with people who use NPS. In the non-statutory healthcare service, most HCPs (61 percent) are neutral surrounding their experience with engaging people who use NPS in comparison to a positive experience (21 percent) and negative experience (18 percent). Next, HCPs based in the private healthcare service sector are mostly neutral (73 percent) in their response of engaging and experiences of people who use NPS (Question 6, Appendix 1). Across the different healthcare services, more than half of HCPs (56.3 percent) are neutral in their engagements and experience with people who use NPS. However, some HCPs (26.4 percent) reported a negative experience in comparison to a positive experience (17.3 percent).

2.4 Knowledge of NPS

The HCPs are provided with a list of five ratings to clarify their understanding of NPS (Appendix 1). Of 92, most HCPs reported an 'OK' (36 percent) and a 'poor' (34 percent) understanding of NPS. Some HCPs reported a very poor (15 percent) and a 'very good' (2 percent) to a 'good' (13 percent) understanding of NPS (Question 8, Appendix 1). HCPs are asked how serious the harmful effects on health (in the short term) of synthetic cannabinoid opioid agonists (SCRAs) are the harmful effects on health (in the short term) of synthetic cannabinoid opioid agonists (SCRAs) are or better known as SPICE. One example is given using the analogue name 'JWH-018'. Most HCPs (99 percent) reported SCRA's are extremely serious to slightly serious. Only 2 HCPs from the statutory healthcare services reported SCRAs are not serious (1 percent). However, most of understood the seriousness of NPS effects on health (Question 9, Appendix 1). They are requested a closed question surrounding any educational training available to manage people who use NPS in their healthcare sector. Most HCPs (64 percent) reported that there is no training available related to NPS management. Some (36 percent) reported that there is training related to NPS use. In addition, HCPs are requested to indicate whether there is sound policies and procedures in place for managing the acute symptoms of NPS in their healthcare setting. Most (45 percent)

of the HCPs, indicated that they have ‘strongly’ and ‘strongly disagreed’ with having no NPS policy and procedure. Some (33 percent) HCPs indicated that they are ‘neutral’ in their response and only (21 percent) ‘strongly agreed’ and ‘agreed’ (Question 12-13, Appendix 1).

2.5 NPS assessment procedures

We asked the HCPs if people who use NPS needed improved clinical assessment procedures. Most HCPs (87 percent) reported they need improved assessment procedures compared to (13 percent) who do not (Table 1). Further, they are asked if they found drug testing of people who use NPS effective pharmacologically. Most (80.5 percent) HCPs reported they do not and (19.5 percent) reported they do find NPS drug testing effective during the assessment procedure. In addition, they are asked if they could identify a clinical assessment tool for assessing the acute intoxications by NPS. Most HCPs (96 percent) reported they could not identify a clinical tool compared to (4 percent) of HCPs that responded ‘yes’ (Questions 15-18, Appendix 1).

PLACE TABLE 1 HERE

2.6 Free text responses related to NPS

When invited to share their comments in a free text box in the survey (Q.11, Q.12, Q.7, and Appendix 1) HCPs reported that the assessment with people who use NPS differs in comparison to another substance use client (90.2 percent). Some HCPs made several points about a need for an assessment tool for people who use NPS (41 percent). The comments reported surrounded the uncertainty with NPS effects, management, and acute intoxications by NPS:

‘I don’t know, because of the uncertainty of the substances involved’

‘The challenges seem to be how to deliver consistent treatment to inconsistent substances’

‘NPS users are usually homeless or in prison which would have an effect on my assessment, but I would generally do things the same as any other substance’

Assess physical changes, behaviour, recovery times, and frequency of use. More unknowns as there are fewer long-term studies of NPS effects. Therefore, more wary of potential effects on behaviour.’

There are some concerns that NPS use causes diverse effects, with various unpredictable symptomatology:

‘Some of these drugs cause strange behaviours when it takes effect’

“It is important to assess physical changes, behaviour, recovery times, and frequency of use.” NPS clients are usually knowledgeable about their drug so I would not be asking for intricate details of what they are doing and the effects. With alcohol/ opiates, I would focus more on harm min and information on the side effects of those drugs and consequences on physical and mental health.

‘There are more risks as the substances are unknown and are unpredictable.’

‘I would observe for withdrawal symptoms and focus on the mental health impact.

Additionally, there are a few comments surrounding HCPs understanding of the current legislation in place for NPS. Of 92 HCPs, only 81 (88 percent) completed the scaled question and commented in the free-text box. Most HCPs (32 percent) did not know any current NPS legislation, some (26 percent) reported NPS are ‘banned’, and 42 percent reported a good understanding. HCP commonly reported a limited understanding surrounding NPS drug legislation, which is the Psychoactive Substances Act (2016) (O’Hagan et al., 2019). However, participants reported some understanding of the PSA (2016) in terms of the imprisonment times and stop and search powers of the police:

‘It is now illegal for the sale of NPS and production to 7 years imprisonment’

‘People can now be stopped and searched for NPS by the new legislation according to the 2016 Act in place- Does not stop NPS use in my own opinion’

‘New Psychoactive Substances are not included in drug-related legislation and effects are unpredictable.’

‘My understanding is that New Psychoactive Substances are still illegal’

2.7 Theoretical Findings

To the author’s knowledge, this study is the first to create, pilot review, and implement a theoretically adapted survey to better understand HCPs behavioural action to treat people who use NPS (Appendix 1). The use of a theoretically adapted survey tool helped better explain HCPs behaviours toward people who use NPS based on their survey responses.

Although the engagements and experiences of HCPs are neutral and sometimes poor toward people who use NPS. These initial findings may indicate (or predict) that HCPs may not intend to treat people who use NPS based on: their experiences, varied knowledge on NPS and lack of knowledge on drug legislation, policy and procedures. However, the findings show most HCPs understood the dangers of NPS and risks to health. Therefore, based on the HCPs responses there are some requests for educational training surrounding NPS use. This may indicate that if HCPs attended NPS-specific trainings they may intend to treat people who use NPS. Furthermore, the theoretical findings suggest that HCPs need better assessment procedures on the pharmacological and clinical treatment of NPS presentations in multiple healthcare services.

3. Discussion

There is emerging evidence that NPS presentations are a common co-morbidity, particularly in addiction and mental healthcare services. Although, evidence is lacking on HCPs engagements, experiences toward people who use NPS (Solomon et al., 2023). A recent systematic review highlighted that NPS poses a major public health risk and are growing problem worldwide. However, the review reported several challenges that revealed that HCPs lack knowledge surrounding harms to health and there is a need for preventative and treatment measures (Sajwani, 2023).

Findings revealed 92 out of a potential 120 HCPs completed the online survey across three healthcare sectors namely, statutory, non-statutory and private healthcare services within a 3-month period. The healthcare services consisted of (3) addiction community, (1) addiction rehabilitation, and (1) mental health rehabilitation. The HCPs perceived little experience working with people who use NPS and reported this is the 'norm' across different healthcare services. However, HCPs reported frequent engagement with people that use NPS, and the experience is 'neutral.' Therefore, these responses on their engagements may provide insights into HCPs varied perceptions of their contacts with people who use NPS. Most importantly, the varied perceptions of HCPs engagements with people who present using NPS in healthcare services may indicate a lack of knowledge with this clientele. In terms with how participants perceived contact with people who use NPS, evidence suggests that HCPs commonly report a lack of confidence, skills, and support to address the needs of people who use NPS (Solomon et al., 2023).

The findings suggest half of HCPs (51 percent) are confident in their knowledge surrounding their understanding of NPS. More specifically, most HCPs understood the presenting harmful effects of SCRA (spice) on health. In fact, most HCPs reported no educational training on NPS management and wanted better policies and procedures in place. Nationally, healthcare services must consider the current interventions and consider the responses of HCPs to inform clinical policy and procedures (EMCDDA, 2023; UNODC, 2023).

Given most HCPs, responses indicated a need for training, policies, and procedures. Two thirds of HCPs reported a need for improved clinical assessment procedures. Various NPS related studies by Abdulrahim & Bowden Jones, (2022); Bowden-Jones & Abdulrahim, (2020) and Chiappini et al. (2021) all advise healthcare services incorporate clearer referral procedures and pathways for NPS-related presentations. In addition, some of the free-text comments indicated that HCPs need a clearer understanding of assessing the physical presentations, behaviour, and monitoring of NPS use. Moreover, HCPs need a better understanding of the pharmacological effects, risks, and psychopathological consequences surrounding NPS hospital presentations (Corkery & Schifano, 2022; di Giannantonio et al., 2020). In terms of how participants respond to understanding the difficulties in drug screening, the majority complained of the current difficulties in NPS detection. Arguably, Mullin et al. (2023) study shows promise in the facilitation of drug-checking services with handheld Raman spectroscopy in both addiction and mental health services for positive health outcomes. Although, the responses of this survey explored the engagements of HCPs. The theoretical adaption of the survey, namely, the theory of reasoned action (Fishbein & Ajzen, 1975) helped explain the HCPs intentions and perceptions on managing people who use NPS. For example, HCPs are 'neutral' in their perceived engagements with people who use NPS. This may indicate that HCPs may lack knowledge or experience in response to NPS presentations (or may not know how to respond). The theoretical findings suggest although HCPs understand some of the risks of NPS use, they may assume NPS use is not a problem in clinical settings based on social 'norms' in their engagements with people who use NPS in mental health and addiction services. A solution to this would be to create educational programmes like the Novel Psychoactive Treatment UK Network (NEPTUNE) online e-modules to better the clinical management of NPS-related presentations. (Abdulrahim & Bowden-Jones, 2020; EMCDDA, 2021).

The survey explored the perceptions, engagements, and experiences of HCPs across different healthcare settings. However, there is limitations in this study. First, the method limits the

generalisability, as it is a purposive sampling approach towards HCPs in five healthcare services. Although the sample of HCPs may not be representative of the broader UK population, this study's methods are comparable to similar research surrounding NPS in healthcare services (Guirguis et al, 2020). Although the theory helped developed the survey questions, little insight is shown into the behaviours of HCPs based on the objectivity of the design. A singular qualitative approach may provide deeper meaning surrounding participant HCPS experiences from a phenomenological perspective. It would be useful to replicate this study with an appropriately calculated sample size with a more representative sample of addiction and mental health service. Lastly, similar studies should be replicated in different healthcare services to advance and confirm the findings.

4. Conclusions

In conclusion, the online survey revealed that the HCPs perceived their engagements with people who use NPS are neutral. Not everyone is aware of whether their healthcare service implemented trainings, policy, and assessment for NPS use. The knowledge surrounding NPS legislation and types is lacking, and educational trainings are in demand. The implications for practice include NPS awareness trainings, educational updates through seminars and conferences. Furthermore, HCPs working in different addiction and mental health healthcare services may benefit from clearer NPS assessment, referral and management processes. Several policy-making and procedural opportunities exist to ensure a better health outcome for people who use NPS, particularly in mental health and addiction healthcare settings. The uniqueness of developing a theoretically adapted survey allowed HCPs a 'voice' surrounding their engagements and experiences with people who use NPS in different healthcare services. Although HCPs remain uncertain surrounding their engagements with people who use NPS, the results suggest better clinical management procedures should be developed in the future.

(4335 words)

AUTHOR CONTRIBUTIONS

Each author certifies that their contribution to this work.

Acknowledgments

The authors would like to acknowledge the invaluable support of the five mental health and addiction healthcare services that assisted with the data collection and recruiting of survey participants. The authors would also like to thank Professor Jeffrey Grierson and Associate Professor Lauren Godier-McBard for the statistical review of the tables and the doctoral supervision of DS.

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APPENDIX 1	
HCP NPS SURVEY TOOL	
Survey Questions	Theory of Reasoned action alignment
1. How old are you?	n/a
2. Please select which role is most relevant to you?	n/a
3. What is your gender?	n/a
4. How many years have you worked in the healthcare sector?	n/a
5. How frequently do you come in to contact with people who use NPS?	Norms
6. How much experience do you have working with people who use NPS?	Norms, behaviour
7. Please detail your current understanding of the current legislation in place for NPS?	Norms, subjective norms

8. How do you rate your understanding of NPS? (Please circle)	Beliefs, subjective norms, outcome evaluations
9. Overall, how serious are the harmful effects of the NPS drug 'SPICE' (a Synthetic cannabinoid- JWH-018) on health short-term? (Please tick)	Beliefs
10. How would you assess a person who uses NPS differently to a alcohol/opiate/other substances service user?	Intentions, behaviour, motivation, attitudes
11. People who use NPS are easier to work with clients that use NPS compared to clients that use alcohol/ opioids/ other substances?	Attitudes, beliefs, outcome evaluations
12. Is there educational training available for managing the use of New Psychoactive Substances, in your work setting? (Please circle)	Norms, subjective norms, beliefs, outcome evaluations
13. There are sound policies and procedures in place for managing the acute symptoms of NPS in your work setting? (Please circle)	Norms, beliefs, outcome evaluations
14. To date have your engagement experiences of working with people who use NPSs been either of the following?	Intentions, motivations, norms, behaviour
15. Do you find drug testing effective for users of NPS pharmacologically?	Norms, beliefs, outcome evaluations, attitudes, intentions, behaviour

16. Are you familiar with a clinical diagnostic tool for assessing the symptoms of NPS clients?	Intentions, behaviour, norms, subjective norms.
17 Do you feel people who use NPS need improved clinical assessment procedures in treatment?	Attitudes, motivation, beliefs, outcome evaluations, intentions.
18 How would you intend to improve the clinical assessment for people who use NPS?	Intentions, motivations, behaviour

Appendix 1: The survey questions are aligned towards the Theory of Reasoned Action to better understand the experiences and views of Hcps toward people who use NPS (Fishbein & Ajzen, 1975; Solomon et al, 2021)