University of the Western Cape

Faculty of Community and Health Sciences

School of Nursing

Knowledge and attitudes of nursing students about women who use substances during pregnancy in the Western Cape

Minor dissertation submitted in partial fulfilment of the requirements for the Master's degree in Psychiatric Nursing Science

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Declaration

I declare that the thesis, *Knowledge and Attitudes of nursing students about women who use substances during pregnancy in the Western Cape*, which I hereby submit for the Master's in nursing at the University of the Western Cape is my own work and has never been submitted before to this University or any other institution.

I declare that the references used are indicated in the reference list.

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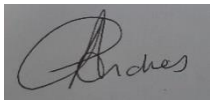
Signature: 

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Abstract

Background: Substance use has become a major socio-economic problem worldwide and is alarmingly high in South Africa. Substance use is frequent in pregnant women and has a negative impact on foetal, neonatal, and maternal well-being. Nurses play an essential role in identifying and treating substance use and related problems in patients in general and pregnant women. Worldwide, published literature reports that professional and student nurses have insufficient knowledge regarding substance use in pregnant women and often portray punitive, negative attitudes towards them.

Aim and objectives: This study aimed to assess the knowledge and attitudes of nursing students about women who use substances during pregnancy in the Western Cape. The objectives of this study were to describe nursing students' knowledge about women who use substances during pregnancy and their attitudes toward women who use substances during pregnancy.

Methods: A quantitative descriptive design with a self-administered questionnaire was used. The study setting was selected university in the Western Cape which offers a four-year undergraduate degree in nursing programme. The population was the final-year student nurses registered for the academic year of 2018, as they had already completed their midwifery modules and midwifery clinical placements in 2017. An all-inclusive sampling was used. The sample was 172 final-year students who participated in the study. The researcher adhered to all ethical considerations.

Results: The results showed that the student nurses had minimal exposure to substance use and pregnant mothers using substances. The student nurses had a moderate knowledge of substance use with a generally negative attitude towards mothers using substances. The study's findings raise a potential area for educational intervention and training in perinatal substance use.

Keywords: Knowledge, Attitudes, Nursing Students, Substance Use, Substance Abuse, Pregnancy

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List of Abbreviations

AADAP- Attitude About Drug Abuse in Pregnancy

ANOVA-Analysis of Variance

ICN -Inter Institution Council of Nurses

SANC- South African Nursing Council

FASD- Foetal Alcohol Syndrome Disorder

IBE- International Bureau of Education

SPSS- Statistical Package for Social Sciences

UNESCO-United Nations Education Scientific and Cultural Organization

WHO- World Health Organization

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Chapter One

Introduction

1.1 Introduction and Background

Substance use by pregnant women has become a global public health concern. Substance use has a negative impact which includes psychological, physical and emotional trauma and it is an increased financial burden on the health systems globally (Cook et al., 2017). Substance use during pregnancy requires skilled management, which may be challenging for nursing and midwifery students learning how to care for pregnant women.

Substance use is defined by Weich (2015) as "the use of psychoactive substances to rapidly experience an altered psychological state" (p. 360). Substance use has become a significant economic and social problem worldwide for individuals, their families, and the wider community (Maigari, et al., 2014). Drug abuse often leads to criminal activity, mental health challenges and difficulty maintaining stability at home (Gotay, 2014). Cannabis is the most utilised illicit drug worldwide, followed by Amphetamine; these are the two drugs used mainly by women of reproductive age (Forray, 2016). South Africa generally has an alarmingly high substance use problem, with alcohol being the primary substance of abuse, followed by cannabis and a cannabis-Mandrax combination known as white pipe (Baumann, 2015). The disorder of substance use has not received sufficient attention due to not being identified as an issue, possibly due to the prejudice and labelling associated with substance dependence and problems related to drug use (WHO, 2014, p. xi).

Worldwide, approximately 11% of reproductive-age women use illicit substances; 25% use cigarettes, and 30% either binge drink or use heavy amounts of alcohol (Forray et al., 2015). Limited data from South Africa indicates that between 3.6 - 8.8% of pregnant women use substances, and 19.6% use alcohol (Forray, 2016). Alcohol and substance use is prevalent in pregnant women and poses a significant health problem because severe health outcomes can result for both mother and child during and after pregnancy (Vythilingum et al., 2012; Forray, 2016). Women with substance use problems also experience inadequate prenatal care, poor nutrition, chronic medical problems, poverty, and domestic violence. Substance use in pregnancy may also result in an early dysfunctional maternal-infant relationship that can

potentiate the harmful effects of prenatal drug exposure (Forray, 2016). According to a national survey relating to drug usage and health in the USA, approximately 15% of women between the ages of 15 and 44 use drugs during pregnancy. It was also reported that 4% of pregnant women used alcohol during pregnancy, and 5% used highly addictive and illegal substances (Substance Abuse and Mental Health Services Administration, 2012).

According to the International Council of Nurses (ICN), nurses are responsible for promoting health, restoring health, preventing illness, and alleviating suffering (Maigari et al., 2014). As the first-line healthcare workers with whom patients encounter and interact throughout their drug treatment, nurses play an essential role in enhancing treatment outcomes, rehabilitation, and integration of individuals into the community (Akinola, 2015). Under-reporting of alcohol and drug use by pregnant women is common, and this requires nurses to be able to screen for the risk of alcohol and substance disorders (Vythilingum et al., 2012). Studies about perinatal substance use reveal a lack of knowledge and negative attitudes among nurses and nursing students (Sleeper & Bochain, 2013; Akinola, 2015). Nurses working in maternity facilities felt they lacked confidence when working with pregnant mothers who are abusing substances (Lee et al., 2013). This author also reported that midwives were judgemental towards substance-abusing mothers and this reinforced a prejudiced stance (Lee et al., 2013).

1.2 Problem Statement

Substance use during pregnancy is a worldwide health problem due to its implications for maternal and neonatal well-being (Onah et al., 2016; Gardner, 2016; Stone, 2015). According to Ojo et al. (2010), high-risk drinking by pregnant women in the Western Cape, with a prevalence of 46%, has resulted in South Africa having the highest rate of Foetal Alcohol Spectrum disorders in the world, with a rate of more than 70/1000 births (Vythilingum, 2012). Foetal alcohol syndrome is a significant problem which requires expanded screening and surveillance programmes and preventive interventions (Olivier, 2013).

Nursing professionals in South Africa are recognised as the gatekeepers for the future of the country's health and play a vital role in the early identification, diagnosis, and treatment of drug usage challenges (Van Boekel et al., 2015). However, various studies have indicated that qualified, and student nurses portray punitive and negative attitudes and have insufficient knowledge of substance use in pregnancy (Akinola, 2015; Gardner, 2016; Ojo et al., 2010; Olivier, 2013). Caring for pregnant women who use substances is challenging for midwives and even more challenging for midwifery nursing students (Doleman et al., 2018). Doleman

et al. (2018) reported that postgraduate midwifery students had a more positive attitude towards mothers who abused substances during their pregnancies than undergraduate nursing students. This highlighted the need for student nurses to be trained in substance use disorder and the management of perinatal substance use. Stigmatization of substance-using pregnant women and mothers by nurses was attributed to a lack of knowledge and poor education (Lee et al., 2013). Few peer-reviewed studies have been reported in this field of research to date, especially in South Africa. Therefore, this study aimed to determine the knowledge and attitudes of final-year nursing students towards pregnant women affected by substance use in the Western Cape.

1.3 Significance of the study

The results of the study could offer valuable information for nurse managers to use in planning in-service programmes to improve current clinical practice and to nursing education institutions to inform curriculum development for pre-and post-registration programmes. The results may also be useful for policymakers and guideline developers to develop appropriate instruction manuals on nurse training for the management of perinatal substance abuse. Nursing professionals receive limited information on the use of alcohol and other drugs during their undergraduate programmes, thus this study could inform the content development of undergraduate nursing programme curricula. Improved knowledge may lead to an enhanced understanding of the problem and facilitate the development of empathic attitudes towards pregnant women and mothers who use substances.

1.4 Research aim and objectives

This study aimed to assess the knowledge and attitudes of nursing students about women who use substances during pregnancy in the Western Cape. The objectives of the study were to describe the:

1.4.1 knowledge of final-year nursing students about women in the Western Cape who use substances during pregnancy

1.4.2 attitudes of final-year nursing students towards women in the Western Cape who use substances during pregnancy.

1.5 Research Questions

- What is the level of knowledge of 4th-year undergraduate nursing students regarding pregnant mothers who are abusing substances?
- What are the attitudes of 4th-year undergraduate nursing students towards mothers abusing substances during their pregnancies?

1.6. Definition of terms

1.6.1 Knowledge

Knowledge is "the body of concepts and factual information (data), including their interrelated structures and patterns, concerning the natural and social environment as well as our understanding of the world, people and society, gained through learning and/ or experience." (UNESCO IBE, 2013, p. 34) In this study, knowledge refers to the final-year student nurses' theoretical and practical understanding of substance use in pregnancy as measured by the knowledge questions in the *Attitude About Drug Abuse in Pregnancy scale* developed by Coles et al. (1992).

1.6.2. Attitudes

Attitudes are defined as "the manner in which someone views and evaluates things, a predisposition in which to react positively or negatively towards a certain subject or idea" (Vargas-Sánchez et al., 2016, pp. 58-62). Attitudes represent an individual's feelings of favour or dismay towards a person, place, or thing. In this study, attitudes refer to the student nurses' predisposition to respond to people, institutions, and objects negatively or positively as measured by attitude questions in the *Attitude About Drug Abuse in Pregnancy* scale.

1.6.3. Nursing student

A nursing student refers to any person who is enrolled in a nursing education institution and registered with the South African Nursing Council (SANC) in terms of Section 32 of the Nursing Act 2005 (Act no. 33 of 2005) (South African Nursing Council, 2005). In this study, nursing student refers to final-year Bachelor of Nursing students registered at the selected university for the academic year 2017.

1.6.4. Substance use

The World Health Organization (2019) defines substance as "the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs" (p. 5). Psychoactive substance use

can lead to a dependence syndrome, categorised as a cluster of behavioural, cognitive, and physiological phenomena that develop after repeated substance use. Typically, there is an intense desire or craving to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, and a higher priority given to drug use than to other activities and obligations. Ultimately increased tolerance ensues, and sometimes a physical withdrawal state (World Health Organization, 2017).

1.6.5 Substance abuse

Substance abuse is defined as a "maladaptive pattern of chemical use characterised by continual and considerable harmful consequences related to the repetitive use of the substance". Substance abuse is considered when the following occurs within 12 months: failure to perform obligatory roles and functions due to substance use and the potential for physical harm or mental illness in the person using the substance or in others (American Psychiatric Association, 2013).

1.7 Outline of the thesis

This thesis is structured as outlined below.

Chapter One: Introduction

This chapter is an introduction to the study. The background and rationale for the study are discussed, the research problem, the aim and objectives of the study, the research question, and the operational definition of terms related to the study. It concludes with a summary and the study layout of this thesis.

Chapter Two: Literature Review

In this chapter, literature related to substance use and abuse, as well as the knowledge of substance abuse and attitudes of healthcare workers towards people using substances, are explored, and discussed. Literature on nurses' knowledge, attitudes, and education in managing pregnant mothers is reviewed.

Chapter Three: Research Methodology

This chapter describes the research methodology of the study. The study setting, research design, population, sampling, data collection procedure, data analysis and ethical considerations are presented.

Chapter Four: Research Results

In this chapter, the research results are presented.

Chapter Five: Discussion

In this chapter, the results and the interpretation of the results are discussed.

Chapter Six: Summary, Limitations, Conclusion and Recommendations

This chapter provides a summary of the study, limitations, and recommendations based on the study's main findings.

1.8 Conclusion

In chapter one, an overview and rationale for the study has been presented.

Chapter Two

Literature review

2.1 Introduction

This chapter provides an overview of the relevant literature as it pertains to the scope of this thesis. This literature review covers substance use in general and in pregnancy, knowledge and attitudes of nursing students, factors that influence their attitudes, and the impact of these attitudes. The search was conducted for the period 2010-2020 using the following keywords: Substance Use, Substance Abuse, Attitudes, Pregnancy, Nursing students and Knowledge.

2.2 Substance use

Substance use encompasses all the complex behavioural disorders associated with the preoccupation with obtaining drugs and alcohol, excessive consumption, and loss of control over consumption. It often leads to the development of tolerance and withdrawal and results in impaired social and occupational functioning, affecting thoughts, feelings, and behaviour (Baumann, 2015; Gotay, 2015).

Chemical substances are classified according to how they make the user feel, e.g., 'uppers or stimulants of the central nervous system such as cocaine, amphetamine, ephedrine, and nicotine. Then there are the 'downers or central nervous system depressants, as well as the psychedelics or hallucinogens. Some substances may have more than one effect; and may be administered via injection, smoking, or oral ingestion (Baumann, 2015). According to Parker (2019), in South Africa, alcohol and cannabis have been reported as the most abused substances. The researcher noted that up to 60% of crimes reported in South Africa were associated with individuals using alcohol or cannabis. According to the American Addiction Centres (2017), substance abuse significantly impacts health, affecting life expectancy.

2.3 The impact and outcomes of substance use during pregnancy

The first 1000 days of life, from conception to the age of two years, are identified as a critical window period for long-term health and development (Black et al., 2013). It is therefore of utmost importance to be knowledgeable and understand the critical importance of the impact

of substance abuse on the whole maternal journey, which includes the pregnancy, breastfeeding, the mother-child bonding relationship, and the outcomes for the child. Perinatal substance abuse poses high risks to the mother and foetus. Although a reduction in substance use has been reported during pregnancy, abuse of illicit and licit drugs remains a problem in women of childbearing age (Forray, 2016).

Alcohol consumption during pregnancy has become a major public health challenge and concern. Alcohol is the most common drug used by women of childbearing age (Oei, 2020). A study conducted in Israel reported that 67% of a sample of 802 pregnant women were consuming alcohol two months before becoming aware of their pregnancy status, and 12% continued to consume alcohol after knowing they were pregnant (Hen-Herbst et al., 2021). Perinatal or prenatal alcohol exposure is a global health challenge. The prevalence of prenatal alcohol exposure was estimated at 25.2% globally, according to the World Health Organization (WHO) 2018 Global Information System on Alcohol and Health (WHO, 2019). Globally, indicators of prenatal alcohol exposure have been reported in the USA at 7.3% (Green et al., 2016), in Ireland at 60.4% (Popova et al., 2017) and 4.1% in Norway (Mardby et al., 2017).

Heavy alcohol use in the perinatal period has been associated with a wide range of adverse birth outcomes, especially for the infant, including the risk of miscarriage (Avalos et al., 2014) and an increased risk of stillbirth when pregnant women use alcohol and nicotine (Odendaal et al., 2021). Numerous incidents of infant mortality, congenital anomalies, low birth weight, reduced gestational age, preterm delivery, and small-for-gestational-age have been observed in pregnant mothers abusing alcohol. According to Brown et al. (2018), the use of alcohol during the prenatal stage can negatively impact foetal development, which can lead to a wider range of physical and mental abnormalities with a diagnosis of Foetal Alcohol Syndrome (FASD). FASD is estimated to affect one in thirteen infants prenatally exposed to alcohol consumption, approximately 630,000 infants worldwide per annum (Roozen et al., 2018). Numerous unfavourable outcomes are implicated with alcohol abuse, such as cognitive and motor deficits and behavioural challenges (Niclasen et al., 2014; Ross et al., 2015). Abuse of alcohol during pregnancy is associated with long-term effects such as executive functioning deficits in children and psychosocial consequences in adulthood (Forray, 2016). Neurological challenges due to prenatal alcohol exposure have been reported (Goril et al., 2016), and more than half of the children diagnosed with FASD present with sleeping disorders (Chen et al., 2012). Binge drinking during pregnancy is associated with poor foetal growth outcomes and preterm birth (Reynolds et al., 2019). A USA census estimated that binge drinking during pregnancy

significantly impacted preterm births, especially in older pregnant females aged 40-44 (Truong et al., 2012). A five-community study conducted in the Western Cape province in South Africa in which 34-51% of women had consumed alcohol during pregnancy showed that 1545 alcohol-exposed babies had abnormalities. In the same study, it was noticed that female children had severe dysmorphology with poor cognitive functions and male children had a poor survival rate until the age of seven; these poor outcomes were all related to binge drinking (May et al., 2017).

Cannabis is the most common illicit substance used during pregnancy (Schauberger et al., 2014; Metz & Stickrath, 2015). The use of cannabis during pregnancy has increased (Young Wolff et al., 2019). According to Volkow et al. (2019), during the years 2002-2003 in the USA, there was an increase in the use of cannabis by pregnant women, and between 2016- 2017 cannabis was the illegal drug most used by pregnant women. Many females use cannabis throughout their pregnancies (Volkow et al., 2019).

It is unsafe to use cannabis during pregnancy; perinatal cannabis use is associated with numerous adverse prenatal outcomes (Fine et al.,2019, Marchand et al., 2022, Corsi, 2020) and adverse birth outcomes (Alpar et al., 2016). Cannabis use in pregnancy has been linked with preterm labour, increased risk of low birth weight (50%), small-for-gestational age, and admission to the neonatal intensive care unit (Crume et al., 2018). Prenatal cannabis use has also been associated with adverse consequences for neurodevelopment in infants (Jaques et al., 2014). Perinatal alcohol abuse compromises the growth and development of foetal and adolescent brains, reduced attention and executive functioning skills, poorer academic achievement, and behavioural problems (Forray, 2016). Due to the harmful complications associated with cannabis usage during pregnancy, The Professional body – The American College of Obstetrics and Gynaecologists Committee an Obstetrics Practice (2017) – recommended discontinuing cannabis use during the preconception, pregnancy, and lactation stage and encouraged clinicians to advise pregnant women accordingly (American College of Obstetricians and Gynaecologists, 2017).

Cocaine use during pregnancy can cause long-term adverse child health outcomes, including growth restriction (Richardson et al., 2013). It can result in premature rupture of membranes, placental abruption, preterm birth, low birth weight, and the birth of small-for-gestational-age infants (Mbah et al., (2012). There are increased risks of developmental and behavioural defects, preeclampsia, gestational hypertension, intrauterine foetal death, and infant and neonatal death (Mbah et al., 2012; Guttman et al., 2019).

Opioid use in pregnancy is associated with a greater risk of low birth weight, respiratory problems, third-trimester bleeding, toxaemia, and mortality (Forray, 2016). Other effects of substance use, especially opioids, include increased spontaneous abortion, premature delivery, foetal growth retardation, placenta abruptions, decreased school achievement, reduced arousal, a deficit in memory, learning and attention, increased stress, and breech presentation (Gardner, 2016; Onah, 2016)

The drug- or alcohol-dependent pregnant woman wants to keep the drug addiction side of her life secret due to societal shame and the fear of having her child removed (Kenny et al., 2018). The impact of substance use on the foetus has also impacted legal systems and discussions on whether to criminalise pregnant women for behaviour that may harm their foetuses. The appropriate approach to managing women abusing substances during pregnancy and afterwards would be education, early identification, and referral of women at risk of substance use, provision of appropriate treatment and rehabilitation facilities that cater for pregnant women, access to contraception and abortion services as well as early diagnosis and therapies for children with Foetal alcohol syndrome or Neonatal Abstinence Syndrome (Gardner, 2016).

Low birth weight survivors exposed to substances during the antenatal period are at higher risk for psychiatric and substance use disorders (Van Lieshout et al., 2015). The mother's prenatal nicotine use is also associated with an increased risk that the child will develop alcohol and cannabis challenges (Salom et al., 2015). Delaney-Black et al. (2011) reported that prenatal cocaine exposure is linked to adolescent use of psychoactive substances. Minnes et al. (2014) reported that prenatally cocaine-exposed young people are 2,8 times more likely to have substance use-related problems than non-exposed individuals during the prenatal stage.

2.4 Attitudes of nursing students towards women who use substances during pregnancy

To date there is a paucity of literature available exploring the attitudes of undergraduate nursing students towards pregnant women who substances and the search was then broadened to retrieved additional literature. The review has therefore included registered nurses and midwives' knowledge of and attitudes towards substance use in pregnancy.

Attitudes towards illicit drug use and substance-related disorders are multifaceted in different societies, particularly regarding norms and values (Healthy People 2020, 2013). Illicit drug use

is a personal choice or disease with a biological and genetic component (Healthy People 2020, 2013).

With increasing substance use, the number of patients using substances admitted to health facilities has been on the rise. It is essential that healthcare workers, especially nurses, are informed and educated on how to render a service free from judgement and discrimination. Unfavourable stereotypes regarding substance users often prevent them from accessing quality care at health institutions. Nilsen et al. (2012) found that nurses reported a violent, hostile, stereotypical, and moralistic view towards substance-abusing patients. Poor attitudes and perceptions often resulted in the nurses being less involved with the patients and taking a more task-orientated approach; this then led to less personal interaction with the patients and diminished much-needed empathy (Van Boekel et al., 2014). Student nurses' attitudes influence their behaviours, which can be understood through their socially constructed views about substance use in general, particularly during pregnancy (Zhang et al., 2016).

Quality antenatal care is a vital component that reduces risk and improves maternal and infant outcomes. Discrimination and stigma associated with addiction and drug-related issues remain major hindrances to appropriate treatment (WHO, 2014). Without prenatal care, women who struggle to abstain from substances during pregnancy are more likely to struggle with birth complications (Ordean. ,2011). Providing a safe environment where nurses are non-judgemental, respectful, supportive, and understanding is needed for women accessing antenatal care (Leslie, 2011).

Biases and stigma towards people with substance use disorders are well reported at an individual and general population level, as well as among health professionals (Livingstone et al., 2012), including primary care doctors, nurses as well as medical students (Albright et al., 2012; van Boekel et al., 2013). The care of individuals with substance use disorder has been documented as problematic because health professionals exhibit negative attitudes, which could be attributable to their own life experiences, values, and cultures (Ligon, 2009, Kalebka et al., 2013). Doukas (2010) reported that health professionals have mistrust issues with substance users due to their manipulative and deviant behaviour. Nurses express negative attitudes when there is a lack of support and supervision as they feel unable to access support for information and guidance regarding substance addiction (Howard & Holmshaw, 2010).

Nurses are the first point of contact for South Africans accessing health care at primary healthcare facilities. They are instrumental in the early detection, diagnosis, and treatment of

substance-related issues and play an essential role in enhancing treatment outcomes, rehabilitation, and integration of individuals into the community (Akinola, 2015; Van Boekel et al., 2013.) Nurses' attitudes related to drug and alcohol abuse are formed long before the commencement of nursing education. These beliefs continue to exert a profound influence as the nurse pursues their nursing education and then goes on to work as a graduate nurse (Ligon, 2009). Akinola (2015) found that nurses have low regard for individuals suffering from substance use related problems. Drug addiction is stigmatised because many people view it as a choice rather than a burden of disease; therefore, drug abusers are blamed for their drug use. Related health problems receive less pity, concern, and reduced nurture and support (Brener et al., 2010). When a foetus or infant is involved, the stigma and marginalisation of these women is more significant than for the general population of individuals with drug and alcohol issues (Akinola, 2015).

Researchers have suggested that negative attitudes towards substance users are often perceived as cultural, which is a barrier to the optimal detection, understanding and treatment of addicts. For example, in China, drug abuse is considered a bad habit rather than a disorder (Gilchrist et al., 2011). In some states of the USA, America, substance-using pregnant women are subjected to increased surveillance and may face prosecution, arrest, conviction and/or child removal (Stone, 2015).

2.5 The impact of knowledge and attitudes of nurses on the well-being of pregnant women affected by addiction.

Nurses' attitudes are implicated as a barrier to positive outcomes and interventions (Maguire et al., 2012). Negative attitudes towards drug abusers will reduce therapeutic alliance, resulting in poor communication between patients and nurses and avoidance of seeking help (Scomerus et al., 2014; Akinola., 2015). When nurses hold punitive and stigmatising attitudes towards people with addictive disorders, they express managing addicts as complex, often challenging, and that treatment goals are often unachievable (Ford, 2011). This leads to diminishing positive results on effective treatment outcomes and prolongs recovery and successful reintegration of the clients into their respective communities (Van Boekel et al., 2014). Fear of detection and punishment is a significant barrier to care for pregnant women and mothers, resulting in health risks for the mother and infant (Stone, 2015).

It is crucial for nurses caring for this substance-abusing population to understand the acquired information and the experiences of pregnant women so that they, as nurses, can approach these

mothers in a more empathetic manner. During a survey in Charleston, West Virginia, in the United States of America, a workshop was conducted with 70 respondents, which consisted of nurses and doctors, with the focus to increase the understanding of addiction, and substance use treatment as well as a readiness to support pregnant women, it was determined that there was an increase of compassion for pregnant women who abused substances (Seybold et al., 2014)

Curricula for the undergraduate education of nurses do not include sufficient knowledge content regarding perinatal substance abuse. Studies regarding perinatal substance abuse revealed a lack of knowledge among nurses (Sleeper & Bochain, 2013; Akinola, 2015). Qualified and student nurses are reported as having punitive and negative attitudes toward their patients (Akinola, 2015; Gardner, 2016; Ojo *et al*., 2010; Olivier, 2013). A better understanding by nurses of the underlying factors for women's substance use has the potential to improve nursing care and treatment outcomes.

2.6 Conclusion

The magnitude of the negative effects of substance abuse in all areas of the population mandates the need for well-informed healthcare professionals, especially nurses, as they are the frontline healthcare workers. Even though substance use information is readily available in the media and other platforms, the inclusion of this aspect is limited in the nursing curriculum. The studies in this review have reported that nursing students have limited knowledge about perinatal substance use and hold punitive and negative, rather than positive and supportive, attitudes toward their patients. The literature suggests that the best predictors of positive attitudes in nursing students towards substance use in pregnancy would be increased knowledge, seeking substance addiction as a disease model, and more cultural acceptance. The lack of studies on the knowledge and attitudes of undergraduate nurses towards perinatal substance abuse within the South African context is a gap in the research to date.

Chapter 3

Research Methodology

3.1 Introduction

This chapter outlines the research methodology. It is discussed in terms of the research design, the research setting, the research population, data collection, data analysis and ethical considerations.

3.2 Research design

In this study, a quantitative, descriptive survey design was used to describe the knowledge and attitudes of final-year student nurses towards pregnant women who use substances.

3.2.1 Quantitative and descriptive research

Quantitative research is described as a "set of logical phases used as a purpose to answer the research question" (Polit & Beck., 2012, p. 236). This approach and design were suitable for the study as there was limited data available on the knowledge and attitudes of nursing students about women who use substances during pregnancy. A descriptive design was selected because it is a process which describes the daily experiences of people and their knowledge as well as attitudes concerning their lives (Grove et al., 2013). In this study, a quantitative descriptive design was the most appropriate because the aim was to determine the knowledge and attitudes of final-year nursing students towards pregnant women in the Western Cape who abuse substances.

3.3 Research setting

Ledford and Gast (2018) have described research setting as a physical, social, and cultural setting where the researcher gathers data for the specific study. This study was conducted at a selected university in the Western Cape Province, offering a bachelor's degree in nursing to 1148 students in 2017. Students in the programme come from diverse cultural, social, and economic backgrounds.

3.4 Research population

Population refers to the entire group of people possessing the characteristics the researcher is interested in learning about (Brink et al., 2012). The study population was all fourth-year nursing students at a selected university who had completed the Midwifery component of the

programme and would have had exposure to pregnant women who were using substances. In 2017 there were 230 nursing students in the fourth year of the Bachelor of Nursing programme.

3.5 Research sample

A sample is obtained by selecting a subset from the population to get data representative of the population (Brink et al., 2012). An all-inclusive (total population) sampling method was used. Two hundred and thirty students were enrolled in the four-year programme; however, at the time of data collection, only 172 students were available. The final sample size was 172 4th-year undergraduate nursing students.

3.5.1 Sampling inclusion criteria.

- The respondents had to be over the age of 18 years.
- The respondents had to be registered undergraduate 4th-year nursing students at the specific institution for the academic year of 2017
- The respondents had to be willing to participate.

3.5.2 Sampling exclusion criteria

- The respondent was unwilling to participate
- The respondent was ill at the time of the data collection

3.6 Data collection instrument

The Attitudes about Drug Abuse in Pregnancy (AADAP) questionnaire (Appendix A) was used in the study (Coles et al., 1992). The 54-item questionnaire utilised a 5-point Likert-type scale (strongly disagree to strongly agree) to determine the knowledge and attitudes towards substance use in pregnancy. The tool has three sections. In section A, demographic information, and the source of the respondent's information about substance use were obtained. Section B assessed knowledge of physiology and social determinants of substance use in pregnancy; section C measured attitudes towards women who use substances during pregnancy.

Written permission was obtained from the developer to adapt the questionnaire for the South African setting (Appendix A). The adapted tool was divided into two sections: a knowledge section and an attitudes section, to facilitate the respondents' understanding and responses. Cronbach's Alpha Coefficient of .81 for the knowledge scale and .90 for the attitude scale was

reported by Ligon (2009), who utilised the instrument in a study examining baccalaureate nursing students' knowledge and attitudes of abuse of drugs and alcohol during pregnancy before and after an educational intervention.

3.7 Pre-test of the study instrument

The researcher pre-tested the instrument prior to the commencement of the study. The purpose of pre-testing the questions was to establish readability and comprehension and to determine if all could be answered (Polit & Beck, 2017). A pre-test helps the researcher identify misunderstandings of difficult questions, make sure that the questions are readable, clear, and unambiguous and help determine any weaknesses in the questionnaire (Creswell, 2014). The questionnaire was pre-tested with students in the same class who were excluded from the main study. All respondent names were anonymised. Each respondent was assigned a double-digit number. Forty numbers were electronically randomly selected and the pre-test survey was sent to those specific people. Of the 40 students, only 27 students returned the emailed questionnaire. The data collected from the pre-test were not included in the main study results (Smith et al., 2016).

3.8 Data collection procedure

Data collection can be defined as a method of gathering and measuring given data on targeted variables or variables of interest to the researcher to answer research questions and evaluate the outcomes (Solymosi & Bowers, 2018).

Ethical approval for the study was obtained from the Human and Social Sciences Research Committee of the University (Ethics Reference Nr HS 179/9/1 (Appendix C). The researcher obtained permission to access the setting and the respondents from the University Registrar, the Head of the Nursing Department, and the fourth-year level coordinator (Appendix B). Consent from the lecturer was obtained to distribute the questionnaires during a lecture period, as this was the most appropriate time to access most students. Two weeks prior to the administration of the questionnaire, students were given an information letter to explain the nature of the study, and the researcher introduced the study to the students and invited them to participate. The purpose and the reasons for their selection were explained. Respondents completed a consent form prior to the questionnaire distribution.

Questionnaires were distributed to 172 respondents and they had 30 minutes to complete the questionnaire. Students are divided into two classes in different venues but taught at the same time. The researcher arranged to administer the questionnaire to each group consecutively during the same teaching period. All 172 questionnaires were completed and returned, with a response rate of 100%.

3.9 Data management

After the data was collected, the researcher ensured confidentiality by keeping the identification contact details of the respondents available only to the researcher, supervisor, and statistician. Each respondent's questionnaire was uniquely coded. Questionnaire data was captured in Excel, and data were checked and cleaned to detect, correct, and remove inaccurate records. No documents were found to be incorrect or incomplete; thus, none were discarded (Babbie, 2010). The questionnaires were stored in a lockable steel cabinet. Electronic data was password protected. The data was entered into SPSS Version 25 for analysis after it was coded in a code book. All data will be kept for five years; thereafter, all electronic and hard copy data will be deleted or destroyed.

3.10 Data analysis and interpretation

Descriptive statistics such as frequency tables, percentages, standard deviation, and mean were used. The Likert Scale data were recorded in five response categories. Each category was assigned a value, with a value of one (1) given to the most negative response and a value of five (5) given to the most positive response.

The items were scored as follows: on the knowledge scale, the highest scores indicated that the students were knowledgeable about substance use during pregnancy. In contrast, the lower scores showed that they were less knowledgeable. On the attitude scale, the lowest score indicated a punitive and negative attitude, while the highest score indicated a positive attitude.

Categorical variables were summarised using frequencies and percentages, and continuous variables were analysed using means and standard deviation. Data are presented in tables and graphs. Univariate analysis (mean, median, mode, frequencies) involves the analysis of a single variable and examining it in detail - nominal, interval and ordinal measurements were used. Bivariate analysis (such as t-test, ANOVA, and correlation) involves the analysis of two variables and the associations between them to understand how the associations work (Heavey,

2015). Univariate analysis was applied to describe the data, identifying the variable that needed to be analysed and the questions that needed to be answered through the data analysis. The researcher was assisted by a statistician to analyse the data (Appendix G).

3.11 Academic Rigor

3.11.1 Validity

Instrument validity ensures that the instrument measures what it is supposed to measure. In this study, face and content validity were applied. Face validity means that the instrument seems to measure what it is supposed to measure and is based on the intuitive judgement of an expert in the field (Brink et al., 2012). The study supervisor checked the instrument, and other nurse lecturers provided feedback regarding the questionnaire.

Content validity examines the extent to which the questionnaire included all the elements relevant to the construct (Grove et al., 2013). Table 2 shows the questions relevant to each objective).

Table 2: Content validity

Objective	Question number
1. To describe the knowledge of final-year nursing students about women in the Western Cape who use substances during their pregnancy.	4-33
2. To describe the attitudes of final-year nursing students towards women in the Western Cape who use substances during their pregnancy.	34-54

3.11.2 Reliability

Reliability is when an instrument provides a similar result when used repeatedly over time on the same subject or by two researchers (Babbie, 2010; Polit & Beck, 2012). Internal consistency refers to homogeneity or the extent to which all aspects of the instrument measure the same variable (Brink et al., 2012). Cronbach's Alpha test was used to measure internal consistency. Table 3.10 shows the Cronbach's Alpha is 0.614, which is acceptable.

Table 3.10 Cronbach's Co-efficient reliability

Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	No. of Items
0.614	0.594	54

3.12 Ethical considerations

Ethics approval was obtained from the Human and Social Science Research Ethics Committee of the University (Ethics Reference Nr: HS 179/9/1) (Appendix C). The University Registrar and the head of the University Nursing Department granted access to the study setting and respondents. Codes of ethics govern research studies involving human beings. The principles of the Declaration of Helsinki (2013) ensure the study's ethical soundness (World Medical Association General Assembly, 2013).

The respondents were not required to provide personal details on the questionnaire, preventing the researcher from linking the data to the specific respondents. This was done to uphold the ethical principles of anonymity and confidentiality by safeguarding the respondent's identity. According to the British Education Research Association, the confidentiality and anonymity treatment of respondents should always be the norm for research. Therefore, the researcher should accord the respondents the right to confidentiality and anonymity (British Educational Research Association., 2018). The emphasis is on ensuring that the potential for harm in research is avoided (Gelling, 2020). Three fundamental principles of ethics were respected throughout the study:

Respect for person: individuals have the right to decide whether to participate in the study without the risk of prejudicial treatment or penalty. They have the right to withdraw from the study at any time, ask for clarification about the purpose of the research, and refuse to give information. Respondents freely signed the informed consent. Respondents were informed that there was no reward, no incentive, or punishment for not participating (Brink et al., 2012).

Beneficence: the respondents' well-being was ensured as the researcher tried to minimise harm and discomfort, whether psychological, emotional, physical, spiritual, social, economic, or legal. The researcher prevented harm by monitoring the respondents for any signs of distress. Addiction is a sensitive topic for many and addiction during pregnancy can trigger an emotional response and the researcher was aware of this. The researcher was available in the vicinity to

answer any questions of clarity or if a student became distressed and would have arranged for counselling if necessary. This was, however, not needed.

The researcher respected the university's culture and reputation by ensuring that the research was regulated by institutional norms, which provided that the research was open, independent, collective, and critical.

Justice: respondents were selected on a transparent and fair bias, meaning that all the 4th-year nursing students willing to participate were included and treated equally. The researcher ensured that no information was linked to the participant or the institution by using codes. Only persons directly involved in the study, such as the researcher and supervisor, had access to the completed questionnaires.

3.13 Conclusion

In this chapter, the research methodology was discussed. The researcher described the research setting, research design population, sampling of data, data collection, data analysis and ethical considerations. The reliability and validity of the instrument have been described.

Chapter 4

RESULTS

4.1 Introduction

This study aimed to assess the knowledge and attitudes of nursing students about women who use substances during pregnancy in the Western Cape. This chapter presents the demographic characteristic of the respondents and the results of the survey according to the objectives below:

- To describe the level of knowledge of final-year nursing students about women in the Western Cape who use substances during pregnancy.
- To describe the attitudes of final-year nursing students towards women in the Western Cape who use substances during pregnancy.

4.2 Demographic information

Table 4.1 shows the demographic characteristics of the university's 4th-year undergraduate nursing students. Most nursing students were female (n=151; 88%), with 21 male students (12%). The mean age of the respondents was 28.17 years (standard deviation, 5.91) and the age range was from 21 to 51 years. Respondents obtained their knowledge of substances as follows: 46% via the media, 29% during clinical placements, 1% from their families, 8% via the Internet, 6% from religious teaching, 5% from their schooling, 3% being exposed at social circles and only 2% of student nurses had previous knowledge of substances from university studies.

Table 4.1 Sources of knowledge about substance use

Source of previous knowledge about substance (drug and/or alcohol) use in pregnancy	N	Percent
During nursing studies at university	3	2%
Family	2	1%
Internet	13	8%
Media	80	46%
Religious teachings	10	6%
During schooling	9	5%
Social circles	5	3%
During clinical practical placements	50	29%

4.3 Knowledge of nursing students about substance abuse in pregnancy

Section B of the questionnaire focussed on the knowledge of the respondents. The results from this section are presented below. The results are first reported in terms of univariate analysis (item analysis); after that, the total score of the nursing students' knowledge. Bivariate analysis and inferential statistics are also reported in the appropriate section with other related concepts.

4.3.1 Analysis of Knowledge Items

The mean was calculated: all the scores were added and then divided by the sum of the numbers. The mode was identified as the score that appeared the greatest number of times. The p-value is the statistical level of significance in the study. The smaller the p-value in the study, the more significant the results.

The results on the knowledge about pregnant women affected by substance use are displayed in tables 4.2, 4.3 and 4.4. The knowledge questionnaire is divided into three sections:

- Table 4.2: General knowledge regarding substance abuse
- Table 4.3: Knowledge regarding the approach to the treatment of pregnant women who use substances
- Table 4.4: Knowledge of substance and alcohol abuse management

Table 4.2 General knowledge regarding substance abuse

Knowledge:		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Mode
Q4-The best thing to do with a drug or alcohol exposed baby is to place it in foster care	N	6	32	26	92	16	3.5	4
	%	3.5%	18.6%	15.1%	53.5%	9.3%		
Q5-The part of the brain of a person that is most affected by substance use is the frontal lobe	N	4	14	32	102	20	3.7	4
	%	2.3%	8.1%	18.6%	59.3%	11.6%		
Q6.-Substance use is a disease	N	38	87	17	25	5	2.3	2
	%	22.1%	50.6%	9.9%	14.5%	2.9%		
Q7-In general, illegal drugs do more damage to a foetus than legal medications	N	9	26	21	100	16	3.5	4
	%	5.2%	15.1%	12.2%	58.1%	9.3%		
Q8-Most pregnant women who abuse substances were sexually or physically abused in their childhood	N	19	93	37	22	1	2.4	2
	%	11.0%	54.1%	21.5%	12.8%	0.6%		
Q9-Methamphetamine and cocaine can cause preterm labour and preterm babies	N	3	33	32	86	18	3.5	4
	%	1.7%	19.2%	18.6%	50.0%	10.5%		
Q10-Substance users usually use a single drug rather than using multiple substances	N	13	104	26	24	5	2.4	2
	%	7.6%	60.5%	15.1%	14.0%	2.9%		
Q11- Alcoholics and drug abusing women often have family members who are drug abusers	N	4	26	24	113	5	3.5	4
	%	2.3%	15.1%	14.0%	65.7%	2.9%		
Q12-Prenatal drug and alcohol abuse should be considered a form of child abuse	N	3	30	12	96	31	3.7	4
	%	1.7%	17.4%	7.0%	55.8%	18.0%		
Q13-Child abuse and neglect are often reported in homes where drug and alcohol abuse exist	N	2	32	8	101	29	3.7	4
	%	1.2%	18.6%	4.7%	58.7%	16.9%		
Q14-All pregnant women should be screened for substance use during prenatal care	N	0	3	17	101	51	4.2	4
	%	0.0%	1.7%	9.9%	58.7%	29.7%		

- **The best thing to do with a drug or alcohol-exposed baby is to place it in foster care (Q4).**

  Table 4.2 shows that n=92 (53.5%) agreed and n=16 (9.3%) of the respondents strongly agreed that an alcohol-exposed baby should be placed in foster care. Some respondents had disagreed with the statement: n=6 (3.51%) strongly disagreed and n=32 (18.6%) disagreed, and 26 respondents were unsure. Most respondents indicated that their knowledge of how to deal with an alcohol or drug-exposed infant was poor. This question can also be interpreted as an attitude question; however, the original questionnaire includes this in the knowledge section.

- **The part of the brain of a person that is most affected by substance use is the frontal lobe (Q5)**

  Most respondents knew that substance abuse affects the frontal lobe most; n=102 (59.3%) agreed, and n=29 (11.6%) strongly agreed. A minority were unsure about the section of the brain most affected n=32 (18.6%); n=4 (2.3%) strongly disagreed and n=14 **(8.1%)** disagreed. The above may be due to the lack of knowledge regarding any form of substance abuse, and this may reflect in their responses.

- **In general, illegal drugs do more damage to a foetus than legal medications (Q7)**

  Most respondents agreed or strongly agreed that illegal drugs are more damaging to the foetus than legal medications; n=100 (58.1%) agreed, and n=16 (9.3%) strongly agreed. n=21(12.2%) respondents reported being unsure in response to this statement. Nine (9) (5.2%) strongly disagreed and n=26(15.1%) disagreed. This could be due to a lack of knowledge regarding the physiology of a foetus exposed to drug use, as this is not included in the nursing curriculum.

- **Most pregnant women who abuse substances were sexually or physically abused in their childhood (Q8)**

  Most of the respondents, n=11 (58.1%), agreed and n=16 (9.3%) strongly agreed with the statement. However, as indicated, some of the respondents, n=37 (21.5%), were not sure about the answer. Results also showed that n=19(11.0%) strongly disagreed and n=93(54.1%) disagreed with this statement. This indicated that most respondents lacked knowledge regarding the above statement, which can be due to a lack of exposure or not being educated at the tertiary level regarding the indications for substance abuse in pregnant women.

- **Substance users usually use a single drug rather than using multiple substances (Q9)**
  Most respondents were reasonably knowledgeable about using single or multiple drugs in pregnancy; 104 respondents (60.5%) disagreed, and 13 (7.6%) strongly disagreed that substance users usually use a single drug rather than multiple drugs. There were some respondents, n=24 (14.0%) that disagreed and n=5 (2.9%) that strongly disagreed, with only n=26 (15.1%) of the respondents indicating that they were uncertain about the answer.
- **Child abuse and neglect are often reported in homes where drug and alcohol abuse exist (Q13)**
  Most respondents, n=101 (58.7%) agreed, and n=51 (29.7%) strongly agreed with the above statement. Some respondents reported n=8(7.0%) to be not sure of this statement. Not many of the respondents agreed with this statement as n=2(1.2%) strongly disagreed and n=32(18.6) disagreed. Even though the results indicated an adequate amount of knowledge, it is still evident that some respondents displayed poor knowledge, which might be due to not having training in the effects of substance abuse.
- **All pregnant women should be screened for substance use during prenatal care (Q14)**
  Many of the respondents were aware of the need to screen pregnant women, with n=101 (58.7%) agreeing and n=51 (29.7%) strongly agreeing with the above statement. Seventeen respondents (9.7%) were unsure about the above statement. However, the were n=3(1.7%) who disagreed and n=0(0.0%) who strongly disagreed.

In Table 4.3 below, the questions relating to respondents' knowledge about how pregnant women who abuse substances should be treated are presented and discussed.

Table 4.3 Knowledge regarding the approach to treatment of pregnant women who use substances.

Knowledge:		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Mode
Q15- All pregnant women should be given regular urine drug and alcohol tests during their pregnancies	N	0	7	23	93	49	4.1	4
	%	0.0%	4.1%	13.4%	54.1%	28.5%		
Q16- Women who use drugs and/or alcohol usually associate with men who also use drugs and/alcohol	N	1	28	15	95	33	3.8	4
	%	0.6%	16.3%	8.7%	55.2%	19.2%		
Q17- Among alcoholic women, the risk of foetal alcohol syndrome increases with each pregnancy	N	26	54	29	50	13	2.8	2
	%	15.1%	31.4%	16.9%	29.1%	7.6%		
Q18-Nicotine abuse (cigarettes) causes more deaths per year in the SA than any other used substance	N	4	33	42	67	26	3.4	4
	%	2.3%	19.2%	24.4%	39.0%	15.1%		
Q19- Due to the addiction process, many substance users cannot stop using even though they know that it may harm their unborn child	N	1	22	15	106	28	3.8	4
	%	0.6%	12.8%	8.7%	61.6%	16.3%		
Q 20- Recent research indicates that 20% of pregnant women use illegal drugs	N	0	16	52	97	7	3.6	4
	%	0.0%	9.3%	30.2%	56.4%	4.1%		
Q 21- Alcoholics Anonymous is an effective treatment for many women with drug and alcohol problems	N	0	19	33	108	12	3.7	4
	%	0.0%	11.0%	19.2%	62.8%	7.0%		
Q 22- There should be more drug and alcohol treatment centres for pregnant and parenting women	N	1	9	21	113	28	3.9	4
	%	0.6%	5.2%	12.2%	65.7%	16.3%		
Q 23-Social and economic factors are the main causes of drug abuse in South Africa	N	5	27	23	100	17	3.6	4
	%	2.9%	15.7%	13.4%	58.1%	9.9%		
Q 24-You cannot become addicted to prescription medications as long as they are prescribed by a healthcare provider	N	20	59	19	56	18	3	4
	%	11.6%	34.3%	11.0%	32.6%	10.5%		

- **Among alcoholic women, the risk of foetal alcohol syndrome increases with each pregnancy (Q17)**

Table 4.3 shows the results of the above statement. The results obtained from the above statement revealed that most respondents, n=54 (31.4%), disagreed, and n=26 (15.1%) strongly disagreed with the above statement. There were respondents, n=50 (29.1%), who agreed and n=13(7.6%), who strongly agreed with the statement. However, n= 29 (16.9%) of the respondents displayed ambivalence; they did not agree or disagree with the above statement. Most respondents displayed a lack of knowledge about the statement that among alcoholic women, the risk of foetal alcohol syndrome increases with each pregnancy. The scoring can be related to the common misconception that women abusing alcohol can have a "normal baby", and the students were possibly not educated at the tertiary level regarding the dangers of alcohol abuse towards the foetus.

- **Nicotine abuse (cigarettes) causes more deaths per year in SA than any other used substance (Q18)**

The results in Table 4.3 for the above statement show that of the N=172 respondents, the majority, n=67 (39.0%), agreed and n=26 (15.1%) strongly agreed that nicotine abuse causes more deaths per year in SA than any other used substance. Thirty-three (19.2%) respondents disagreed, and four (2.3%) strongly disagreed. However, n=42 (24.4%) of the respondents were unsure about the above statement. It is evident from the responses that the respondents had limited knowledge of nicotine-related deaths in SA per year, higher than other substances used. These results are possibly indicative of the lack of education regarding nicotine usage.

- **Due to the addiction process, many substance users cannot stop using even though they know that it may harm their unborn child (Q19)**

Table 4.3 shows that out of the N=172 respondents, n=106 (61.1%) agreed, and n=28 (16.3%) strongly agreed with the above statement. However, n=22 (12.8%) of the respondents disagreed, and n=1 (0.6%) strongly disagreed with the above statement that due to the addiction process, many substance users cannot stop even though they know it might harm their unborn child. There were respondents n=15 (8.7%) that neither agreed nor disagreed with the above statement. The results indicate that the respondents had knowledge of the above statement and might have received some form of formal or informal education.

- **There should be more drug and alcohol treatment centres for pregnant and parenting women (Q22)**

With reference to the above statement in Table 4.3, the results indicate that n=113 (65.7%) of the respondents agreed, and n=28 (16.3%) of the respondents strongly agreed that there should be more drug and alcohol treatment centres for pregnant and parenting mothers. In comparison, another n=9 (5.2%) of the respondents disagreed, and n=1 (0.6%) of the respondents strongly disagreed. Ambivalence regarding the above statement was indicated by n= 21 (12.2%) respondents. Respondents were generally knowledgeable regarding the need for the availability of addiction treatment centres.

- **You cannot become addicted to prescription medications as long as they are prescribed by a healthcare provider (Q24)**

Fifty-six (56) (32.1%) of the respondents agreed and n=18 (10.5%) strongly agreed with the above statement. Fifty-nine (59) (34.3%) respondents disagreed, 20 (11.6%) strongly disagreed and 19 (11.0%) of the respondents were uncertain about the issue of addiction to prescription medication. This may point to a lack of understanding about the addictive potential of certain prescription medications.

Table 4.4 Knowledge of substance and alcohol abuse management

Knowledge:		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Mode
Q25-I currently feel that I would be uncomfortable working in the field of addiction because I do not feel prepared academically.	N	1	17	22	109	23	3.8	4
	%	0.6%	9.9%	12.8%	63.4%	13.4%		
Q26-Denial is a part of the addiction process	N	0	15	20	106	31	3.9	4
	%	0.%	8.7%	11.6%	61.6%	18.0%		
Q27-The diagnosis of substance dependence is the need for increased amounts of a substance to achieved the desired effect.	N	1	6	19	115	31	4	4
	%	0.6%	3.5%	11.0%	66.9%	18.0%		
Q28-Over time, an addicted person's brain becomes so damaged that they can no longer make rational decisions	N	34	77	26	32	3	2.4	2
	%	19.8%	44.8%	15.1%	18.6%	1.7%		
Q29-A substance user should not be held accountable for the things they do when they are intoxicated	N	10	70	21	62	9	2.9	2
	%	5.8%	40.7%	12.2%	36.0%	5.2%		
Q30-Addicts and alcoholics are capable of drinking or using socially	N	3	17	12	104	36	3.9	4
	%	1.7%	9.9%	7.0%	60.5%	20.9%		
Q31-Alcohol abuse causes more deaths per year in SA than any other used substance.	N	5	52	37	69	9	3.1	4
	%	2.9%	30.2%	21.5%	40.1%	5.2%		
Q32-Recovery from alcoholism and drug addiction is a life-long process	N	16	43	24	69	20	3.2	4
	%	9.3%	25.0%	14.0%	40.1%	11.6%		
Q33-Among pregnant women, drug use is a bigger problem than alcoholism	N	34	76	26	27	9	2.4	2
	%	19.8%	44.2%	15.1%	15.7%	5.2%		

- **I currently feel that I would be uncomfortable working in the field of addiction because I do not feel prepared academically (Q25)**

Regarding the above statement, the majority of the N=172 respondents, n=109 (63.4%), agreed, and n=23 (13.4%) strongly agreed with the above statement. Of the other respondents, n=17(9.9%) disagreed, and n=1(0.6%) strongly disagreed with the above statement. However, n=22 (12.8%) indicated they were uncertain regarding the above statement. This suggests a lack of knowledge regarding substance abuse, which can be due to the limited number of hours, and information, allocated for teaching substance abuse at the university level.

- **Over time, an addicted person's brain becomes so damaged that they can no longer make rational decisions (Q28)**

In Table 4.4, with regards to the above statement, the results showed that of the N=172 respondents, most of the respondents n=77 (44.8%) disagreed and n=34 (19.8%) strongly disagreed that over some time, an addicted person's brain becomes so damaged that they can no longer make rational decisions. However, there were respondents, n=32 (18.6%), who agreed, and n=3(1.7%) who strongly agreed with the above statement. There was n=26 (15.1%) of the respondents that were unsure about the statement. These results displayed that the respondents lacked knowledge concerning the above statement. This could be due to the nursing students receiving limited training and teaching regarding the physiology of substance addiction in the human body.

- **A substance user should not be held accountable for the things they do when they are intoxicated (Q29)**

The results in Table 4.4 for the above statement showed that of the N= 172 respondents, n=70 (40.1%) disagreed, and n=10 (5.8%) strongly disagreed with the above statement. There were, however, respondents n=62 (36.0%) who agreed and n=9(5.2%) who strongly agreed with the above statement. Of the rest of the respondents= 21 (12.2%) were unsure and did not agree, nor did they disagree. Respondents displayed knowledge regarding the statement "a substance user should not be held accountable for the things they do when they are intoxicated" due to the respondents being exposed to intoxicated people or through input during theory sessions about the behaviour of intoxicated patients.

- **Addicts and alcoholics are capable of drinking or using socially (Q30)**

The results in Table 4.4 for the above statement revealed that most of the respondents, n=104(60.5%) agreed and n=36(20.9%) strongly agreed with the above statement. Seventeen (n=17) (9.9%) of the respondents disagreed and n=3(1.7%) strongly disagreed with the above

statement. Of the N=172 respondents, n=21(12.2%) were unsure about the statement that addicts and alcoholics, are capable of drinking or using socially. The results showed that respondents lacked knowledge about the above statement, possibly linked to limited knowledge and training in addiction.

- **Among pregnant women, drug use is a bigger problem than alcoholism (Q33)**

The results in Table 4.4 revealed that most of the respondents n=76 (44.2%), disagreed and n=34 (19.8%) strongly disagreed with the above statement. However, there were respondents n=27 (15.1%) who agreed and n=9 (5.2%) who strongly agreed with the above. Results showed that n= (26) (15.1%) of the respondents were unsure and neither agreed nor disagreed about the statement "Among pregnant women drug use is a bigger problem than alcoholism". The respondents displayed a lack of knowledge with regard to the above statement which could be due to the limited education provided at university level regarding drug and alcohol usage.

Table 4.4 Knowledge regarding substance use

Knowledge	Frequency	Percent
Moderate	169	98%
Good	3	2%
Total	172	100%

Table 4.4 (above) indicates that the knowledge was good if the respondents scored 70% and above. Only three respondents demonstrated that they had good knowledge of substance use. In contrast, respondents who scored below 70% were classified as having a moderate amount of knowledge regarding substance use.

Table 4.5: Comparison of knowledge with demographic characteristics

			Knowledge		P-value
			Moderate	Good	
Gender	Female	N	148	3	0.5146
		%	98.0%	2.0%	
	Male	N	21	0	
		%	100.0%	0.0%	
Age group	21 – 30	N	120	3	0.7491
		%	97.6%	2.4%	
	31 – 40	N	39	0	
		%	100.0%	0.0%	

			Knowledge		P-value
			Moderate	Good	
	41 – 50	N	9	0	
		%	100.0%	0.0%	
	51 – 60	N	1	0	
		%	100.0%	0.0%	
Where did you obtain your knowledge about substance (drug and/or alcohol) use in pregnancy?	During nursing studies at university	N	3	0	0.9384
		%	100.0%	0.0%	
	Family	N	2	0	
		%	100.0%	0.0%	
	Internet	N	13	0	
		%	100.0%	0.0%	
	Media	N	79	1	
		%	98.8%	1.3%	
	Religious teachings	N	10	0	
		%	100.0%	0.0%	
	During schooling	N	9	0	
		%	100.0%	0.0%	
	Social circles	N	5	0	
		%	100.0%	0.0%	
	During clinical practical placements	N	48	2	

4.3.4 Knowledge section summary

Knowledge was measured using the knowledge scale to determine the undergraduate nursing students' perceived level of knowledge regarding substance use and perinatal substance use. For the knowledge questions in Tables 4.2, 4.3 and 4.4 above most respondents (66.7%) answered 23 of the 30 questions correctly, and 33.3% answered incorrectly. Questions 4,5,7,9,11-16,18-27 and 30-33 were answered correctly and questions 6,8,10,17,28-29 and 34 were answered incorrectly. This indicated that the student nurses were fairly knowledgeable regarding perinatal substance use. However, 57.4% of the respondents demonstrated a lack of knowledge in stating that illegal drugs do more damage to the foetus than legal medication. Poor knowledge was also demonstrated as 54.1% of the respondents agreed that nicotine abuse causes more deaths per year in South Africa than any other used substance. The respondents showed a lack of knowledge when 64% of them disagreed that among pregnant women, drug usage is a bigger problem than alcoholism, whilst 15% of the respondents showed uncertainty in their level of knowledge regarding this specific answer. Regarding the statement suggesting that the best management of a drug or alcohol-exposed baby is to place the baby in foster care, most of the respondents, 62.8%, agreed, which showed a lack of knowledge about the management of perinatal substance abuse.

4.4 Attitudes of undergraduate student nurses towards pregnant women

Section C of the questionnaire dealt with respondents' attitudes towards substance-using pregnant women. The results are presented below. The results are first reported in univariate analysis and thereafter total attitude scores. Bivariate analysis and inferential statistics are also reported in the section.

4.4.1 Item analysis

The results on the attitude about pregnant women affected by substance use are displayed in three tables as follows:

Table 4.6: Attitudes of nursing students regarding the stigmatisation of pregnant women

Table 4.7: Attitudes of nursing students regarding substance-using women and their infants

Table 4.8: Attitudes of nursing students regarding how pregnant mothers are perceived

Table 4.6 Attitudes of nursing students regarding stigmatisation of pregnant women

Attitudes:		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Mode
Q34-Making a woman feel guilty about her substance use is an effective way to stop her use	N	24	76	23	39	10	2.62	2
	%	14.0%	44.2%	13.4%	22.7%	5.8%		
Q35-Black women are more likely to use drugs and alcohol than white women	N	15	80	39	38	0	2.58	2
	%	8.7%	46.5%	22.7%	22.1%	0.0%		
Q36-Women who use drugs during their pregnancy should be punished by being put in jail	N	1	30	30	88	23	3.59	4
	%	0.6%	17.4%	17.4%	51.2%	13.4%		
Q37-Substance using women should have tubal-ligation after they deliver	N	0	20	26	109	17	3.72	4
	%	0.0%	11.6%	15.1%	63.4%	9.9%		
Q38-When I hear about the effects of alcohol and drugs on new-born infants, I feel angry towards their mother	N	3	60	31	77	1	3.08	4
	%	1.7%	34.9%	18.0%	44.8%	0.6%		
Q39-Drug and alcohol use by pregnant women should be handled by the legal system	N	24	75	42	27	4	2.47	2
	%	14.0%	43.6%	24.4%	15.7%	2.3%		
Q40-To prevent further damage to their foetus, pregnant women should be imprisoned until they deliver	N	3	62	30	72	5	3.08	4
	%	1.7%	36.0%	17.4%	41.9%	2.9%		

- **Making a woman feel guilty about her substance use is an effective way to stop her use (Q34)**

Twenty-four (14.0%) respondents strongly disagreed, and n=76 (44.2%) disagreed with the statement, "Making a woman feel guilty about her substance use is an effective way to stop her use". A small proportion of the respondents, n=39 (22.7%), strongly agreed, while an even smaller portion, n=10 (5.8%), agreed. Of the N= 172 respondents, n=23 (13.4%) demonstrated some uncertainty. The response to this statement was positive and this might be due to nursing still portraying the caring element of the profession.

- **Substance using women should have tubal ligation after they deliver (Q37)**

The above statement showed that the respondents had a negative attitude as most respondents, n=109 (63.4%), agreed and n=17 (9.9%) strongly agreed. The results demonstrated that only n=20 (11.6%) disagreed, however, n=26 (15.11%) was neutral concerning the above statement. This revealed a negative attitude of the student nurses towards pregnant mothers using substances and this might be due to preconceived ideas and poor knowledge of substance-using mothers.

- **When I hear about the effects of alcohol and drugs on new-born infants, I feel angry towards their mother (Q38)**

The responses to the above statement reveal that most respondents agreed that they feel anger towards the mother when they hear about the effects of alcohol and drugs on newborn infants. Out of the total of N=172 respondents, n=77 (44.8%) agreed, and n=1 (0.6%) strongly agreed with the above statement. Table 4.6 indicated that about a third of the respondents, n=60 (34.9%), disagreed, while n=3 (1.7%) strongly disagreed with the above statement. The rest of the respondents, n=31 (18.1%), remained neutral. This is an example of negative attitudes towards pregnant mothers using substances.

- **To prevent further damage to their foetus, pregnant women should be imprisoned until they deliver (Q40)**

Table 4.6 shows the results of the statement, "to prevent further damage to the foetus, the pregnant women should be imprisoned until they deliver". Sixty-two n= (62) (36.0%) of the respondents disagreed, and n=3 (1.7%) of the respondents strongly disagreed with the above statement. However, n=72 (41.9%) of the respondents agreed and n=5 (2.9%) of the respondents strongly agreed with the attitude statement. The rest of the respondents, n= 30 (17.4%) were neutral.

Table 4.7: Attitudes of nursing students regarding substance using women and their infants

Attitudes:		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Mode
Q 41-Even if a woman successfully completes a treatment program, she should not have access to her baby in case of relapse	N	38	66	23	41	4	2.44	2
	%	22.1%	38.4%	13.4%	23.0%	2.3%		
Q 42-Becoming addicted to substances are personal weaknesses	N	12	61	21	70	8	3.01	4
	%	7.0%	35.5%	12.2%	40.7%	4.7%		
Q 43-If a pregnant woman abuses substances in her pregnancy, she does not deserve help from society, such as medical or social services	N	6	57	14	77	18	3.26	4
	%	3.5%	33.1%	8.1%	44.8%	10.5%		
Q 44-In all honesty, I would be more judgmental than empathetic toward a pregnant drug addict	N	1	27	20	102	22	3.68	4
	%	0.6%	15.7%	11.6%	59.3%	12.8%		
Q 45-Getting off drugs is mostly a matter of will power	N	11	53	24	82	2	3.06	4
	%	6.4%	30.8%	14.0%	47.7%	1.2%		
Q 46-Pregnant women who abuse drugs and alcohol are more concerned with their needs than their unborn babies	N	0	20	64	84	4	3.42	4
	%	0.0%	11.6%	37.2%	48.8%	2.3%		
Q 47-My reaction to drugs is faith based	N	0	15	16	118	23	3.87	4
	%	0.0%	8.7%	9.3%	68.6%	13.4%		
Q 48-It is difficult for women to get gender-sensitive treatment for substance use	N	12	30	47	81	2	3.18	4
	%	7.0%	17.40%	27.3%	47.1%	1.2%		

- **Becoming addicted to substances are personal weakness (Q42)**

In Table 4.7 the responses to the above statement revealed that n=70 (40.7%) of the respondents agreed, and n=8 (4.7%), strongly agreed that "becoming addicted to substances is a personal weakness". However, n=61 (35.5%) disagreed and n=12 (7.0%) strongly disagreed with the above statement. A small amount of the respondents, n= 21 (12.2%), revealed an unsure response. The result indicated a negative attitude towards substance abusers. The respondents' answers showed a significant possibility of a lack of knowledge and training for addictions.

- **If a pregnant woman abuses substances in her pregnancy, she does not deserve help from society, such as medical or social services (Q43)**

Table 4.7 reveals the result of the above attitude statement. The findings demonstrated that n=77 (44.8%) of the respondents agreed and 18 (10.5%) respondents strongly agreed with the statement "if a pregnant woman abuses substances, she does not deserve help from society such as medical or social services". However, there were n=57 (33.1%) respondents that disagreed, and n=6 (3.5%) strongly disagreed. This result indicated that more than 50% of the student nurses portrayed a negative attitude and this might possibly be due to their inexperience in how to manage pregnant women that are suffering from drug addiction.

- **In all honesty, I would be more judgmental than empathetic toward a pregnant drug addict (Q44)**

In table 4.7 the results indicated that most of the respondents agreed with the statement "in all honesty they would be more judgmental than empathetic towards a pregnant addict". More than 50% of the respondents, n= 102 (59.3%) agreed, and n= 22 (12.8%) strongly agreed. A total of n= 27 (15.7%) disagreed, and n=1 (0.6) strongly disagreed. Twenty, n=20 (11.6%), of the respondents neither agreed nor disagreed with the above attitude statement. This response might be due to a possible lack of experience in working with patients that are addicted to drugs.

- **Getting off drugs is mostly a matter of will power (Q45)**

The results indicated that out of a total of N=172 respondents there were n= 82 (47.7%) agreed and n= 2 (1.2%) strongly agreed that "it is a matter of willpower to get off drugs". These results also showed that n= 53 (30.8%) of the respondents disagreed, and n= 11 (6.4%) strongly disagreed. However, a small amount of respondents n=24 (14.0%) experience uncertainty and indicated that they are not sure about their responses. This result is indicative of negative attitudes amongst student nurses. The results show that there is little to no educational exposure regarding drug addiction and the scientific processes.

- **Pregnant women who abuse drugs and alcohol are more concerned with their needs than their unborn babies (Q46)**

According to the results in Table 4.7, 50 % of the respondents agreed that "pregnant women who abuse drugs and alcohol are more concerned about their own needs than their unborn babies". The respondents, n=84 (48.8%), agreed, and n=4 (2.3%) strongly agreed with this statement. A small number of respondents, n=20 (11.6%) disagreed, which was in contrast with the n= (37.2%) of the respondents that neither disagreed nor agreed. These results are indicative of the portrayal of negative attitudes by student nurses towards women who abuse substances. The results can be indicative of a lack of exposure and training regarding perinatal substance abuse.

- **My reaction to drugs is faith-based (Q47)**

The results in Table 4.7 demonstrated that most respondents agreed with the statement "my reaction to drugs is faith-based". Out of a total of N=172 respondents, n=118 (68.6%) agreed and n=23 (13.4%) strongly agreed with the above statement. The results showed that only n=15 (8.7%) of the respondents disagreed and that n=16 (9.3%) were unsure about their responses. These results demonstrated the negative attitude that student nurses portray. This response might possibly be due to the religious belief systems that the respondents grew up with as well as the lack of educational information regarding substance abuse.

- **It is difficult for women to get gender-sensitive treatment for substance use (Q48)**

According to the results in table 4.7 most of the respondents agreed that "it's difficult for women to get gender-sensitive treatment for substance use" There was a total of n=81 (47.1%) that agreed and n=2 (1.2%) that strongly agreed. The minimum of respondents, n=30 (17.4%), disagreed, and n=12 (7.0%) strongly disagreed. However, n=47 (27.3%) of the respondents remained neutral. A positive attitude was demonstrated by the student nurses. Most respondents were females, and the responses to this question might possibly indicate that females have more acceptance and empathy for pregnant women.

Table 4.8: Attitudes of nursing students regarding how pregnant mothers are perceived

Attitudes:		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Mode
Q 49-Taking drugs makes people manipulative and unreliable.	N	4	43	28	73	24	3.41	4
	%	2.3%	25.0%	16.3%	42.4%	14.0%		
Q 50-Taking care of infants who are born addicted as a result of their mother's substance use places an unfair burden on society	N	1	23	45	90	13	3.53	4
	%	0.6%	13.4%	26.2%	52.3%	7.6%		
Q 51-Drug addicts do not care and forget about their babies when they leave the hospital	N	1	25	15	95	36	3.81	4
	%	0.6%	14.5%	8.7%	55.2%	20.9%		
Q 52-An addicted person can control their use if they tried harder	N	6	22	20	94	30	3.7	4
	%	3.5%	12.8%	11.6%	54.7%	17.4%		
Q 53-It is my responsibility as a nurse to advocate for care for drug exposed infants	N	25	78	26	36	7	2.55	2
	%	14.5%	45.3%	15.1%	20.9%	4.1%		
Q 54-It is my responsibility as a nurse to advocate for care for pregnant women who are drug or alcohol users	N	7	50	49	64	2	3.02	4
	%	4.10%	29.1%	28.5%	37.2%	1.2%		

- **Taking care of infants who are born addicted as a result of their mother's substance use places an unfair burden on society (Q50)**

In table 4.8 most of the respondents, n= 90 (52.3%), agreed, and n=13 (7.6%) strongly agreed that "taking care of infants who are born addicted as a result of their mother's substance use place an unfair burden on society". There was n= 23 (13.4%) of the respondents that disagreed and another n=1 (0.6%) that strongly disagreed with the above statement. However, n=45 (26.2%) of the respondents were unsure in their responses. The overall response to this statement was negative.

- **An addicted person can control their use if they tried harder (Q52)**

For this statement, most of the respondents, n=94 (54.7%), agreed, and n=30 (17.4%) strongly agreed that an addicted person can control their use if they try harder. A small amount of the respondents, n=22 (12.8%), disagreed, and n= 6 (3.5%) strongly disagreed with the above statement. A total of n= 20 (11.6%) of the respondents had a neutral response. The results of this statement indicated another negative attitude portrayed by the respondents, which might be due to their minimum exposure to addiction knowledge and training.

- **It is my responsibility as a nurse to advocate for care for drug-exposed infants (Q54)**

The response to the above attitude statement, indicated in table 4.6, showed that most of the respondents, n=78 (45.3%), disagreed, and n=25 (14.5%) strongly disagreed that it's the responsibility of the nurse to advocate for care for drug-exposed infants. This is in contrast with the n=36 (20.9%) of the respondents that agreed, and the n=7 (4.1%) that strongly agreed. Some of the respondents, n=26(15.1%), were unsure about this attitude statement. The above result is indicative of the respondents portraying a negative attitude, which might be due to minimum practical and theoretical exposure at the tertiary level.

- **It is my responsibility as a nurse to advocate for care for pregnant women who are drug or alcohol users (Q53)**

According to the results in table 4.8, most of the respondents had a positive response towards the above attitude statement. Of the total N=172 respondents, n=64 (37.2%) of the respondents agreed, and n=2 (1.2%) strongly agreed that nurses should advocate for care for pregnant women who are drug or alcohol users. However, n= 50 (29.1%) disagreed, and n=7 (4.1%) strongly disagreed with this statement. A total of n=49 (28.5%) of the respondents had a neutral response to this attitude statement. The respondents mostly displayed a positive attitude;

possibly because most students at the university have an established attitude that the role of the nurse is to care, and be an advocate, for the patient.

4.4.2 Attitudes section summary

The respondents were provided with 20 questions regarding their attitudes. They were required to select one of the five options, ranging from strongly disagree, not sure, and strongly agree. A five-point Likert scale with ranges from strongly disagree, disagree, not sure, agree to strongly agree was utilised. The total scoring on attitudes shows that most (88%) of the respondents had negative attitudes towards mothers abusing substances during their pregnancy and only (12 %) of the undergraduate nursing students displayed a positive attitude. The examination of certain items showed that respondents were displaying negative attitudes towards pregnant mothers abusing substances. For instance, (72.1%) of the respondents agreed that they are more judgemental than empathic towards a pregnant addict. Most of the respondents (73.3%) indicated that substance-addicted pregnant mothers should have a tubal ligation after delivery and (82%) of the respondents indicated that their reaction towards mothers abusing substances while pregnant is faith-based. With regard to the above items, it could be concluded that respondents were likely to have negative attitudes with regard to most items.

Other items indicating negative attitudes towards mental illness were related to the following statements: "Women should be put in jail when they use substances while they are pregnant" by (64.6%) of the respondents and the statement "becoming addicted to substances is a personal weakness." by (45.4%) of the respondents. Although most of the respondents (76.1%) indicated that drug addicts do not care and forget about their babies when they leave the hospital, a minimum percentage (38.4%) of the sample revealed that they feel it's their responsibility as a nurse to advocate for better care for substance abusing pregnant mothers. Positive attitudes displayed by (55.2%) of the respondents were not in agreement with the statement that black women are more likely to abuse drugs than white women. Another positive attitude from (58.2%) of the respondents was reported when they disagreed that making a pregnant woman feel guilty about her drug usage is an effective way of making her stop using.

Table 4.9 Attitudes of respondents with demographic data

			Attitudes		P-value
			Negative	Positive	
Gender	Female	N	132	19	0.6883
		%	87.4%	12.6%	
	Male	N	19	2	
		%	90.5%	9.5%	
Age group	21 – 30	N	109	14	0.7836
		%	88.6%	11.4%	
	31 – 40	N	34	5	
		%	87.2%	12.8%	
	41 – 50	N	7	2	
		%	77.8%	22.2%	
	51 – 60	N	1	0	
		%	100.0%	0.0%	
Where did you obtain your knowledge about substance (drug and/or alcohol) use in pregnancy?	During nursing studies at university	N	3	0	0.6735
		%	100.0%	0.0%	
	Family	N	2	0	
		%	100.0%	0.0%	
	Internet	N	12	1	
		%	92.3%	7.7%	
	Media	N	72	8	
		%	90.0%	10.0%	
	Religious teachings	N	9	1	
		%	90.0%	10.0%	
	During schooling	N	8	1	
		%	88.9%	11.1%	
	Social circles	N	5	0	
		%	100.0%	0.0%	
	During clinical practical placements	N	40	10	
		%	80.0%	20.0%	

Although the majority of the respondents were female, male respondents also reported negative attitudes towards pregnant mothers who abuse substances. Male students were more likely to have a negative attitude towards women abusing substances while pregnant compared with female nursing students (90.5% vs 87.4%) All the respondents in the older age group, 51-60 years, showed (100%,) negative attitudes towards perinatal substance usage, whereas the younger group of respondents, between the ages of 21-30 years, were more likely to show some form of positive attitude towards pregnant mothers abusing substances (11.5% vs 100%,).

Nursing students who were exposed to substance abuse in social circles, in their family setting and during their nursing studies at university were more likely to display a higher degree of negative attitudes than those who were exposed to substance abuse during clinical placements, schooling, religious teaching, media and the internet (100% vs 85%).

4.6 Non-significant Results

The knowledge questionnaire and attitude questionnaire included multiple questions, and the researcher discussed the questions that showed a statistical difference in responses. Responses that showed no statistical significance have not been presented. The knowledge questions that showed no statistical significance are as follows.

Table 4.2

- Question 6- Substance use is a disease.
- Question 10- Substance users usually use a single drug rather than using multiple substances.
- Question 11- Alcoholics and drug-abusing women often have family members who are drug abusers.
- Question 12- Prenatal drug and alcohol abuse should be considered a form of child abuse.

Table 4.3:

- Question 15- All pregnant women should be given regular urine drug and alcohol test during their pregnancies.
- Question 16- Women who use drugs and/or alcohol usually associate with men who also use drugs and/alcohol.
- Question 20- Recent research indicated that 20% of pregnant women use illicit drugs.
- Question 21- Alcoholics Anonymous is an effective treatment for many women with drug and alcohol problems.
- Question 23- Social and economic factors are the main causes of drug abuse in South Africa.
- Question 24- You cannot become addicted to prescription medication as long as they are prescribed by a healthcare provider.

Table 4.4:

- Question 26- Denial is part of the addiction process.
- Question 27- The diagnosis of substance dependence is the need for increased amounts of a substance to achieved the desired effect.
- Question 30- Addicts and Alcoholics are capable of drinking or using social.

- Question 31- Alcohol abuse causes more deaths per year in SA than any other used substances.
- Question 32- Recovery from alcoholism and drug addiction is a life-long process.

Attitude questions that showed no significant difference are the following:

Table 4.6:

- Question 35- Black women are more likely to use drugs and alcohol than white women.
- Question 36- Women who uses drugs during their pregnancy should be punished by being out in jail.
- Question 39- Drug and alcohol use by pregnant women should be handled by the legal system.

Table 4.7:

- Question 42- Becoming addicted to substances are personal weaknesses.

Table 4.8:

- Question 49- Taking drugs makes people manipulative and unreliable.
- Question 51- Drug addicts do not care and forget about their babies when they leave the hospital.

4.7 Summary and conclusion

Numerous statements were used to determine student nurses' knowledge and attitudes to perinatal drug abuse. For the attitude statements (table 4.7) most respondents (88%) displayed negative attitudes towards pregnant women who are using or abusing substances. However, 21.2% of the respondents demonstrated positive attitudes. Negative attitudes were demonstrated in response to the statement that substance-using women should have a tubal ligation after the delivery of their baby. Similar negative attitudes were displayed by the responses that an addicted person can control their usage if they tried harder. Regarding the question about being more judgemental than empathic toward a pregnant addict, most respondents agreed to this, which demonstrated a high level of negative attitudes regarding substance-abusing pregnant mothers. In this survey, the student nurses' discomfort in working with perinatal substance-abusing mothers, and the absence of an empathic feeling for them

portrayed mainly negative attitudes. The bivariate statistics respectively for knowledge and attitudes showed that a significantly higher mean good knowledge score was found amongst female respondents as compared with males. With regards to attitude, a significantly higher negative attitude score was found in males (90.5%) than in females (87.4%).

Chapter 5

Discussion

5.1 Introduction

In this chapter, the results and implications of the study are discussed.

5.2 Demographic characteristics

Most of the study respondents were female, a worldwide pattern in the nursing profession (Shakwane, 2014; Mattos et al., 2015). Nursing remains a predominantly female profession, with over 90% of nurses worldwide being female. In the African region, 76% are female (World Health Organization, 2018). In South Africa, a study regarding agency nursing conducted by Rispel et al. (2014) showed that 92.71% of the 3874 nurse respondents were female. Although many other professions, such as commerce, law, and medicine, have narrowed the gender gap, nursing remains a female-dominated profession (Mao et al., 2021). The nursing profession has been stereotyped as a female domain, and historically it has been perceived in that manner, with the caring image of the profession being symbolised as the epitome of femininity (Zamanzahdeh et al., 2013).

The mean age of the respondents was 28.1 years (age range 21-51), which indicates that in the study setting, nursing students do not always enter tertiary education immediately after completing secondary education. A study in the same setting showed a similar trend, where the mean age of the fourth-year student respondents was 25.86 (Musafari, 2015). A study conducted in Turkey by Kavlak et al. (2015) reported that older respondents were more likely to have positive attitudes. This study noted that female students had a more positive attitude towards substance-using pregnant women.

5.3 Previous exposure to substance abuse

Sources of information regarding substances are important contributors to subsequent knowledge and attitudes. Respondents reported various sources of knowledge about substance abuse, including online and other media. Trusting unreliable sources can be problematic given the public health risk of substances. Media sources may be critical of scientific research, which

can be challenging for student nurses if they cannot distinguish between scientific evidence and bad science.

Only 3% of the respondents indicated that they had exposure to substance use during their nursing studies at the university. This raises questions about the spread of content in the nursing curriculum, given that substance use is a significant public health issue. Mahmoud et al. (2018) reported that education and training in screening for substance use, brief intervention, and referral to treatment would help to decrease students' stigmatising attitudes. Legere et al. (2017) found that newly practising nurses were not trained to focus on postpartum treatment for mothers who abused substances, nor were they provided opportunities to become knowledgeable regarding this. A Doctorate Nursing Practice project at Walden University in Minneapolis, Minnesota, 2021, reported that nurses with many years of experience caring for postpartum patients lacked continued education on how to care for women with mental health challenges emanating from substance abuse (Howard et al., 2010).

In a comparative study, undergraduate nursing students only received 16 hours of substance-use education, including theory, identification of alcohol-related harm, epidemiology, and nursing care elements (de Barros Junqueira et al., 2015). In a USA study of traditional baccalaureate nursing programs, limited didactic and clinical offerings for alcohol, and other substance use and abuse, were reported (Mollica et al., 2011).

Clinical placements provided exposure to substance use for 29% of the respondents. Placements, particularly in specialist treatment settings, are limited; thus, nursing students must receive appropriate information about substance use across the lifespan. They also need to know how to care for and manage persons who use substances and attend any health facility. Simulation training is an important resource for teaching and learning, and substance use, and abuse could be taught using appropriate scenarios. According to Neale (2019), emphasis must be on the importance of communication skills in psychiatry, which can be highlighted through simulation. Simulation training can reduce the stigma and raise awareness of the importance of the impact of addiction (US Department of Health and Human Science, 2016). Fine et al. (2018) reported a minimum change in substance addiction content, type, and amount for undergraduate nursing education over the previous 40 years and indicated the need for improvement. Oermann (2018) in the USA, recommended that nurse educators develop and integrate substance addiction content into pre-licensure curricula to ensure that nursing student graduates are equipped and prepared to address the needs of patients with substance addiction. In a systematic review of the nursing literature regarding the content of nursing education

curricula, the authors reported that American nursing schools did not include substance addiction, prevention, or treatment in the curriculum (Smothers et al., 2018).

5.4 Knowledge about substance use

Knowledge about addiction is essential in caring for individuals with substance use challenges. In this study, the student nurses had moderate knowledge regarding substance abuse, especially perinatal substance use. This finding concurs with other studies that highlighted that nursing professionals receive little or no information on the use of alcohol and other drugs during their academic education (de Vargas et al., 2013). A survey conducted in the United States by Romisher et al. (2018) demonstrated a low level of knowledge about addiction in mothers. Results of a qualitative study with a cohort of neonatal nurses by Maguire et al. (2012) reported that neonatal nurses needed further education and training to become more knowledgeable in managing mothers and babies exposed to substances. Training in substance use and abuse is included in the nursing education curricula for pre-registration nursing programmes but might not be adequate to prepare nurses for practice, and for managing persons with substance use disorders or challenges in health facilities.

The findings of this present study reveal that undergraduate nursing students have a moderate amount of knowledge, similar to the findings in a study "Trainees' knowledge and attitudes towards caring for the substance-exposed mother-infant dyad" (Schiff et al., 2017), in which it was reported that only 21% of respondents felt that their prior training around substance addiction was sufficient. Anderson et al. (2014) reported that women received conflicting information regarding alcohol use during pregnancy due to a lack of knowledge from healthcare providers who gave pregnant women different messages regarding alcohol use. Women perceive healthcare providers as a reliable source of information and believe that nurses and other healthcare professionals hold expert knowledge (Anderson et al., 2014). The same study reported that false information between nurses and patients could lead to varying perceptions and erroneous interpretations about the safety of alcohol consumption during pregnancy. A study done in the United Kingdom by Holloway et al. (2013) reported that the stigma exhibited by midwives had been attributed to poor knowledge and education about drugs and alcohol (Lee et al., 2012). Education regarding substance use during pregnancy should be introduced to reduce stigma and improve attitudes toward pregnant and non-pregnant drug users (Boyle et al., 2010, Jenkins, 2013).

A study conducted in Scotland regarding healthcare providers' attitudes towards drug use in pregnancy reported that healthcare providers had limited knowledge about the use of psychoactive substances during pregnancy and felt that managing substance-abusing mothers is a specialised service (Whittaker et al., 2015). This is comparable with the present study's findings, which found that undergraduate student nurses had fair to moderate knowledge. Educational interventions have been shown to positively impact nursing students' attitudes, knowledge, and skills (Smothers et al., 2018).

5.5 Positive attitudes towards pregnant mothers abusing substances

A minority of final-year nursing students in this study displayed a positive attitude towards pregnant women who use substances. This is a similar finding to that of Fonti et al. (2016) reported that nurses displayed negative and punitive attitudes. Still, after attending a course on substance addiction, they showed a more positive attitude towards individuals addicted to alcohol and other substances.

Although there is considerable evidence that indicates healthcare providers hold negative attitudes towards substance-using individuals, there are also some studies that have found positive attitudes towards this patient population. Schiff et al. (2017) also found that attitudes towards pregnant women with substance-use disorders were primarily positive. In the current study, a small proportion of the student nurses displayed positive attitudes, and this is comparable with a study by Kelleher & Cotter (2009) of emergency department doctors' and nurses' knowledge and attitudes concerning substance use, which found that the doctors and nurses displayed positive attitudes when working with substance-using patients.

In most of the studies, however, positive attitudes were reported when healthcare providers were professionals, and not nursing students, as they had more experience caring for individuals abusing substances or had more personal contact with patients abusing substances (Van Boekel et al., 2013). The current study concurred with a study by Fonti et al. (2016), where a survey was done, and nurses indicated neutral to slightly positive overall attitudes towards prenatal substance use. The same authors also noted that the majority of healthcare providers indicated that they believed they have the power, professionally, to make a positive difference for the mother (Fonti et al., 2016).

In this study, nurses disagreed with the statement that among alcohol-abusing women, the risk for foetal alcohol syndrome increased with each pregnancy. Therefore, it is important to note that a better understanding and a positive attitude by nurses towards mothers abusing

substances can improve nursing care for substance-abusing women and better outcomes for addicted mothers and their infants.

5.6 Negative attitudes towards pregnant mothers abusing substances

Respondents in this study reported that a lack of knowledge or competence in caring for mothers with substance use disorder contributed to their negative attitudes. Only a few had any educational preparation in substance use disorders, resulting in low confidence and poorer attitudes. It was difficult to establish whether illicit substance use, or abuse, is included at any level of depth in nursing education curricula. Students enter nursing education and training with a broad range of personal experiences relating to substance use. The influences of the media and society's negative views are significant factors in developing their attitudes around illicit drug use.

In the current study, student nurses displayed negative attitudes towards pregnant mothers who use substances. This is similar to a study where researchers explored the attitudes of nurses toward individuals who use illicit substances in general (Chu & Galang et al., 2013). These studies indicated poor attitudes towards individuals using substances and a lack of support from nursing staff. Results from these studies recommended training on illicit drug treatments and organisational interventions to increase the role support of nurses (Chu & Galang et al., 2013). Although the attitudes of nurses and other professionals receive much attention, most studies explored and reported on the attitude of professionals toward individuals with comorbidities, according to Link et al. (2014). These researchers emphasised the need for a more optimistic and positive attitude when treating individuals who take illicit substances.

While the current study reported negative attitudes, a study conducted by Chu et al. (2013) indicates that hospital nurses' attitudes towards patients with a history of illicit drug use were neutral. In the current study, respondents disagreed with the statement that among alcohol-abusing women, the risk for foetal alcohol syndrome disease increased with each pregnancy. However, in a systematic review by Popova et al. (2017), estimations were that 1 in every 67 women who abuse alcohol during the perinatal stage would deliver an infant with foetal alcohol syndrome (Popova et al., 2017).

5.7 Conclusion

Substance use during pregnancy has become increasingly prevalent, and nursing students are often the primary providers responsible for caring for these mothers and their unborn infants. The current study's findings are consistent with the results of other studies. A nursing student's previous exposure and experience concerning substance abuse can influence attitudes towards substance-abusing pregnant women. The inclusion of relevant information and skills for the care and management of women who use substances during the perinatal period has the potential to not only impact positively on the life of the mother and infant but contribute to the reduction of other health and social substance-related risks.

Chapter 6:

Summary, Recommendations and Conclusion

6.1 Introduction

This chapter discusses a summary, key findings, limitations, and recommendations. The study aimed to determine the knowledge and attitudes of final-year nursing students about women in the Western Cape who use substances during pregnancy.

6.2 Key findings

In this study, a minority of final-year undergraduate student nurses had received any instruction in perinatal substance use and care, and even fewer believed that such education was adequate. Caring for mothers abusing substances, focusing on awareness of substance use, creating a safe, trusting environment for mothers, providing opportunities for change, focusing on each mother's strength, and promoting resilience have all been proven to improve outcomes for mothers who struggle with perinatal substance use. Overall, the knowledge of the student nurses in this study was fair; however, there were some negative attitudes towards using substances by pregnant women.

6.3 Limitations of the study

This descriptive study had several limitations. The sample in this study was drawn from only one of the Nursing education institutions in the Western Cape region, and the results cannot be generalised to a wider population, or the rest of South Africa. This study represented the views of the undergraduate fourth (final) year nursing students at a single point in time and does not assess how the respondents' knowledge and attitudes may change when exposed to substance use and to care for substance users during their undergraduate programme. The study focussed specifically only on one level of nursing students and it was limited to one geographical area. Stigma, sensitivity and stereotyping may have limited the responses. Some of the questions are subjective and could be viewed as judgmental if not contextualised and validated for specific studies. Despite the above limitations, the study offers information which could be useful for nursing education curricula and allows for comparisons across the various levels of nursing education and types of training programmes.

6.4 Recommendations

Recommendations emanating from the study findings are made for education, practice, policy, and further research.

6.4.1 Nursing Education

Nursing curriculum developers can use the findings of the study mainly to add relevant curriculum context to the midwifery modules in the undergraduate programme. Substance use and abuse in nursing students is a concern for nurse educators; this has the potential to impact academic achievement and patient care. Knowledge of the risks of substance use in pregnancy is one way of ensuring that not nurses can provide information and support to pregnant women, which might be helpful for nurses themselves.

Nurses need to be able to identify and manage pregnant mothers who use substances; therefore, substance abuse topics should be included in nursing and midwifery curricula from the first to the final year of the programme to create awareness, and it could assist undergraduate nursing students who are challenged with substance abuse in their personal lives. Specific aspects of substance use and abuse, the effects on maternal and foetal health, management and referral should all be included in the midwifery components of the programme.

6.4.2 Nursing Practice

Anti-stigma training should be an essential aspect of in-service or upskilling programmes. This can promote involvement and compassionate care for pregnant mothers abusing substances.

6.4.3 Policy

National and local policies regarding the care and management of pregnant women who use substances should be regularly revised and updated to align with international research and recommendations. These policies should be made available to relevant nursing education institutions to ensure incorporation into the curriculum.

6.4.4 Further Research

Further studies should be conducted in different settings on the knowledge and attitudes of nurses and nursing students towards mothers abusing substances while pregnant, and intervention studies to promote change in practice.

6.5 Conclusion

Substance use during pregnancy is increasingly prevalent, and nurses are often the primary healthcare providers responsible for caring for these mothers and their infants. The study revealed that undergraduate nursing students in the School of Nursing at one tertiary institution in the Western Cape are knowledgeable about perinatal substance abuse and have a positive attitude towards pregnant mothers abusing substances. However, there were some gaps in the nurses' knowledge, indicating a need for further education regarding mother and infant attachments findings of the study raise a potential area for educational intervention and further research, focusing on developing an educational model for perinatal substance abuse to improve the care of pregnant mothers and their infants.

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Appendices

Appendix A: Consent for use of questionnaire

Kim Mitchell <yoganurse62@gmail.com> Mar 13, 2017, 8:27 PM

to me

Hi Carmen,

Yes, of course you can use my questionnaire! I would be honoured. When I conducted my study, the questionnaire was about 50 questions and the students I administered it to were very irritated by the length of it. If I did it again, I would pick the ten best question/statements, to elicit their level of knowledge and empathy.
Do I need to sign a consent form, or is this email fine?
Good luck on your project, and please don't hesitate to contact me for any other help!

Kim

Carmen Andries Apr 23, 2017, 7:19 PM

From: Kim Mitchell <yoganurse62@gmail.com> Date: Sun, Mar 19, 2017, at 9:34 PM Subject: Re: F

Carmen Andries <carmen70andries@gmail.com> Jun 23, 2017, 2:30 PM

to Dr

Appendix B: Institutional Permission

UNIVERSITY of the WESTERN CAPE

STUDENT ADMINISTRATION
Administration Building, 1st Floor
ashaikjee@uwc.ac.za, nschoeman@uwc.ac.za
021 959 2110

27 October 2017

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT THE UNIVERSITY OF THE WESTERN CAPE

Name of Researcher	:	Carmen Andries
Research Topic	:	Knowledge and attitudes of nursing students about women who use substances during pregnancy in the Western Cape
Date of issue	:	27/10/2017
Reference number	:	UWCRP271017CA

This serves as acknowledgement that you have obtained and presented the necessary ethical clearance and your institutional permission required to proceed with the above referenced project.

Approval is granted for you to conduct research at the University of the Western Cape for the period 27 October 2017 to 20 October 2018. You are required to engage this office in advance if there is a need to continue with research outside of the stipulated period. The manner in which you conduct your research must be guided by the conditions set out in the annexed agreement: *Conditions to guide research conducted at the University of the Western Cape.*

The University of the Western Cape promotes the generation of new knowledge and supports new research. It also has a responsibility to be sensitive to the rights of the students and staff on campus. This office will require of you to respect the rights of students and staff who do not wish to participate in interviews and/or surveys.

It is also incumbent on you to first furnish this office with a copy of the proposed publication should you wish to reference the University's name, spaces, identity, etc. prior to public dissemination.

Please be at liberty to contact this office should you require any assistance to conduct your research or specifically require access to either staff or student contact information.

Yours sincerely

DR AHMED SHAIKJEE
DEPUTY REGISTRAR: ACADEMIC ADMINISTRATION
OFFICE OF THE REGISTRAR

Appendix C: Ethics Approval

UNIVERSITY of the WESTERN CAPE

OFFICE OF THE DIRECTOR: RESEARCH
RESEARCH AND INNOVATION DIVISION

Private Bag X17, Bellville 7535
South Africa
T: +27 21 959 2988/2948
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24 October 2017

Ms CM Andries
School of Nursing
Faculty of Community and Health Sciences

Ethics Reference Number: HS17/9/1

Project Title: Knowledge and attitudes of nursing students about women who use substances during pregnancy.

Approval Period: 20 October 2017 – 20 October 2018

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval. Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

PROVISIONAL REC NUMBER - 130416-049

Appendix D: Information sheet

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27219592523 Fax: 27 21-959-2679

E-mail: sarunachallam@uwc.ac.za

INFORMATION SHEET

I hereby invite you to participate in a study, there will be a fair selection of the respondents and your rights associated with research participation will be protected. The study will be explained to you, and you will have opportunities to ask questions.

Project Title*:* KNOWLEDGE AND ATTITUDES OF FINAL YEAR STUDENT NURSES TOWARDS PREGNANT WOMEN AFFECTED BY SUBSTANCE ABUSE IN THE WESTERN CAPE

What is this study about?

This is a research project being conducted by Carmen Andries at the University of the Western Cape. We are inviting you to participate in this research project because you are a registered as a final year B Cur nursing student and you fall under the population of interest of my study be. The purpose of this research project is to assess the knowledge and attitudes of final year student nurses towards pregnant women affected by substance abuse

What will I be asked to do if I agree to participate?

You will be asked to give the information related to your age, your gender, and where you learn about drugs and or alcohol abuse in pregnancy; you will also be asked about your knowledge about pregnant women affected by substance abuse as well as your attitude pregnant women affected by substance abuse. The survey will take plus/minus 25 minutes.

Would my participation in this study be kept confidential?

Your information will be kept confidential. To help protect your confidentiality, the completed form will be kept in a safe and lockable cupboard. The anonymity will be guaranteed as your name will be omitted on the questionnaire and will be protected in data analysis using the codes. The access to your identification key will be reserved only to the researcher. You have the right to determine the extent to which your private information can be shared or protected from

others. The collected data will be published without mentioning your name and the name of your institution. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

There are no known risks or discomfort related to participation in this study. However, all human interactions and talking about self or others carry some amount of risks. We will nevertheless minimise such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention. The results of this project will not influence your qualification and your graduation at the end of year.

What are the benefits of this research?

There will be no money to pay you for your participation, however the findings be used to assist in identifying the gap nursing curriculum and be used to develop short courses for nurses in order to equip them with necessary skills to manage perinatal substance addiction. It will also improve clinical practice, eliminate treatment barriers, and facilitate the reintegration of drug addict back into the community.

Do I have to be in this research, and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

This research is being conducted by Mrs Carmen Andries at the University of the Western Cape. If you have any questions about the research study itself, please contact

Researcher: Andries Carmen

School of Nursing

University of the Western Cape

Cell: +27832991449/ 0214449442

Email: 3260896@myuwc.ac.za

Supervisor: Dr S. Arunachallam
School of Nursing
University of the Western Cape
Private Bag * 17

Bellville 7535
Prof Jennifer Chipps
Head of Department: School of Nursing
University of the Western Cape
Private Bag X17
Bellville 7535
jchipps@uwc.ac.za

Appendix E: Consent form

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959-3024 Fax: 27 21-959-2679

E-mail: saruchallam@uwc.ac.za

CONSENT FORM

Title of Research Project: *Knowledge and attitudes of final year student nurses towards pregnant women affected by substance abuse in the Western Cape.*

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

Participant's name……

Participant's signature……

Date……

Appendix F: Questionnaire

Knowledge and attitudes of nursing students about women who use substances during pregnancy

(Questionnaire adapted from "Knowledge and Attitudes of final year nursing students towards women affected by substance use in pregnancy" by Kimberly Ligon-Mitchell).

Revised: December 2015

Instructions: Please place a tick √ in the box that best represents your answer.

Section A. Demographic data

1. Age in years: _____

2. What is your gender?

   2.1 Male

   2.2 Female

3. Where did you obtain your knowledge about substance (drug and/or alcohol) use in pregnancy?

During nursing studies at university ☐

During schooling ☐

During clinical practical placements ☐

Media ☐

Internet ☐

Social circles ☐

Family ☐

Religious teachings ☐

Other _____

Section B. Knowledge about pregnant women affected by substance use as measured by the knowledge scale.

Please indicate how much you agree or disagree with each statement by making a tick √ the box which corresponds to your choice

	ITEM OF THE SCALE	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
4.	The best thing to do with a drug or alcohol exposed baby is to place it in foster care	1	2	3	4	5
5.	The part of the brain of a person that is most affected by substance use is the frontal lobe	1	2	3	4	5
6.	Substance use is a disease	1	2	3	4	5
7.	In general, illegal drugs do more damage to a foetus than legal medications	1	2	3	4	5
8.	Most pregnant women who abuse substances were sexually or physically abused in their childhood	1	2	3	4	5
9.	Methamphetamine and cocaine can cause preterm labour and preterm babies	1	2	3	4	5
10.	Substance users usually use a single drug rather than using multiple substances	1	2	3	4	5
11.	Alcoholics and drug abusing women often have family members who are drug abusers	1	2	3	4	5
12.	Prenatal drug and alcohol abuse should be considered a form of child abuse	1	2	3	4	5
13.	Child abuse and neglect are often reported in homes where drug and alcohol abuse exist	1	2	3	4	5
14.	All pregnant women should be screened for substance use during prenatal care	1	2	3	4	5
15.	All pregnant women should be given regular urine drug and alcohol tests during their pregnancies	1	2	3	4	5
16.	Women who use drugs and/or alcohol usually associate with men who also use drugs and/alcohol	1	2	3	4	5
17.	Among alcoholic women, the risk of foetal alcohol syndrome increases with each pregnancy	1	2	3	4	5
18.	Nicotine abuse (cigarettes) causes more deaths per year in the SA than any other used substance	1	2	3	4	5
19.	Due to the addiction process, many substance users cannot stop using even though they know that it may harm their unborn child	1	2	3	4	5
20.	Recent research indicates that 20% of pregnant women use illegal drugs	1	2	3	4	5
21.	Alcoholics Anonymous is an effective treatment for many women with drug and alcohol problems	1	2	3	4	5

	ITEM OF THE SCALE	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
22.	There should be more drug and alcohol treatment centres for pregnant and parenting women	1	2	3	4	5
23.	Social and economic factors are the main causes of drug abuse in the South Africa	1	2	3	4	5
24.	You cannot become addicted to prescription medications as long as they are prescribed by a healthcare provider	1	2	3	4	5
25.	I currently feel that I would be uncomfortable working in the field of addiction because I do not feel prepared academically.	1	2	3	4	5
26.	Denial is a part of the addiction process	1	2	3	4	5
27.	The diagnosis of substance dependence is the need for increased amounts of a substance to achieve the desired effect	1	2	3	4	5
28.	Over time, an addicted person's brain becomes so damaged that they can no longer make rational decisions	1	2	3	4	5
29.	A substance user should not be held accountable for the things they are intoxicated	1	2	3	4	5
30.	Addicts and alcoholics are capable of drinking or using socially	1	2	3	4	5
31.	alcohol abuse causes more deaths per year in SA than any other used substance.	1	2	3	4	5
32.	Recovery from alcoholism and drug addiction is a life-long process	1	2	3	4	5
33.	Among pregnant women, drug use is a bigger problem that alcoholism	1	2	3	4	5

C. Attitudes of final year student nurse towards pregnant woman affected by substance use as measured by attitude scale

Please indicate how much you agree or disagree with each statement by ticking√ the box which corresponds to your choice.

	ITEM OF THE SCALE	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
34.	Making a woman feel guilty about her substance use is an effective way to stop her use	1	2	3	4	5
35.	Black women are more likely to use drugs and alcohol than white women	1	2	3	4	5
36.	Women who use drugs during their pregnancy should be punished by being put in jail	1	2	3	4	5

	ITEM OF THE SCALE	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
37.	Substance using women should have tubal- ligation after they deliver	1	2	3	4	5
38.	When I hear about the effects of alcohol and drugs on new-born infants, I feel angry towards their mother	1	2	3	4	5
39.	Drug and alcohol use by pregnant women should be handled by the legal system	1	2	3	4	5
40.	To prevent further damage to their foetus, pregnant women should be imprisoned until they deliver	1	2	3	4	5
41.	Even if a woman successfully completes a treatment program, she should not have access to her baby in case of relapse	1	2	3	4	5
42.	Becoming addicted to substances are personal weaknesses	1	2	3	4	5
43.	If a pregnant woman abuses substances in her pregnancy, she does not deserve help from society, such as medical or social services	1	2	3	4	5
44.	In all honesty, I would be more judgmental than empathetic toward a pregnant drug addict	1	2	3	4	5
45.	Getting off drugs is mostly a matter of will power	1	2	3	4	5
46.	Pregnant women who abuse drugs and alcohol are more concerned with their needs than their unborn babies	1	2	3	4	5
47.	My reaction to drugs is faith based	1	2	3	4	5
48.	It is difficult for women to get gender-sensitive treatment for substance use	1	2	3	4	5
49.	Using drugs makes people manipulative and unreliable	1	2	3	4	5
50.	Taking care of infants who are born addicted as a result of their mother's substance use places an unfair burden on society	1	2	3	4	5
51.	Drug addicts do not care and forget about their babies when they leave the hospital	1	2	3	4	5
52.	An addicted person can control their use if they tried harder	1	2	3	4	5
53.	It is my responsibility as a nurse to advocate for care for drug exposed infants	1	2	3	4	5
54.	It is my responsibility as a nurse to advocate for care for pregnant women who are drug or alcohol users	1	2	3	4	5

Thank you for your participation

Appendix G: Letter from statistician

Data Analysis

I Eldud Ahmed, hereby confirm that as a statistician I assisted the researcher Carmen Andries with her Master's Thesis: Knowledge and Attitudes of nursing students about women who use substances during their pregnancy in the Western Cape.

Name and Surname: Ahmed Eldud
Credentials: University of the Western Cape
Email: eldud32@gmail.com
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MJR
EDITORIAL CONSULTING

Date: 03 January 2023

DECLARATION OF EDITING

I, Professor Margaret Williams, hereby declare that I did the language editing on the dissertation detailed below. The manuscript is for submission purposes in fulfilment of the requirements for the degree Masters in Psychiatric Nursing Science in the School of Nursing, Faculty of Community and Health Sciences, University of the Western Cape. The manuscript has been edited for English language, grammar, syntax, punctuation, and spelling.

TITLE

Knowledge and attitudes of nursing students about women who use substances during pregnancy in the Western Cape

AUTHOR

Carmen Andries

Disclaimer: The author is free to accept or reject my changes to the document after editing. However, I do not bear responsibility for revisions made to the document after my edit on **03/01/2023**

Signed:

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