UNIVERSITY OF THE WESTERN CAPE

Faculty of Community and Health Sciences

Investigating the reproductive health knowledge, attitudes and practices among student nurses at a selected private nursing college in South Africa

Patricia Eileen Forsyth

Student Number: 3419120

A thesis submitted in partial fulfilment of the requirements for a Master's Degree in Nursing (Advanced Midwifery) in the School of Nursing, Faculty of Community and Health Sciences, University of the Western Cape.

Supervisor: Dr Million Bimerew

2018

ABBREVIATIONS

BC 1	Bridging Course Leading to Registration as a General Nurse – first year
BC 2	Bridging Course Leading to Registration as a General Nurse – second year
HIV	Human Immunodeficiency Virus
KAP	Knowledge, Attitudes and Practices
PEN 2	Programme Leading to Enrolment as a Nurse – second year nursing student
SANC	South African Nursing Council
TOP	Termination of Pregnancy
WHO	World Health Organisation

ABSTRACT

Background: The changes in sexual and reproductive behaviour of young people as they become students, has been widely documented. International and local studies promote the development of student-centred, comprehensive and accessible reproductive health services. In order to establish effective reproductive health care within education institutions, it is strongly recommended that one should understand the local context well.

Aim: This study aimed to describe the reproductive health knowledge, attitudes and practices of student nurses at a select private nursing college in South Africa.

Methodology: A descriptive, quantitative study was carried out. All registered students who were present on the days of data collection, were eligible to participate. Data was collected by means of a self-administered questionnaire, which was distributed to one hundred and thirty-six (136) students, by the researcher. A total of one hundred and twenty-two (122) questionnaires were returned, with a response rate of 89.7%. The sample was made up of PEN 2 students (n=22), BC 1 students (n=52), and BC 2 students (n=48). The population was accessible, and an all-inclusive sampling method was employed. A pre-test was carried out, prior to the study, consisting of six (6) students, two (2) from each student group, who were not included in the actual study. Returned questionnaires were cleaned, coded and analysed by using SPSS version 25.0 statistical software. Findings were communicated using simple descriptive statistics.

Results: Respondents self-reported having sufficient knowledge related to the reproductive health system, risks and consequences; as well as contraception. Knowledge related to oral contraceptive pills, male condoms and three-monthly

injectable contraceptive methods was high and these were the current methods most frequently used. Reproductive health attitudes appeared similar across all respondent groups. Most respondents indicated that contraception should be a shared responsibility between sexual partners and 41.8% (n=52). The majority of respondents, namely 86.9% (n=106), indicated that they disagreed with TOP as the only option for student nurses who faced an unplanned pregnancy. Reproductive health practices in the study population appeared risky, with practices that included intake of alcohol and/or substance use before engaging in sexual activity and inconsistent contraceptive use. Barriers to accessing reproductive health services were identified and most frequently reported as operational hours, waiting times and queueing.

Conclusion: The study population appeared to have appropriate knowledge, yet gaps do exist in knowledge related to alternative contraceptive methods. Knowledge had however not translated into an absence of risky reproductive health practices; nor had it resulted in significant contraceptive uptake and consistency of use.

Recommendations: Collaboration between nursing faculty and reproductive health services needs to strengthen. This may ensure the availability of appropriate reproductive health services and relevant contraceptive information is disseminated. Associations between variables such as gender, religious affiliation and sexual preference need further investigation. Further research is needed to explore the utilisation of reproductive health services, address barriers to access as well as to develop student-orientated reproductive health services.

KEY WORDS: Reproductive health, Reproductive health knowledge, Reproductive health attitudes, Reproductive health practices, Student Nurse.

DECLARATION

I, Patricia Eileen Forsyth, do hereby declare that *Investigating the reproductive health knowledge, attitudes and practices among student nurses at a selected private nursing college in South Africa,* is my own work, that it has not been submitted before, at any other University, and that all sources used or quoted have been indicated and acknowledged as complete references.

Signed  on this 23rd day of October 2018.

ACKNOWLEDGEMENTS

"*But the Lord stood with me and strengthened me," 2 Timothy 4:17.* With God's grace, promise and strength, this study too was made possible.

My acknowledgement and sincere appreciation is expressed to everyone who contributed to the commencement and completion of this study. A special word of gratitude is sent to:

Dr Million Bimerew who, as my supervisor facilitated my growth and understanding of this process.

The Faculty of Community Health Sciences academic staff and Nicolette Johannes, for each one's contribution towards completion of this programme.

Dr Million Bimerew who, as my supervisor facilitated my growth and understanding of this process.

My family and daughters, for their unconditional love and unwavering support. Without question they pray, encourage and assist where needed – Thank You! You've carried me through this!

My best friend Hannes, for sharing this journey with me and for being a steadfast pillar. Your encouragement and keen interest in my progress picked me up when I needed it the most. Your support and voice of reason is treasured. I look ahead with excitement to what the future holds!

DEDICATION

This study is dedicated to:

- My daughters, Aimee and Jessica, who understood and loved unconditionally. You have been a source of joy and strength;
- My parents Peter and Lina Cunningham without whom, this would not have been accomplished; and
- Hannes Zwiegers, who motivated me to persist and who inspired me to achieve.

Table of Contents

LIST OF TABLES

CHAPTER 1: FOUNDATION OF THE STUDY

1.1 Introduction

This first chapter serves to orientate the reader to the background on the reproductive health knowledge, attitudes and practices of student nurses studying at a Private Higher Education Institution. It describes the problem statement, as well as the significance of the study. The chapter also explains the purpose and the objectives of the study.

1.2 Background

Reproductive health knowledge, attitudes and practices has received attention from researchers for several decades, and the changes in reproductive behaviour, of young people, as they become students, has been documented (Patrick & Lee, 2010; Stenhammar, Ehrsson, Akerud, Larsson & Tydén, 2015). Local and international studies suggest that students studying at institutions of higher learning, are engaging in riskier sexual practices than previously reported (Stenhammar et al., 2015).

Unplanned pregnancy, increased termination of pregnancy rates, HIV, sexually transmitted infections and cervical cancer, are some of the consequences of risky sexual behaviours experienced by students (Seutlwadi, Peltzer, Mchunu & Tutshana, 2012; Hoque, Ghuman, Coopoosamy & Van Hal, 2014).

Evidence suggests that students have appropriate knowledge relating to reproductive health, as well as the risks related to unprotected sexual activity (Stenhammar et al., 2015). Others have noted that student populations possess adequate knowledge relating to condom use (Nel, Rankoana & Govender, 2015); yet

this knowledge has not always resulted in a reduction in high-risk sexual practices (Stenhammar et al., 2015), nor in an increase in contraceptive use (Ramathuba, Khoza & Netshikweta, 2012; Thongnopakun, Maharachpong & Abdullakasim, 2016).

Chi, Hawk, Winter and Meeus (2013), describe a shift towards more liberal reproductive health practices and attitudes in student populations in Southwest China, over the past four decades. Chi & Shin (2015) cite that a lack of sexual education resources might contribute towards the gaps in students' reproductive health knowledge, in their study.

In 2011, Polat and Baser, as cited by Nel et al., (2015) discuss the use of condoms and ability to discuss sexuality, amongst Turkish university students, in a predominantly patriarchal context. These researchers indicated that female students were restricted in their ability to discuss aspects related to sexuality and reproductive health, which may contribute to their limited ability to obtain accurate information and education relating to reproductive health. This, in turn, may have limited their ability to negotiate and to encourage condom use with their sexual partners.

In a Kenyan study of contraceptive uptake amongst young women, myths and misconceptions were also shown as major barriers to effective contraceptive uptake (Ochako, Mbondo, Aloo, Kaimenyi, Thompson, Temmerman, & Kys, 2015). Their study highlighted the need to understand the local context, to ensure that gaps in knowledge are overcome and that the appropriate information is shared regarding reproductive health, practices and contraception (Ochako et al., 2015).

Nsubuga, Sekandi, Sempeera and Makumbi (2016) explain, in a study based in Limpopo, that perceptions and attitudes towards contraceptive use and sexual risk-

taking behaviour can place students at risk. Makhubele (2010) shares that female students' attitude towards contraception, reproductive health and their ability to exercise choices in this regard, remain limited by their social contexts and by the demands of their male partners.

First year students In a Higher Education Sector Study appeared to be particularly vulnerable to HIV and risk-taking behaviour (HEAIDS, 2010). Other risk-taking behaviours such as substance and alcohol use, prevalent among student populations, increase the likelihood of unprotected sexual activity (HEAIDS, 2010). In this seminal study conducted in South Africa, HEAIDS (2010) investigated the HIV prevalence in the tertiary education sector, across South African institutions; as well as this population's knowledge, attitudes and practices with regard to HIV and reproductive health. HEAIDS (2010) reported a mean HIV prevalence of 3.4% among students at Higher Education Institutions (HEI). The researchers found that 19% of men disclosed having had more than one sexual partner in the previous month, as opposed to 6% of women (HEAIDS, 2010). They also found differences in attitudes towards condom use along gender lines, where some female students reported being viewed as promiscuous and/or HIV positive, when initiating condom use.

In a quantitative cross-sectional survey of the use of condoms amongst female and male third year students at a Kwa-Zulu Natal University, Nel et al., (2015) describe a similar patriarchal context, in which cultural norms and gender influenced the use of condoms amongst the respondents. These researchers described culturally-based negative perceptions on condom use, which reduced their use in certain African

cultures. They also reported that female students feared being labelled as “unfaithful” should they request the use of condoms during sexual activity.

Universities both local and abroad, encompass diverse faculty and programs, many include nursing. These institutions traditionally provide student health services on campus, which may include reproductive health services. Private Nursing Higher Education Institutions are not diverse in study program offerings and within the Western Cape, none are known to provide student health/reproductive health services on campus.

Anecdotal evidence suggests that student nurses, studying in private nursing education institutions in the Western Cape are at a knowledge deficit regarding reproductive health and are engaging in high-risk sexual practices, experiencing unplanned pregnancies, as well as sexually transmitted infections and HIV, yet they do not appear to have access to comprehensive reproductive health services, provided for, by the training institutions.

1.3 Problem Statement of the Study

HEAIDS (2010) showed that the mean HIV prevalence in Higher Education Institution student populations across South Africa was 3.4%. Their study was the first known attempt to study the reproductive health attitudes, knowledge and practices, as well as HIV prevalence, in Higher Education Institutions comprehensively (HEAIDS, 2010). Although HIV prevalence was shown to be lowest at 1.1% in the Western Cape Higher Education Institutions (HEAIDS, 2010), high risk reproductive practices could result in unplanned pregnancy, HIV infection, and sexually transmitted infections amongst other significant health problems,

among student nurses attending nursing education and training (Eisenberg, Lust & Garcia, 2014); all of which could also pose challenges to the academic progress for students.

As high-risk reproductive practices amongst student nurses may be associated with the unavailability of reproductive resources (Eisenberg, Lust, Garcia, Lechner & Frerich, 2013), international and local studies strongly support the development of student-centred, comprehensive reproductive health services, as well as removing the barriers to accessing such resources (Eisenberg, Lust & Garcia, 2014; Somba, Mbonile, Obure & Mahande, 2014; Coetzee, Ngunyulu, 2015).

HEAIDS (2010) recommend that Higher Education Institutions respond to the reproductive health needs of their student populations in a diversified and customized way.

In the current context of Private Nursing Higher education, little is known about the student's reproductive health KAP and whether they can in turn provide and support the dissemination of appropriate information related to reproductive health, risks and contraception to their communities.

Given the limited exposure to midwifery and reproductive health in nursing curricula provided in programmes offered by these institutions; and the apparent absent reproductive health services on campuses, one would need to acquire an understanding of the population's specific reproductive health needs, to establish appropriate, accessible reproductive health services within this setting.

1.4 Research Aim

This study aimed to describe the reproductive health knowledge, the attitudes and the practices of student nurses at a select private nursing college in South Africa.

1.5 Objectives of the Study

i. To investigate the reproductive health knowledge of privately trained student nurses;

ii. To determine the attitudes of student nurses towards reproductive health, risk-taking behaviour, practices and contraceptive use; and

iii. To identify the reproductive health practices of privately trained student nurses.

1.6 Significance of the Study

It is evident from the literature that one needs to understand the reproductive health KAP of a student population, in order to promote and support the establishment of reproductive health services that address their specific needs.

This study provides some understanding of the current reproductive health KAP of student nurses at a Private Nursing College in South Africa, which could assist in motivating for a comprehensive and appropriate reproductive health service to be made available to this population; promoting a more holistic approach to student support and health services.

1.7 Concept Definition

Reproductive health: in this study implies that individuals enjoy physical, emotional and social-wellbeing in respect of their sexual well-being and their reproductive ability and choice of private nursing college students.

Reproductive health knowledge: in this study refers to the current and the self-reported knowledge that student nurses have, relating to the female reproductive system, reproductive health risks and the consequences thereof, as well as relating to contraceptive methods. This will be evaluated in the questionnaire by means of questions related to the reproductive physiology, sexually transmitted infections and contraceptive methods, as well as self-reported knowledge, covered in Section B of the questionnaire.

Reproductive health attitudes: in the context of this study refers to the acceptability and perceived morality, by means of a judgment statement of the subject concerned; namely the reproductive health practices of private nursing college students, as assessed using the Likert scale type questions covered in Section C of the questionnaire.

Reproductive health practices: refers to the sexual and the reproductive activities engaged in, patterns of contraceptive use, including the respondent's method of choice, access to reproductive services, frequency of use and compliance with the chosen regimen. Reproductive health practices will be evaluated by means of anonymous, self-reported questions covered in Section D of the questionnaire.

Patterns of contraceptive use: in the context of the study this refers to the choice of, access to, to the use and the frequency of the use of the chosen methods, as well

as compliance with the chosen regimen of contraception, by private nursing college students.

Student Nurse: in this study refers to a student currently registered as a full-time student in an accredited private nursing education institution, in the programme, leading to the enrolment as a nurse under Regulation 2175, or as a full-time student in the Bridging Course for Enrolled Nurses leading to the registration as a nurse under Regulation 683 of the South African Nursing Council.

1.8 Outline of the Chapters

Chapter 1: The study is introduced, the background and the problem is explained, together with the aim and the objectives of the study. Conceptual definitions are provided in this chapter, together with an overview of the study.

Chapter 2: Provides a literature review on the reproductive health knowledge, the attitudes and the practices of student populations globally, and from a national perspective as well.

Chapter 3: The methodological approach is discussed, including the research design, the setting, the population, the data collection instrument and the data collection process. The ethical considerations are also explained in this chapter.

Chapter 4: The research results and the findings are presented in this chapter.

Chapter 5: This chapter presents a discussion of the key findings of the study.

Chapter 6: The study conclusion, the practice implications as well as the recommendations and the limitations are discussed in this chapter.

1.9 Conclusion

In the above chapter, the study was introduced, and the reader was provided with a background to the study, together with the problem statement, and the research aims and objectives. The chapter also served to introduce the conceptual framework applied in this study. It provided further orientation as to the subsequent chapters.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The reproductive health knowledge, attitudes and practices (KAP) of student populations has been studied internationally and to a lesser extent, locally. This chapter provides a comprehensive discussion on international and local research findings with regard to the reproductive KAP of student populations. There does, appear to be a gap in current literature relating to the reproductive KAP of student nurse populations at Universities and more specifically Private Nursing Higher Education Institutions in South Africa.

2.2 Reproductive Health of Student Populations

The reproductive health of young people remains a universal concern, with reports of varied reproductive health knowledge, an increased incidence of sexually transmitted diseases and risk-taking behaviours (Hedayati-Moghaddam et al., 2015; Born, Wolvaart & McIntosh, 2015) as well as low contraceptive uptake (Wang, Lang, Cai, et al., 2015).

Young adulthood has been shown to be the period of greater prevalence in sexually transmitted infections according to an Australian survey on sexually transmitted infections and testing, amongst eighteen (18) and thirty (30) year olds (Henry, Brown, Dowsett & Carman, 2017). Engaging in tertiary education can mean a period of increased independence, increased engagement in social interactions, as well as greater sexual exploration (Mengistu & Melku, 2013; Castro, 2015; Stenhammar, Ehrsson, Akerud, Larsson & Tydén, 2015).

As young people transition into tertiary education, many move away from their families for the first time and become exposed to the risk of negative outcomes related to reproductive risk-taking practices (Castro, 2015). Unplanned pregnancy, increased termination of pregnancy rates, HIV, sexually transmitted infections and cervical cancer, and sexual victimization are some of the negative consequences of risky sexual behaviours experienced by students (Mengistu & Melku, 2013; Hoque, Ghuman, Coopoosamy & Van Hal, 2014; Castro, 2015). Comparative, repeated cross-sectional surveys conducted over a period of twenty-five (25) years, revealed that senior students at a Swedish University, engage in high risk sexual practices, and that the reproductive behaviours have become riskier than previously reported (Stenhammar, et al., 2015).

Researchers in Ethiopia found that despite knowledge related to reproductive health and risks, students at the Central University in Ethiopia did not necessarily perceive themselves as at risk (Yared, Sahile & Mekuria, 2017). In their study, Yared et al., (2017) found that 22.95% (n=91) of the respondents had reported having had a sexually transmitted infection, concluding that despite knowledge relating to reproductive health, that their practices continued to place them at risk for HIV and sexually transmitted infections.

The National Department of Health South Africa (NDOHSA) reported in 2016 that 3.4% of students at twenty-two (22) of the universities in South Africa were HIV positive. NDOHSA (2016) found that the percentage of woman who reported consistent condom use with two (2) or more sexual partners in the preceding twelve (12) months was lower in those women with a higher educational status. A qualitative study conducted at a University in Durban revealed that peer pressure

and social factors impacted a student's ability to negotiate contraception and risk reduction strategies, within sexual relationships (Ngidi, Moyo, Zulu, Adam & Krishna, 2016).

Although no current literature relating to the reproductive health of student nurse populations at Universities in South Africa was found, nor that of student nurses in Private Higher Education Institutions in the Western Cape, it appears that reproductive health issues in student nurse populations is an area requiring investigation as well as intervention.

2.3 Reproductive Health Knowledge of Student Populations

Almost two (2) decades ago, researchers reported a concern about the limited knowledge relating to reproductive physiology amongst college students (Siegel, Klein & Roughman, 1999). In 2015, Castro found that despite programmes aimed at improving knowledge on reproductive health risks and access to reproductive health services, students continue to engage in risk-taking behaviour. Other research suggests that knowledge gaps exist in student populations and could be contributing to the high-risk behaviours amongst students. Eisenberg, Lust and Garcia (2014) reported that students in higher education had prioritized the need for increased information and communication about reproductive health resources available to them.

An explorative, qualitative study on Ethiopian university campuses described the knowledge and understanding about reproductive health amongst students in that population to be "superficial and inadequate," amidst the growing prevalence of reproductive health problems in student populations (Mengistu & Melku, 2013). A

systematic review focused on the Middle Eastern and North African higher education student population's reproductive health, also showed gaps in female student's reproductive health knowledge (Farih, Freeth, Khan & Meads, 2015). When exploring the reproductive health of young women, aged fifteen to twenty-four (15 to 24) and twenty-five plus (25+) years of age in Yemen, in a setting where reproductive health and practices were shown to be influenced by cultural and religious contexts, researchers showed that reproductive health knowledge increased with the level of education, age and marital status (Masood & Alsonini, 2017).

A large body of knowledge does exist, suggesting that students do appear to have knowledge relating to reproduction, reproductive health risks and contraceptive methods, yet it was found that knowledge alone has not resulted in changes in behaviour, nor in an increase in contraceptive use (Nsubuga, Sekandi, Sempeera, & Makumbi, 2016). Nsubuga et al., (2016) explored the knowledge, the attitudes, the perceptions and the practices of Ugandan University students (N=1008), relating to modern contraceptive use and reproductive health. These researchers found that although 99.6% (n=1004) of respondents were found to have appropriate knowledge regarding contraceptives and reproductive health, only 46.6% (n=450) reported use of a barrier contraceptive method during sexual intercourse. Somba, Mbonile & Obure (2014) reported that most students at a Tanzanian university, had knowledge about oral contraceptives and condoms, yet less was known about other alternatives. Somba et al., (2014) found that students in medical and life sciences programmes were more knowledgeable than those in other programmes, yet risk-taking behaviours remained high, irrespective of a student's field and year of study.

The researchers recommended that to improve access to, and appropriate the use of contraceptive methods, institutions need to improve current knowledge regarding reproductive health and fertility control (Somba et al., 2014).

In a small, mixed-method pilot study investigating the reproductive health perceptions and practices of first year university students, as well as the changes in such, after a reproductive health education intervention was initiated at an institution in Namibia, Born, Wolvaardt & McIntosh (2015) found that almost 20% (n=27) of the respondents had insufficient and inaccurate basic reproductive health knowledge and displayed higher risk-taking behaviour. These researchers reported that the respondents identified as having poor knowledge and high risk-taking behaviour were placed in an intervention, which was designed to improve the essential knowledge relating to reproductive health (Born et al., 2015). They stated further that the twenty-seven (27) respondents, who underwent the intervention in their study, self-reported a positive change in their previous risk-taking practices. Although Born et al., (2015) concluded that knowledge alone doesn't guarantee a reduction in risky sexual practices, they do advocate for the implementation of sexual and reproductive health education programs at institutions of higher learning, to facilitate more informed decision making amongst students in relation to their reproductive health.

A study carried out in Botswana revealed that students, both male and female, were aware of common contraceptive methods such as condoms and injectable/oral pills, yet knowledge had not always resulted in a reduction in risky sexual practices (Hoque, Ntsipe, Mokgatle-Nthabu, 2013).

Nel, Rankoana and Govender (2015) highlighted that the understanding of the local context must guide individualized reproductive health programmes, which could

serve to correct misguided understanding related to reproductive health that has been entrenched in cultural contexts. Similarly, Abdissa, Addisie and Seifu (2017) described cultural traditions and belief systems as factors which influence reproductive health knowledge, risks and practices, and recommended that reproductive health information should receive focused attention. They state further that information needs to be disseminated more effectively, to enhance knowledge and ultimately to change behaviour.

Castro (2015) recommended that reproductive health services be adapted or redeveloped within university settings, to meet the needs of a diverse and contemporary student population, in terms of gender and sexual orientation, with insight into the students' perceptions on the services currently available to them.

Researchers suggest that institutions should review the ways in which reproductive health information is accessed and disseminated, as well as make information relevant and appropriate to the student populations (Choi & Shin, 2015). These researchers proposed establishing culturally and socially acceptable communication and information sharing between students, peers and families, to improve their knowledge and to promote safer and more appropriate reproductive health practices and contraceptive use. Others suggest employing the use of technology and alternative media platforms, to disseminate and to enhance student access to information and services in order to address reproductive health knowledge deficits (Baraister, Syred, Spencer-Hughes, Howroyd, Free & Holdsworth, 2015).

2.4 Reproductive Health Attitudes of Student Populations

Perceptions and attitudes towards contraceptive use and sexual risk-taking behaviour can place students at risk (Abdissa et al., 2017). Evidence suggests that

culture, religion and social contexts may influence these attitudes (Nsubuga et al., 2016). Jones and Cox (2015), in their American study, explain that religion and culture influenced attitudes towards emergency contraception. However, two (2) thirds of the women in their target population fostered positive attitudes towards access to contraceptives. They explained that their female respondents believed that ensuring their financial security required unrestricted access to contraceptives. They found that 81% of women were in favour of expanding access to contraception in lower socioeconomic groups; a finding which was shared across all ethnic, religious and political groups studied (Jones & Cox, 2015). They also reported on the general support for making contraception and reproductive health services available, through institutions such as employment and learning institutions. Despite the similar attitudes towards contraception across ethnic and religious lines, the attitudes measured towards the termination of a pregnancy were divided according to religious affiliation and identity. Interestingly, most groups within the population studied revealed that past experiences and exposure, as well as special circumstances influenced moral judgments relating to reproductive health practices, behaviours and contraceptive use (Jones & Cox, 2015).

England and Bearack (2014) investigated the gender differences in attitudes towards casual sex amongst University students in America and their large online survey (N=24,298). They found that 69% of male students displayed negative attitudes towards female students who engaged in casual sex, yet only 37% felt the same about male students engaging in casual sex.

Burke, Gabhainn and Young (2015) sought to compare the reproductive attitudes and the practices of students at higher education institutions and non-students in the

nineteen to twenty-two (19 to 22) year-old age group in Ireland and found that 26.5% (n=47) of male students believed that sexual intercourse prior to marriage was wrong, whereas 15.3% of non-student males believed the same. Burke, Gabhainn & Young (2013) found that attitudes towards same sex partnerships differed in that male student respondents displayed more acceptance thereto than their non-student male respondents.

In a cross-sectional survey of the KAP of female students in a Ugandan University, Nsubuga et al., 2016, discussed that 20.4% (N=1008) of respondents believed that contraception was intended for females alone. Nsubuga et al., 2016 found that 96% of the respondents expressed that it was acceptable to make contraceptives available to university students, yet 20.1% of the respondents indicated that using contraceptives was wrong. The researchers explained that religious views influenced these attitudes towards contraception, yet the respondents' age or year of study did not appear to do so (Nsubuga et al., 2016). They also described negative attitudes towards the access to and the utilization of reproductive health care services, along with some misconceptions about who contraceptives were intended for (Nsubuga et al., 2016). Other studies in Africa also described tertiary students' negative attitudes towards contraceptive use, which were based on inaccurate information, as well as on negative perceptions regarding the use of reproductive health care services (Cadmus & Owoaje, 2009).

In her correlational study, Ugoji (2013) explored the knowledge and the sexual attitudes of students in relation to their self-concept, at six (6) Universities in Nigeria, and found that no significant relationship existed between a students' knowledge relating to reproductive health, their attitudes, their self-concepts and their

reproductive health practices. However, there appeared to be a relationship between a students' knowledge of contraception and their attitudes towards contraception (Ugoji, 2013).

In a study describing the attitudes towards and sexual behaviours of students at a Namibian University, researchers found that the general attitude towards condom use amongst students was negative, stating that the use of condoms may detract from the sexual experience (Olawale & Ifeanyi, 2016). In a cross-sectional mixed method pilot survey at a rural University in South Africa, researchers explored the influence of culture and gender on sexual attitudes and practices and found that female respondents were more likely to postpone sexual activity until they were in a stable and committed relationship than the male respondents were (Heerden, Jemmott, Mandeya & Tyler, 2012). These researchers also found that females did not always favour the use of condoms due to the perception that condoms adversely affected the sexual experience (Heerden et al., 2012).

Lebese, Maputle, Ramathuba and Khoza (2013) explored the contraceptive uptake of rural adolescents in Limpopo and they explained in their qualitative study, that gaps in knowledge resulted in negative attitudes towards reproductive health services, as well as cultural barriers having affected contraceptive use in this area.

2.5 Reproductive Health Practices of Student Populations

Many have discussed the shift in reproductive health practices as young people engage in tertiary education, and the subsequent increase in reproductive health risks (Mengistu & Melku, 2013; Castro, 2015; Stenhammar et al., 2015). A qualitative study exploring the students' perspectives in respect of the factors contributing

towards reproductive health practices and high-risk behaviour among university students at a University in the United Kingdom, showed that foreign, older students and students with strong religious convictions and negative attitudes towards risk-taking, were less likely to engage in risk-taking practices (Chanakira, O'Cathain, Goyder & Freeman, 2014). Chanakira et al (2014) also explained that those students who do engage in risk-taking practices, are perhaps less restricted in their reproductive practices, due to the absence of parental scrutiny as a student.

2.5.1 Demographics and reproductive health practices

Wang, Lang, Cai, et al., (2015) reported that at a university in China, 10.2% (n=3595) of the unmarried female respondents were reportedly sexually active, of which only 28.3% reported using some form of contraception. These researchers stated further, that the prevalence of unintended pregnancy amongst sexually active unmarried respondents was 31.8% (n=1142), of which 53.5% had experienced more than one pregnancy as students, 83.9% (n=958) had chosen to terminate their pregnancies through medical or surgical methods. Wang et al., (2015) also found that 45.4% (n=1632) of respondents indicated that they were not well prepared for sexual activity, and therefore reported low contraceptive use. Others, 5.2% (n=126), indicated that they did not know how to use contraceptive methods. These researchers concluded that culture, economic and social factors and marital status may influence the high incidence of termination of pregnancy amongst their studied population.

Nel, Rankoana and Govender (2015) remarked that cultural and gender stereotypes influenced the choice and use of male condoms in their study, investigating condom use amongst third year psychology students. They reported that open-ended

questions during interviews, revealed that male students perceived condom use as not intended for the African population of South Africa, and female students perceived that suggesting the use of condoms might be understood by their male partners as them being unfaithful, or carrying sexually transmitted infections (Nel, Rankoana & Govender, 2015).

According to Hoffmann, Levassuer, Mantell, et al., (2017) condom use amongst second and fourth-year University students in Kwa-Zulu Natal was reportedly higher in male students, whose partners were not using any form of hormonal contraception. Hoffman et al., (2017) explained there were no contraceptive-related influences apparent in the consistency of condom use amongst female students, and that sexual partner relationship status influenced contraceptive use. These researchers recommended ongoing promotion of condom use in student populations.

2.5.2 Programme, year of study and reproductive health practices

At a University in Ethiopia, Azwihangwisi, Mavhandu-Mudzusi and Asgedom (2015) reported that 67.67% (n=122) of their undergraduate respondents reported being sexually active, with 31.64% male and 33.33% female respondents reporting their sexual debut to have been after becoming students, with 59.4% (n=87) reporting the use of condoms with their last sexual partner.

Eisenberg, Lust and Garcia (2014) compared the reproductive practices of students engaged in two (2) year college programmes and four (4) year college programmes in Minnesota and reported that almost half of the respondents (N=9748), reported not using condoms during their last sexual encounter and over a third of them

reported that they had had two (2) or more sexual partners in the preceding year. The researchers showed that rates of unprotected sex, unplanned pregnancy and reports of the incidence of sexually transmitted infections were higher amongst the two (2) year programme respondents, whereas casual and multiple sexual partners, intoxication during sexual activity and avoidance of HIV testing was higher in the four (4) year programme respondents (Eisenberg, Lust & Garcia, 2014). This would suggest that year of study and type of programme may be associated with reproductive risk-taking practices.

Wang, Lang, Cai et al. (2015) showed that the age and the level of education were associated with the risk of unintended pregnancy. They also found that being in a medical field of study was associated with a lower risk of unintended pregnancy. Coronado, Delgado-Miguel, Rey-Canas and Herrias (2017) compared the reproductive health practices of students in the Law and Medical faculties at a University in Madrid and, in their cross-sectional observational study, they showed that the reproductive health practices of students in the Medical Faculty were more conservative than those of the Law students. These researchers found that students in the Medical Faculty reported having fewer sexual partners and lower rates of unprotected sex and a later age of sexual debut, when compared with those at the Law Faculty. These findings also support the suggestion that programme and/ year and reproductive health practices may share an association.

2.5.3 Sexual preference and reproductive health practices

In a survey of young people's reproductive practices and sexual orientation in the United States of America, Oswalt and Wyatt (2013) showed that sexual orientation was associated with high-risk sexual practices, multiple partners and low

contraceptive use. In a large national survey on student sexual health, HIV knowledge, attitude and behaviour survey focused primarily on student men who have sex with men, across fourteen (14) higher education institutions in South Africa, Brink (2014) stated that 13.9% of respondents disclosed having had two to three (2 to 3) sexual partners in the preceding year, 12.7% disclosed having had four (4) or more sexual partners and 4.1% (n=31) reported having had more than nine (9) sexual partners in the preceding year. In this study Brink (2014) also reports that 11.8% of the respondents had reported being forced into sexual intercourse. In 2016, Agénor, Austin, Kort, Austin & Muzny reported that although certain reproductive health behaviours of lesbian and bisexual women were reported less frequently, namely screening, HIV testing and unintended pregnancies, some reproductive health risks and practices such as contraceptive use, prevalence of abnormal PAP smear results and reported sexual assault was not influenced by sexual preference. No current evidence was found describing the sexual preferences and possible association with reproductive health practices in student nurse populations.

2.5.4 Risk taking behaviour and reproductive health practices

Azwihangwisi, Mavhandu-Mudzusi and Asgedon (2015) described the risk-taking behaviours and the influence of these on reproductive health of undergraduate students at a University in Ethiopia. They found that respondents had not only reported having multiple sexual partners, but that 25.2% (n=37) had reported the use of alcohol prior to engaging in sexual activity, of which 8.8% indicated that both themselves and partner had been under the influence of alcohol during sexual intercourse. Oster (2015) similarly found that the use of alcohol together with engaging in sexual activity, led to an increase in sexual risk-taking behaviours such

as engaging in sexual activity with those other than respondent's current sexual partner, as well as inconsistent condom use. Abdissa et al., (2015), found that according to the self-reported 11.5% of the respondents who had sexually transmitted symptoms, 16.8% of them had a history of pregnancy, of which 53.6% had resulted in the termination of the pregnancy and the most showed an increased likelihood in engaging in other risk-taking practices such as substance and alcohol use.

Shorey, Stuart and Cornelius (2012) highlight a concerning consequence of alcohol use within student populations. The found that the use of alcohol amongst student populates increased the risk of sexual violence between sexual partners. These researchers strongly suggest that interventions should target risk taking behaviours such as alcohol and substance use together with sexual risk-taking practices. Although no evidence was found of alcohol use and reproductive health risk-taking practices amongst student nurse populations, it is evident from literature that sexual activity with concomitant alcohol/substance use poses reproductive health risks amongst others.

2.5.5 Contraceptive uptake and access to reproductive health services

The relationship between available reproductive resources at Colleges and sexual practices of college students in America was investigated by Eisenberg, Hannan, Lust, Lechner, Garcia and Frerich (2013). They found that the predicted probability of students not using a condom or other methods of contraception was 14% and at institutions where no reproductive health services were available versus 7% at those institutions where some reproductive health services were available. This suggests that factors outside of the demographics may influence reproductive practices.

A qualitative study exploring the perceptions of students and staff at a University in the Western Cape, relating to the location of a sexual health service on campus, Adams, Van der Heever and Damons (2017) describe location, awareness of and advertising of sexual health services as factors that impact the access to, and the use of reproductive health services. Adams et al., (2017) recommended that institutions should review their dissemination of information relating to the availability of specific reproductive health services on campus, and position the service in a more accessible location, to maximise the utilisation of this service.

Hobbs (2015) emphasized that, those responsible for sexual and reproductive health programmes and services on campuses of higher education institutions need a clear understanding of the social contexts and the practices of their student populations. It is important to understand the role of institutions in providing relevant and effective services that reduce the incidence of risk-taking behaviour amongst their student populations (Hobbs, 2015).

2.6 Conclusion

This chapter served to provide a review of literature pertaining to the reproductive health KAP of student populations internationally, as well as locally. Limited literature was available relating to the reproductive KAP of medical students and there appears to be a gap in current evidence relating to the reproductive KAP of South African university students, those in the Western Cape and that of nursing students in both Universities and Private Higher Education Institutions.

The chapter that follows presents a comprehensive discussion on the research methodology and design of this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The following chapter serves to provide a detailed description of the research design and the approach used in this study. The chapter also provides a description of the setting, as well as the respondents, the instrument used the data collection process and analysis as well as the ethical considerations applied.

3.2 The Research Methodology

Quantitative research methodology is described as a formal, systematic way of obtaining numerical data, to describe and to explain phenomena as they occur in the world (Burns, Grove & Gray, 2011). Little is known about the current reproductive health KAP of the student population at the selected setting; and as Burns, Grove & Gray (2011) explained, when little is known regarding a phenomenon, quantitative research is valuable as it provides a means to describe such a phenomenon. This approach has been widely adopted by researchers who have investigated aspects of the reproductive and sexual health KAP of other student populations, both internationally and locally.

3.3 Research Design

A descriptive design is used when one seeks to describe events and/or phenomena in the real world, as they occur (Burns & Grove, 2007). In quantitative research, this design can provide an accurate description of the characteristics of a large group of respondents, without the manipulation of their environment (Kerlinger & Lee, 2000 as cited by Burns, Grove & Gray, 2011). They explained further that the outcome of this a design, makes it possible to draw conclusions about relationships between

variables. The study employed a descriptive design to gather information about the prevailing conditions and to analyse and to interpret the results. The choice of research method and design thus supports the research aim and allowed the researcher to provide a current picture of the students' reproductive health knowledge, attitudes and practices.

Data collection by means of self-administered questionnaires, allow for a structured and a consistent approach to data collection, from a larger group of respondents, on a broader subject area, commonly used in descriptive studies (Burns, Grove & Gray, 2011). Numerical data was collected by means of an anonymous self-administered questionnaire, designed to obtain the necessary data to meet the study objectives, which renders the selected design and method of data collection and analysis for this study appropriate.

3.4 Study Setting

The study setting was a private nursing college in the Western Cape, affiliated to a leading private health care provider. The college was established over fifteen (15) years ago and is accredited by the Council of Higher Education and the South African Nursing Council, to provide a Programme Leading to Enrolment as a Nurse R2175 (PEN) and a Bridging Course for Enrolled Nurses, leading to Registration as a General Nurse R683 (BC). The college's current student capacity is at 63 PEN and 144 BC students. Selection of this setting was based on the feasibility of the study, ease of access to the entire population, as well as the alignment with the intended aim and objective of the study. Currently no on-site reproductive health services exist.

3.5 The Population

A population is the entire focus of the researcher's interest and includes all individuals within the group that the researcher intends to study (Burns, Grove & Gray, 2011). The accessible population included the entire student nurse population N=151, at the selected setting. The student nurse profiles were diverse in terms of ethnicity, culture, nationality, age and language. There were four (4) BC groups and two (2) PEN groups registered. The BC first year students made up 37.7% (n=60), BC second year students made up 42.4% (n=64), and PEN second year students made up 17.9% (n=27). BC students comprised 82.1% (n=124) of the population and PEN students 17.9% (n=27). There were no PEN first-year students as the programme did not have any further intakes during 2017. The BC numbers were also lower than those initially anticipated to participate due to some completing their studies prior to the approval of data collection. All the students at the selected setting receive a monthly income in their student nurse capacity. PEN two (2) students receive a monthly stipend, whereas the BC students received monthly salaries from their respective hospitals. All students received uniforms and text books, as well as sponsored tuition. There were eleven (11) (7.3%) male students and one hundred and forty (140) (92.7%) female students in the total population. Black students made up 13.3% (n=20). Coloured students made up 36.4% (n=55). White students made up 46.7% (n=75) and Indian students made up 0.7% (n=1) of the population.

3.6 Sampling

Sampling is described as the process of selecting respondents, who represent the population of interest and are accessible for inclusion in the study (Burns, Grove & Gray, 2011). The sampling process enables the researcher to collect data applicable

to the research aims and objectives (Brink, van Der Walt & van Rensburg, 2012). To study the intended phenomenon accurately, researchers need to ensure that the selected sample is representative of the population of interest (Brink et al., 2012). The study aimed at describing the population's reproductive health KAP's and generalization was not intended.

The researcher personally collected the data from the respondents who were accessible. All-inclusive sampling is considered a purposive sampling technique; which may pose a risk for sampling bias according to Brink et al., (2012).

Sampling bias was not a threat in this study as all student nurses at the study setting, present on the pre-arranged dates for data collection, who were willing to participate, were eligible to participate and included in the study. The total number of student nurses included in the study was (n=122), (n=5) being absent on the data collection dates. Those who participated in the pre-test (n=6), were not included in the actual study.

A pre-test on the questionnaire was conducted prior to the actual study, using a simple random sampling method by means of a fish-bowl technique, without replacement (Brink et al., 2012), is described in Section 3.8.

3.7 The Instrument

A structured self-administered questionnaire, adapted from peer reviewed, published studies conducted by Coetzee and Ngunyulu (2015) and Nsubuga et al., (2016) was used to collect data. Questions extracted from the questionnaire developed by Coetzee and Ngunyulu (2015), were originally in English, "The use of contraceptives by female undergraduate students" was used to collect data relating to Objectives III

and IV. Questions pertaining to Objectives I, II and III were used from the questionnaire, “A needs assessment of reproductive and sexual health in Makerere University” developed by Nsubuga et al., (2016), were also originally in English. The questionnaire was administered in English, being the language of instruction, assessment as well as the corporate language of the institution selected as the research setting.

Permission to use and to adapt the original questionnaires was sought and granted in writing from the authors Coetzee and Nsubuga. Adaptations were made due to the scope of this study and its applicability to local context, without changing the meaning of the extracted questions. The questionnaire consisted of five (5) sections, namely Section A: Demographic Data (nine (9) questions - fill in/multiple choice); Section B: Reproductive Health Knowledge, (eleven (11) questions - True/False/Unsure); Section C: Reproductive Health Attitudes, (six (6) questions - Likert scale ranging from strongly agree to strongly disagree, with a range of 1 to 5); Section D: Reproductive Health Practices (fourteen (14) questions - fill in/multiple choice). Section B of the questionnaire will meet Objective I, Section C will meet Objective II and Section D will meet Objective III. The questionnaire consisted of a total number of forty (40) questions. Completing the questionnaire took approximately twenty-five (25) minutes.

3.8 Pre-test

The pre-test was conducted on six (6) respondents ahead of the study, to identify possible challenges to time allocation for answering of the questionnaire and potential flaws in the instrument, ahead of the actual study (Brink et al., 2012). The researcher personally addressed the respondent groups and conducted the

sampling for pre-test purposes. The names of all students per group were placed in a sleeve and two (2) names were drawn from each sleeve, containing the names in each respective group, PEN 2 and BC 1 and BC 2 programmes from the selected college. The student's whose names were drawn were consulted and informed of the aims and the objectives of the study, as well as the purpose of the pre-test. They consented to participate, and they understood that they would not be included in the actual study. Confidentiality and anonymity were discussed with the respondents and ensured by the researcher. All six (6) respondents (n=6) identified a duplicated question. On submission of the completed pre-test questionnaires, the researcher noted that it took approximately thirty-five (35) minutes to complete, which might have been longer than anticipated, but was still acceptable as the respondents were required to identify any potential errors. The respondents in the pre-test indicated by submitting their completed questionnaires that the questions were clear, and that no difficulty was experienced in completing the instrument. This pre-test was thus successful in identifying a duplicated question, which was removed prior to actual data collection. No further adjustments were made to the instrument nor to the data collection process.

3.9 Validity

The researcher did not anticipate any threats to internal and external validity, as neither manipulation nor testing was conducted (Brink et al., 2012). Generalization of findings was not intended and was limited to the student nurses engaged in private nursing education, in either PEN or BC programmes, in institutions where reproductive health services are not available.

The stability of the instrument was accepted as the instrument was adapted from two (2) pre-existing instruments developed by peer reviewed researchers who provided written permission to use and to adapt their instruments. Brink et al., (2012) suggested that to ensure the content validity that the adapted questionnaire should be reviewed by subject experts in the field and a pre-test conducted. The instrument was adapted from published studies and literature reviewed. Face validity indicated that the instrument appeared to measure what it was meant to measure (Brink et al., 2012). To ensure this initial form of validity assessment, the instrument was reviewed by the research supervisor to determine whether all the components of the intended study were covered in the questionnaire, and it was also reviewed during the presentation of the research proposal, by peers to determine whether the instrument addressed the objectives of the study (Brink et al., 2012), by supporting its content and its face validity.

3.10 Reliability

According to Creswell (2009), reliability refers to the ability of a study to render similar results over time. In other words, it relates to the consistency of the study's findings and the dependability of an instrument's measurements (Polit & Beck, 2008).

The instrument used was adapted from peer-reviewed studies, which had undergone reliability testing and revealed a Cronbach's alpha score >0.7. Generalisation of the results was not intended, and the administration of the questionnaire was not repeated.

The instrument used in this study was pre-tested prior to the actual study, using a total of six (6) respondents; with two (2) respondents from each programme at the private nursing college. The feedback provided by the respondents participating in the pre-test, confirmed that the instrument was clear; that it measured the essential aspects required by the study and that it could be completed in a reasonable amount of time.

3.11 Data Collection

Once ethical approval and permission to access the respondents was received, the researcher contacted the educators responsible for each group, a suitable date and time for data collection was identified and agreed upon. Data collection was scheduled and carried out after a period of clinical placement, when the respondent groups had returned to the college for a compulsory academic period, during July 2017 and August 2017. The researcher contacted the groups on the set dates and addressed the respondents in their individual classrooms. The researcher personally outlined the study and explained the purpose and the aim thereof, as well as provided an overview of the questionnaire that would be used for data collection. The questionnaire was issued with a covering letter attached and opportunities were provided to ask questions prior to commencement.

The principle of anonymity and confidentiality was assured as no identifiable information was required on the questionnaire and the completed questionnaires were returned to a sealed box placed at the entrance to the classroom. Completion implied informed consent to participate, as was discussed in the brief provided by the researcher. Respondents were encouraged to return all the questionnaires (those completed and those not).

The researcher remained available to answer any questions that arose during the questionnaire completion, which took approximately twenty-five (25) minutes. The researcher waited for the respondents to complete and/or return the questionnaires and then removed the box from the classroom. Refreshments were provided for all the respondents after completion of the data collection, as they were then dismissed for a scheduled break. This allowed for all the respondents to enjoy their refreshments in the cafeteria as eating in the classrooms is prohibited.

3.12 Data Analysis

According to Burns, Grove & Gray (2011) data collected must be prepared for data analysis and confirmatory analysis. Once prepared, the data is used to describe the sample in detail. The measures applied to check the reliability of the measurement and thereafter the data, is analysed comprehensively (Burns, Grove& Gray, 2011).

The returned questionnaires were cleaned and coded to facilitate accuracy in electronic capturing. Data was captured onto an Excel spreadsheet, according to the sections covered in the questionnaire, namely Sections A to E. Data was then imported to and analysed using a current SPSS version 25.0 software for analysis. Once captured, data was re-checked, to confirm the accuracy of capture. Non-parametric tests on data were carried out with the assistance of a statistics coach.

Section A provided the demographics of the sample, including the year of study, gender, age, ethnicity, religious affiliation, marital status, number of children, residence and sexual preference. Numeric codes were assigned to characteristics namely gender, year of study, ethnicity, religious affiliation, residence and sexual preference.

Descriptive statistics were used to describe and to present data (Brink, et al., 2012), which were presented in table format and included the frequency distribution per group and the sample for the demographic descriptors.

Section B of the questionnaire addressing Objective I of the study, related to the reproductive health knowledge of the respondents; the self-reported knowledge as perceived by the respondents, being either “yes”, “no”, “unsure” or “unanswered”. Responses to questions were assigned numerical codes and this section was analysed using the SPSS version 25.0 software. The data was described and tabulated using simple descriptive statistics, indicating the frequency distributions of self-reported scores for the sample, and for each student category. The respondents’ knowledge was also assessed by means of specific questions related to the reproductive system, reproductive health risks and contraception, by means of multiple-choice questions. The answers were scored, and the individual respondent percentage scores were captured. Descriptive statistics were used to present the range of scores per respondent group, the mean percentage scores for each group as well as the sample. Knowledge scores were assigned as “good”, “average” or “poor”. These knowledge categories were used based on descriptors used in a peer reviewed study related to knowledge by Wang et al., (2015).

Section C of the questionnaire represented the respondent’s attitudes towards reproductive health, risks and contraception by means of the 5-point Likert scale measurement. This ordinal data was analysed and was also described by means of simple descriptive statistics, including frequency distributions and mean scores represented per group and for the sample, in tabular format as well as graphical display.

Data related to the reproductive health practices of the respondents collected in Section D of the questionnaire was also assigned numerical codes and analysed using SPSS version 25.0 software, to present simple descriptive statistics such as frequency distributions of the variables measured for the sample and respondent groups, in table formats.

Generalization of the results of this study to all other student nurses is not intended as the study was conducted in only one college, but the study serves to describe the current knowledge, the attitudes, the practices of student nurses at a private nursing college where reproductive health services are limited and/or not available on campuses.

3.13 Ethical Considerations

Written permission and ethical clearance to conduct this research was sought from and granted by the Ethics Committee of the University of the Western Cape. Upon written confirmation of ethics clearance, permission was requested from the Private Nursing Education Institution's Ethics Committee to conduct the study. Only upon receipt of written approval to collect data at the college, did the researcher contact the educators to arrange a suitable date and a time for data collection. The respondent's right to autonomy and voluntary participation was observed. The purpose and objectives of the study were explained prior to commencement. The researcher was present during the data collection process and when a need for clarification arose during the study, this was addressed. The respondents were informed that they had a right to withdraw without prejudice, at any time during the data collection. No harm was intended nor anticipated. However, due to the disclosure of sensitive information, should any of the respondents have experienced,

psychological, emotional, or spiritual harm, a counsellor was available to the respondents on an appointment basis. Contact details were provided in the covering letter issued to all and this was clearly explained prior to commencement. Referral to a medical practitioner or to a nurse practitioner was made available as needed by the researcher but was not required and the counselling service was not utilized.

All student nurses, present willing to participate, were included in the study and were issued an information sheet, with the questionnaire. The written informed consent section was included in the questionnaire. This confirmed informed consent and voluntary participation.

Questionnaires were anonymous and returned to an unmarked, sealed box provided by the researcher. The completed instruments were stored in a locked cupboard and access was limited to the researcher, the statistician and the research supervisor, for analysis and verification. Data captured electronically was stored and password protected.

Neither names nor reference to institution or students were included in the instrument nor will they be found in any published findings. Once the results are published, access to publication will be made available to the respondents and to the college.

3.14 Conclusion

This chapter outlines the research method and the design applied to the study of the reproductive knowledge attitudes and practices of student nurses at a private nursing college. It described the setting and the population, as well as the data collection instrument, the data collection process and the data analysis. It also provided details

of the ethical considerations applied to the study. Chapter four follows, with the presentation of the findings according to the objectives set out for this study.

CHAPTER 4: THE STUDY RESULTS

4.1 Introduction

The purpose of this study was to describe the reproductive health KAP of student nurses at a select private nursing college in South Africa. Data was collected by means of a self-administered, structured questionnaire, which was coded, captured on an Excel spreadsheet and analysed, using SPSS version 25.0 software, with the assistance of a statistics coach and a supervisor. This chapter describes the sample's demographics and presents the results of the study, according to the study objectives:

i. The reproductive health knowledge of privately trained student nurses;

ii. The attitudes of privately trained nurses towards reproductive health risk-taking behaviours, practices and contraceptive use; and

iii. The reproductive health practices of privately trained student nurses.

The total sample of nurses at a private nursing college in the Western Cape was one hundred and fifty-one (151). A pre-test was conducted and six (6) students who participated in the pre-test were not included in the actual study, the training of four (4) students had been terminated and a total of five (5) students were absent on the days of data collection which resulted in a total of one hundred and thirty-six (136). The total number of returned questionnaires was one hundred and twenty-two (122), indicating an 89.7% response rate. The results will be presented in table format and displayed per respondent group, namely, PEN 2, representing the respondents from the second year of the programme leading to enrolment as a nurse. BC 1 represented first year respondents from the bridging course for enrolled nurses

leading to registration as a general nurse and BC 2 represented respondents in the second year of the same programme. This chapter provides a detailed description of the sample and the discussion of the research findings.

4.2 Demographics

The study sample size totalled one hundred and twenty-two (122) respondents, who were made up of 18.0 % (n=22) PEN 2 respondents, 42.6% (n=52) BC 1 and 39.3% (n=48) were BC 2 respondents. Table 1 shows that 90.2% (n=110) of the total sample were female respondents and that 9.8% (n=12) were male. This was expected as traditionally; nursing programmes have been entered into predominantly by females.

The age distribution of the sample, as shown in Table 1 showed that 70.5% (n=86) were in the age range of twenty to twenty-nine (20 to 29) years, 19,7% (n=24) within the thirty to thirty-nine (30 to 39) year-old range, 5.7% (n=7) were above forty (40) years old and 0.8% (n=1) were above fifty (50) years of age. The mean age of the PEN 2 group was twenty-three (23) years, with a range of twenty to thirty-one (20 to 31) years, in the BC 1 respondent group, the mean respondent age was 27.6 years with a range of twenty-one to fifty (21 to 50) years and in the BC 2 respondent group a mean age of 29.4 years with a range of twenty-one to forty-six (21 to 46) years was found (not shown in the table). Younger respondents were expected in the PEN 2 groups, as this was the more junior programme of the two (2) and older respondents were expected in the BC 2 programme, being in their final year.

Table 1 Demographics: Group, Gender and Age Distribution

Demographics	Frequency (f)	% (N=122)	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Respondent Group	122	100	22	18.0	52	42.6	48	39.3
Gender								
Male	12	9.8	2	1.6	4	3.8	6	4.9
Female	110	90.2	20	16.4	48	39.3	42	34.4
Total	**122**	**100**	**22**	**18**	**52**	**42.6**	**48**	**39.3**
Age								
20 to 29	86	70.5	20	90.9	38	73.1	28	58.3
30 to 39	24	19.7	1	4.5	9	17.3	13	27.1
40 to 49	7	5.7	0	0	3	5.8	5	10.4
50+	1	0.8	0	0	1	1.9	0	0
Unanswered	4	3.3	1	4.5	1	1.9	2	4.2
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

The Ethnic distribution as shown in Table 2, indicates that most respondents, 46.7% (n=57) are from the Coloured ethnic group, 42.6% (n=52) were White, 9.8% (n=12) were Black and 0.8% (n=1) were from the Indian ethnic group (Table 2).

Table 2 also shows that 91.7% (n=110), reported affiliation with Christianity, which was a majority finding across all respondent groups. Respondents who indicated “other” religious affiliation, namely 5.0% (n=6), were in the BC 1 group with a total of 7.7% (n=4) and of the BC 2 group, 4.2% (n=2). Those specified as other were “Agnostic” and “Atheistic”.

Table 2 Demographics: Ethnicity and Religious Affiliation

Demographics	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Ethnicity (N=122)								
Black	12	9.8	4	18.2	3	5.8	5	10.4
Coloured	57	46.7	12	54.5	25	48.1	20	41.7
Indian	1	0.8	0	0	0	0	1	2.1
White	52	42.6	6	27.3	24	46.2	22	45.8
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Religious Affiliation (N=120)								
Traditional	1	0.8	1	4.5	0	0	0	0
Christian	110	91.7	19	86.4	47	90.4	44	91.7
Hindu	0	0	0	0	0	0	0	0
Islam	3	2.5	0	4.5	1	1.9	1	2.1
Other	6	5.0	0	0	4	7.7	2	4.2
Unanswered	2	1.6	1	4.5	0	0	1	2.1
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

Most of the respondents, namely 31.1% (n=38) indicated that they were still living with their parents, followed by a response rate of 24.6% (n=30) indicating that they lived in their own homes. With reference to the specific categories of nursing students, Table 3 shows that more respondents from the BC 1, namely 30.8% (n=16) and 29.2% (n=14) of the BC 2 respondents reported living in their own homes. This may be due to their financial position being more conducive than that of the PEN 2 respondents to having their own homes. Most PEN 2 respondents, 59.1% (n=13), still resided with their parents, which was an expected finding, given their younger age distribution and the majority indicating not yet being married. Economic factors

may also contribute to this finding, as students in the PEN programme received a stipend monthly, whereas the BC 1 and the BC 2 respondents received a salary from their respective hospitals. Most of the BC 1 respondents, 30.8% (n=16), indicated living in their own homes and in the BC 2 respondent group, 31.3% (n=15) indicated that they were living with their partner, followed by 29.2% (n=14) who indicated living in their own homes. This finding was also expected, given that most of the BC 1 and the BC 2 respondents indicated being married or in a relationship, as in Table 4.

Table 3 Demographics: Residence

Demographics	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Residence								
Own home	30	**24.6**	0	0	16	30.8	14	29.2
Parents	38	**31.1**	13	59.1	14	26.9	11	22.9
Alone	13	**10.7**	2	9.1	7	13.5	4	8.3
With partner	24	**19.7**	1	4.5	8	15.4	15	31.3
Family/friends	16	**13.1**	6	27.3	7	13.5	3	6.3
Unanswered	1	**0.8**	0	0	0	0	1	2.1
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

Most respondents, 45.1% (n=55) indicated their relationship status as “never being married”, most significantly amongst the PEN 2 respondent group, with 90.9% (n=20) which is expected, given their age distribution and reports of still living with parents. Within the BC 1 respondent group 42.3% (n=22) reported “never being married” and 30.8% (n=16) indicated being married; the differences in this group were less given their age and year of study. Within the BC 2 group most indicated being “married”.

This too is expected, with the age progression through the duration of the programmes.

Table 4 Demographics: Marital Status and Number of Children

Demographics	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Marital Status								
Never married	55	45.1	20	90.9	22	42.3	13	27.0
Married	36	29.5	2	9.1	16	30.8	18	37.5
Divorced	4	3.3	0	0	2	3.8	2	4.2
Widowed	2	1.6	0	0	0	0	2	4.2
In a relationship	25	20.5	0	0	12	23.1	13	27.1
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Children								
No Children	71	58.2	13	59.1	33	63.5	25	52.1
1 Child	27	22.1	9	40.9	6	11.5	12	25.0
2 Children	19	15.6	0	0	11	21.2	8	16.7
3 Children	2	1.6	0	0	0	0	2	4.2
Unanswered	3	2.5	0	0	2	3.8	1	2.1
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

Of those respondents indicating whether they had children, 58.2% (n=71) indicated not having any children. This was universal across the respondent groups and the finding was anticipated, given that most indicated not or never yet having been married, as well as still being students and perhaps for financial reasons. Table 4 shows that 22.1% (n=27) reported only having one child and 15.6% (n=19) having 2 children. In the BC 1 group, most also indicated not having children; yet of those who did report having children, more reported having 2 children, 21.2% (n=11) then those with only 1 comprised 11.5% (n=6). Similarly, in the BC 2 respondent group the

majority did not have children, although 37.5% (n=18) indicated being married. Student status as well as economic factors could explain the fertility statistics amongst this population and would require further investigation for comprehensive conclusions to be made.

Table 5 Demographics: Sexual Preference

Demographics	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Sexual Preference								
Heterosexual	106	86.9	19	90.4	47	94	40	88.9
Bisexual	2	1.7	1	4.8	1	2	0	0
Homosexual	8	6.9	1	4.8	2	4	5	11.1
Unanswered	6	4.9	1	4.5	2	3.8	3	6.3
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

Sexual preference was not disclosed by 4.9% (n=6) respondents, as seen in Table 5. A majority of 86.9% (n=106) indicated that they were heterosexual in their sexual preference, which could be understood in the context that most indicated religious affiliation to Christianity.

4.2.1 Results: reproductive health knowledge

Table 6 presents the findings on self-reported knowledge related to the reproductive health, the reproductive health risks and their consequences, as well as the self-reported knowledge related to contraception. Most respondents, 69.8% (n=81) indicated that they had sufficient knowledge relating to the reproductive health system. This could be influenced by the fact that the module on the reproductive system had been covered during their study programme. A total of 19.8 % (n=23) reported being unsure of their knowledge of the reproductive health system.

Self-reported knowledge related to reproductive health risks and the consequences were high across all groups, with 83.4% (n=101) indicating that they had sufficient knowledge, of such risks; an expected finding which aligns with the reviewed literature. As shown in Table 6, 72.7% (n=16) of the PEN 2 respondents indicated that they had sufficient knowledge relating to the reproductive health risks and consequences, 76.9% (n=40) of BC 1 respondents and 93.8% (n=45) of BC 2 respondents indicated the same. A total of 10.7% (n=13) were unsure of their knowledge relating to such risks.

Table 6 Reproductive Health Knowledge – Self-Reported Knowledge

	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Self-reported Knowledge – Reproductive Health System								
Yes	81	69.8	16	72.7	30	57.7	35	72.9
No	12	10.3	2	9.1	8	15.4	2	4.2
Unsure	23	19.8	4	18.2	10	19.2	9	18.8
Unanswered	6	4.9	0	0	4	7.7	2	4.2
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Self-reported Knowledge – Risks & Consequences								
Yes	101	83.4	16	72.7	40	76.9	45	93.8
No	7	5.8	2	9.1	5	9.6	0	0
Unsure	13	10.7	4	18.2	6	11.5	3	6.3
Unanswered	1	0.8	0	0	1	0	0	0
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Self-reported Knowledge – Contraception								
Yes	98	80.3	16	72.7	40	76.9	42	87.5
No	12	9.8	3	13.6	5	9.6	4	8.3
Unsure	9	7.4	2	9.1	5	9.6	2	4.2
Unanswered	3	2.5	1	4.5	2	3.8	0	0
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

Self-reported knowledge related to contraception was similar, with 80.3% (n=98) of the sample indicating that they had sufficient knowledge of contraception. As seen in Table 6, in the PEN 2 group, 72.7% (n=16) self-reported good contraceptive knowledge, 76.9% (n=40) amongst the BC1 group and 87.5% (n=42) in BC 2 indicated the same. Self-reported knowledge was expected to be higher in the BC2 category, given their year of study, their ages and their practical years of clinical experience.

The questionnaire included questions which tested knowledge. Each correct answer scored one (1) mark and a total percentage was calculated for each respondent. The percentage scores were classified as being Poor (0 to 49%), Average (50 to 69%) and Good (≥70%). Most respondents 87.7% (n=107) had good knowledge scores and scored above 70%. In the BC 1 group, 96.2% (n=50) of BC 1 students scoring ≥70%, 83.3% (n=40) of BC 2 respondents and 77.3% (n=17) of PEN 2 respondents scoring ≥70%, as shown in Table 7.

Table 7 Reproductive Health Knowledge Scores

	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Poor (0-49%)	2	1.6	0	0	1	1.9	1	2.1
Average (50-69%)	13	10.7	5	22.7	1	1.9	7	14.6
Good (≥70%)	107	87.7	17	77.3	50	96.2	40	83.3
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

The respondents then identified which contraceptive methods they were familiar with. The frequency of responses indicating “yes” for knowledge of each of the contraceptive methods is shown in Table 8. The frequency of these responses for

the methods listed, show that oral contraceptives and male condoms are the methods known to most of the respondents, 84.4% (n=103) and 76.2% (n=93) respectively, which is expected and aligned to studies reviewed. Of the injectable contraceptive methods, knowledge of the three-monthly method appeared higher than that of the two-monthly method, yet responses in the BC 2 group appeared more frequent for both the three-monthly and the two-monthly method than in other groups. This could be due to the age, life experience and level of study of the BC 2 respondent groups. The option for the "other method" was provided on the questionnaire and respondents were asked to specify the method. The only responses indicating knowledge of other methods were those from the BC 2 respondent group – 3.3% (n=4). One (1) respondent specified "Spermicide" as an "Other" method and the other respondents specified "Vasectomy" and "Sterilization" as the "Other" known methods.

Table 8 "YES" Responses of Each Contraceptive Method (N=122)

	"Yes" f	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Oral Contraceptives	103	84.4	17	77.3	42	80.8	44	91.7
2 Monthly Injectable	45	36.9	3	13.6	18	34.6	24	50.0
3 Monthly Injectable	74	60.7	17	77.3	24	46.2	33	68.8
Female Condom	65	53.3	11	50.0	26	50.0	28	58.3
Male Condom	93	76.2	19	86.4	36	69.2	38	71.7
Emergency	57	46.7	10	45.5	24	46.2	23	47.9
Patch	32	26.2	3	13.6	19	36.5	10	20.8
Implant	55	45.1	6	27.2	23	44.2	26	54.2
Intrauterine Device	63	51.6	7	31.8	25	48.1	31	64.6
Other	4	3.3	0	0	0	0	4	8.3

It was surprising that only four (4) respondents indicated this method from the BC 2 respondent group, given that their theoretical content related to the reproductive

system would have covered methods such as vasectomy and tubal ligation/sterilization; thus, more from this group were expected to identify these "other" forms.

4.2.2 Reproductive health attitudes

The respondent's attitudes towards reproductive health, risks and their consequences and the contraception used is presented in Table 9. The respondents indicated whether they agreed, disagreed or felt neutral about statements relating to reproductive health, risks and consequences. The statement 1: "I believe that one should abstain from sexual intercourse before marriage" was agreed to by 41.8% (n=52) of respondents, with 31.8% (n=7) of the PEN 2 respondents agreeing, 46.2% (n=24) were BC 1 respondents and 41.7% (n=20) of BC 2 respondents. Although there were 11.5% (n=14) of respondents who disagreed with the statement, 46.7% (n=57) felt neutral towards the statement. Despite 45.1% (n=55) of respondents indicating not being married, 82.8 (n=97) reported having a current sexual partner (Table 11), whilst 29.5% (n=36) reported being married and 20.5% (n=25) were in a relationship. Given these relationship statuses and reported current sexual practices, it was expected that most would not have a negative attitude towards premarital sexual activity.

Table 9 Reproductive Health Attitudes: Abstaining and Contraceptives

	Frequency	%	PEN 2	%	BC 1	%	BC 2	%
Statement 1: I believe that one should abstain from sexual intercourse before marriage								
Agree	52	41.8	7	31.8	24	46.2	20	41.7
Neutral	57	46.7	13	59.1	20	38.5	24	50.0
Disagree	14	11.5	2	9.1	8	15.3	4	8.3
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Statement 2: I believe that contraception is a woman's responsibility								
Agree	34	27.9	4	18.2	16	30.8	14	29.2
Neutral	20	16.4	4	18.2	8	15.4	8	16.7
Disagree	68	55.7	14	63.6	28	53.8	26	54.2
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Statement 3: Using contraception is against my religious views								
Agree	9	7.4	2	9.1	2	3.8	5	10.4
Neutral	10	8.2	4	18.2	5	9.6	1	2.1
Disagree	103	84.4	16	72.7	45	86.5	42	87.5
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

In Table 9, Statement 2: "I believe that contraception is a woman's responsibility "was agreed to by 27.9% (n=34) of respondents. However most, 55.7% (n=68) disagreed with the statement, which could indicate that these respondents viewed contraceptive use as a joint responsibility between sexual partners.

Most respondents, 84.4% (n=103) disagreed with Statement 3: "Using contraception is against my religious views" and only 7.4% (n=9) indicated that this was true. Given that most respondents 91.7% (n=110) indicated that they were of Christian religious

views, and that contraceptive use is not discouraged in most Christian denominations, this was an expected finding.

Table 10 Reproductive Health Attitudes: Pregnancy, Termination & HIV Status

	Frequency f	%	PEN 2	%	BC 1	%	BC 2	%
Statement 4: I believe that pregnancy is a normal part of life and that it should not be prevented								
Agree	7	5.7	0	0	2	3.8	5	10.4
Neutral	26	21.3	6	27.3	7	13.5	12	25
Disagree	89	73.0	16	72.7	43	82.7	31	64.6
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Statement 5: I believe that termination of pregnancy is the only option for students who are facing an unplanned pregnancy								
Agree	3	2.5	2	9.1	0	0	1	2.1
Neutral	10	8.2	5	22.7	3	6	2	4.3
Disagree	106	86.9	15	68.2	47	94.0	44	93.6
Unanswered	3	2.5	0	0	2	3.8	1	2.1
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Statement 6: I expect to know what the HIV status of my partner (N=119)								
Agree	114	93.4	21	95.4	49	98	44	93.6
Neutral	2	1.6	1	4.5	1	2	0	0
Disagree	3	2.5	0	0	0	0	3	6.4
Unanswered	3	2.5	0	0	2	3.8	1	2.1
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

Regarding Statement 4: “I believe that pregnancy is a normal part of life and that it should not be prevented”, 5.7% (n=7) agreed, but the majority, 73% (n=89) disagreed (Table 10). This finding too, is aligned to the previous statement in that most respondents were of Christian religious views, who indicated that their religious views were not against the use of contraception. Of the PEN 2 respondents, 72.7%

(n=16) disagreed, BC 1 respondents, 82.7% (n=43) indicated the same and in the BC 2 respondent group, 64.6% (n=31) disagreed also.

Statement 5: “I believe that termination of pregnancy is the only option for students who are facing an unplanned pregnancy,” was disagreed with by most students, namely 86.9% (n=106), while only 8.2% (n=10) indicated a neutral attitude towards the statement. Table 12 shows that 7.6% (n=9) of the respondents indicated that they (or their partner) had previously chosen to terminate a pregnancy, yet only 2.5% (n=3) agreed to the statement. The scope of the study did not explore the specific attitudes of the respondents who had experienced a termination of pregnancy, related to this statement, yet it was interesting to see that fewer agreed to Statement 5 than had reportedly terminated.

Most of the BC 1 and BC2 respondents indicated that they do expect to know the HIV status of their partner. Of the total sample, 93.4% (n=114) indicated that they agreed with Statement 6, 1.6% (n=2) were neutral towards the statement and 2.5% (n=3) disagreed.

4.2.3 Reproductive health practices

The reproductive health practices and contraceptive patterns of the sample are displayed in Table 11. As seen in the table, ages of first sexual encounter appear to be similar across the respondent groups. A total of 4.9% (n=6) indicated that they had not had any sexual encounters. A further 4.9% (n=6) indicated that the age of their first sexual encounter was before the age of twelve (12) and 36.9% (n=45)

having had their first sexual experiences between the ages of thirteen (13) and eighteen (18).

The youngest reported sexual incident was indicated as assault at the age of 2 years. The range displayed in Table 11 includes all reports of sexual experiences despite those that were reported between this age category (1 – 12 years) indicated as assault or molestation.

The respondents were not asked to indicate whether their sexual encounters were consensual, yet it could be assumed that early sexual encounters prior to age twelve (12) were without consent and although not required to be specified, respondents who indicated this specified that it was either without consent or it indicated abuse. It is not presumed that all the responses over the age of twelve (12), were consensual though. Most of the other respondents, namely 31.9% (n=39), reported having had their first sexual encounters between nineteen (19) and twenty-one (21) years of age and 17.2% (n=21) indicated between twenty-two (22) and thirty (30) years of age.

Table 11 Reproductive Health Practices: Sexual Debut & Partners

	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Age at first sexual encounter								
No encounters	6	4.9	0	0	2	3.8	4	8.3
1 to 12	6	4.9	2	9.1	1	1.9	4	8.3
13 to 18	45	36.9	12	54.5	19	36.5	13	27.1
19 to 21	39	31.9	7	31.8	17	32.7	15	31.3
22 to 30	21	17.2	1	31.8	11	21.2	9	18.8
Unanswered	5	4.1	0	4.5	2	3.8	3	6.3
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Have current sexual partners								
No	22	17.2	9	40.9	6	11.5	7	14.6
Yes	97	82.8	13	59.1	44	84.6	40	83.3
Unanswered	3	2.5	0	0	2	3.8	1	2.1
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Number of current sexual partners								
1 partner	89	81.7	11	50.0	42	80.8	36	75
2 partners	3	2.8	2	9.1	0	0	1	2.1
3 partners	3	2.8	0	0	2	3.8	1	2.1
4 partners	1	1	0	0	0	0	1	2.1
10 partners	1	1	0	0	0	0	1	2.1
Unanswered	13	10.7	9	40.9	3	5.8	1	2.1
Not sexually active	12	11.0	0	0	5	9.6	7	14.6
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

All respondents responded to whether they had (a) sexual partner(s) at present. 82.8% (n=97) of respondents indicated that they did, whilst 17.2% (n=22) indicated that they did not have a current sexual partner. Of those who indicated the number of sexual partners they currently had, 1% (n=1) indicated having ten (10) current sexual

partners, yet the majority reported only having one (1) sexual partner 81.7% (n=89). Within the BC 1 and the BC 2 respondent groups, the reports of a single sexual partner were higher than in the PEN 2 respondent group. This was expected, as a higher percentage reported being married in the BC 1 and the BC 2 groups than in the PEN 2 groups. Most respondents indicated Christianity as their religious affiliation, which could be perceived as a factor that promotes monogamy.

Table 12 Reproductive Health Practices: Responses

	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Responses on condom use during sexual activity (N=117)								
Always	24	20.9	3	13.6	14	26.9	7	14.6
Sometimes	43	37.4	12	54.5	14	26.9	17	35.4
Never	44	38.3	6	27.3	20	38.5	18	37.5
Unanswered	5	4.1	1	4.5	2	3.8	2	4.2
Not sexually active	6	5.2	0	0	2	3.8	4	8.3
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Responses of Ever having Used Emergency Contraception								
Yes	47	39.5	10	45.5	20	38.5	17	35.4
No	72	60.5	12	54.5	30	57.7	30	62.5
Unanswered	3	2.5	0	0	2	3.8	1	2.1
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Responses on Ever having terminated a pregnancy								
Yes	9	7.6	2	9.1	3	5.8	4	8.3
No	109	92.4	20	90.9	47	90.3	42	87.5
Unanswered	4	3.4	0	0	2	3.8	2	4.2
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

The use of condoms during sexual activity was inconsistent across all respondent groups; a finding comparable to literature reviewed.

Table 12 shows that only 20.9% (n=24) indicated always using a condom during sexual activity. Although the use of condoms was reportedly known about by most respondents, the limited consistent use of such could indicate an increased risk for sexually transmitted infection and unplanned pregnancy. It would appear that the appropriate knowledge relating to this method, as well as the reproductive health risks and consequences do not result in increased utilization. It's interesting to note that although 4.9% (n=6) indicated that they had not had any sexual encounters, (Table 11), 11.0% (n=12) indicated that they were not sexually active and 17.2% indicated that they did not have any current sexual partners (Table 11). In Table 12, it was shown that six (6) respondents reported not being sexually active. This variation in reporting could either be due to the difficulty in interpretation of the question posed or under-reporting of practices.

A large percentage of respondents reported being aware of or having knowledge of Emergency Contraception (Table 12), but only 39.5% (n=47) reported having ever used emergency contraception. The PEN 2 respondents had the highest reported use of Emergency Contraception and as seen in Table 12, these respondents reported the lowest consistent use of condoms and although low, this respondent group showed the highest levels of reported termination of pregnancy, namely 9.1% (n=2).

A significant risk factor for reproductive health risk-taking is described in the literature, which is the simultaneous use of alcohol and drugs with or prior to sexual activity. The respondents were asked whether they and their partner had used

substances prior to sexual activity and an overwhelming majority of 78.2% (n=93) indicating that they had. The most frequent responses to having used substances before sexual activity were from the BC 2 respondent group, 93.8% (n=45) and PEN 2 respondent groups with 72.7% (n=16).

Table 13 Reproductive Health Practices: Risks

	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Ever used substances before sexual activity								
Yes	93	78.2	16	72.7	32	64	45	93.8
No	26	21.9	6	27.3	18	36	2	4.2
Unanswered	3	2.5	0	0	2	3.8	1	2.1
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Ever had voluntary HIV test								
Yes	106	89.1	18	81.8	43	82.7	45	93.8
No	13	10.9	4	18.2	7	13.5	2	4.2
Unanswered	3	2.5	0	0	2	3.8	1	2.1
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**

As seen in Table 10, 93.4% (n=114) indicated that they expect to know the HIV status of their sexual partners. Table 13 shows that 89.1% (n=106) of respondents indicated that they had undergone voluntary HIV testing. Although the respondents were not required to disclose their status, neither indicated whether they would disclose their status to their partner(s). It was anticipated that most would have undergone HIV testing, given the high reported expectation of knowing their partner's status.

As previously shown in Table 11, most respondents reported a sexual debut between the ages of thirteen (13) and twenty-one (21), and it could be expected that the onset of contraceptive use would be similar. The earliest reported onset of contraceptive use was at ten (10) years of age by a respondent in the BC 1 group and the oldest age of onset of contraceptive use reported was thirty (30) years old in the same respondent group.

Table 14: Reproductive Health Practices: Contraceptives

	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Age when first used contraceptives (N=105)								
10 to 16 years	26	24.8	5	22.7	11	21.2	10	20.8
17 to 21 years	56	53.3	12	54.5	24	46.2	19	39.6
22 to 30 years	23	21.9	3	13.6	8	15.4	13	27.1
Unanswered	17	13.9	2	9.1	9	17.3	6	12.5
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Contraceptive method(s) currently used								
Oral Contraceptives	19	15.6	8	36.4	9	17.3	9	18.8
2 Monthly Injection	9	7.4	0	0	3	5.8	6	12.5
3 Monthly Injection	15	12.3	5	22.7	6	11.5	4	8.3
Female Condom	0	0	0	0	0	0	0	0
Male Condom	21	17.2	3	13.6	10	19.2	8	16.7
Emergency Contraception	1	0.8	0	0	1	1.9	0	0
Patch	1	0.8	0	0	1	1.9	0	0
Implant	3	2.5	0	0	2	3.8	1	2.1
Intrauterine Device	8	6.6	0	0	5	9.6	3	6.3
Not Using	34	27.9	8	36.4	13	25.0	13	27.1
Other	8	6.6	0	0	3	5.8	5	10.4

Categories were assigned to the ages and are presented in Table 14. Of those responding to age at first contraceptive use, 24.8% (n=26) were between ten (10) and sixteen (16) years old, 53.3% (n=56) were between seventeen (17) and twenty-

one (21) years old, 21.9% (n=23) were twenty-two to thirty (22 to 30) years old when they first commenced using contraceptives.

As shown in Table 14, 53.3% (n=56), reported the onset of contraceptive use to be between seventeen (17) and twenty-one (21) years of age, with similar onset reportedly between the ages of ten (10) and sixteen (16) years old with 24.8% (n=26) indicating this range and 21.9% (n=23) indicating commencement between twenty-two (22) and thirty (30) years of age. Many respondents, namely 27.9% (n=34), indicated that they were currently not using any contraceptive methods and although asked to specify why, most did not specify a reason for not currently using contraception.

The most frequently reported method used was the male condom, with 17.2% (n=21) reporting the use thereof, followed by similar reports of the use of oral contraceptives in 15.6% (n=19) and a three (3) monthly injectable contraceptive was reported in 12.3% (n=15) of cases.

Although most PEN 2 respondents, 90.9% (n=20), indicated not being married, 59.1% (n=13) indicated not having any children. This group reportedly, had a good knowledge of contraceptives. This group also indicated being currently sexually active with 82.8% (n=13) implying that the contraceptive uptake in this group appeared lower than in others.

Respondents were required to specify if they selected other methods and those that indicated so, namely 6.6% (n=8) included vasectomy and tubal ligation as the method used.

The sources of contraceptive method(s) varied across the groups. A family planning clinic was selected frequently, 34.0% (n=33) in all groups, followed by a pharmacy as a source 25.8% (n=25). The BC 1 respondents selected a gynaecologist more frequently than the other respondent groups and a total of 13.3% (n=4) indicated accessing their methods from a gynaecologist. BC 1 and BC 2 respondents are funded by their respective hospitals and receive higher monthly incomes than do PEN 2 respondents, which could imply increase access to private gynaecologist services from a financial perspective. Finance could be a reason for reduced access by the PEN 2 respondent groups.

Table 15: Reproductive Health Practices: Contraceptive Source & Reproductive Health Service Utilisation

	Frequency (f)	%	PEN 2 (f)	%	BC 1 (f)	%	BC 2 (f)	%
Source(s) for contraceptives - responses								
Clinic	33	34.0	9	60.0	11	21.2	13	43.3
Pharmacy/Store	25	25.8	6	40.0	10	19.2	9	30
GP	10	10.3	1	6.7	3	5.8	6	20
Gynaecologist	16	16.5	1	6.7	11	21.2	4	13.3
Do not use	25	0.8	7	31.8	0	0	18	37.5
Reports of ever having stopped using contraceptives – 'Yes' responses								
Yes responses	48	40.3	10	45.5	21	40.4	17	35.4
Reason(s) for ever stopping use of contraceptives								
Side effects	29	23.8	5	22.7	14	26.9	10	20.8
Forgot	16	13.1	7	31.8	6	11.5	3	6.3
Ran out	4	3.3	4	18.2	0	0	0	0
Partner request	1	0.8	0	0	1	1.9	0	0
Planned pregnancy	18	14.8	0	0	7	13.5	11	22.9
Cost	5	4.1	2	9.1	2	3.8	1	2.1
Other	58	47.5	6	27.3	26	50	26	54.2

Are Family Planning Clinics accessible (N=122)								
Yes	52	42.6	11	50.0	15	28.8	26	54.2
No	25	20.5	6	27.3	14	26.9	5	10.4
Not using	45	36.9	5	22.7	23	44.2	17	35.4
Total	**122**	**100**	**22**	**100**	**52**	**100**	**48**	**100**
Responses: Reason(s) why FP not accessible/convenient								
Distance	2	3.3	0	0	1	4.8	1	3.6
Expenses	1	1.7	1	8.3	0	0	0	0
Operating	26	43.3	5	41.7	7	33.3	14	50.0
Hours	11	18.3	4	33.3	4	19.0	3	10.7
Staff Attitudes	20	33.3	1	8.3	9	42.9	10	35.7
Other	**60**	**100**	**12**	**100**	**21**	**100**	**28**	**100**
Total								

A total of 40.3% (n=48) of the respondents reported that "yes" they had at times stopped using their contraceptive method (Table 15). The reasons for stopping were reported largely as "other" 47.5 % (n=58) with "sterilisation/vasectomy" and "no longer required," as the reasons specified. The questionnaire required respondents to specify if "other" was selected, yet not all specified why this option was chosen. Those respondents who selected a reason for stopping indicated "side effects" in 23.8% (n=29) cases, 13.1% (n=16) chose "forgot" and 3.3% (n=4) indicated that they had run out, 0.8% (n=1) was indicated as a "partner request", which was from the BC 1 respondent group. Other responses included 14.8% (n=18) who "wanted to become pregnant" and "contraceptive cost" 4.1% (n=5).

Respondents were required to indicate whether they felt that family planning clinics were convenient and accessible. 0.8% (n=1) did not respond, 36.9% (n=45) indicated that this was not applicable, 20.5% (n=25) indicated that they disagreed and 42.6% (n=52) indicated that they agreed that family planning clinics were convenient and accessible. The respondents were asked to indicate what made

accessing family planning clinics difficult for them, if they had previously indicated that access was difficult. More respondents responded to the question than those indicating that access was difficult, which might indicate that some respondents may find access challenging yet still used this service. Of those who responded to the question, 3.3% (n=2) indicated that it was far to travel, 1.7% (n=1) indicated that it was expensive to access family planning clinics, 43.3% (n=26) indicated that operating hours and 18.3% (n=11) indicated that staff attitudes made accessing family planning clinics difficult. The 33.3% (n=20) respondents who indicated "other" as a reason, specified waiting times, queuing and being embarrassed, infertility and not knowing about availability of clinics, as reasons for difficult access. These barriers to access appear in the literature and may contribute to the reduced utilisation of services.

4.3 Conclusion

The objectives of the study were to investigate reproductive health knowledge, to determine attitudes towards reproductive health, risk-taking behaviour and contraceptive use, as well as to identify the reproductive health practices of student nurses at a private nursing college. This chapter provides detailed descriptions of the data which was collected, coded and analysed. Findings were presented using simple descriptive statistics, in table format, including frequencies of responses in the tables, according to the objectives of the study. The chapter that follows provides a discussion of the results, a summary and further recommendations based on these findings.

CHAPTER 5: DISCUSSION OF RESULTS, KEY FINDINGS, LIMITATIONS AND RECOMMENDATIONS

5.1 Introduction

Chapter 4 provided the study findings. In this chapter the study findings will be discussed according to the study objectives, which are:

i. The reproductive health knowledge of privately trained student nurses;
ii. The attitudes of privately trained nurses towards reproductive health, risk-taking behaviours, practices and contraceptive use; and
iii. The reproductive health practices of privately trained student nurses.

A summary of key findings for the results according to the objectives will be included. The study limitations as well as recommendations for nursing education and training, clinical practice as well as ongoing research is also presented herein.

The study sample was a total of one hundred and twenty-two (122) respondents, of which 18% (n=22) were PEN 2 respondents, 42.6% (n=52) were BC 1 respondents and 39.3% (n=48) were BC 2 respondents. Female respondents made up 90.2% (n=110) of the total sample and 9.8% (n=12) were males. Most respondents, namely 70.5% (n=86) were between the ages of twenty (20) and twenty-nine (29). The ethnic distribution showed 46.7% (n=57) to be Coloured and 42.6% (n=52) to be White, 9.8% (n=12) were Black and 0.8% (n=1) were Indian. Only 29.5 (n=36) indicated being married and 58.2% (n=71) indicated that they did not have any children. Results showed that 86.9% (n=106) reported heterosexual sexual preference.

5.2 Objective i: Reproductive health knowledge of privately trained student nurses

5.2.1 Reproductive health knowledge: Discussion

There appears to be a gap in the literature regarding student's knowledge specific to the reproductive health system, in both international and local contexts. Some international studies related to reproductive health knowledge in tertiary education, do not appear to show consistent and comprehensive evidence that students, studying at higher education institutions demonstrate appropriate knowledge specific to the reproductive health system (Cassidy, Curran, Steenbeek & Langile, 2015), yet a systematic review on the reproductive health KAP of university students in the Middle East and North Africa showed poor knowledge levels relating to reproduction, reproductive health risks and contraception (Farih, Freeth, Khan & Meads, 2015).

In a study exploring the reproductive health knowledge, the attitudes and the behaviours of University students in Turkey, Basaran and Naim (2017) showed that 61.2% (N=1898) self-reported being knowledgeable on reproductive health. Basaran and Naim (2017) found that only 5.1% (n=97) reported knowledge of contraceptive method(s), yet 81.4% (n=1545) indicated that they were knowledgeable regarding reproductive health risks, in particular HIV/AIDS. In an explorative, qualitative study at Ethiopian university campuses, Mengistu and Melku (2013) described the students' knowledge related to reproductive health to be "superficial and inadequate," amidst a growing prevalence of reproductive health problems in student populations.

Somba, Mbonile and Obure (2014) found that students at a Tanzanian University were knowledgeable about oral contraceptives and condoms, but less was known about alternative methods. These researchers also found that although students in medical and life sciences programmes were more knowledgeable about reproductive health and risks, the patterns of risk-taking behaviours were universal. Similarly, Nsubuga et al., (2016) showed that students at a University in Uganda had appropriate knowledge regarding contraceptives and reproductive health yet only 46.6% (n=450) reported using a barrier contraceptive method during sexual intercourse. This supports the concern that having appropriate knowledge does not necessarily result a reduction in risk-taking reproductive health practices.

In contrast though, a small mixed-method pilot study in Namibia found that students at a tertiary institution with low reproductive health knowledge, who had reportedly displayed high reproductive health risk-taking behaviours, showed a positive decline in subsequent reproductive risk-taking behaviour after participating in an intervention aimed at improving reproductive health knowledge (Born, Wolvaardt & McIntosh, 2015). No current studies exploring the reproductive health knowledge of student nurses in private education and training were found, which could serve as a basis for comparison or support.

Respondents in this study self-reported knowledge related to the reproductive health system, reproductive health risks and contraception. Most respondents, 69.8% (n=81) indicated that they did have sufficient knowledge relating to the reproductive health system, 10.3% (n=12) reported that they did not and 19.8% (n=23) were unsure of their knowledge relating to the reproductive health system. The self-reported knowledge relating to reproductive health risks and consequences was

higher at 83.4% (n=101), indicating that they did have sufficient knowledge regarding reproductive health risks and the consequences, as opposed to 5.8% (n=7) who indicated they did not, and 10.7% (n=13) who were unsure. A total of 80.3% (n=98) of the respondents also reported having sufficient knowledge regarding contraceptive methods and use. The nursing curriculum in this setting is set according to the SANC Regulation 2175 and Regulation 683 (SANC, 2004). These regulations do not specify midwifery as compulsory subject and theoretical content related to the reproductive system health is limited in comparison to nursing curriculums which are offered at Universities under Regulation 425, where midwifery is a compulsory subject. This could explain why there remain self-reports of insufficient knowledge and of being 'unsure' about knowledge related to the reproductive system, risks, consequences and contraception.

The questionnaire used for data collection also included scored knowledge questions pertaining to the reproductive health system, the reproductive health risks and the consequences, as well as contraception. Respondent's correct answers were awarded 1 (one) mark and a total percentage score was allocated. Scores were categorised as "good" (≥70%), "average" (50-69%) and "poor" (0-49%). The scores were described using categories that were used in studies evaluating health related knowledge in peer reviewed studies by Wang et al., (2015). The knowledge scores of 87.7% (n=107) of the respondents were categorised as "good", 10.7% (n=13) as "average" and only 1.6% (n=2) as "poor".

Although some literature suggests that gender, culture, ethnicity, age and marital status may affect the reproductive health knowledge of students (Farih, Freeth, Khan & Meads, 2015; Masood & Alsonini, 2017), the scope of this study was to describe

the reproductive health KAP of privately trained nurses. Associations for each of these variables and reproductive health knowledge were not explored.

5.2.2 Reproductive health knowledge: Key findings

Although literature showed mixed findings related to reproductive health knowledge in different socio-cultural and ethnic contexts, the respondents in this study were relatively homogenous in terms of religion and culture.

They appeared to have similar knowledge of reproductive health, the risks and contraceptives to that of student populations in other local and international higher education institutions.

The respondents appeared to have better assessed knowledge scores than their self-reported knowledge, yet each component exploring reproductive health knowledge, revealed good knowledge.

The reproductive health knowledge related to the reproductive health system, tested and self-reported, was good across all groups, but highest in the BC 1 group, followed by the BC 2 group.

Respondent knowledge related to certain contraceptive methods such as male condoms, oral contraceptives, three (3) monthly injectable methods, female condoms as well as emergency contraception, was frequently reported, yet little was revealed about alternative methods.

The highest frequency of reported knowledge was that related to oral contraceptives and male condoms. Respondents also indicated that they had sufficient knowledge related to the three-monthly injectable contraceptives and self-reported knowledge

relating to female condoms and emergency contraception was found in approximately half of the total sample.

In the PEN 2 group, knowledge related to male condoms was most frequently reported, followed by oral and three-monthly injectable contraceptives. Within the BC 1 group oral contraceptives was also selected by most respondents, followed by male condoms, female condoms as well as three-monthly injectable and emergency contraceptives. In the BC 2 group, oral contraceptive methods were most frequently selected followed by male condoms, intra-uterine devices, three-monthly injectable method and similar frequency for the implantable contraceptive.

These findings seem consistent with most literature reviewed. It appears that nursing students in the selected setting do have adequate knowledge relating to reproductive health, risks as well as contraception, yet the recommendation for ongoing reproductive health education and information dissemination is shared as with other researches who found both good and poor knowledge levels amongst student populations (Eisenberg, Lust & Garcia 2014; Farih et al., 2015; Nsubuga et al., 2016).

5.3 Objective ii: Reproductive health attitudes of privately trained student nurses

5.3.1 Reproductive health attitudes: Discussion

There appears to be consensus amongst researchers that attitude towards reproductive health, risk-taking and contraceptive use, places student populations at risk (Nsubuga, et al., 2016; Abdissa, Addisie & Seifu, 2017). Some propose that culture and religious contexts underpin these attitudes (Akintade, Pengpid, Peltzer,

2011; Nsubuga et al., 2016). Interestingly, Burke, Gabhainn and Young (2015) compared the attitude towards abstinence before marriage of students, and non-student populations in the nineteen to twenty-two (19 to 22) year old age group and found that 26.5% (n=47) of male students believed that sexual intercourse prior to marriage was wrong, whereas 15.3% of non-student males implied that students' attitudes towards aspects related to reproductive health differ from their peers who were not engaged in higher education. Other studies show that student attitudes towards premarital sexual activity, have become more liberal, with many accepting premarital sex despite cultural and religious contexts (Qinisile, 2013; Chanakira, et al., 2014).

As with the [lack of] literature related to reproductive health knowledge of privately trained student nurses, there is paucity in evidence related to their attitudes towards reproductive health, risk-taking behaviours as well as contraceptive use.

In this study, findings showed that attitudes towards reproductive health practices such as abstinence until marriage were similar across the respondent groups with 41.8% (n=52) agreeing and 46.7% (n=57) reporting feeling neutral towards the statement. Most respondents, 84.4% (n=103) indicated that their religious views were not against the use of contraception, 8.2% (n=10) were neutral and 7.4% (n=9) indicated that their religious views were against the use of contraceptives. Considering that religion did not appear to be a significant barrier towards contraceptive use, other barriers should be explored, to facilitate improved contraceptive uptake.

Makhubele (2010) shared that female student's attitudes towards contraception and their ability to exercise choices in this regard were limited by their social context and

the choices of their male partners. Luquis, Brelsford and Rojas-Guyler (2012), explored the relationship between religion, spirituality, sexual attitudes and sexual behaviours, and found differences in sexual attitudes along gender lines. Jones and Cox (2015) explained that female students reportedly believe that ensuring their financial security requires unrestricted access to contraceptives. Chebitok (2017) explored University student's attitudes towards contraceptive use and reproductive health risks and found that female students expressed the view that contraceptive use was a female's responsibility. The female respondents in her study expressed that the burden of unplanned pregnancy and parenthood rested on women, and thus underpinned the perception that responsibility for contraception use lay with women (Chebitok, 2017). Nsubuga et al., (2016) reported 20.4% (n=206) of respondents believed that attitudes towards contraceptive use, place the responsibility for such, with women.

In this study, whilst 27.9% (n=34) of students indicated that contraception is a woman's responsibility and 16.4% (n=20) indicated being neutral; over 50% believed that it was not a woman's responsibility only. Results showed that 55.7% (n=68) disagreed with the statement, which could imply that they viewed it as a responsibility to be shared with a sexual partner. Interestingly, Brunner Huber and Ersek (2011) found that despite 89.1% (n=290) of female students believing that contraceptive responsibility should be shared, only 51.8% (n=169) indicated this to be the case. In this study however, only 0.8% (n=1) indicated that they had stopped contraception at their partner's request, suggesting less sharing of responsibility for contraceptive use.

Other studies exploring university student's attitudes towards contraceptive use showed that student's primarily viewed contraceptives as a method to prevent pregnancy and HIV and sexually transmitted infections, to a lesser extent (Heisler, Van Eron, 2012; Raselekoane, Morwe & Tshitangano, 2016); yet risk-taking behaviours remained high (Ugoji, 2013; Nsubuga et al., 2016; Raselekoane et al., 2016). Akintade, Pengpid, Peltzer and Skaal (2013) found that among student populations in Limpopo, high risk sexual practices were prevalent, and that among this population, 46% (n=332) reported not knowing the HIV status of their sexual partner(s). In a qualitative study exploring the disclosure of HIV positive status among university students in Limpopo, Mampa, (2015) discussed improved knowledge and understanding, and a change in perceptions towards HIV, and has facilitated disclosure of HIV positive status to respondents' families and sexual partners.

In this study 86.9% (n=106) had undergone voluntary HIV testing, and 93.4% (n=114) expected to know the HIV status of their sexual partner(s). Of the remaining respondents that responded to the question, 2.5% (n=3) disagreed and 2.5% (n=3) indicated feeling neutral toward this statement. One could conclude that not knowing nor expecting to know your sexual partner's status, nor your own, places both individual and partner at risk. Understanding this attitude however, requires exploring the context in depth, as did Barth, Cook, Switzer and Fischhoff (2010), who cited fear, cultural and relationship norms, social stigma and distrust as factors that influence students seeking voluntary testing or screening for sexually transmitted infections and HIV.

Nsubuga et al., (2016), reported that despite the perceived acceptability of contraception in the university population studied, unintended pregnancies appear to be increasing, as well as the number of students reporting ever having been pregnant, 40% (n=36) had terminated a pregnancy. *A* study exploring the use and attitudes towards contraceptive use amongst university students in the United States of America and Canada found that female students who had experienced a termination of pregnancy were more frequent users of contraception, including emergency contraception, when compared with their peers who had not experienced a termination of pregnancy. Downing (2014) found that students who were more knowledgeable about emergency contraception displayed more positive attitudes towards the use of emergency contraceptives.

Chima Anyanwu, Ter Goon and Tugli (2013) studied student's perceptions of unplanned pregnancies at a university in Venda and found that female students viewed the consequences of unplanned pregnancy more negatively then their male counterparts, which implies that the burden of contraception as well as baring of consequences may lie more heavily on female students. Gresh & Maharaj (2014) explored the acceptability and demand for termination of pregnancy amongst female students at a University in Kwa-Zulu Natal and found that most of the respondents perceived termination of pregnancy as morally wrong for various reasons, such as religion and sociocultural contexts. However, they agreed that women should have the individual right to choose.

In the studied population, the researcher found that most respondents, namely 86.9% (n=106), disagreed with the termination of a pregnancy as the option for students facing an unplanned pregnancy. Although only 4.9% (n=6) of the

respondents indicated that pregnancy should not be prevented, 7.6% (n=9) reported ever terminating a pregnancy and 39.5% (n=47) reported having used emergency contraception, which might contribute towards the low termination of pregnancy rates. The reasons for Emergency contraceptive use such as contraceptive failure, were not explored but could prove valuable in understanding why respondents resort to the use of emergency contraception as well as whether those who use emergency contraception are currently using other forms of contraception.

5.3.2 Reproductive health attitudes: Key Findings

The population studied, displayed reproductive health attitudes consistent with the literature reviewed. Being fairly homogenous in terms of religion and culture, trends in attitudes related to reproductive health, risks and contraception appeared similar across the respondent groups.

In the studied population, differences between male and female attitudes were not compared, but it appeared that many respondents showed positive attitudes towards sharing responsibility for contraception with their sexual partner(s).

Attitudes towards abstinence were equally shared across groups. Less than half of the sample indicated a positive attitude towards abstinence before marriage, however approximately the same indicated a neutral attitude towards abstinence before marriage and a minority indicating a negative attitude towards abstinence. In the PEN 2 group a neutral attitude towards abstaining was found most frequently and the highest positive attitude towards abstaining was found in the BC 1 group.

Religious views did not appear to influence the acceptability and the attitudes towards contraceptive use, as the majority of respondents indicated that their religious views were not against the use of contraceptives. This finding was shown most frequently in the BC 1 group, followed by the PEN 2 group. This finding may differ from other contexts with some strongly held religious views regarding contraception.

Positive attitudes towards HIV voluntary testing were found across the respondent groups as was the expectation of wanting to know their partner's HIV status which was reported in almost all the respondents. This indicates a positive attitude towards understanding reproductive health risk.

Although few respondents reported having terminated a pregnancy, most displayed negative attitudes towards the statement 'termination of a pregnancy being the only option for students facing an unplanned pregnancy'. The highest reports of positive attitudes towards preventing pregnancies was found in the BC 1 group, followed by the PEN 2 group, yet all groups appeared in favour of preventing a pregnancy as opposed to terminating a pregnancy. Given the majority of respondents indicated Christianity as their religious affiliation, high incidence of negative attitudes towards termination of pregnancy could be associated with religious affiliation.

5.4 Objective iii: Reproductive health practices of privately trained student nurses

5.4.1 Reproductive health practices: Discussion

Researchers agree that during the transition into adulthood, student populations engage in many risk-taking behaviours, including risky reproductive health practices;

despite having knowledge related to reproductive health (Mengistu & Melku, 2013; Somba, Mbonile & Obure, 2014; Nsubuga, et al., 2016). Others report that student populations have higher levels of awareness of contraceptives than on knowledge related to reproductive health practices and risk-taking behaviour (Duru, Iwu & Diwe et al., 2015).

Results of this study confirmed that nursing students in this setting appear to have adequate knowledge, yet risk-taking behaviours remain a concern. Most students, 82.8% (n=97), indicated being sexually active, with a current sexual partner reported. The reported sexual debut age range was thirteen to twenty-one (13 to 21). These findings were comparable to another local report (Qinisile, 2013), which showed sexual debut of university students to be most frequently reported between the ages of 15 and 20 years of age.

Chankira et al., (2014) offered that the liberation and freedom from parental control may contribute towards sexual experimentation and risk taking.

In this study, many still resided with parents and family, which may serve as a deterrent to risk-taking behaviour and practices. Although 81.7% (n=89) of respondents indicated that they only had one current sexual partner, 1% (n=1) indicated having four (4) current sexual partners and 1% (n=1) indicated having ten (10) current sexual partners. Despite these being outliers, these reports of multiple current partners raise concern, considering 38.3% (n=44) of respondents reported never using condoms during sexual intercourse and 37.4% (n=43) reported using condoms only ‘sometimes’, similar concerns of inconsistent condom use and multiple concurrent sexual partners amongst university students was reported by Qinisile (2013). Condoms were however the most commonly reported method used,

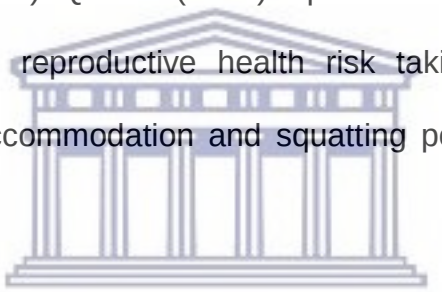
followed by oral contraceptives and three (3) monthly injectable contraception in the study.

Heerden, Jemmott, Mandeya and Tyler (2012) found that females did not always favour the use of condoms and England and Bearack (2014) showed that male students displayed negative attitudes towards sexually active female students - more frequently than they did towards sexually active males. Gender differences and contraceptive use were not explored in this study, due to most respondents being female, yet it was noted that contraceptive uptake and condom use showed similar patterns to that of students studying at institutions abroad and at other local institutions.

In a cross-sectional survey of the KAP of female students in a Ugandan University, Nsubuga, Sekandi, Sempeera and Makumbi (2016) discuss that 20.4% (n=1008) of respondents believed that contraception was intended for females alone. Nsubuga et al., (2016) found that 96% (n=968) of the respondents expressed that it was acceptable to make contraceptives available to university students, yet 20.1% of the respondents indicated that using contraceptives was wrong. The researchers explained that religious views influenced these attitudes towards contraception, yet respondent age or year of study did not appear to do so (Nsubuga et al., 2016). They also described negative attitudes towards the access and utilization of reproductive health care services, along with some misconceptions about whom contraceptives were intended for (Nsubuga et al., 2016). Other studies in Africa also describe tertiary students' negative attitudes towards contraceptive use which were based on inaccurate information, as well as negative perceptions regarding the use of reproductive health care services (Cadmus & Owoaje, 2009).

The scope of this study limited the analysis of religion and risk-taking practices, as well as the influence that residence has on risk-taking. A few respondents in this study did indicate negative views towards contraception in terms of religious practice, yet it appeared that most believed that both sexual partners shared the responsibility for contraception.

Chanakira, O'Cathain, Goyder and Freeman (2014) explain that students, who do engage in risk-taking practices, are perhaps less restricted in their reproductive practices, due to the absence of parental scrutiny. Their study showed that older students with strong religious convictions, studying abroad, tend to display less risk-taking (Chanakira et al., 2014). Qinisile (2013) reported that living on campus, away from family contributed to reproductive health risk taking, yet issues such as overcrowding in student accommodation and squatting possible factors increasing risk taking.



In this study, the highest reports for current residence showed 31.1% (n=38) who reportedly still lived with their parents and 13.1% (n=16) who lived with family or friends. This may have been a factor limiting risk-taking behaviour in some respondents.

The use of alcohol and/or prior and during sexual activity is well documented and seen as a significant factor contributing to reproductive health risk-taking (Shiferaw, Alemu, Assefa, Tesfaye, Gibermedhin & Amare, 2014; Santos et al., 2018). This study showed that 78.2% (n=93) respondents used substances and/or alcohol before sexual activity. This finding strongly suggests that most respondents engage in reproductive health risk-taking, involving concomitant substance use and high reports of inconsistent condom use, despite appropriate knowledge scores.

The use of emergency contraception and termination pregnancy reports were low across all respondent groups studied, yet many indicated that they had at some point stopped using contraceptives. The reasons provided for cessation of contraceptive use varied, with 23.9% (n=29) citing side effects and 47.5% (n=58) indicating “other” reasons. Although the respondents were required to specify a reason whether they selected this option, most did not specify a reason, and this could be a limitation. Those who did specify a reason, indicated “no longer needed” and “not sexually active,” as reasons. Literature suggests that fear of stigma, knowledge and awareness related to reproductive health services and lack of confidentiality as barriers to accessing family planning services and contraceptives (Chanakira et al., 2014; Okanga, Kipmerewo, 2018). These studies also highlighted that side-effects, myths and misconceptions related to contraceptives were also shown as factors influencing contraceptive use and compliance to chosen method.

The respondents in the study were asked to indicate whether they found family planning clinics to be accessible, 42.6% (n=52) indicated that they were accessible, yet 36.9% (n=45) indicated that they did not use family planning clinics.

In a qualitative study exploring factors that influence a students’ utilization of reproductive health services for testing for sexually transmitted infections, researchers identified negative perceptions and attitudes to seeking testing by the majority of respondents (Barth, Cook, Downs, Switzer & Fischhoff, 2010). They cited fear of the results, fear of social stigma as well as concerns about the health care service providers’ adherence to confidentiality, as barriers to accessing these services on campus (Barth et al., 2010). These results were echoed by Okango & Kimpereow (2018) and such barriers may result in unnecessary delays in seeking

treatment and compound the risky practices in subsequent sexual activity. Chanakira et al., (2014) conducted in depth interviews with respondents, in their qualitative study, at a University in the United Kingdom. Their research identified barriers to the utilization of reproductive health services and cited convenience, access, perceived lack of confidentiality and stigma, as overall barriers to the utilization of reproductive health services (Chanakia et al., 2014).

In this study, respondents indicating that family planning clinics were not accessible or convenient, 18.35 (n=11) reported staff attitudes as a barrier, 43.3% (n=26) reported operating hours. Those who indicated “other”, 22.3% (n=20) specified waiting times and queues as barriers. These findings were similar to those reported by Ghafari, Shamsuddin and Amiri (2014) and Bersamin, Fisher, Marcell, et al., (2017) and possibly highlighted the need to explore the use of reproductive health clinics by students, including factors that enhance benefits, as well as those that prove to be barriers to utilisation of services.

5.4.2 Reproductive health practices: Key findings

The study revealed that good knowledge did not appear to influence reproductive health practices significantly. Most respondents reported a heterosexual preference and very few indicated not having had any sexual encounters. The most frequently reported sexual debut age range was thirteen to eighteen (13 to 18) years of age, with the majority of respondents indicating being in a sexually active relationship at present.

Of the respondents indicating having a current sexual partner, most indicated the number of current sexual partners being only one (1). Discrepancies were found in

the reporting of being currently sexually active, and could be either under or over-reporting on sexual practices.

Low condom use was reported, with only a few respondents indicating that they 'always used condoms during sexual activity'. In the sample, those who indicated using condoms; consistency of use appeared low. Despite inconsistent frequency of use and uptake, male condoms remained the most frequently used contraceptive method, followed by oral contraceptives and three (3) monthly injectable contraceptive methods.

A high reported frequency of alcohol and or substance use, prior to engaging in sexual activity, which was seen across the sample. This is a concern, considering the low reports of consistent condom use despite high levels of associated knowledge.

Emergency contraceptive use and the termination of pregnancy reports were low across all respondent groups, with strong negative attitudes being shown against the termination of a pregnancy.

Almost half of the respondents indicated that they had ever stopped using contraceptives and those that indicated reason(s) for stopping, few reported 'side-effects' as the reason for stopping. Almost half of the respondents that reported ever stopping contraceptive use, selected "other" and specified that they "did not require" contraception and being "not active" as reason(s). Less than half of the respondents indicated that reproductive health/family planning clinics were easily accessible. Although many reported not making use of such facilities, the barriers to accessibility included operating hours, staff attitudes and waiting times.

Risk-taking practices may have been limited amongst the PEN 2 respondent groups as well as those still living with their parents or their family as well as their marital status. In the PEN 2 group more than half of the respondents indicated that they were currently sexually active and indicated having only one sexual partner, although many did not respond to the question regarding current number of sexual partners.

Very few in the PEN 2 group reported consistent condom use during sexual activity and many had never used emergency contraception. As in the other groups, alcohol and substance use prior to sexual activity was reported frequently yet most had reportedly undergone a voluntary HIV testing. In the PEN 2 group, many had commenced with contraceptive use between the ages of seventeen (17) and twenty-one (21) and the majority reported family planning clinics and private pharmacy and stores as their source for contraceptive purchases.

The BC 1 respondents indicated similar practices relating to sexual debut, contraceptive methods used, and alcohol and or substance use prior to sexual activity, HIV testing and cessation of contraceptive use. In this group a higher frequency reported being currently sexually active and although the majority indicated having one current sexual partner, there were reports of multiple current sexual partners in this respondent group. This group also inconsistently reported their 'not sexually active' status. In the BC 1 group the most frequently selected sources for contraceptives were family planning clinics and a gynaecologist, followed by a private pharmacy or store. Contraceptive side-effects were seen to be a frequently selected reason for stopping contraceptives and half of the BC 1 group indicated "other" reasons with "not requiring" as the most frequently specified

reasons. Some reported that family planning clinics were inconvenient and access difficult, citing operating hours, waiting times and queuing as barriers to accessibility.

Very few respondents in the BC 2 group indicated 'not having any sexual encounters', yet this group showed similar reports of being sexually active a present. In the BC 2 group outliers in the number of current sexual partners was seen, with reports of having two (2), three (3), four (4) or ten (10) sexual partners found. Inconsistency in reporting of "not sexually active" was also seen in this group. Condom and emergency contraceptive use was similar to other groups as was age at commencement of contraceptive use. Patterns of contraceptive methods used were similar to that of other respondent groups as were the reports of voluntary HIV testing. Risk taking in terms of alcohol and/or substance use was most frequently reported in the BC 2 group.

Family planning clinics were the most frequently selected source for contraception in the BC 2 group and fewer reported ever having stopped contraceptives. Reasons for stopping included 'planning a pregnancy', 'side effects' and more than half indicated "other" as their reason. All had not specified a reason for this selection but of those who had; having undergone "sterilization", partner having had a "vasectomy" and "no longer requiring" were reported. More than half of the respondents indicated that family planning clinics were accessible and convenient to access. The frequency of responses related to reasons why respondents did not perceive this facility as convenient, included 'operating hours', 'queues' and 'waiting times' as reasons for this selection.

5.5 Limitations

The purpose of this study was to describe the reproductive health KAP of student nurses, at a private nursing education institution. The small sample size from the private college made generalization of results limiting. Although this was not intended, exploring the objectives in other private nursing education institutions may have contributed to a deeper understanding of these. Widening the population studied may also have allowed for a comparison between male and female respondent responses, as the size of the study population and the small number of male respondents limited this comparison, as well as exploring the reproductive health KAP of nursing students in other academic institutions.

Although the questionnaires were self-reported and anonymous, there may have been some bias in responses, given the sensitive nature of the data. Respondents may have provided responses that were perceived to be more socially acceptable, which might have influenced results.

The questionnaire included questions that when selected, required respondents to specify their responses, yet they seldom did. This limited an interpretation of these questions. The nature of the objectives, as well as a mini-thesis required that the questionnaire be shortened. Using a quantitative approach may also have limited the depth to which the objectives could be explored, and further investigation could benefit by using a mixed-method approach that includes focus group discussions and interviews with respondents.

5.6 Recommendations

This study demonstrated that students in higher education institutions do appear to have good reproductive health knowledge, yet this knowledge did not reflect in increased levels of contraceptive use, nor did it reflect in an absence of risk-taking behaviours.

5.6.1 Recommendations for higher education and training

- Despite reports of high reproductive health knowledge, institutions should continue to seek ways in which to enhance appropriate and context-specific reproductive health information dissemination.
- Curricula should include content relating to the expanding range of contraceptive methods, as well as addressing risk-taking practices, and the associated reproductive health risks and consequences.
- Addressing high risk practices such as alcohol and/or substance use which appear to be associated with risky reproductive health practices requires further investigation, and possible tailored intervention.
- Establishing reproductive health services in academic settings where there aren't any, may address many barriers to access and the utilization of reproductive health services and improve the consistency of contraceptive use.

5.6.2 Recommendations for practice

Family planning clinics appear to be driven by contraceptive supply, which might reduce access by both female and male students requiring information and screening for sexually transmitted infections.

- These settings could possibly expand the contraceptive method options available, and operational hours could be staggered, to improve accessibility by student nurses, who are in class during normal operational hours.

- Reproductive health clinics could be established within private education institutions, which address male student reproductive health needs, as well as those of female students. These services should partner with the academic institution in developing interventions and initiatives that address reproductive health needs and risk-taking behaviours.

5.6.3 Recommendations for future research

- Further investigation regarding the association between population variables, such as gender, age, ethnic group, religious affiliation and marital status; and contraceptive uptake, as well as risk-taking behaviour could be explored. Ongoing research could identify the factors that limit the reduction of risky reproductive health practices despite adequate reproductive health knowledge.

- Exploring the barriers to contraceptive use, as well as the access to and the utilization of family planning clinics may provide valuable insight into developing a more appropriate and effective service within this setting.

- A qualitative inquiry may also provide a deeper understanding of patterns of contraceptive use and access of services, as well as reasons for discontinuing contraceptive use. This might provide guidance on how to address these aspects and develop services that address the population's reproductive health needs, within their current context more effectively.

5.7 Conclusion

A discussion on the research findings framed by current literature reviewed and in relation to the study objectives was presented in this chapter as followed by key findings according to the study objectives. The study limitations as well as recommendations, for higher education and training practice as well as for future research were offered.

This study showed that the knowledge of this population related to the reproductive health, the risks and contraception appeared high, although similar to studies reviewed, this knowledge does not translate into an absence of risk-taking reproductive health practices. The population was found to be fairly homogenous in culture and religious orientation, and thus displayed similar attitudes towards reproductive health practices and to contraception. Although the incidence of high-risk practices such as multiple sexual partners was reportedly low, and voluntary HIV screening appeared high, other reproductive health practices such as contraceptive use, consistency of use and alcohol and substance appeared problematic. These findings may provide some insight into the population's reproductive health needs for ongoing education, as well as stimulating further investigation into developing a reproductive health service that provides for these needs more appropriately.

REFERENCES

Abdissa B, Addisie M, Seifu W. (2015) Premarital Sexual Practices, Consequences and Associated Factors among Regular Undergraduate Female Students in Ambo University, Oromia Regional State, Central Ethiopia. *Health Sciences Journal.* 11(1). [Online] http://www.hsj.gr/medicine/premarital-sexual-practices-consequences-and-associated-factors-among-regular-undergraduate-female-students-in-ambo-university-oro.php?aid=18407 [Accessed 11/1/2017]

Adams, R., Van Der Heever, M.M., Damons, A. (2017). Perceptions of clients on awareness and the geographical location of a South African university sexual health clinic. *African Journal of Primary Health Care & Family Medicine.* 9(1). [Online] https://scholar.sun.ac.za/handle/10019.1/104186 [Accessed 12/11/2017]

Akintade, O.L., Pengpid, S., Peltzer, K., Skaal, L. (2013). Mental health and HIV sexual risk behaviour among University of Limpopo students. *South African Journal of Psychiatry*. 19(2). [Online] https://sajp.org.za/index.php/sajp/article/view/415 [Accessed 11/10/2017].

Agénor, S., Austin, B., Kort, D., Austin, E.L., Muzny, C.A. (2016). Sexual Orientation and Sexual and Reproductive Health among African American Sexual *Minority Women in the U.S. Women's Health Issues*. (26)6. [Online] http://www.sciencedirect.com/science/article/pii/S1049386716300809 [Accessed 10.02.2019]

Azwinhangwisi, H., Mavhandu-Mudzusi, T., Asegdom, T. (2016). The prevalence of risky sexual behaviours amongst undergraduate students in Jigjiga University, Ethiopia. *Health SA Gesondheid.* 21. [Online] https://doi.org/10.4102/hsag.v21i0.950 [Accessed 15/03/2018]

Baraitser, P., Syred, J., Spencer-Hughes, V., Howroyd, C., Free, C., Holdsworth, G. (2015) *BioMed Central. Health Services Research.* 15(540). [Online] http://researchonline.lshtm.ac.uk/2530967/1/12913_2015_Article_1200.pdf [Accessed 17/11/2017]

Barth, K.R., Cook, R.L., Downs, J.S., Switzer, G.E., Fischoff, B. (2010). Social stigma and negative consequences: factors that influence college students' decisions to seek testing for sexually transmitted infections. *Journal of American College Health*. 50(4). [Online] https://doi.org/10.1080/07448480209596021 [Accessed 11/10/2017]

Basaran, A.G., Naim, N. (2017). Information, attitudes and behaviours about reproductive health of a university's student. *International Journal of Caring Sciences.* 10(3). [Online] http://www.internationaljournalofcaringsciences.org/docs/48_basaran_original_10_3.pdf [Accessed 15/11/2017]

Bersamin, M., Fisher, D.A., Marcell A.V., Finan, L.J. (2017). Reproductive health services: barriers to use among college students. *Journal of Community Health*. [Online] 42(1). https://doi:10.1007/s10900-016-0242-2 [Accessed 11/11/2017].

Born, K.M., Wolvaardt, L., McIntosh, E. (2015). Risky sexual behaviour of university students: perceptions and the effect of a sex education tool. *African Journal of Public Health.* 21. [Online] https://journals-co-za.ezproxy.uwc.ac.za/content/ajpherd/21/2/EJC172489?fromSearch=true [Accessed 30/10/2017].

Brink, J.G. (2014). National student sexual health HIV knowledge, attitude and behaviour survey: focusing on student men who have sex with men at 14 higher education institutions in South Africa. [Online] https://www.health-e.org.za/wp-content/uploads/2015/05/National-Student-Sexual-Health-HIV-Knowledge-Attitude-and-Behaviour-Survey.pdf [Accessed 15/05/2016].

Brink, H., van der Walt, C. & Van Rensburg, G. (2012). *Fundamentals of research methodology for health care professionals.* 2nd ed. Cape Town: Juta.

Brunner Huber, L.R. & Ersek, J.L. (2011). Contraceptive use among active university students. *Journal of Women's Health.* 18(7) [Online] http://dx.doi.org/10.1089/jwh.2008.1131 [Accessed 13/04/2016].

Burke, L., Gabhainn, S.N., & Young, H. (2015). Student sex: more or less risky than other young adults? *Sex Education* 15(1). [Online] http://dx.doi.org/10.1080/14681811.2014.947362 [Accessed 05/11/2017].

Burns, N., & Grove, S. (2007). *Understanding nursing research: Building an evidence-based practice* (4th ed.). Philadelphia: Saunders.

Burns, N., Grove, S., Gray, J. (2011). Understanding nursing research: building an evidence-based practice. 5th ed. Maryland: Elsevier/Saunders

Cadmus, E., Owoaje, E. (2009). Patterns of contraceptive use among female undergraduates in the University of Ibadan, Nigeria. *Internet Journal of Health.* 10(2). [Online] https://print.ispub.com/api/0/ispub-article/439613/ [Accessed: 13/06/2016].

Cassidy, C., Curran, J., Steenbeek, A., Langile, D. (2015). University students' sexual health knowledge: a scoping literature review. *Canadian Journal of Nursing Research Archive.* 47(3). [Online] http://cjnr.archive.mcgill.ca/article/view/2490 [Accessed 20/11/2017]

Castro, A. (2015) Sexual behaviour and sexual risks among Spanish university students: a descriptive study of gender and sexual orientation. *Journal of Sexuality Research and Social Policy.* 13(1). [Online] https://doi.org/10.1007/s13178-015-0210-0 [Accessed 06/03/2018].

Chanakira, E., O'Cathain, A., Goyder, E., Freeman, J.V. (2014). Factors perceived to influence risky sexual behaviours among university students in the United Kingdom: a qualitative telephone interview study. *BioMed Central Public Health.* 14. [Online] http://www.biomedcentral.com/1471-2458/14/1055 [Accessed 13/11/2017].

Chebitok, B. (2017) Knowledge of contraceptives, attitudes towards contraceptive use, and perceptions of sexual risk, among university students at a South African university.[Online] http://hdl.handle.net/10413/15231 [Accessed 05/08/2018]

Chima Anyanwu, F., Ter Goon, D., Tugli, A., et al. (2013). Perception of susceptibility to the negative outcomes associated with unprotected sex among University of Venda students. *Pakistan Journal of Medical Sciences*. 29(6). [Online]. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3905366/ [Accessed 5/06/2016].

Choi, M.S. & Shin, H. (2015). Factors influencing Stages of Change for Contraceptive Use in College Students: A Path Analysis. *Nursing and Health* [Online] 3(1). http://www.hrpub.org/journals/article_info.php?aid=2362 [Accessed on 01/03/2016].

Coetzee, M.H. & Ngunyulu, R.N. (2015). Assessing the use of contraceptives by female undergraduate students in a higher educational institution in Gauteng. *Curationis* [Online] 38(2) http://dx.doi.org/10.4102/curationis.v38i2.1535 [Accessed 11/02/2016].

Coronado, P.J., Delgado-Miguel, C., Rey-Cañas, A., Miguel, M.D., Herráiz, A. (2016). Sexual and reproductive health in Spanish university students. A comparison between medical and law students. *Sexual & Reproductive Healthcare.* 11. [Online] https://doi.org/10.1016/j.srhc.2016.11.004 [Accessed 14/05/2018].

Creswell, J.W. (2009). Research design: qualitative, quantitative, and mixed method approaches. 3rd ed. California: Sage.

Downing, A. (2014). University Students' Knowledge and Attitudes Toward Emergency Contraception Pills. *Journal of Community Health Nursing*. 31(2). [Online] https://doi.org/10.1080/07370016.2014.901089 [Accessed 13/10/2017].

Eisenberg, M.E., Hannan, P., Lust, K.A., Lechner, K.E., Lust, K.E., Garcia, C.M. & Frerich, E.A. (2013). Sexual health resources at Minnesota colleges: associations with students' sexual health behaviours. *Perspectives on Sexual and Reproductive Health.* [Online] 45(3). http://dx.doi.10.1363/4513213 [Accessed 20/03/2016].

Eisenberg, M.E., Lust, K.A. & Garcia, C.M. (2014). Differences in sexual behaviours among unmarried sexually active students at 2-and 4-year colleges. *Research in Nursing and Public Health.* [Online] 37. http://dx.doi.10.1002/nur/21586 [Accessed 20/03/2016].

Eisenberg, M.E., Lechner, K.E., Frerich, E.A., Hannan, P.J. Lust, K.A., Garcia, C. (2013). Sexual health resources at Minnesota Colleges: associations with students' sexual behaviors. *Perspectives on Sexual and Reproductive Health.* 45(3). [Online] https://doi.org/101363/4513213 [Accessed 06/07/2016]

England, P., Bearak, J. (2014). The sexual double standard and gender differences in attitudes towards casual sex among U.S. university students. *Demographic Research.* 30(46). https://www.demographic-research.org/volumes/vol30/46/ [Accessed 30/10/2016].

Farih, M., Freeth, D., Khan, K., & Meads, C. (2015). Sexual and reproductive health knowledge and information-seeking behaviour among Middle Eastern female university students: a systematic review. *International Journal of Sexual Health*. 27. [Online] https://10.1080/19317611.2015.1023961 [Accessed 15/11/2017].

Ghafari M., Shamsuddin K., Amiri M. (2014). Barriers to Utilization of Health Services: Perception of Postsecondary School Malaysian Urban Youth. *International*

Journal of Preventive Medicine. [Online] 14;5(7). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4124555/ [Accessed 12/11/2017].

Gresh, A., Maharaj, P. (2014). Termination of pregnancy: Perspectives of female students in Durban, South Africa. *African Population Studies.* 28(1). [Online] http://aps.journals.ac.za/pub/issue/view/51 [Accessed 05/06/2018].

Heerden, G.A., Jemmott, J.B., Ngwane, Z., Mandeya, A. & Tyler, J.C. (2012). A randomized controlled pilot study of an HIV risk-reduction intervention for sub-Saharan African university students. *AIDS & Behaviour*. [Online] https://link.springer.com/article/10.1007/s10461-011-0129-2 [Accessed 14/06/2016].

Hedayati-Moghaddam MR, Eftekharzadeh-Mashhadi I, Fathimoghadam F, Pourafzali SJ. (2015). Sexual and Reproductive Behaviours among Undergraduate University Students in Mashhad, a City in the Northeast of Iran. *Journal of Reproduction & Infertility*. 16(1). [Online] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4322181/ [Accessed 19/05/2016].

Heisler, K. & Van Eron, D.M. (2012). A descriptive study of undergraduate contraceptive attitudes among students at the University of New Hampshire. *Honours Theses and Capstones*. 8. [Online] https://scholars.unh.edu/honors/8 [Accessed 13/04/2016].

Henry, N.A., Brown, G. Dowsett, G.W., Carman, M. (2017) Association between sexually transmissible infection testing, numbers of partners and talking to partners and friends about sexual health: survey of young adults. *Sexual Health.* 14. [Online] https://doi.org/10.1071/SH16076 [Accessed 01/11/2017].

Higher Education HIV and AIDS Programme (HEAIDS). (2010). HIV prevalence and related factors–higher education sector, South Africa, 2008–2009. Pretoria: Higher Education South Africa.

Hobbs, S. (2015). Young love: it's complicated. [Online]. http://nacosa.org.za/news/love-its-complicated.aspx [Accessed 09 May 2016].

Hoffman, S., Levasseur, M., Mantell, J.E., Beksinska, M., et al. (2017). Sexual and reproductive health risk behaviours among South African university students: results from a representative campus-wide survey. *African Journal of AIDS Research.* 16(1). [Online] https://doi.org/10.2989/16085906.2016.1259171 [Accessed 15/03/2018]

Hoque, M.E., Ghuman, S., Coopoosamy, R. & Van Hal, G. (2014). Cervical cancer screening among university students in South Africa: a theory based study. [Online] 9(11) *Public Library of Science ONE.* http://dx.doi.org/10.1371/journal.pone.0111557 [Accessed 06/06/2016].

Jones, R.P., Cox, D. (2015). How race and religion shape millennial attitudes on sexuality and reproductive health. Findings from the 2015 Millennials, Sexuality, and Reproductive Health Survey. Public Religion Research Institute, Washington. [Online] http://publicreligion.org/site/wp-content/uploads/2015/03/PRRI-Millennials-Web-FINAL.pdf [Accessed 12/05/2016].

Lebese, R.T., Maputle, S.M., Ramathuba, D.U. & Khoza, L.B. (2013). Factors influencing the uptake of contraception services by Vatsonga adolescents in rural communities of Vhembe District in Limpopo Province, South Africa. *Suid Afrikaanse Gesondheid* 18(1) [Online]

http://www.hsag.co.za/index.php/HSAG/article/view/654/797 [Accessed 07/05/2016].

Luquis, R.R., Brelsford, G.M., Rojas-Guyler, L. (2012). Religiosity, spirituality, sexual attitudes, and sexual behaviours among college students. *Journal of Religious Health.* 51(3). [Online] https://doi:10.1007/s10943-011-9527-z [Accessed 16/06/2016].

Makhubele, JC. (2010). Student's attitudes towards reproductive health and rights in the university of Limpopo (Turfloop Campus) – South Africa: a social work perspective. *East African Journal of Public Health* 7(2). [Online] http://www.ncbi.nlm.nih.gov/pubmed/21413589 [Accessed on 03/05/2016].

Mampa, S.R. (2015). The experiences of students disclosing their HIV positive status at the University of Limpopo, Turfloop Campus.[Online] http://hdl.handle.net/10386/1361 [Accessed 12/10/2017].

Masood, M.S.A., Alsonini, N.A.A. (2017). Knowledge and attitude about reproductive health and family planning among young adults in Yemen. *Hindawi International Journal of Population Research.* [Online] https://doi.org/10.1155/2017/1895472 [Accessed 15/05/2018].

Mengistu, T.A., Melku, A.T., Bedada, N.D., Eticha, T.E. (2013). Risks for STIs/HIV infection among Madawalabu University students, Southeast Ethiopia: a cross sectional study. Reproductive Health. 10. [Online] http://www.reproductive-health-journal.com/content/10/1/38 [Accessed 14/06/2016].

National Department of Health South Africa. (2016). Demographic and Health Survey 2016. Key indicators report. [Online] https://www.statssa.gov.za/publications/Report%2003-00-09/Report%2003-00-092016.pdf [Accessed 05/03/2017]

Nel, K., Rankoana, S. & Govender, S. (2015). The use of male condoms amongst female and male third year undergraduate students at a rural university in South Africa. *African Journal for Physical, Health Education, Recreation and Dance. 1(1).* [Online] https://journals-co-za.ezproxy.uwc.ac.za/docserver/fulltext/ajpherd/21/sup-1/ajpherd_v21_supp1_1_a3.pdf?expires=1539271790&id=id&accname=58219&checksum=05B3F5A5F6C374DF07C3F85E6647DA75 [Accessed 14/05/2016].

Ngidi, N.D., Moyo, S., Zulu, T., Adam, J.K. & Krishna, S.B. (2016). Qualitative evaluation of selected social factors that impact sexual risk-taking behaviour among African students in Kwazulu-Natal, South Africa, *SAHARA-J: Journal of Social Aspects of HIV/AIDS*. 13(1). [Online] https://doi.org/10.1080/17290376.2016.1218792 [Accessed 16/05/2016].

Nsubuga, H., Sekandi, J.N., Sempeera, H. & Makumbi, F.E. (2016). Contraceptive use, knowledge, attitude, perceptions and sexual behaviour among female University students in Uganda: a cross-sectional survey. *BioMed Central. The Open Access Publisher: Women's Health* [Online] 16, https://bmcwomenshealth.biomedcentral.com/track/pdf/10.1186/s12905-016-0286-6 [Accessed 02/03/2016].

Ochako, R., Mbondo, M., Aloo, S., Kaimenyi, S., Thompson, R. (2015). Barriers to modern contraceptive methods uptake among young women in Kenya: a qualitative study. *BioMed Central. Public Health. 15.* [Online] https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-015-1483-1 [Accessed 11/10/2017].

Olawale, J.T., Ifeanyi, O.T. (2016). Sexual behaviours: HIV/STI risk perceptions among Namibian university students. *Family Medicine & Medical Science Research.* 5(4). [Online] https://www.omicsonline.org/open-access/sexual-health-behaviours-hivsti-risk-perception-among-namibianuniversity-students-2327-4972-1000205.pdf [Accessed 07/06/2018]

Oster, D.R. (2015). College students and sexual risk behaviour. *DigitalComms@URI. Open Access Master's Theses.*[Online] https://digitalcommons.uri.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1531&context=theses [Accessed 06.03.2019]

Oswalt, S.B., Wyatt, T.J. (2013). Sexual health behaviours and sexual orientation in a US national sample of college students. *Archives of Sexual Behaviour.* 42(8). [Online] https://doi:10.1007/s10508-012-0066-9 [Accessed 20/08/2018].

Okanga, A.A., Kipmerewo, M.C. (2018). Uptake of family planning among female students of Masine Muliro University of Science and Technology. *Journal of Nursing and Health Sciences.* 7(4). [Online] http://iosrjournals.org/iosr-jnhs/papers/vol7-issue4/Version-4/H0704047377.pdf [Accessed 29/10/2018]

Patrick, M.E., Lee, C.M. (2010). Sexual Motivations and Engagement in Sexual Behaviour During the Transition to College. *Archives of sexual behaviour*. 39(3) [Online] https://doi:10.1007/s10508-008-9435-9 [Accessed 23/09/2017].

Polit, D.E., Beck, C.T. (2008). Nursing research: generating and assessing evidence for nursing practice. 8th ed. Philedelphia: Wolters Kluver/Lippincott Wiliams & Wilkins.

Qinisile, N.P. (2013). Perceptions of first-year students regarding engaging in sexual behaviors at a university campus. [Online] https://scholar.sun.ac.za/bitstream/handle/10019.1/80301/qinisile_perceptions_2013.pdf?sequence=1&isAllowed=y [Accessed 29/10/2018]

Ramathuba, D.U., Khoza, L.B. & Netshikweta M.L. (2012). Knowledge, attitudes and practice of secondary school girls towards contraception in Limpopo Province. [Online] 35(1). *Curationis* http://dx.doi.org/10.4102/curationis.v35i1.45 [Accessed 17/04/2016].

Raselekoane, N.R., Morwe,K.G., Tshitangano, T. (2016). University of Venda's male students' attitudes towards contraception and family planning. *African Journal of Primary Health Care & Family Medicine*. 8(2). [Online] https://phcfm.org/index.php/phcfm/article/view/959 [Accessed 11/10/2017].

Santos M.J., Ferreira E., Duarte J. & Ferreira M. (2018) Risk factors that influence sexual and repro+ductive health in Portuguese university students. International Nursing Review. 65. [Online] https://onlinelibrary.wiley.com/doi/abs/10.1111/inr.12387 [Accessed 11/10/2018].

Seutlwadi, L., Peltzer, K., Mchunu, G. & Tutshana, B.O. (2012). Contraceptive use and associated factors among South African youth (18-24 years): a population-based survey. [Online] 18(2) *South African Journal of Obstetrics and Gynaecology.* http://www.sajog.org.za/index.php/SAJOG/article/view/504/280 [Accessed 05/06/2016].

Shorey, R. C., Stuart, G. L., & Cornelius, T. L. (2011). Dating Violence and Substance Use in College Students: A Review of the Literature. *Aggression and violent behavior*, *16*(6). [Online] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3224085/ [Accessed 02.03.2019].

Shiferaw, Y., Alemu, A., Assefa, A., Tesfaye, B., Gibermedhin, E., Amare, M. (2014). Perception of risk of HIV and sexual risk behaviours among University students: implication for planning interventions. BioMed Central. Research Notes. 7. [Online] https://doi.org/10.1186/1756-0500-7-162 [Accessed 11/10/2018].

Siegel, D., Klein, D.I. & Roughman, K.J. (1999). Sexual behaviour, contraception, and risk among college students. *Journal of Adolescent Health* [Online] 25 http://www.jahonline.org/article/S1054-139X(99)00054-3/ [Accessed 03/02/2016].

South African Nursing Council. (2004). Government Notice R2175. South African Nursing Council. Regulations relating to registration as an Enrolled Nurse. [online] http://sanc.co.za/regulat/Reg-nen.htm [Accessed 27/02/2019]

South African Nursing Council. (2004). Government Notice R683. South African Nursing Council. Regulations relating to the minimum requirements for a bridging course for Enrolled Nurses leading to registration as a General Nurse or a

Psychiatric Nurse [online] http://sanc.co.za/regulat/Reg-brg.htm [Accessed 27/02/2019]

South African Nursing Council. (2004). Government Notice R425. South African Nursing Council. Regulations Relating to the Approval of and the Minimum Requirements for the Education and Training of a Nurse (General, Psychiatric and Community) and Midwife leading to Registration. [online] http://sanc.co.za/regulat/Reg-nen.htm [Accessed 27/02/2019]

Somba, M.J., Mbonile, M., Obure, J. & Mahande, M.J. (2014). Sexual behaviour, contraceptive knowledge and use among female undergraduate students of Muhimbili and Dar es Salaam Universities, Tanzania: a cross sectional study. *BioMed Central. The Open Access Publisher: Women's Health* [Online] 14. http://www.biomedcentral.com/1472-6874/14/94 [Accessed 02/02/2016].

Stenhammar, C. Ehrsson, Y.T., Akaerud, H., Larsson, M. & Tydén, T. (2015). Sexual and contraceptive behaviour among female university students in Sweden: repeated surveys over a 25-year period. [Online] *ACTA Obstetricia et Gynaecologia Scandanavia.* 94. http://dx.doi.10.1111/aogs.12656 [Accessed 16/04/2016].

Thongnopakun, S., Maharachpong, N., Abdullakasim, P. (2016) Factors Related to the Sexual Behaviours among Youth in Universities Located in the Eastern Region of Thailand. J Med Assoc Thai. [Online] Jan 99(1) http://www.thaiscience.info/journals/Article/JMAT/10985999.pdf [Accessed 17/04/2016].

Ugoji, F.N. (2013). An examination of university student's attitude to contraceptive use. *American International Journal of Social Science* 2(1) [Online] http://www.aijssnet.com/journals/Vol_2_No_1_January_2013/3.pdf [Accessed 07/05/2016].

Wang R., Yang Y., Chen R., et al. (2015). Knowledge, Attitudes, and Practices (KAP) of the Relationship between Air Pollution and Children's Respiratory Health in Shanghai, China. *International Journal of Environmental Research and Public Health*. [Online] 12(2) https://doi:10.3390/ijerph120201834 [Accessed 11/11/2017].

Wang, H., Long, L., Cai, H., et al. (2015). Contraception and unintended pregnancy among unmarried female university students: A cross-sectional study from China. *Public Library of Science ONE*. [Online] https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0130212 [Accessed 10/05/2016]

Yared, A., Sahile, A., Mekuria, M. (2017). Sexual and reproductive health experience. Knowledge and problems among university students in Ambo, central Ethiopia. *Reproductive Health.* [Online] https://link.springer.com/content/pdf/10.1186%2Fs12978-017-0302-9.pdf [Accessed 12/11/2017]

ANNEXURE 1: Questionnaire

Reproductive Health Knowledge, Attitudes & Practices of Students in Private a Nursing College

This questionnaire consists of five (5) pages. Please answer each question by inserting a tick (√) the appropriate block(s) or provide your answer as indicated on the questionnaire.

Section A: Demographic Information			Office use only
1. Gender	☐ 1. Female	☐ 2. Male	
2. Programme & Year of Study	☐ 1. PEN 1 ☐ 2. PEN 2	☐ 3. BC/OB 1 ☐ 4. BC/OB 2	
3. Age	Specify _____		
4. Ethnic Origin	☐ 1. Black ☐ 2. Colored ☐ 3. Indian	☐ 4. White ☐ 5. Other: Specify _____	
5. Religious Affiliation	☐ 1. African Traditional ☐ 2. Christian ☐ 3. Hindu	☐ 4. Islam ☐ 5. Judaism ☐ 6. Other: Specify _____	
6. Residence	☐ 1. Living in own home ☐ 2. Living with parents ☐ 3. Living alone	☐ 4. Living with partner ☐ 5. Living with family/friends ☐ 6. Other: Specify _____	
7. Marital Status	☐ 1. Never married ☐ 2. Married ☐ 3. Divorced	☐ 4. Widowed ☐ 5. Staying with partner ☐ 6. Other: Specify _____	
8. Number of children	Specify _____		
9. Sexual Preference	☐ 1. Heterosexual ☐ 2. Bisexual	☐ 3. Homosexual ☐ 4. Other: Specify _____	

Section B: Objective I				
	TRUE	**FALSE**	**UNSURE**	
1. The menstrual cycle begins with the shedding of the endometrium.				
2. Ovulation happens approximately midway during the menstrual cycle.				
3. I have sufficient knowledge about the reproductive system				
4. Pregnancy can occur if the ovum is exposed to sperm once ovulation has occurred				
5. Correct condom use (male/female) can reduce the risk of transmission of HIV and sexually transmitted infections				
6. Sexually transmitted infections can be transmitted via oral and anal intercourse.				
7. Oral and injectable contraceptives may reduce the incidence of sexually transmitted infections (STIs)?				
8. I have sufficient knowledge about reproductive health risks and their consequences (STIs, HIV, unplanned pregnancy)				
9. Oral contraceptives work by interrupting pregnancy if conception has occurred				
10. I have sufficient knowledge about contraception.				
11. Please indicate which contraceptive methods you are familiar with, with specific reference to indications, advantages and side effects: (Select all that apply)	☐ 1. Oral contraceptives ☐ 2. 2 monthly injection ☐ 3. 3 monthly injection ☐ 4. Female condom ☐ 5. Male condom ☐ 6. Emergency contraception ☐ 7. Patch ☐ 8. Implant ☐ 9. Intrauterine device ☐ 10. Other: Specify _____			

Section C: Objective II			
Please indicate your response on the scale 1-5 provided for each question.		Answer	
1. I believe that one should abstain from sex until marriage	1 = strongly agree 2 = agree 3 = neutral 4 = disagree 5 = strongly disagree		
2. I believe that contraception is a women's responsibility	1= strongly agree 2 = agree 3 = neutral 4 = disagree 5 = strongly disagree		
3. Using contraception is against my religious views	1= strongly agree 2 = agree 3 = neutral 4 = disagree 5 = strongly disagree		
4. Pregnancy is a normal part of life and should not be prevented	1= strongly agree 2= agree 3 = neutral 4= disagree 5 = strongly disagree		
5. I believe that termination of pregnancy is the only option to unplanned pregnancy for a student	1= strongly agree 2= agree 3 = neutral 4= disagree 5 = strongly disagree		
6. I expect to know the HIV status of my sexual partner	1= strongly agree 2= agree 3 = neutral 4= disagree 5 = strongly disagree		

Section D: Objective III			
1.	The first time I experienced sexual intercourse	☐ Never had sex Age: Specify _____	
2.	How many sexual partners do you currently have?	☐ 1. None ☐ 2. Number: Specify _____	
3.	Do you use condoms when you are sexually active	☐ 1. Always ☐ 3. Never ☐ 2. Sometimes ☐ 4. Not sexually active	
4.	Have you ever used Emergency Contraception?	☐ 1. Yes ☐ 3. N/A ☐ 2. No	
5.	Have you/your partner terminated a pregnancy	☐ 1. Yes ☐ 3. N/A ☐ 2. No	
6.	Have you or your partner been under the influence of alcohol or substances before engaging in sexual activity	☐ 1. Yes ☐ 3. N/A ☐ 2. No	
7.	Have you ever voluntarily had an HIV test	☐ 1. Yes ☐ 2. No	
8.	How old were you when your first started using contraceptives?	AGE_____ ☐ N/A	
9.	Which method(s) are you currently using? (Select all that apply)	☐ 1. Oral contraceptives ☐ 2. 2 monthly injection ☐ 3. 3 monthly injection ☐ 4. Female condom ☐ 5. Male condom ☐ 6. Emergency contraception ☐ 7. Patch ☐ 8. Implant ☐ 9. Intrauterine device ☐ 10. Not using any ☐ 11. Other: Specify _____	

10. Where do you get your contraceptive(s) from?	☐ 1. Family planning clinic ☐ 2. Private pharmacy service ☐ 3. General Practitioner ☐ 4. Gynecologist ☐ 5. Don't use any ☐ 6. Other: Specify _____	
11. Have you ever stopped taking your contraceptive?	☐ 1. Yes ☐ 2. No ☐ 3. N/A – not using	
12. What was the reason for stopping? (Select all that apply)	☐ 1. Side effects ☐ 2. Forgot ☐ 3. Ran out ☐ 4. Partner request ☐ 5. Wanted to become pregnant ☐ 6. Cost ☐ 7. Other: Specify _____	
13. Do you find easy/convenient to attend family planning clinics?	☐ 1. Yes ☐ 2. No ☐ 3. N/A – not using	
14. If you answered NO to Q.38: What makes it difficult to access the clinic?	☐ 1. Far to travel ☐ 2. Expensive to travel/access ☐ 3. Operating hours ☐ 4. Staff attitudes ☐ 5. Other: Specify _____	

Thank you for your time, honesty and participation in this study!

Should the completion of this questionnaire result in the need to speak to a qualified Counselor, please contact:

Ms Adelina Pires on 082 470 1183 for telephonic/face-to-face counselling. Remember to indicate that it relates to participation in this study.

ANNEXURE 2: Ethics Clearance - University of the Western Cape

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
F: +27 21 959 3170
E: research-ethics@uwc.ac.za
www.uwc.ac.za

07 April 2017

Ms PE Forsyth
School of Nursing
Faculty of Community and Health Sciences

Ethics Reference Number: HS17/1/25

Project Title: The reproductive health knowledge, attitudes and practices among student nurses at a selected private nursing college in South Africa.

Approval Period: 05 April 2017 – 05 April 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

ANNEXURE 3: Ethical Clearance and approval letter – study site

MEDICLINIC

RESEARCH APPLICATION – PE FORSYTH

Date: 20 April 2017

FOR APPROVAL

G VAN WYK — Chief Human Resources Officer

NOTES

Locality	• Cape Region Learning Centre
Value of Study	• Confirmed
Employee	• Yes
Topic/Title	• The reproductive health knowledge, attitudes and practices among student nurses at a selected private nursing college in South Africa.
Impact	• PFN and Bridging students (N=207)
Supported by hospital	• Supported by: J Olivier and A van Zyl

ANNEXURE 4: Covering letter

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959 9346, Fax: 27 21-959 2679
E-mail: mbimerew@uwc.ac.za

INFORMATION SHEET

Project Title: The reproductive health knowledge, attitudes and practices among student nurses at a selected private nursing college in the Western Cape.

What is this study about?
This is a research project being conducted by Patricia Forsyth at the University of the Western Cape. We are inviting you to participate in this research project because your contribution is valuable in understanding the reproductive health knowledge, practices and attitudes among student nurses at a private nursing college in the Western Cape.

The purpose of this research is to describe the reproductive health knowledge, practices and attitudes among student nurses at a private nursing college in the Western Cape, in order to understand the current reproductive health needs of students in this environment.

What will I be asked to do if I agree to participate?
You will be asked to complete an anonymous questionnaire consisting of 4 Sections. The sections will cover knowledge you may have about the reproductive system, contraception, sexual health risks, your feelings about these aspects and your own experiences. The questionnaire will take approximately 25 minutes to complete. Once you have completed the questionnaire you will need to return it in the self sealing envelope, to the researcher.

Would my participation in this study be kept confidential?
The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, the questionnaire is anonymous and will not contain information that may personally identify you. The questionnaire will be coded so that the researcher may only identify which programme the returned questionnaires are from. The same code will be used in data analysis and reporting and therefore no identifiable information relating to the campus will be included. Only the researcher will have access to the code's identification key

To ensure your confidentiality, returned anonymous questionnaires will be stored in a locked cabinet for a period of 5 years and thereafter they will be shredded. Only the researcher and supervisor will have access to the cabinet. Information that is stored electronically will be stored with password protection and will only be accessible by the researcher, supervisor and statistician for data analysis purposes. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?
There may be some risks from participating in this research study. 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.

Due to the sensitive nature of disclosing reproductive and sexual health related information, you may be reminded of experiences that may be upsetting. In this event, should you require counselling after completion of the questionnaire, please contact: **Ms Adelina Pires (082 470 1183)** for prearranged counselling.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about private nursing student's reproductive health knowledge, attitudes and practices.
We hope that, in the future, other people might benefit from this study through improved understanding of private nursing student's reproductive health needs and the establishment of reproductive health services.

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

Your participation in this research is completely voluntary. Participation in the research is not a course requirement. 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 in any way.

What if I have questions?

This research is being conducted by Patricia Eileen Forsyth, School of Nursing at the University of the Western Cape. If you have any questions about the research study itself, please contact Patricia Forsyth at: **084 567 8901 or** 3419120@myuwc.ac.za.

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Dr Sathasivan Arunachallam
Acting Director: School of Nursing
University of the Western Cape
Private Bag X17
Bellville 7535
srunachallam@uwc.ac.za

Prof José Frantz
Dean of the Faculty of Community and Health Sciences
University of the Western Cape
Private Bag X17
Bellville 7535
chs-deansoffice@uwc.ac.za

This research has been approved by the University of the Western Cape's Humanities and Social Sciences Research Ethics Committee

(REFERENCE NUMBER:HS17/1/25)

ANNEXURE 5: Proofreading and Editing Certificate

Busy Bee EDITING

57 Beach Road, Melville, Port Shepstone, Kwa-Zulu Natal, 4240

+27 72 244 4363 or +27 82 781 5103

brendavanrensburg2@gmail.com or hugochandler49@gmail.com

www.busybeeediting.co.za

Proofreading and Editing Certificate

TO WHOM IT MAY CONCERN

This is to certify that we Brenda van Rensburg and Hugo Chandler are both **professional freelance proof readers and editors.** For the past ten years we have been providing **proofreading, editing, layout, syntax, spelling** and grammar checks as well as graphic design **services to university students for their theses,** reports and dissertations, as well as authors **for their manuscripts. We will gladly provide references** if needs be.

We have completed doing the proofreading, editing, layout, syntax, spelling and grammar check on a 24 917 word / 80-page Thesis for PATRICIA FORSYTH (Student No. 3419120) submitted in partial fulfilment of the requirements for a MASTER'S DEGREE in Nursing (Advanced Midwifery) at the School of Nursing, Faculty of Community and Health Sciences, at the University of the Western Cape.

Brenda van Rensburg

Brenda van Rensburg

Hugo Chandler

Hugo Chandler

Date: 15 October 2018