

**EXPLORING KNOWLEDGE, ATTITUDES AND PRACTICES AMONG
UNDERGRADUATE FEMALE STUDENTS LIVING IN TERTIARY INSTITUTION
RESIDENCES IN KWAZULU-NATAL WITH REGARDS TO THE USE OF
CONTRACEPTIVES**

BY

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RESEARCH DISSERTATION

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DECLARATION

I, Mrs. Precelia Gopaul, declare that this dissertation hereby submitted to the University of KwaZulu-Natal, for the degree of Masters in Community Health Nursing has not been previously submitted by me for a degree at this university or any other university. This is my work in design and execution and all the material herein has been acknowledged.

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DEDICATION

This dissertation is dedicated to all university students, with a view to help students make informed, decisive decisions with regards to reproductive health, such that unwanted pregnancies can be avoided.

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ABBREVIATIONS

FP	Family planning
HBM	Health Belief Model
HIV	Human immuno-deficient virus
IUCD	Intra-uterine contraceptive device
KAB	Knowledge, attitude, belief
KAP	Knowledge, attitude, practice
PCC	Post-coital contraceptive
STI	Sexually transmitted infections
TOP	Termination of pregnancy

Abstract

Background: Risky sexual behaviour is a significant part of an undergraduate student life, which can often result in unintended pregnancies, leading to major social and public health concerns. Despite the free availability of contraceptives at tertiary institutions in KwaZulu-Natal, the number of undergraduate students becoming pregnant continues to increase.

Aim of the Study: To explore the knowledge, attitudes and practices among female undergraduate students in tertiary institution residences in KwaZulu-Natal with regards to contraceptive use.

Method: A quantitative exploratory descriptive survey was conducted to explore the knowledge, attitude and practice among ninety-seven female undergraduate students living in campus residences in a tertiary institution in KwaZulu-Natal. The conceptual framework used for this study was the Health Belief Model, according to which health-related actions can be influenced positively by one's knowledge, attitude and practice if one perceives the severity of a negative health condition. A hand-delivered, self-administered questionnaire was used to collect data, containing 27 items divided into five sections, including the demographic profile of participants, and questions pertaining to knowledge, attitude and practice, as well as barriers /factors promoting contraceptive use. Data was entered and analysed using the SPSS version 23 package.

Results: Among the participants, n=95 (97.9%) indicated that they were knowledgeable of the contraceptives methods, while n=89 (91.8%) participants indicated that contraceptives prevented pregnancies; yet, unintended pregnancies remain a major problem amongst university students. A majority of the students had a positive attitude towards contraceptive use, where n=75 (77.3%) of the participants indicated that contraceptive education should begin at puberty. Results indicated that a large percentage of the participants were not aware of some of the methods of contraception that are available to them, namely spermicidal: n=93 (95.9%); dermal patch n=82 (84.5%); natural family planning: n=78 (80.4%); and the intra-uterine device: n=76 (78.4%); which may be the reason for the low percentage of participants that practice these methods. It was found that n=3 (3.1%) of the participants practiced the spermicidal method; n= 2 (2.1%) the dermal patch; n=3 (3.1%) natural family planning and n=5 (5.2%) the intra-uterine device. The contraceptive participants practiced most with was condoms n=59 (60.8%), followed by injectable contraceptives n=34 (35%), and oral contraceptives n=14 (14.4%), respectively. A low percentage of the participants indicated that there were barriers to contraceptive use, where n=6 (6.2%) participants indicated that they do not know how close a reproductive health service is to them, n=18 (18.6%) indicated that they cannot easily access the family planning clinic at their campus and n=15 (15.5%) indicated that the clinic hours are not convenient for them. A

majority of the participants n=80 (82.5%) indicated that the campus clinics promoted the use of contraceptives amongst students. The results in the current study indicated a high level of awareness of contraceptive methods, as shown in Table 5, p. 36, and a low percentage of practice of those very same contraceptive methods as shown in Table 8, p. 42.

Conclusion: A majority of the students were knowledgeable about the convenient contraceptive methods, and have positive attitudes towards them, but practices with contraceptives remained inadequate, although participants indicated minimal barriers to reproductive health services. There is a need to further explore student-friendly methods to reach out to students to accept and practice contraception as part of their daily lives.

Key words: knowledge, attitude, practice, undergraduate, tertiary institution, residence, contraceptives, Health Belief Model

Chapter 1 – INTRODUCTION

1.1 BACKGROUND

The primary objective of any academic institution is to enhance the academic and personal wellbeing of their students. A university education goes beyond career opportunities, higher pay, and a successful future, where it should provide students with knowledge to form habits and practices that must last a lifetime. The main motive for students entering tertiary institutions is the desire to improve their labour-market prospects and fulfill their career aspirations (Callender, 2009).

Becoming a parent is a life-altering phenomenon, regardless of age, race, education and socio-economic circumstances. Parenthood places an overwhelming responsibility on the student. For a student, especially one who lacks the support of family, this experience can be a daunting and a challenging one (Texas Comprehensive Centre, 2012).

To meet a student's academic goals and aspirations, contraceptive options must be made available to them so that unintended pregnancies, abortions, STI's and HIV infections can be avoided. The impact of pregnancies on students in tertiary institutions has immense problems for both the institution and the student herself. For the institution, the high dropout rate may result in financial loss, and it also affects the throughput targets of the institution. For the student, it affects her emotional and bio-psychosocial wellbeing, relationships, and ultimately, her academic performance (Vermaas, 2010). According to Mokagtle & Motuma (2014) knowledge of contraceptives is a prerequisite for their utilisation, thus, it is imperative that both government and non-government organisations intervene to ensure interventions are in place to make adolescents aware of and knowledgeable about contraception. Parenthood is a leading cause of students dropping out from educational institutions, and less than two percent of young mothers attain a college degree by the age of 30 (The National Campaign to Prevent Teen Pregnancy, 2012).

According to certain studies, students lack knowledge with regards to contraceptive use (Bana, Bhat, Godlwana, Libazi, Maholwana, Marafungana & Mona, 2010), and students are not emotionally ready to deal with university work and care for a baby (Hooper 2009), thus, when faced with unintended pregnancies, they may turn to legal or illegal abortions, abandoning babies, emergency contraception and adoptions.

University students, as a population of young adults, are at a higher risk of contracting HIV, STIs and unintended pregnancies, due to their higher levels of sexual experimentation, unsafe sexual practices, and risky sexual behaviour (Hoque & Ghuman, 2012). Risky sexual behaviour is a significant part of an undergraduate students' life, which most often results in unintended pregnancies, leading to major

social and public health concerns. Many studies have shown that, due to student's ignorance, attitudes and practices about contraceptives and reproductive health issues, they have become prey to unintended pregnancies, abortions, STIs and HIV infections (Tilahun, Assefa & Belachew, 2010; Olaitan, 2010; Mung'ong'o, Mugoyela & Kimaro, 2010). Risky sexual behaviour, according to Hoque (2011), is characterised by experimentation among university students, who live and socialise with other adults, which encourages sexual activity that are not mutually monogamous. A survey conducted by LoveLife (2012) indicates that 79.7% of women reported that they did not intend to get pregnant, and 71.2% said they did not understand how pregnancy happens. Pregnancy is an indicator that young people are having unprotected sex, and is a strong predictor of unwanted pregnancies, and lack of contraceptive use amongst young women (LoveLife, 2012). Despite the free availability of contraceptives at tertiary institutions, the number of undergraduate students becoming pregnant continues to increase (Patel & Kooverjee, 2009). Non-regular partners, unprotected sex and cross-generational sex (keeping so-called 'sugar daddies') among university students are common practices (Mehra, Agardh, Petterson & Ostergren, 2012). Being away from home and living in a setting with no parental or family supervision may be a factor in promoting their sexual debut. Many students may also feel inclined to experiment in activities that they were told were for adults, or feel the need to indulge in sexual activity due to peer pressure (El-Adas, 2012).

Shortly after his inauguration, President Obama announced at Howard Community College graduation ceremony in the USA that "initiatives to prevent pregnancy by making students more aware on reproductive issues, in tertiary institutions [was to be] part of [his] innovation strategies to improve students completing their studies in universities/tertiary institution" (The National Campaign to Prevent Unwanted Pregnancy, 2009, p. 1). Globally, world leaders are seeking initiatives that may reduce unintended pregnancies among students in tertiary institutions; and studies have shown that a lack of knowledge, attitudes and practices of contraceptive use may all be factors that result in unintended pregnancies. Unintended pregnancy among students is a social issue that severely jeopardises the quality of life for both parents and their children. University age women between the ages of 20 and 24 have one of the highest rates of unintended pregnancies amongst women in society, due to the lack of contraceptive use and unsafe sexual practices (The National Campaign to Prevent Unwanted Pregnancies, 2009).

The South African Government is worried about escalating abortions. According to SowetanLIVE (2012), students in tertiary institutions are not using contraceptives, thus exposing themselves to unwanted pregnancies, HIV and STI infections. South African Health Minister Aaron Motsoaledi released the statistic that a total of 77,771 legal abortions were performed in South Africa in 2011, a figure confirmed by JOY (2012).

These figures are a major concern to the South African Department of Health, not only due to the high statistics, but also to the fact that so many people have unprotected sexual intercourse, despite the fact that contraceptives are freely available at governmental health institutions. Since 80% of females in tertiary institutions are sexually active and not seeking to become pregnant, it is important to provide these women with effective contraceptive options (Bryant, 2009).

Inaccurate or inconsistent information on contraceptives indicates a need to educate university students on sexual reproductive health matters. Universities are faced with the problem of unintended pregnancies amongst students, where research is needed on how best to improve the unmet needs of the students with regards to reproductive health (Akintade, 2010). If needs can be identified, institutions can plan how best to address these needs, so that unintended pregnancies, STIs and HIV infections may be decreased. Many of the studies reviewed indicate the lack of effective knowledge, attitude and practice of contraceptives among students to be one of the many reasons why students are faced with pregnancy dilemmas (Bana et al., 2010; The National campaign to Prevent Teen and Unplanned Pregnancy, 2012; Vermaas, 2010; University World News, 2012; Ngozi, 2013). A better understanding of the knowledge, attitudes and practices of why university students have difficulty in using contraceptives may strengthen programmes and policies designed to reduce unwanted pregnancies among university students (Akintade, 2010).

Knowledge and positive attitudes and practices with regards to contraceptive use can prevent the number of unwanted pregnancies, STIs and HIV infections amongst university students. Sexual and reproductive health education are among the six top priorities for the youth, due to the alarming rates of unplanned pregnancies amongst this category of people (National Dept. of Health, 2010/11). Key intervention strategies that relate to contraception include facilitating easy, cheap and private access to all forms of contraception, using multi-media methods to provide information to youth and young adults about sexual matters, and integrating sexual and reproductive health services (National Dept. of Health, 2010/11).

Marketing and making contraceptives widely available to students will reduce the number of unintended pregnancies at universities. Quality contraceptive services must be client-centred, where a range of contraceptives must be offered. Access to long-term family planning methods must also be made available to young adults, especially students, so that unintended pregnancies leading to unsafe abortions and STIs can be prevented. IUCD and implants, which are long-term contraceptives, are available free of charge from the Department of Health in South Africa (National Dept. of Health, 2014).

Contraception is one of the major determinants of fertility levels, as it measures potential births. Contraceptive use has increased worldwide, but remains low among sexually active young women, due to the lack of access to family planning methods and family planning education, resulting in some 76 million unintended pregnancies each year in developing countries (Graczyk, 2012). Socio-cultural and religious norms and practices impact the use of contraceptives. Religious beliefs preventing girls from using contraceptives and cultural beliefs that girls should only use contraceptives when they are married, are barriers to contraceptive use (Jones, Marshall & Alder, 2012). In the developing world, an estimated 122.7 million women have an unmet need for contraception, leading to unwanted pregnancies, unsafe abortions, and even death. Each pregnancy puts the young adult at risk of dying from complications of pregnancy or childbirth. Maternal mortality rates are particularly high for young women, where pregnancy is the leading cause of death for young women ages 15 to 19 years (Graczyk, 2012).

A study done in Ghana demonstrated that little had been done to investigate the knowledge, attitudes and practices of university students with regards to unintended pregnancy, probably because they are not considered a “deprived population”, due to their prospective middle-class status (El-Adas, 2012). Female students in tertiary institutions of higher learning are at an age and in a social context, where risky social and sexual behaviours are common (alcohol abuse, drug abuse, hostel type housing, sexual abuse, etc.). This makes them extremely susceptible to unintended pregnancy, and the consequences of unsafe abortions (El-Adas, 2012).

Student pregnancies at tertiary institutions are increasing every year, despite the assumption that students have sufficient knowledge of contraceptives and the risks of unprotected sex (Vermaas, 2010). A study conducted on the high drop-out rate of South African students at university found it to be one of the factors contributing to the increase in the drop-out rate is pregnancy (University World News, 2012). The level of unwanted pregnancies, HIV infections and STIs among young people in South Africa is a matter of grave concern (Mchunu, Peltzer, Tutshana & Seutlwadi, 2012). Universities are struggling to solve the issue of the high number of females falling pregnant, and have called on support systems like the Health Department to help by hosting Family planning (FP) and Pregnancy Awareness Campaigns (University World News, 2012).

At most tertiary institutions reviewed, campus health support services are available to all university students that require counselling, health information and healthcare. The campus health clinic provides primary healthcare services that meet most of the health care needs of students. In the campuses under study, reproductive healthcare services are available from 0800hrs to 1600hrs, from Monday to Friday. Services are offered free of charge and provided by professional health staff.

1.2 The ‘sugar daddy, sugar baby’ phenomenon

North West Premier Thandi Modise stated that lack of contraceptive knowledge has led to many young girls becoming pregnant by “sugar daddies”. She also stated that these men pay large amount of money to girls for unprotected sex with the hope of being cured from HIV infection (AllAfrica, 2013).

So-called ‘Blessers’ are a new generation of South African ‘sugar daddy’. Health Minister Aaron Motsoaledi has launched a three-year campaign to keep young girls away from blessers. The campaign will focus on girls and young women in the age group 15-24, and for the men who are infecting and impregnating these girls (Adams, 2016).

The incidence of prostitution and various forms of promiscuous behaviour associated with students of tertiary institutions coupled with lack of knowledge on contraceptives, sexually transmitted diseases and HIV, are of major concern to society (Ngozi, 2013). The intergenerational sex or transactional sex commonly known by the moniker of the ‘sugar daddy’, also plays a role in the unintended pregnancy and HIV transmission crisis globally. According to Fairbanks (2011), college students are one of the biggest segments of society becoming “sugar babies” for “sugar daddies”, and the numbers are continually on the increase. College students are looking for “sugar daddies” in exchange for sex, to help them pay their college debts, while wealthy men well past their prime are paying large sums of money on college bills for sex with women half their age (Fairbanks, 2011). According to Ramafoko, the chief director of the Soul City Institute for Health and Development Communication, the ‘sugar daddy’ phenomenon is prevalent in South Africa, amongst other countries. He stated that universities know this is happening, the older men buy the young women gifts and there is pressure on the girls at campuses to look a certain way, thus making young women vulnerable to a man’s offer (John, 2012). These men pay the student’s rent, buy the girl’s airtime, pay

tuition fees and pay for hair and nails. Due to the difference in ages between the girls and the men, the women are hyper-vulnerable to indulge in unprotected sex and risky behavior under coercion, increasing the chances of an unintended pregnancy. In January 2012, the KwaZulu-Natal Department of Health launched a campaign against sugar daddies. Topics discussed at this campaign included contraceptive education, access to contraceptives, HIV, STIs and Pregnancy abstinence, improving life skills, sex and relationship education (John, 2012).

1.3 Problem statement

A major study done in seven universities around South Africa has found that 40% of South African students drop out of university in their first year of study, for a number of reasons, some of which are a lack of reproductive health information, resulting in

unplanned pregnancies, lack of finance, and lack of information regarding career choices (University World News, 2012). According to Hoque (2011), in South Africa, about 75% of unplanned pregnancies occur amongst unmarried women. Similarly, in the USA, a study done by the Higher Education and Student Affairs Programme, showed that 12% of university students in Virginia Polytechnic Institute and the State University either experienced or had been involved in an unplanned pregnancy, although this percentage may be as high as 23 percent, when accounting for those unplanned pregnancies that go unreported. Students need to seek assistance from their campus health and other health facilities offering full contraceptive services, so that they can make informed decisions about their sexual reproductive health (Hooper, 2009). Unplanned pregnancies are a global phenomenon among university students.

Below are statistics for the year 2013 from the three campuses in KwaZulu-Natal that are under study:

CAMPUS	PREGNANT	STI	HIV
A	146 - 7.5%	478 - 24.7%	109 - 5.6%
B	84 - 5.7%	271 - 18.2%	10 - 0.7%
C	74 - 7.5%	273 - 27.8%	38 - 3.9%

(UKZN Clinic Statistics, 2013)

Permission to use the above statistics was obtained from the clinic manager of the university under study, as shown in Appendix 2. The above information from the university under study, shows that students are faced with unintended pregnancies, STI and HIV infections, which suggest a need for better and targeted sexual reproductive health education, and family planning services for university students, as a result of a lack of knowledge, poor attitude and poor contraceptive practices.

By increasing the knowledge, attitude and practice levels of female undergraduate students at university through educational campaigns, programmes and improved services, pregnancy, STI and HIV infection rates may decrease (Dept. of Health, 2015).

1.4 Aim

To explore the knowledge, attitudes and practices among female undergraduate students in tertiary institution residences in KwaZulu-Natal with regards to contraceptive use.

1.5 Research Objectives

1. To explore the knowledge, attitudes and practices of female university students with regards to the use of contraceptives.
2. To identify any barriers that may inhibit contraceptive use among female university students living in campus residences.
3. To identify any factors that may promote contraceptive use among female university students living in campus residences.

1.6 Research questions

To explore the knowledge, attitudes and practices of female university students with regards to the use of contraceptives

1. What current knowledge do female students living in university residences have with regards to contraceptives?
2. What attitudes do female students living in university residences have with regard to the use of contraceptives?
3. What are the current practices of female students living in university residences have with regards to contraceptive use?

To identify any barriers that may inhibit contraceptive use among female university students living in campus residences.

1. What are the barriers that hinder female students living in campus residences from using contraceptives?

To identify any factors that may promote contraceptive use among female university students living in campus residences.

1. What are the factors that will promote contraceptive use among students living in campus residences?

1.7 Significance of the study

In Nursing Education, the study may identify the needs and challenges that students have with regards to contraceptive knowledge. These may be met through educational talks on reproductive health in campus residences. The identified needs and challenges may also be discussed with the academic nursing department, with the intention of including a module on reproductive health for all first year university students.

In community health, this study may decrease the number of attendance in community clinics, due to fewer female university students becoming pregnant, fewer students having abortions, or having to seek out HIV and STI treatment.

In nursing research, this study may highlight issues that require further research to be done.

In nursing administration this study may help in devising strategies to promote the use of contraceptive use among female undergraduate students by, for example, initiating express queues for family planning, and creating a positive attitude among female university students with regards to contraceptive use.

1.8 Conceptual framework for this study

A theoretical framework is a group of statements composed of concepts related in some way to form an overall view of a phenomenon. They predict and explain health behaviour. They also serve as guides to practitioners and researchers, where they organise existing knowledge and aid in making new discoveries to advance nursing practice (Fitzpatrick & Kazer, 2011). Behaviour changes are keys to improving healthcare and health outcomes. Changing behaviours is not easy, but is more effective if interventions are based on evidence-based principles of behavioral change (Cane, O'Connor & Michie, 2012).

The conceptual framework used for this study is the Health Belief Model (HBM). The HBM is a well-tested, comprehensive social cognitive framework devised by Rosenstock as one of the first models to predict and explain variations in contraceptive behavior among women in the 1970s and 1980s (Hall, 2012). Many of the health problems faced today including unintended pregnancies amongst others (HIV/AIDS, heart disease), requiring public health action to change personal behaviour. Personal behaviour may be influenced by knowledge, attitude and practices (KAP). KAB surveys are based on the theory that an individual's knowledge, combined with their attitudes and beliefs, may predict their health-related behaviour (Katzenellenbogen, Joubert & Karim, 2007). The HBM attempts to explain and predict health behaviours. This is done by focusing on the attitudes and beliefs of the individuals. The HBM is based on the understanding that a person will take a health-related action if a person:

- Feels that a negative health condition e.g. unwanted pregnancy can be avoided;
- Has a positive expectation that by taking a recommended health action e.g. taking contraceptives such that she will avoid a negative health condition;
- Believes that he/she can successfully take a recommended health action with confidence and comfort (Polit & Beck, 2004).

The HBM has six constructs, representing the perceived threat and net benefits:

- Perceived susceptibility – when one perceives the threat of an unwanted pregnancy and its sequels (births, abortions, parenthood), this results in a need to use contraceptives.
- Perceived severity – when one recognises the seriousness of becoming pregnant (not being able to complete their studies, lack of financial support, abortions, fear of body changes), this may impact the likelihood of contraceptive use.
- Perceived benefits – these relate to the advantages of contraception mainly completing their studies, better job prospects, financial success, health promotion benefits e.g. protection against ovarian cancer, improved menstrual symptoms, acne, and STI and HIV infections, that will improve contraceptive use.
- Perceived barriers – these are the negative consequences of contraception e.g. weight gain, mood swings, inconvenience of taking the pill daily, side effects of the contraceptive of choice, partner preferences, and the stigma attached to contraceptive use amongst unmarried females, which has been found to inhibit use.
- Cues to action – stimuli that trigger the consciousness of a perceived threat and facilitate consideration of using contraceptives to remedy the threat e.g. missed menses, after intercourse, worry from the partner, counselling from a healthcare provider on contraceptive use.
- Self-efficacy – one's confidence in the ability to successfully make a decision to prevent an unwanted pregnancy by using a contraceptive (Hall, 2012).

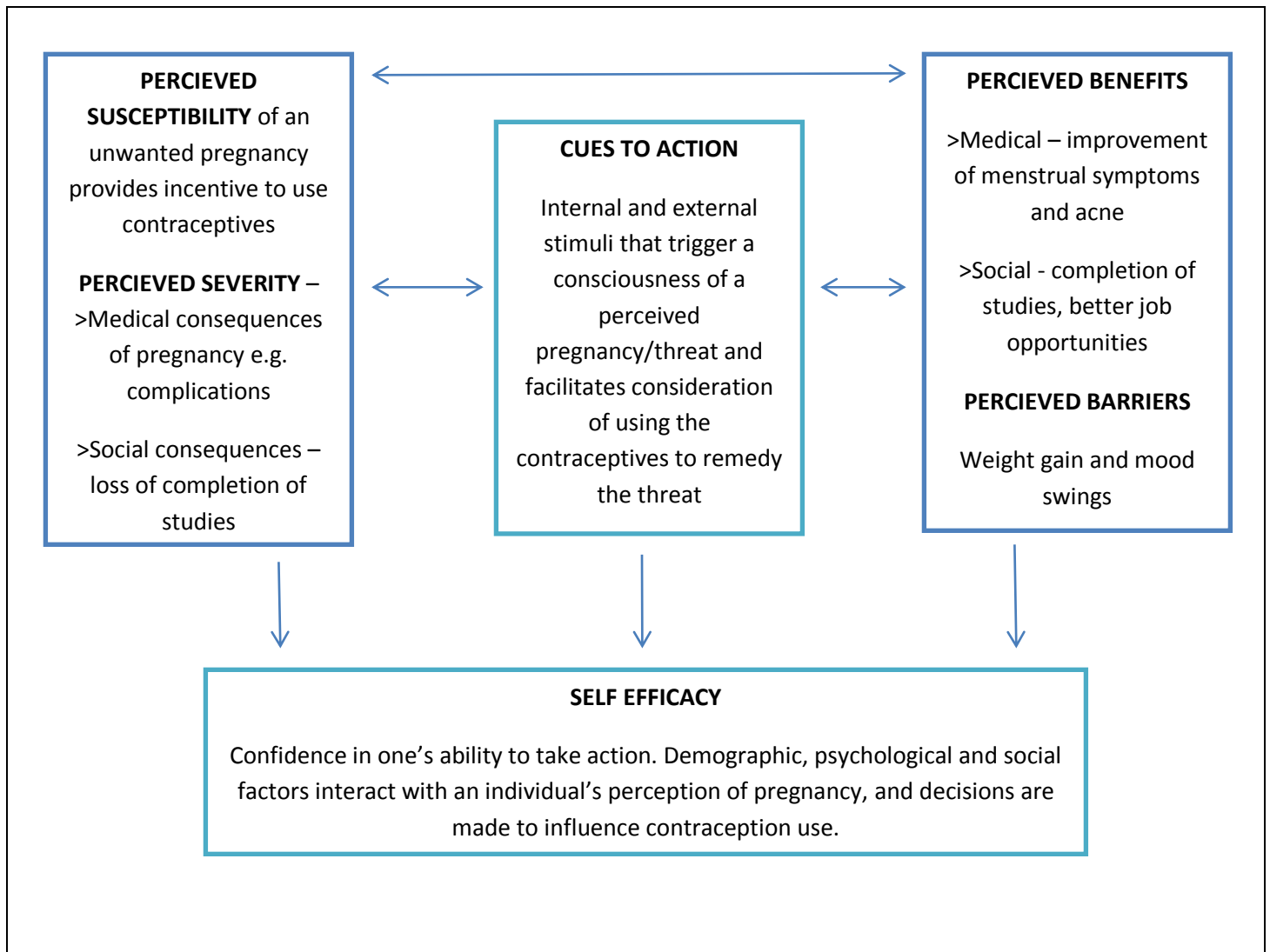


Figure 1 Constructs of Health Belief Model applied to contraceptive behaviour (2011)

The HBM's adaptability and holistic nature facilitate applications in diverse contexts, such as family planning; and with complex behaviours, such as contraceptive behaviour. Contraceptive behaviour, one form of family planning, refers to activities involved in the process of identifying and using a contraceptive method to prevent pregnancy, and can include specific actions, such as contraceptive initiation, continuation or discontinuation, misuse or non-use (Hall, 2012). Sufficient knowledge, attitude and practices must exist and be a motivating factor to prevent pregnancy, and to support the contraceptive behaviour decision-making process (Hall, 2012).

1.9 Conclusion

In this chapter an overview of the study is outlined. The following aspects have been discussed: the background information of the study, the 'sugar daddy'- 'sugar baby' syndrome, the problem statement, the aim, research objectives, research questions, significance of the research and the conceptual framework used for this study.

1.10 Operational definitions

Exploring refers to a method of systematic investigation (South African Oxford Dictionary, 2002). The researcher in this study aims to inquire into the knowledge, attitudes and practices that university students have with regard to contraceptives use.

Attitudes refer to a settled ways of thinking or feeling, typically reflected in a person's behaviour (South African Oxford Dictionary, 2002). In this study, it refers to a student's feelings and ways of thinking towards contraceptive use.

Knowledge refers to the theoretical or practical understanding of a subject (South African Oxford Dictionary, 2002). In this study, it refers to the knowledge the university students actually have with regards to contraceptives use.

Practice refers to one's usual way of carrying out or performing an activity regularly. In this study, it refers to the current, regular approaches students have with regards to contraceptive use.

Contraceptives refers to a device or drug serving to prevent pregnancy (South African Dictionary, 2002). This can be in the form of hormonal, mechanical or barrier methods.

Undergraduate student refers to a student at a university who has registered for an undergraduate degree and lives in a campus residence for the term.

University female student – in this study this includes female college students.

Chapter 2 - LITERATURE REVIEW

2.1 Introduction

Sexuality is the central aspect of being human throughout life and encompasses sex, gender, identities and roles, sexual orientation, pleasure and reproduction. Mankind experiences and expresses sexuality through fantasies, beliefs, values, behaviours, practices and relationships (Ngozi 2013).

The literature reviewed gave an overview as to the lack of contraceptive use resulting in high pregnancy rates among university/tertiary students in America, Australia, China, Africa and South Africa (Bryant, 2009; Calabretto, 2009; Wang, Long, Cai, Wu, Xu, Shu, Wang, Li, Wei, Shang, Wang, Zhang, Xiong & Yin, 2015; El-Adas, 2012; Hoque & Ghuman, 2012). The literature indicated how pregnancy negatively affected the lives of the students in relation to their studies. The challenges faced by the students and their institutions are also discussed in the articles.

2.2 Consequences of lack of contraceptive use and risky sexual behaviour

Risky sexual behaviour is common among young people. In a study done in the United States of America, about half of those aged between 15 to 19 years of age have tried vaginal sex, and about 75% of persons between the ages of 20 to 24 have multiple sexual partners, while in the same age group, a group of individuals that university students fall into, about 90% have had vaginal sex (Malhotra, 2012). According to Hoque (2011) in a study done in South Africa, university students are reportedly engaging in unsafe sex, which places them at a higher risk for unwanted pregnancies. According to a study done in Uganda, nearly 70% of the students were sexually active in the past twelve months showing premarital sex to be common. Young females joining universities often become sexually active, and the risk of unintended pregnancies point to a need to promote sexual and reproductive health services (Nsubuga, Sekandi, Sempeera & Makumbi, 2016). Failure to use contraceptives is regarded as risky sexual behaviour among unmarried female university students, which has the following consequences: unintended pregnancies, abortions both legal and illegal, sexually transmitted diseases; and failure to complete education, thus limiting future job prospects and jeopardising their child's wellbeing. Student pregnancies present a serious social and public health problem. Over the past decade there have been an ever-increasing number of female university/college students becoming pregnant. Studies from the past decade indicate previous students having similar issues as students of today. These issues include pressure to have sex, pressure to partake of alcohol and drugs, reluctance of students to discuss sexual issues with family and healthcare providers, misinformation about safer sex, and contraceptive measures (Kaiser Family Foundation, 2003). Student pregnancies at tertiary institutions worldwide

are increasing every year (Vermaas, 2010), where among half of all the pregnancies in America, approximately three million are unplanned, and about 38% of students have either become pregnant or have impregnated someone (The National campaign to Prevent Teen and Unplanned Pregnancy, 2012). Research has to be conducted on how pregnancies among students at tertiary institutions can be decreased. More than 1.1 million unplanned pregnancies occur amongst single women in their 20s each year, which is a group that includes tertiary students (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2012).

Family planning programmes strive to prevent unwanted pregnancies, to space births out, to limit family size and to allow couples to have children when they feel it is the right time. This ultimately has a positive influence on maternal mortality rates. Contraceptives play a major role in meeting these above needs (Ngozi, 2013).

2.3 Reasons for high pregnancy rates among students

According to Vermaas (2010) the high pregnancy rates amongst Tshwane students is due to lack of finance, lack of awareness and lack of sex education. Similarly, South African studies show high pregnancy rates among young people due to a lack of finance, lack of knowledge, students being too gullible in thinking that they will not fall pregnant, and poor choices. In contrast, an American study showed that students were under immense pressure to have sex, failed to discuss sexual issues, and frequently used drugs and alcohol, which played a significant role in students falling pregnant (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2009).

2.4 Students attitude towards contraceptives

Students from five studies show the following similarities concerning attitudes towards contraceptives and pregnancy:

- using contraceptives is important in preventing pregnancies;
- it is morally wrong to indulge in sexual acts before marriage, leading to a failure to use contraceptive methods;
- falling pregnant is due to lack of knowledge of contraceptives;
- students are stigmatised or afraid to visit the family planning clinic because of the negative attitudes of the health care providers;
- males felt that it was the responsibility of the females to prevent pregnancy;
- students are reluctant to come forward for contraceptives, due to misconceptions on contraceptives;
- fear of falling pregnant; and
- university students express a strong desire for more information about sex health (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2012; University World News, 2009; Bana et al., 2010; Ngozi, 2013; Vermaas, 2010).

2.5 Student knowledge regarding sexual health

Knowledge regarding sexual issues: According to Vermaas (2010), a South African study, students have sufficient knowledge of the risk of unprotected sex, but fail to use this knowledge, thus, the number of students who sought help as a result of unplanned pregnancies, abortion or post-abortion stress has increased by approximately 250% since 2005. The Kaiser Family Foundation (2003) shares the same views, that although students have sufficient knowledge about sexual issues, they fail to use this knowledge and continue to have unprotected sex. In contrast to this, The National Campaign (2012) states that the last time that students reportedly received information about sex and related issues was in high school, that many do not remember what they have been taught, and rely on outdated information. According to Qiaoqin, Masako & Xiaohona (2009), 40% of students are not sure of the role played by contraceptives, because very little attention is given to reproductive issues, including contraception, unintended pregnancies and abortions among unmarried women.

2.6 Financially needy students

The South African Government pays a child support grant to caregivers in need provided they meet the criteria for such a grant (South African Government, 2014). According to Vermaas (2010) students fall pregnant only to receive a social grant, not realising that caring for a baby costs much more than the actual grant. Similarly, according to Bana et al. (2010) and the publication in the University World News (2009), posit that financially needy students fall pregnant such that they might benefit from a social grant. According to the article in the University World News (2009), loans and bursaries do not cover the full cost of study, leaving poor students struggling to meet their living and other expenses. Due to this lack of finances, students resort to other measures to support themselves, one of which is the social grant, while extended families care for the child. Studies done by Kaiser Family Foundation (2003) and The National Campaign to Prevent Teen and Unplanned Pregnancy (2012) do not make any reference to financially needy students, but are in the agreement over the fact that unintended pregnancies among women in college increase financial stress. The article states that unplanned pregnancies can increase financial stress on those young men and women involved in a pregnancy, which can impede academic performance.

Pressure to have sex: both American studies reviewed are likewise of the view that university students are pressured to have sex (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2012; Kaiser Family Foundation, 2003), while the African studies reviewed (University World News, 2009 and Bana, et al., 2010), make no mention of sexual pressure, but are of the view that university students are reluctant to discuss sexual issues with family and healthcare providers.

Attitudes towards pregnancies: from the articles reviewed, most of the pregnancies among students were unplanned and unwanted, nevertheless, most of those that fell pregnant decided to keep their babies. Bana et al. (2010) describe that 85% of the families showed strong disapproval of the pregnancy, as parents have very high expectations of their children attending tertiary institutions, and most of them are first generation university students in their families, causing parents enormous distress when they drop out due to pregnancy (University World News, 2009).

The National campaign to Prevent Teen and Unplanned Pregnancy (2012) reiterates that 82% of the females that had their babies were required to look outside of their families for childcare and support. University students sampled from the five studies all agree that falling pregnant will negatively affect their studies (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2012; University World News, 2009; Bana et al., 2010; Ngozi, 2013; Vermaas, 2010).

Main Reasons for falling pregnant while at university: according to African studies by Bana et al. (2010) the University World News (2009) and Vermaas (2010) have all cited that little attention is given to sexual health issues, while the American studies, The National Campaign to Prevent Teen and Unplanned Pregnancy (2012) cited the immense pressure, without even thinking of the chances of falling pregnant, to have sex without protection, where a majority of the students sampled were sexually active at the age of 13 years.

In several African countries, surveys among university students showed that only three quarters of youth had heard about emergency contraceptives, and had a minimal amount of accurate knowledge about it (Tilahun, et al., 2010).

The understanding of knowledge, attitude and practices of contraceptives is critical for countries like South Africa, aiming to reduce unwanted pregnancies. According to a study done by Olaitan (2010), the most important means of prevention of unwanted pregnancy is the education of oneself about pregnancy, and being able to devise methods of preventing it.

A Study done by Flack & Holland (2013) in a South African University suggests that 12 percent of university students report either experiencing or being involved in an unplanned pregnancy, although this percentage may be as high as 23 percent, when accounting for unplanned pregnancies that go unreported. The literature suggests that many pregnancies at university are unplanned, where the female student's studies are disrupted. The impact of pregnancies on students' ranges from periods of absenteeism, failure, and potential drop out on the part of the mother (Vermaas, 2010).

2.7 Impact of lack of contraceptive use

Over the past decade, there have been an ever-increasing number of female university/college students that are becoming pregnant. Studies from the past decade indicate students having similar issues as the students of today. Issues such as pressure to have sexual intercourse, pressure to partake in alcohol and drugs, reluctance of students to discuss sexual issues with family, healthcare providers' misinformation about safer sex and misinformed about contraceptive measures (Kaiser Family Foundation, 2003). Student pregnancies at tertiary institutions worldwide are increasing every year (Vermaas, 2010). Half of all the pregnancies in the US, approximately three million are unplanned, and about 38% of students have either become pregnant, or have impregnated someone (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2012).

2.7.1 Grandparents burdened with raising grandchildren

The raising of grandchildren by grandparents is a growing phenomenon worldwide. Grandparents take on this parent role for a number of reasons, one being unintended pregnancy (Lunga, 2009). Many grandparents are stepping in to raise their grandchildren when the children's own parents are not able or are unwilling to do so. This phenomenon places a great burden on the elderly: "my heart is sore. I am an old lady. What is going to happen to these children if I do not take care of them?", asked 76 year-old Aslinah Mncube (Population Reference Bureau, 2011, p. 1-2). It is both stressful and physically demanding to care for children, thus the elderly too have become a target of public health concern.

2.7.2 Unintended pregnancies due to lack of contraceptive use

An untended pregnancy is a "pregnancy that is mistimed, unplanned or unwanted at the time of conception" (Centres for Disease Control, 2013, p. 1). University students facing unplanned pregnancies confront many issues, not only personally but also academically. Some of the issues are a lack of finances, lack of parental and family support, lack of decision-making skills, and emotional and psychological problems with regards to how to cope with pregnancy.

More than one million unplanned pregnancies occur to single women in their 20's each year, which is a group that includes many enrolled in tertiary institutions. These unplanned pregnancies are often unwanted pregnancies, which according to the literature, in the US, results in a number of single parents, who then struggle with a host of challenges, which include interrupted or indefinitely postponing education (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2009). In July 2009, US President Obama stated, "whether the opportunity for education is lost or delayed, unplanned pregnancy often makes life harder for those trying to achieve the dream of

tertiary education” (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2009, p. 1). Women of all ages may have unintended pregnancies, but young adults are at a higher risk because they are more likely to be coerced into having sex. The Centers for Disease Control (CDC) published a report in 2011, revealing that 49% of pregnancies were unintended (CDC, 2013). Moreover, four out of five pregnancies among girls between the ages of 19 years and below were unintended. In age groups between 18 to 24 years unintended pregnancies also increased, and mainly resulted from the lack of, inconsistent, or incorrect use of effective contraceptive methods. Global goals should be established to improve pregnancy planning and to prevent unintended pregnancies. Family planning efforts to reduce unintended pregnancies include increasing access to contraceptives, as well as increasing correct and consistent use of contraceptive methods among sexually active individuals, especially those at risk (CDC, 2013).

A recent Australian study in an academic institution found that 46 percent of females and 48 percent of males reported having had sexual intercourse, with a quarter of students using either no contraception, or an unreliable method of contraception at last intercourse, putting them at risk of facing the difficult decision between early parenthood, termination of pregnancy, or pregnancy (Calabretto, 2009).

2.7.3 Abortions due to lack of contraceptive use

Abortions are the result of unintended pregnancies. According to a study done in Soweto, South Africa, 37.9% of unintended pregnancies end in abortions. Young people, including university students, find premarital sex more acceptable and their sexual behaviour and attitudes have become more open. Each year, about 79 million unintended pregnancies occur worldwide. According to the new worldwide estimates of abortion rates and trends, the overall abortion rates are almost the same in both developing and developed world (Abdulghani, Karim & Ifran, 2009). In 2010, there were 59.447 reported abortions among South African youth; this figure might be doubled, considering the number of cases that go unreported (JOY, 2012).

Unintended pregnancies and unsafe abortions continue to be a major reproductive problem in Africa, where the reasons cited for this are: inconsistent and incorrect use of contraceptives, negative attitudes of service providers, partner resistance to contraceptive use e.g. condom usage, women’s lack of control in decision-making process when it comes to their reproductive health issues, and conservative attitudes of parents (Patel & Kooverjee, 2009). Family planning can reduce the number of deaths among women by preventing unintended pregnancies and abortions (Akintade, Pengpid & Peltzer, 2011).

A study done in Ghana demonstrated that little had been done to investigate the knowledge, attitudes and practices of university students with regards to unintended pregnancy, probably because they are not considered a “deprived population” due to their prospective middle-class status (El-Adas, 2012). Female students in tertiary institutions of higher learning are at an age and in a social context, where risky social and sexual behaviours are common (alcohol abuse, drug abuse, hostel type housing, sexual abuse, etc.). This makes them extremely susceptible to unintended pregnancy, along with the consequences of unsafe abortions (El-Adas, 2012).

2.8 Overview of young women’s sexual health and contraception

Sexual health is a state of physical, emotional, mental and social wellbeing in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having safe sexual experiences free from coercion and violence (WHO, 2008). Sexual and reproductive health and wellbeing are essential if people are to have responsible sexual lives. Sexual health requires a positive approach to human sexuality and an understanding of the complex factors that shape human behaviour. The past three decades have seen a dramatic change in understanding of human sexuality and sexual behaviour. The human immunodeficiency virus, sexually transmitted diseases and unwanted pregnancies have played a major role in the change in sexual behaviours (WHO, 2008).

Sexual rights are recognised by national and international laws. They include the rights of all persons, free of coercion, discrimination and violence, to:

1. the highest attainable standard of sexual health, including access to sexual and reproductive health care services;
2. receive information related to sexuality;
3. sexual education;
4. decide to be sexually active or not;
5. consensual sexual relations;
6. deciding whether or not to have children; and
7. pursuing a safe sexual life (WHO, 2008).

2.9 Contraception

Contraception is also sometimes called birth control, or family planning. There are many different contraceptive methods e.g. mechanical methods, hormonal methods, intra-uterine devices, implants, barrier methods, and surgery. One of the reasons for using contraception is to not have children, or to postpone or stop having children (Steyn & Roets, 2013). The type of methods that are elaborated on, are those that are most likely to be used by young adults or sexually-active university students.

2.9.1 Types of contraception

2.9.1.1 Mechanical contraceptive methods

These contraceptive devices are long-term methods, which are available to students at tertiary institutions.

IUCD: This is a small plastic, often T-shaped device, surrounded by copper wire or containing hormones, inserted into the uterus. Depending on the type, it is effective for three or five years (Steyn & Roets, 2013).

2.9.1.2 Barrier methods

Spermicidal preparations: Foams, creams and gels are sperm killer chemicals that are applied or inserted vaginally before intercourse (Steyn & Roets, 2013).

Male condom: this is a device made of latex lubricated with spermicidal agents and designed to cover the erect penis, and it is capable of destroying sperm. It also helps prevent STIs and HIV (Steyn & Roets, 2013).

Female condom: this is a lubricated, thin polyurethane sac with two soft rings at each end. The larger open ring stays outside the vagina, covering part of the perineum and labia during intercourse, while the smaller ring, covered with polyurethane, fits loosely over the cervix (Steyn & Roets, 2013).

2.9.1.3 Hormonal contraception methods

These are contraceptives which include oral contraceptives, commonly known as the “pill”, injectable, patches and vaginal rings all containing synthetic hormones. Their method of action is to stop ovulation and/or to keep the cervical mucus thick, so that sperm cannot enter the uterus (Steyn & Roets, 2013).

Implants: This is a sub-dermal contraceptive device, about the size of a matchstick, which is inserted by a medical professional under the skin of the upper arm. It provides protection from pregnancy for three years. The implants will give students freedom to control their own lives. It can be removed when they desire and return to fertility takes only a few weeks (National Dept. Health, 2014).

2.10 Conclusion

This chapter discussed the literature reviewed regarding the knowledge, attitude and practices of university students with regards to contraceptive use. These reviews gave the researcher an overview of the phenomenon that exist among university students with regards to contraceptive use or its non-use, along with identifying the gaps that exist, so that further research can be done.

CHAPTER 3 - RESEARCH METHODS

3.1 Paradigm

This study has a positivist approach. The positivist paradigm is based on knowledge gained from 'positive' verification of observable experience, rather than on introspection or intuition (Cohen & Crabtree, 2010). The positivist position is grounded in the theoretical belief that there is a reality that can be objectively known to the researcher (Cohen & Crabtree, 2010). This objective reality is that university students experience unintended pregnancies despite the fact that campuses have reproductive health services available to them. Statistics was objectively used to verify this reality. The study sought to be as objective as possible in the pursuit for knowledge by using a quantitative research design. Personal beliefs and biases were separated from the objective facts on the phenomena under study that has lead up to the objective truth (Cohen & Crabtree, 2010).

3.2 Research design

A quantitative, exploratory descriptive study design was used to explore the KAP among undergraduate female students living in campus residences in a tertiary institution in KwaZulu-Natal. Exploratory descriptive studies aim to describe that which exists in a natural setting, without manipulating or changing that setting (Burns & Grove, 2009)

3.3 Research setting

The study proposed was conducted at a university located in the province of KwaZulu-Natal. Permission to conduct this research was obtained from the Registrar of the university under study, as shown in Appendix 4. A study exploring the knowledge, attitudes and practices of female undergraduate students living in campus residences, on all contraceptive methods had not been undertaken previously. The participants required for this study had met the study criteria. This university is a teaching and research-led university, with five campuses. A simple random sampling method was used to select three of these campuses. The names of the five campuses was written on pieces of paper, individually and placed in a bag. The first three names of the campuses drawn were chosen as the campuses used for this study. The residences on all the campuses have access control, lounges, television rooms, intercom systems, call boxes and parking spaces. All students are accommodated in either single or double sharing rooms. Residences are self-catering, while cafeteria facilities are also available for students. Support is provided for personal problems, and health-related issues at their student health clinics. Fully trained health personnel are on duty during office hours. Reproductive healthcare services are provided to students living in campus residences, operating from Monday to Friday from 08:00 to 16:00 hours. During

weekends and public holidays, the services are closed. Outside of operating hours, the Risk Management Department is available to students that require health services. The university student affairs department aims to provide an enabling environment for all its students, so as to ensure individual intellectual development and an awareness of social responsibility in a diverse society (UKZN, 2014). Fulltime undergraduate student population for each campus was 13773 (total) males 5465, females 8303 (A); 12204 (total) with males 5520, females 6684 (B); and 5176 (total), with males 1803 and females 3373 (C).

STUDENT HEAD COUNT 2013

CAMPUS	MALES	FEMALES
A	5465	8308
B	5520	6684
C	1803	3373
TOTAL	12788	18365

(UKZN, 2013).

3.4 Population and sample

Sampling is selecting subjects for participating in the study (Burns & Grove, 2009). The study population was all female undergraduate students, who lived in campus residences at a university in KwaZulu-Natal. The accessible population was all the female undergraduate students who lived in the three campus residences under study.

Female students living in residence in 2013

Campus	Number
A	1936
B	1486
C	982
TOTAL	4404

(UKZN, 2013)

A total of 4404 female students lived in the three campus residences under study. The sampling frame was a list of all female undergraduate students living in the three campus residences, which was received on request from the office of student affairs.

3.4.1 Sample size and sample procedure

According to the statistician consulted, since the researcher was not testing a hypothesis, the sample size was based on the time and the resources available to collect the data. The university where the study was done, was due to close for the first semester; therefore, time was a factor in collecting the data and the services of the psychologist was available for a limited period of time, based on these factors the sample size of a minimum of 60 female students who resided on campus residences was recruited for this study. A minimum of 20 female students from each campus residence was recruited for the study. From campus A: 25 students participated in the research, from Campus B: 21 students participated in the research, and from campus C: 51 students participated in the research. A total of 97 students participated in this study.

A probability, systematic sampling method was used during questionnaire administration. Every third student that entered the residence hall was recruited. As the female students entered the entrance hall to their residence between 16:00 and 19:00 hours, the researcher introduced herself, informed them about the study, asked if they were undergraduate students and if they desired to participate in the study. If they agreed and met the criteria, the researcher gave them a copy of the questionnaire and a consent form was filled in (Appendix 1 & 3). All students that were recruited agreed to participate in the study. The researcher went through this process until the desired sample size was reached within the scheduled time to collect the data, which was from 16:00 to 19:00 hours from Mondays to Fridays.

3.4.2 Inclusion criteria

- Only female undergraduate students;
- Undergraduate female students who lived in the campus residences; and
- Undergraduate female students that were 16 years and over.

3.4.3 Exclusion criteria

- Undergraduate female students that did not live in the campus residences; and
- Male, and/or postgraduate students.

3.5 Data collection tool

The questionnaire was piloted on five female undergraduate students living in a campus residence. Pre-testing was done to identify gaps and to make necessary corrections to improve data collection. Pretesting of the instrument also ensured the tool's validity and reliability, because the participants were given the opportunity to comment on the clarity of the questions and to make suggestions on further inputs or additions to the

questionnaire. Pretesting was also essential to eliminate ambiguity, difficult wording and unacceptable questions. All the questions were clearly understood by the students, therefore there was no need to change the questionnaire in any way. The students that participated in the pilot study had similar characteristics with that of the sample students used in the study. The pilot study students were not part of the study itself.

A self-administered structured questionnaire was designed to collect the data from participants as shown in Appendix 3. The questionnaires were numbered so that the identity of the participant was protected. All participants answered the same questions in the English language, as this is the language of communication in the study setting where the research was conducted. Simple and easily understood questions were framed. The questions and structuring of the questions was informed by the literature review, as well as from the core WHO questionnaire by John Cleland, which was modified and adapted to the study priorities (Cleland, 2001). Permission to use and modify the tool is shown in Appendix 2. Not all the questions from the WHO questionnaire were used, as it contained more than 300 questions relating to different aspects of reproductive health, therefore questions had to be selected and modified to suit the current study. Some of the questions referred to both males and females, which required modification to suit the current study. A majority of the questions were placed in closed-ended form, which participants were able to answer more easily and quickly, considering the limited time students had available. The questionnaire was designed to elicit the following information:

Section A: social and demographic factors;

Section B: knowledge of contraceptives;

Section C: attitudes towards contraceptives use;

Section D: practice with contraceptives; and

Section E: barriers and factors promoting contraceptive use.

Questions were made both open-ended and close-ended in nature. The time taken to fill in the questionnaire was approximately 15 to 20 minutes.

3.6 Content-related validity

The questionnaire was able to extract valid information on students' knowledge, attitudes, practices, barriers and methods to promote contraceptive use.

Face validity was addressed by ensuring that the instrument measured what it was supposed to measure.

Reliability denotes the consistency of measures obtained in the use of a given instrument (Burns & Grove, 2009).

The questionnaire was piloted on five female undergraduate students living in a campus residence. The pilot study was conducted on the 15 May 2015 at a randomly chosen female campus residence under study. Pre-testing was done to identify gaps and to make necessary corrections to improve data collection. Pretesting of the instrument also ensured its validity and reliability, because the participants were given the opportunity to comment on the clarity of the questions and to make suggestions on further inputs and additions to the questionnaire. Pretesting was also essential so as to eliminate ambiguity, difficult wording, and unacceptable questions. All the questions were understood with clarity by the students, where there was no need to change the questionnaire in any way. The students that participated in the pilot study had similar characteristics with those of the sample students that participated in the study. The pilot study students were not part of the study.

The design of the instrument was such that it extracted information relating to the knowledge, attitudes and practices of university students with regards to contraceptive use. The instrument designed was also guided by findings from literature. The content validity and reliability of the instrument was ensured by using tools that have already been used by other researchers as a guide while preparing the questionnaire (Cleland, 2001). Only information needed for the research was solicited. Consultation with my supervisor regarding the tool was also ensured. All participants were informed before the questionnaire was answered, according to the importance of honesty and truthfulness.

Table 1: Showing research question in relation to data collection tool and Health Belief Model

Research Question	Questionnaire	Health Belief Model
1. What is the current knowledge of female students living in residences' with regards to contraceptives?	1. Knowledge Q 7 to Q 12 (1-11)	Perceived susceptibility Knowledge will trigger a consciousness to use contraceptives, so as to avoid certain threats.
1. What is the attitude of female university students with regards to contraceptive use?	2. Attitude Q13 to Q 19	Perceived susceptibility Student attitudes towards contraceptives will determine the use of contraceptives.
2. What are the current Practices of female university students living in residences with regards to contraceptive use?	3. Practice Q 20 to Q 26	Perceived severity When female students realise consequences of unintended pregnancies, this will provide a need for contraceptive use.
3. What are the barriers that hinder students from contraceptive use?	Q27 to Q41	Perceived barriers Barriers that inhibit contraceptive use can be eliminated so that female students will use contraceptives to prevent unintended pregnancies, abortions, STIs and HIV infections.
4. What are the factors that promote contraceptive use?	Q42	Perceived benefits By realising the benefits of contraceptive, students will improve their use of contraceptives.

3.7 Data collection

Participation in the study was voluntary, and uncompensated, as indicated in Appendix 1. The researcher administered the questionnaires daily from Monday to Friday between 16:00 to 19:00 hours at the entrance/exit hall of the selected residences. During that time, students were returning to the residences from their lectures. A section of hall was screened off with portable screens and 10 desks and chairs were arranged at a distance of 1.5 metres apart from the centre of one participant's chair to the centre of the next, to ensure privacy and an atmosphere of comfort. The desks were arranged in two rows of five each. A screened area, using portable screens was made available for those students that required counselling. A psychologist was present during data collection in the event a student required counselling (a psychologist volunteered her services). In each campus residence, as the students entered the entrance hall to the residence, the researcher introduced herself and informed the students about the research. The researcher then sought their participation in the research. In such event a student felt willing to participate, the researcher obtained a written consent as shown in Appendix 1, and gave the participant a copy of the questionnaire to fill in (Appendix 3). This process was repeated until a minimum of 20 questionnaires was completed by undergraduate female students from each campus residence. One week commencing from the 08 June 2015 to 26 June 2015 was spent collecting data at each of the three campus residences. Collection of data at Campus A was from the 15th to the 19th June 2015; Campus B, from the 08th to 12th June 2015 and Campus C from 22nd to 26th June 2015. All the questionnaires filled in were put into an envelope, which was sealed and taken for analysis. The researcher oversaw the collection of the data.

3.8 Data analysis

Statistical analysis helps researchers make sense of quantitative information, containing programmes for various descriptive analysis (Polit & Beck, 2004). For this study, the Statistical Packages for Social Science (SPSS version 23) software was used for data analysis. This package was used to show frequency tables, graphs and percentages. With the assistance of the statistician, frequency tables, graphs and percentages was obtained for the various variables in the questionnaire by means of which to describe the KAP that exists among female university undergraduate students living in campus residences.

3.9. Data management

Each questionnaire was numbered from one to 97. A minimum of 60 questionnaires was to be completed for this study, but the researcher collected a total of 97 questionnaires in the allocated time spent collecting data at the different residences. Each questionnaire had five pages, which were numbered from one to five. Data

collected was checked thoroughly by the researcher for errors before it was captured into the computer. Capturing of data was done as soon as possible by the researcher. Data was backed up to prevent data loss if the computer failed. The data will be stored for five years on a flash stick, and the hard copies of the data will also be kept for five years. The computer used was password protected.

3.10 Ethics

The fundamental ethical principles of research were used to guide the researcher to avoid unethical lack of consideration towards the participants.

The rights of the participants were protected by adhering to the principles of beneficence, respect for persons and justice. The researcher further ensured that human rights were protected by ensuring the rights to self-determination: to privacy, to anonymity and confidentiality, to fair treatment and to be protected from discomfort and harm, and that the research was conducted by qualified personnel.

Ethical permission for the study was obtained from the Ethics Committee at the University concerned, before initiation as shown in Appendix 5. Written, informed consent from the participants was obtained.

3.10.1 Protection of vulnerable participants – no mentally challenged individual was eligible to participate in the research. Participants were over 16 years of age.

3.10.2 Participants would be autonomous. The participants had a right to decide whether or not to participate in the study without the risk of penalty or prejudice, with the right to withdraw from the study at any time or refuse to give information or to ask for clarification of any uncertainties. If a participant felt anxious or stressed at any time during the study, no form of coercion was used to get her to complete the study (Ezekiel, Emanuel, Wendler, Killen & Grady, 2004).

3.10.3 Protection of participants: in the event of psychological trauma due to the recollection of traumatic experiences with regards to pregnancy e.g. a missed abortion or termination of a pregnancy, counselling was provided by professional nurse and a psychologist that was present during data collection, and thereafter, if the need arose. Counselling services were also made available to unmarried students who may have been confronted by social stigma, which may have put them at risk of being “looked down upon”, or create uncertainty around what people are going to say, thus creating a feeling of low self-esteem and anxiousness (Gallagher, 2015).

I am a professional nurse with a BA in Nursing qualification, and also a HIV and AIDs counsellor. In my daily work encounters, I am exposed to dealing with stress-related

issues. Arrangements have been made with a psychologist for the provision of counselling services, if referrals are directed to her.

3.10.4 Benefits and Risks of this research

The perceived benefits of participating in this study outweigh the perceived risks and costs. The perceived benefits are:

1. Improved access to reproductive healthcare services for students;
2. Skilled staff to discuss situations and problems that students may have;
3. Provision of better facilities for comfort and privacy for students;
4. The students may have an increase in knowledge about themselves or their beliefs and attitudes about reproductive health, either through introspection and self-reflection or through direct interaction with the researcher;
5. The study may create an excitement among the participants, since they are part of the project; and
6. Satisfaction among the participants in that the information they provide may help other students to complete their studies without the burden of falling pregnant.

Perceived risks:

1. Participants may experience discomfort due to physical problems e.g. boredom or fatigue;
2. Participants may experience psychological or emotional stress resulting from disclosure, introspection, fear, embarrassment at the type of questions they have to answer; and
3. Loss of academic time due to participating in the project.

3.10.5 Collaborative partnership

The researcher, together with the study population and the University, worked together to realise the goals of the study. By collaboration, vital information was extracted, which was beneficial to all parties. University policies were adhered to when arranging to meet the participants. Participant's culture, religion and values were considered and respected. Privacy and confidentiality was maintained. Information provided by the participants was not be publicly divulged, or made accessible to others. Information was not shared with strangers or people that are known to the participants, research personnel signed confidentiality pledges, which ensured that breaches of confidentiality did not occur. Provisions were made for participants to be seated privately whilst filling the forms, and, to further maintain anonymity, no identifier was included on the questionnaires, particularly names. Participation was voluntary, and the participants were informed that they would be able to withdraw from the study at any stage if they so

desired, without any penalty or explanation being imposed on them. The results of the research would benefit both the researcher and the University as a whole.

3.10.6 Social value

- Beneficiaries of the research would be the university students, who may gain by having improved family planning service, increased knowledge and awareness on pregnancies and contraceptives, completion of studies, and prevention of unwanted pregnancies.
- The campuses would also gain by the creation of a good reputation, where there may likely be decrease in dropout rates among female students due to unplanned pregnancies. A result of this may be a decrease in financial losses to the institution, with more students being able to fulfill their study itinerary uninterrupted. Due to decrease in the number of unplanned pregnancies among female undergraduate students, the throughput targets of the university may also be realised.
- The researcher would also benefit where her study can be disseminated for scholarly exchange, and where her study can contribute to the existing body of knowledge.

There will be increased visibility and impact of the study, which aimed to decrease the number of unplanned pregnancies among female undergraduate students.

3.10.7 Independent reviews

The researcher ensured accountability to the institution under study by adhering to proper policies and mandates with regard to research. The Ethics Committee, the Gatekeeper and the Head of Department of the clinic in the institution where the research was carried out, (as shown in Appendix 1, 4 & 5) ensured that the researcher conformed to protecting the rights and welfare of the participants in the study, the appropriate methods was used to secure informed consent and that the benefits of the research was greater than the risks to the participants. Results of the study will be reviewed and analysed by the institution concerned. The standards that were set out by the institution for the reporting and disclosure of information about the institution were adhered to, thus avoiding malpractice and abuse and the credibility of the study. All information gathered was accurate.

3.11 Conclusion

This chapter explains the method used to conduct the research. The paradigm, research design, setting, population and sample, data collecting tool, data collection, data analysis, data management and ethical considerations.

CHAPTER 4 - RESULTS AND DISCUSSION

4.1 Descriptive statistics

The researcher's aim was to describe what existed in the natural setting with regards to the knowledge, attitude and practice among undergraduate female students living in tertiary institution residences' in KwaZulu-Natal, with regards to the use of contraceptives. In the campuses under study, ninety-seven questionnaires were distributed across three female campus residences. The response rate was 100%, the researcher distributed the questionnaire and collected them herself. The questionnaire was made up of five sections, which comprised: Section A on demographic characteristics, where the researcher explored the participants age, marital status, religion, cultural group and current level of study at the university; Section B on current knowledge of contraceptives the participants had used; Section C on attitudes with contraceptives use; Section D on participants' practice with contraceptives use; and Section E, on barriers and factors promoting contraceptive use.

SPSS Version 23 software was used to analyse the data. Frequency tables were generated for each variable or response. From the frequency tables, the sum total and percentages for each variable or response was recorded. Graphs were also generated using SPSS Version 23.

Table 2: Demographic characteristics of the participants (N=97)

VARIABLE		N	%
Age	17-20	27	27.8
	21-25	62	63.9
	25+	8	8.2
Marital Status	Single	96	99.0
	Married	1	1.0
Religion	Christian	90	92.8
	Islam	2	2.0
	Other	5	5.2
Cultural Group	Black	95	97.9
	Other	2	2.1
Level of Study	1 st year	9	9.3
	2 nd year	28	28.9
	3 rd year	34	35.1
	4 th year	24	24.7
	Other	2	2.1

4.2 Demographic characteristics of participants

From Table 2 above, a total of n=97 female undergraduate students participated in this study. Almost all the students are single n=96 (99%), almost all the participants are Christian n=90 (92.8%) and almost all the students are from one cultural group n=95 (97.9%). A majority of the participants were from the third year level of study n=34 (35.1%), followed by second year level of study n=28 (28.9%), fourth year level of study n=24 (24.7%), first year level of study n=9 (9.3%) and lastly, other levels n=2 (2.1%).

4.2.1 Age

From Figure 2 it can be seen that a majority of the participants were from the 21-25 age group n=62 (63.9%), followed by the 17-20year age group n=27 (27.8%), thereafter, the 25-and-over age group n=8 (8.2%).

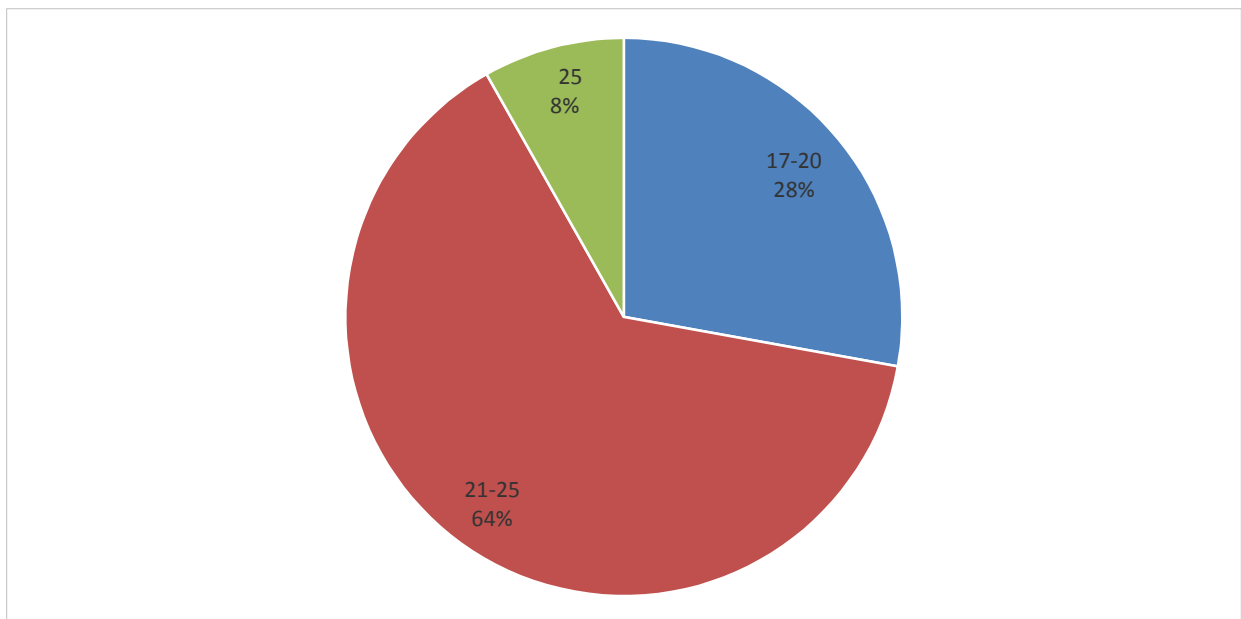


Figure 2 Age distribution of participants (N=97)

In analysing age in Figure 2 above, a majority of the participants in the current study were from the 21-25 age group, which is similar to the study done in Ghana (El-Adas 2012) and Lesotho (Akintade et al., 2011), n=62 (63.9%), followed by the 17-20year age group n=27 (27.8%), then the 25-and-over age group n=8 (8.2%). The marked difference in the age groups could be due to the residence that was randomly chosen to do the study in which a majority of students from a certain level of the study reside.

4.2.2 Level of study

According to (Figure 3), most of the participants were from the third level of study $n=34$ (35.1%) in keeping with the age group of this study, followed by second year, $n=28$ (28.9%), fourth year, $n=24$ (24.7%), first year $n=9$ (9.3%) and other $n=2$ (2.1%). The 'other' category refers to participants over four years of study at the university.

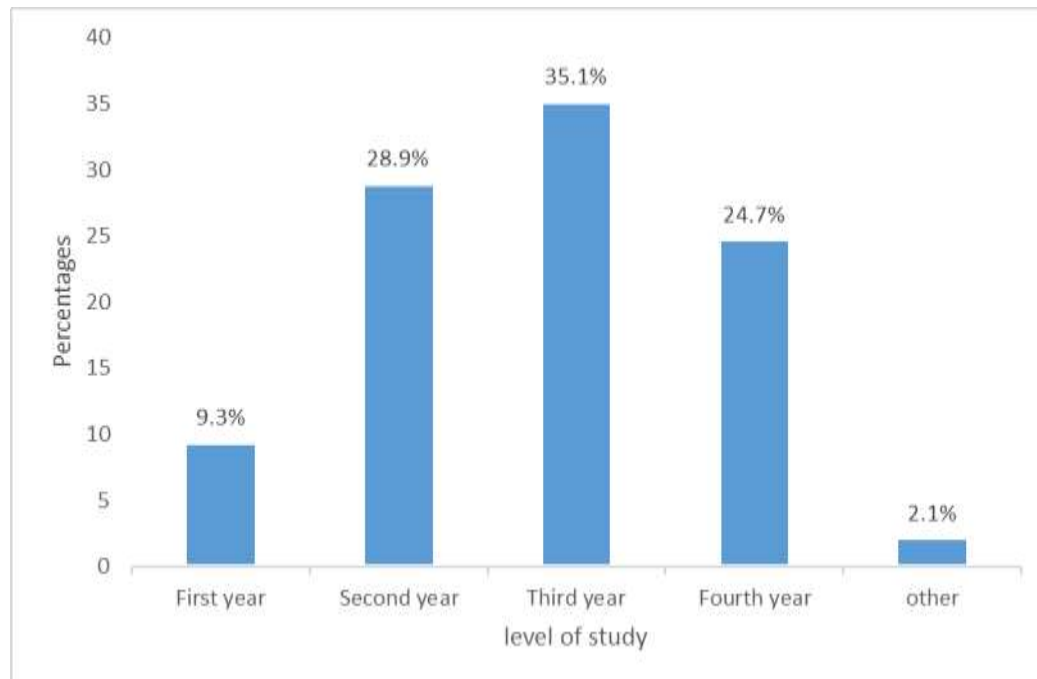


Figure 3: Level of study of participants

In analysing (Figure 3), the demographic characteristics of the participants in the current study appear similar to those from a study done in Lesotho by Akintade, et al. (2011) as well as one conducted in Ethiopia by Tilahun, et al. (2010) among female university students, where majority of the participants in each of the respective studies were between the age group 21-25, $n=62$ (63.9%), majority were single, $n=96$ (99%) almost all were Christians, $n=90$ (92.8%) and almost all was from one cultural group, $n=95$ (97.9%). 'Other levels' refers to undergraduate students in their fifth year or beyond. These demographic characteristics are in keeping with the transformation process in the Higher Education System (Department of Higher Education, 2015), where the previously disadvantage groups have access to higher education. In the current study there was a majority of the previously disadvantaged group that participated.

4.3 Knowledge of contraceptives

From the current study $n=95$ (97.9%) of the participants indicated that they have heard of contraceptives and $n=2$ (2.1%) indicated that they had not heard of contraceptives.

Similar to the studies done in Ghana on the resolution of unintended pregnancy among female university students, where all but three students responded that they had not heard of contraceptives (El-Adas, 2012); as well as in Tanzania, on the KAP of contraceptives among students (Mung'ong'o et al., 2010), where 73% of those respondents interviewed had good to average knowledge on contraceptives; in this current study, the majority of the participants indicated that they had heard of contraceptive methods, n=95 (97.9%) and a very low percentage of participants n=2 (2.1%) indicated that they had not heard of contraceptives.

4.3.1 Benefits of contraceptives

According to Table 3, n=58 (59.8%) of the participants indicated that they knew that contraceptives control the number of births n=39 (40.2%) indicated that they did not know that contraceptives control births, and n=89 (91.8%) indicated that contraceptives prevent pregnancy. Ninety-six (99%) of the participants were not aware that some methods of contraceptives enhanced sexual performance. An unexpected finding in this study was that n=66 (68%) of the participants indicated that they were not aware that contraceptives prevent sexually transmitted infections.

Table 3: Benefits of contraceptives according to participants (N=97)

Response categories		N	%
Control number of births	Yes	58	59.8
	No	39	40.2
Enhances sexual performance	Yes	1	1.0
	No	96	99.0
Prevents unplanned pregnancies	Yes	89	91.8
	No	8	8.2
Prevents STIs	Yes	31	32.0
	No	66	68.0

In analysing results from Table 3, n=58 (59.8%) of the participants indicated that they knew that contraceptives control the number of births, n=39 (40.2%) indicated that they did not know contraceptives control births, and n=89 (91.8%) indicated that contraceptives prevent pregnancy. These results seem to contradict each other, which may be due to the participants not understanding the terms “controlling births” and “preventing pregnancy”. Similar to studies done in Lesotho on the awareness, use and barriers to family planning services among female students (Akintade et al., 2011), a majority of the participants in this study associated contraceptives with the control of pregnancy. Although a high percentage of participants n=89 (91.8%) indicated that they know that contraceptives prevent pregnancy, unintended pregnancies are still a major

problem among university students in Southern Africa (Hogue, 2012). A majority of the participants n=96 (99%), were not aware that certain methods of contraceptives enhances sexual performance, according to studies (Castleman, 2014), the contraceptive pill has many effects that can increase erotic interest and improve sexual function. An unexpected finding in this study indicated that n=66 (68%) of the participants were not aware that contraceptives prevent sexually transmitted infections.

4.3.2 Negative effects of contraceptives

According to Table 4, n=86 (88.7%) of the participants was not aware that contraceptive pills puts one at risk of developing cancer, and a small percentage of the participants, n=14 (14.4%) felt that taking contraceptives increased the promiscuity of the partner. There was n=29 (29.9%) participants who indicated that contraceptives were unreliable and n=86 (88.7%) indicated that contraceptives do not enhance marital infidelity. A significant percentage of the participants n=14 (14.4%) felt that the contraceptives decreased sexual pleasure, which may be one of the reasons why students was reluctant to use them. Sixty-eight (70.1%) of the participants indicated that contraceptives had significant negative effect on a student.

Table 4: Negative effects of contraceptives according to participants

Risk of causing cancer	Yes	11	11.3
	No	86	88.7
Increase Promiscuity	Yes	14	14.4
	No	83	85.6
Unreliable	Yes	29	29.9
	No	68	70.1
Enhances marital unfaithfulness	Yes	11	11.3
	No	86	88.7
Decreases sexual pleasure	Yes	14	14.4
	No	83	85.6
No significant negative effect	Yes	29	29.9
	No	68	70.1

In analysing Table 4, a large percentage of the participants n=86 (88.7%) was not aware that contraceptive pills can put one at risk of developing cancer, yet studies have shown that the risk of breast cancer, cervical and liver cancer appear to increase with the intake of oral combined contraceptives (National Cancer Institute, 2012). Similar to other studies (Hoque, 2012) on contraceptive practices among university students in South Africa and Lesotho (Akintade et al., 2011), a small percentage of the participants

n= 14 (14.4%) in this study felt that taking contraceptives increased the promiscuity of the partner.

Almost 10% more students in Lesotho (Akintade et al., 2011) than the participants in the current study n=29 (29.9%) believed that contraceptives were unreliable. A significant percentage of the participants n=14 (14.4%) felt that contraceptives decreased sexual pleasure, which may be one of the reasons why students are reluctant to take contraceptives, yet research has shown that some contraceptives increase erotic interest, and lead to better sexual functioning and greater sexual satisfaction (Castleman, 2014).

4.3.3 Awareness of contraceptive methods

From Table 5 below, the method of contraceptive the students were most aware of is the condom, with n=84 (86.6%) awareness, followed by oral contraceptives with n=65 (67%), n=61 (62.9%) the injectable and n=60 (61.9%) the emergency contraceptive.

Table 5. Participants awareness of contraceptive methods (N=97)

Methods		N	%
Oral pills	Yes	65	67.0
	No	32	33.0
Intra-uterine device	Yes	21	21.6
	No	76	78.4
Condoms male/female	Yes	84	86.6
	No	13	13.3
Dermal patch	Yes	15	15.5
	No	82	84.5
Injectable	Yes	61	62.9
	No	36	37.1
Implants/Norplant	Yes	29	29.9
	No	68	70.1
Emergency contraceptive	Yes	60	61.9
	No	37	38.1
Spermicidal	Yes	4	4.1
	No	93	95.9
Natural family planning	Yes	19	19.6
	No	78	80.4
Female Sterilisation	Yes	39	40.2
	No	58	59.8
Male Sterilisation	Yes	31	32.0
	No	66	68.0

In analysing Table 5 above, most of the participants indicated that the contraceptive they were most aware of was the condom n=84 (86.6%), oral contraceptives n=65 (67%), injectable n=61 (62.9%) and the emergency contraceptive n=60 (61.9%), which supports the studies done in Tanzania (Mung'ong'o et al., 2010), South Africa (Hoque, 2011) and China (Wang et al., 2015) on contraceptive practices among university students.

Figure 4 depicts the participant's awareness of the different contraceptives methods, with 76 (or 78.4%) not being aware of the intra-uterine device, n=82 (84.5%) the dermal patch, n=68 (70.1%) the implants or norplant, n=93 (95.9%) spermicidal, and n=78 (80.4%) the natural family planning methods.

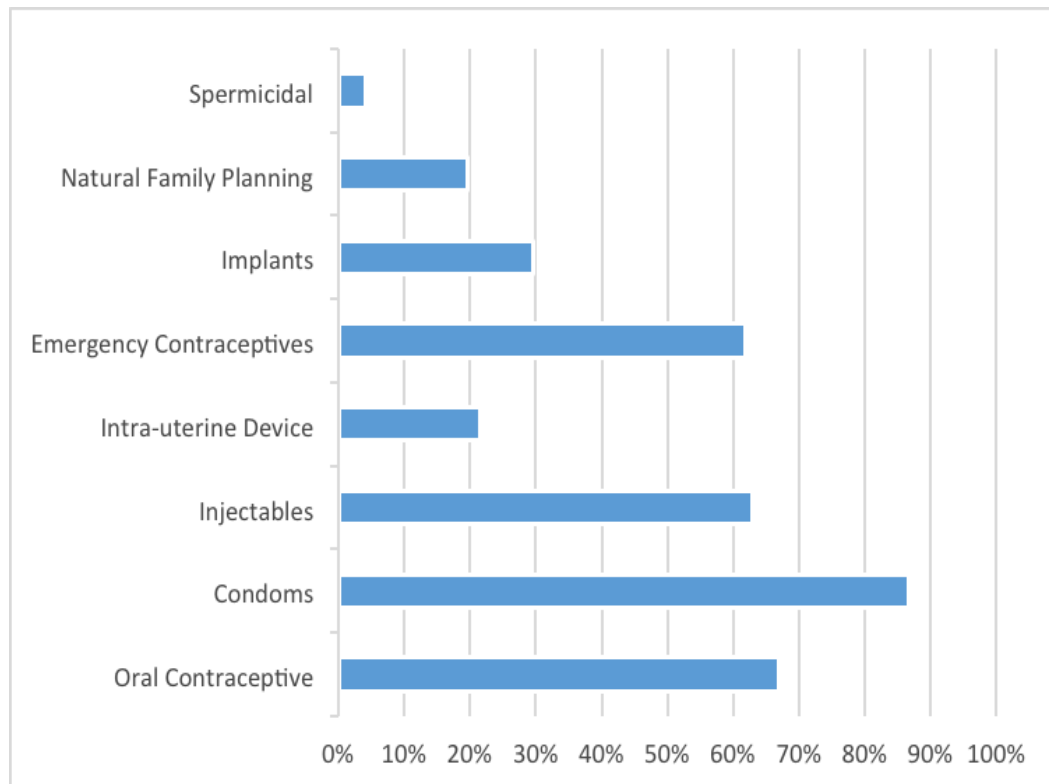


Figure. 4 Participants awareness of contraceptive methods (N=97)

In analysing Figure 4, majority of the participants indicated that the contraceptive they were mostly not aware of was the spermicidal, $n=93$ (95.9%) followed by dermal patch, $n=82$ (84.5%), natural family planning $n=78$ (80.4%) and the intra-uterine device $n=76$ (78.4%); which supports the study done in Tanzania (Mung'ong'o et al., 2010); South Africa (Hoque, 2011) and China (Wang et al. 2015) on contraceptive practices among university students.

Although the Department of Health in South Africa embarked on massive awareness campaigns promoting contraceptive use (Dept. of Health, 2015), from the statistics in figure 4, students indicated that they were not aware of certain contraceptive methods that are available to them. According to the Millennium Development Goal 5, there is a need to improve reproductive health by making all contraceptive methods available, with adequate resources to improve the health of women (Patel, 2014). Similar to the studies done in Ghana (El-Adas, 2012) and Tanzania (Mung'ong'o et al., 2010), the results of the current study indicated that the contraceptives that the participants was not aware of, was not commonly practiced by students.

4.3.4 Response to knowledge statements with regards to contraceptive

The researcher combined the strongly agree/agree responses to an “agree” category, and the strongly disagree/disagree responses into a “disagree” category. As depicted in Table 5, participants in the current study, $n=32$ (33%) agreed, $n=49$ (50.5%) are

uncertain, n=16 (16.5%) disagreed that there is an increased risk of cancer when taking oral contraceptives. There was n=55 (56.7%) of the participants agreed, n=25 (25.8%) were uncertain, and n=17 (17.5%) disagreed on whether emergency pills can be used several times a month, n=32 (33%) of the participants disagreed, and n=35 (36.1%) were uncertain as to whether contraceptives causes infertility, while n=81 (83.5%) of the participants agreed that condoms protect against STIs, HIV and unwanted pregnancy. A percentage of n=64 (69.5%) agreed, n=28 (28.9%) were uncertain and n=5 (5.2%) disagreed that the emergency pill can be taken after 120 hours. A percentage of n=58 (59.8%) of the participants agreed, where n=27 (27.8%) was neutral, and n=12 (12.4%) disagreed that medical history was not an important factor in the choice of contraceptive. Sixty-six percent of the participants agreed, n=26 (26.8%) were uncertain, and n=7 (7.2%) disagreed that you only need to take the pill on the days that you are sexually active. More than n=51 (50%) of the participants was either neutral or disagreed that side effects of the contraceptives can be managed effectively.

Table 6: Response to statements with regards to attitudes to contraceptives

KNOWLEDGE QUESTIONS	STRONGLY AGREE/AGREE	UNCERTAIN	STRONGLY DISAGREE/DISAGREE
Contraceptive pills may cause cancer.	32 (33%)	49(50.5%)	16 (16.5%)
Contraceptive pills may cause infertility.	30 (30.9%)	35(36.1%)	32 (33%)
Emergency pills can be used several times a month.	55 (56.7%)	25(25.8%)	17 (17.5%)
Condoms protect against STIs, HIV & unwanted pregnancies.	81 (83.5%)	4 (4.1%)	12 (12.4%)
Emergency pills can be taken after 120hrs.	64(65.9%)	28 (28.9%)	5 (5.2%)
You only need to take the pill only on the days you are sexually active.	64 (66%)	26 (26.8%)	7 (7.2%)
Medical history is an important factor in the choice of contraceptive.	58 (59.8%)	27 (27.8%)	12 (12.4%)
Contraceptives has side effects that can be managed effectively.	46 (47.5%)	35 (36.1%)	16 (16.3%)

In analysing Table 6 above, n=65 (67%) of the participants was either uncertain or disagreed that oral contraceptives may cause cancer. According to the National Cancer Institute, the oral contraceptive has been found to influence the development and growth of cancers (National Cancer Institute, 2012). Studies done in China (Wang et al., 2015) and Ethiopia (Tilahun, et al., 2010), on contraception and unwanted pregnancy among female university students, concur with the current study that education on emergency contraception is inadequate, with n=80 (82.5%) of the participants either agreed or were uncertain as to whether emergency pills can be used several times a month, and n=92 (94.8%) of the participants either agreed or was uncertain that emergency pills can be taken after 120 hours. The Ethiopian study (Tilahun, et al.,

2010) supports the current study were n=65 (67%) of the participants either disagreed or was uncertain on whether contraceptives causes infertility. Studies done in South Africa (Hoque 2012), Lesotho (Akintade et al., 2011) and Ghana (Nettey, Enuameh, Mahama, Suleman, Adjei, Gyaase, Afari-Asiedu, Adda, Yawson, Nuamah, Anane, Abokyi, Zandoh, Abdulai, Boamah, Adjei, Etego, Dzabeng, Agyeman, Baiden, Asante & Owusu-Agyei, 2014) support the current study, where a majority of the participants n=81 (83.5%) agreed that condoms protect against STIs, HIV and unwanted pregnancy. It was alarming to note that n=85 (87.6%) of the participants either agreed or were uncertain that medical history is not an important factor in the choice of contraceptive, and n=90 (92.8%) of the participants either agreed or were uncertain as to whether you should take the pill only on the days you were sexually active, which supports the studies done in Ethiopia (Tilahun, et al., 2010) and China (Wang, et al., 2015), which argue that education on contraception is needed. Fifty-one participants (52.4%) were either neutral, or disagreed that side effects of the contraceptives can be managed effectively, indicating a need for reproductive health education.

4.4 Attitudes with contraceptive use

From Table 6 in this current study n=75 (77.3%) of the participants indicated that contraceptive education should begin at puberty, n=14 (14.5%) were neutral, and n=8 (8.2%) disagreed. Eighty-two (84.6%) of the students indicate that it was acceptable for a female student to suggest to her partner to use a contraceptive. There was n=49 (50.5%) participants who agreed, and n=41(42.3%) who were neutral on contraceptives causing weight gain. It was positive to note that n=67 (69.1%) of the participants felt that they did not lose their sense of self-worth when on contraceptives, and n=60 (61.9%) disagreed that it was embarrassing to be seen at a family planning clinic. There was n=11 (11.3%) agreed, n=51 (52.6%) were neutral and n=35 (36.1%) disagree on contraceptive pills being inconvenient to use.

Table 7: Attitude towards contraceptives (N=97)

ATTITUDE STATEMENTS	AGREE	NEUTRAL	DISAGREE
Education on contraceptives should begin at puberty.	75 (77.3%)	14 (14.5%)	8 (8.2%)
Education on contraceptives encourages a student to engage in sexual intercourse.	13 (13.4%)	23 (23.7%)	61 (62.9%)
Does a student loose her self-worth if she is on contraceptives?	9 (9.3%)	21 (21.6%)	67 (69.1%)
Is it the responsibility of the female to ensure that contraceptives are used regularly?	59 (60.8%)	20 (20.6%)	18 (18.6%)
Is it embarrassing to be seen at a family planning clinic?	16 (16.5%)	21 (21.6%)	60 (61.9%)
Is it acceptable for a female student to suggest to her partner to use a contraceptive method?	82 (84.6%)	8 (8.2%)	7 (7.2%)
Using contraceptives is the best option to prevent STIs, HIV & unwanted pregnancies.	54 (55.7%)	14 (14.4%)	29 (29.9%)
Traditional methods are the best contraceptive methods.	6 (6.2%)	37 (38.1%)	54 (55.7%)
Contraceptives cause weight gain.	49 (50.5%)	41 (42.3%)	7 (7.2%)
Contraceptive pills are inconvenient to use.	11 (11.3%)	51 (52.6%)	35 (36.1%)
Condoms reduces sexual pleasure.	11 (11.3%)	41 (42.3%)	45 (46.4%)

In analysing Table 7, the current study compliments the study done in Lesotho among female university students on the resolution of unintended pregnancy (Akintade, 2010), were majority of the participants n=75 (77.3%) agreed that contraceptive education should begin at puberty. Similar to a previous study in South Africa on contraceptive practices among university students (Hoque & Ghuman, 2012), a large percentage of the participants n=82 (84.6) indicated that it was acceptable for a female student to suggest to her partner to use a contraceptive. The current study concurs with the study done in Tanzania on the KAP of contraceptive use among students (Mung'ong'o, et al., 2010), that weight gain (a side effect of contraceptives) was one of the reasons for non-usage, n=49 (50.5%). It was positive to note that a large percentage of the participants n=67 (69.1%), felt that they did not lose their self-worth if they were on contraceptives

and n=60 (61.9%) of the participants agreed that it is not embarrassing to be seen at a family planning clinic. Sixty-three (63.9%) of the participants either agreed or were neutral when it came to whether contraceptive pills are inconvenient to use. The high percentages of neutral responses shown in Table 7 indicated a need for reproductive health education, which supports the study in China (Wang et al., 2015), so that students will be able to be decisive regarding their sexual health.

4.5 Contraceptive practices among students

This section is subdivided into the following subsections, practices with contraceptives, reasons for not using contraceptives and statements regarding contraceptive practices.

4.5.1 Practices with contraceptives among participants

According to Table 8, the results of the current study indicated that the condom was the preferred method of contraception, with n=59 (60.8%) of the students indicated that the most convenient contraceptive used among students was the condoms, followed by n=34 (35%) using an injectable method, and n=14 (14.4%) using oral contraceptives.

Table 8: Practice with contraceptives among participants (N=97)

Methods		N	%
Oral contraceptive	Yes	14	14.4
	No	83	85.6
Intra-uterine device	Yes	5	5.2
	No	92	94.8
Condoms	Yes	59	60.8
	No	38	39.2
Emergency contraceptives	Yes	4	4.1
	No	93	95.9
Spermicidal	Yes	3	3.1
	No	94	96.9
Injectable	Yes	34	35
	No	63	65
Norplant/implants	Yes	16	16.5
	No	81	83.5
Dermal patch	Yes	2	2.1
	No	95	97.9
Natural family planning	Yes	3	3.1
	No	94	96.9

In analysing Table 8, there was consensus among the current study and the study done in Tanzania (Mung'ong'o et al., 2010) and South Africa (Hoque & Ghuman, 2012), on condoms being the most convenient method of contraceptive used by university students, n=59 (60.8%) followed by the injectable method, n=34 (35%) and then by oral contraceptives, n=14 (14.4%).

Figure 5 below, indicates the participants practice with the different contraceptive methods; emergency contraceptives n=4 (4.1%), n=5 (5.2%) the intra-uterine device, n=16 (16.5%), implant, n=3 (3.1%), spermicide, n=2 (2.1%), dermal patch, and n=3 (3.1%) natural family planning as a methods of contraception.

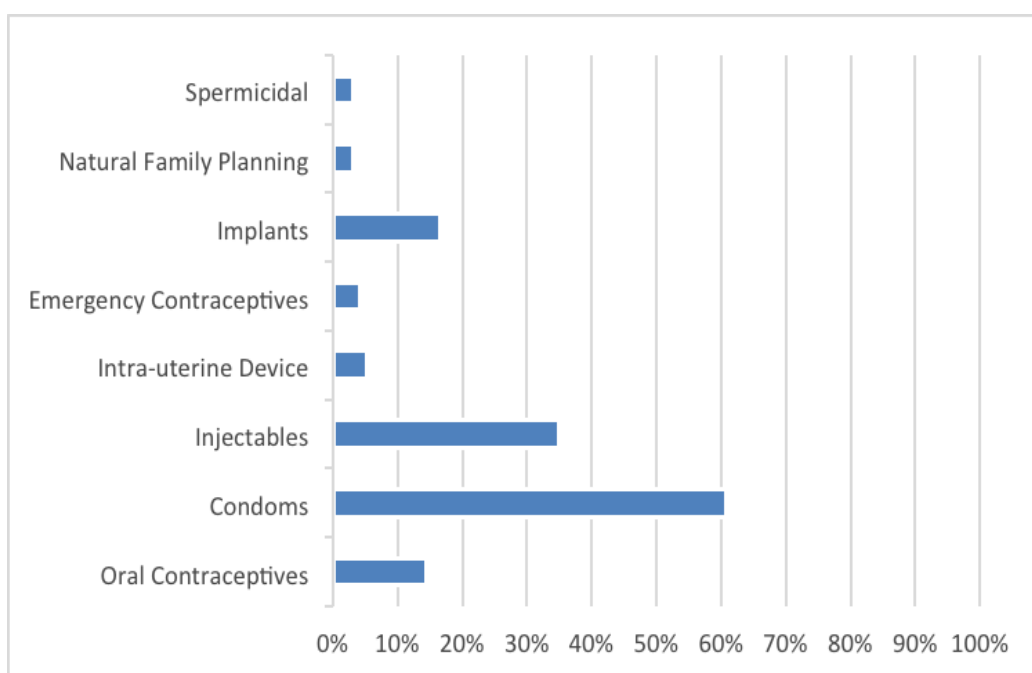


Figure 5: Participants practice with contraceptives

In analysing Figure 5, the current study indicated a small percentage of participants n=5 (5.2%) used the IUCD as a method of contraception, which is similar to the studies done in Cape Town (Patel, 2014) and China (Wang et al., 2015). Although the South African government initiated massive awareness campaigns to promote the implant (Department of Health, 2015), only a small percentage of participants n=16 (16.5%) used the implant as a contraceptive method. The low percentage of usage of certain contraceptive methods, dermal patch n=2 (2.1%), spermicidal and natural family planning, n=3 (3.1%) may be due to ignorance or misconceptions about these methods, this can be eliminated through reproductive health education (Wang et al., 2015). Figure 5 above shows a very low percentage of participants who practiced with emergency contraception n=4 (4.1%), as compared to the participants' awareness of emergency

contraceptives, as shown in Table 5, n=60 (61.9%). This may be due to students' knowledge that emergency contraceptives cannot be taken as a regular contraceptive on a daily basis, but as an emergency when required after unprotected sexual intercourse.

4.5.2 Participants reasons for not using contraceptives

According to Table 9, the current study indicated that n=36 (37.1%) of the participants were not using contraceptives, because they were not sexually active and n=61 (62.9%) indicated that they were sexually active. The study showed that n=83 (85.6%) of participants have no desire to get pregnant, and the same number of participants n=83 (85.6%) indicated that students was not using contraceptives because they were preventing pregnancy through other means. Eleven (11.3%) of the participants were of the opinion that they could not get pregnant, and n=86 (88.7%) were of the opinion that they could get pregnant if not they did not use contraceptives. In this study, n=53 (54.6%) participants cited that the main reason for not taking contraceptives was due to the side effects incurred.

Table 9: Reasons for not using contraceptives (N=97)

Response categories		N	%
Not sexually active	Yes	36	37.1
	No	61	62.9
Desire to get pregnant	Yes	14	14.4
	No	83	85.6
Preventing pregnancy by other means	Yes	14	14.4
	No	83	85.6
I feel I can't get pregnant	Yes	11	11.3
	No	86	88.7
Afraid of possible side effects	Yes	53	54.6
	No	44	45.4

In analysing Table 9, about one third of the participants indicated that students was not taking contraceptives because they was not sexually active, n=36 (37.1%) and almost two thirds of the participants indicated that they were sexually active, n=61 (62.9%) but do not use contraceptives, which may be due to other reasons, as shown in the study done in China (Wang et al., 2015); where students lacked preparation in contraceptive methods (including condoms, devices, pills), and feared their parents knowing that they were sexually active (Bana et al., 2010), fear of not wanting to be seen at a family planning and not being prepared to use a contraceptives. The current study supports the results of the study in Lesotho (Akintade et al., 2011), were a large percentage of participants n=83 (85.6) indicated that they had no desire to get pregnant, and n=86

(88.7) participants indicated that they could get pregnant if they did not use contraceptives. The current study compliments the studies done in Tanzania (Mung'ong'o et al., 2010) and Lesotho (Akintade, 2010), where the participants indicated that the main reason for students not taking contraceptives was due to the possible side effects, thus students may need to be educated about the side effectiveness of contraceptives and how these side effects can be managed effectively.

4.5.3 Statements regarding contraceptive practices

From Table 10, n=16 (16.5%) agreed, n=6 (6.2%) were neutral, and n=75 (77.3%) of the participants disagreed that condoms could be used more than once. Sixty (61.9%) agreed and n=34 (35.1%) of participants were neutral about whether a sexually active student ought to take the pill daily. Sixty-one (62.9%) disagreed, and n=24 (24.7%) were neutral regarding whether a sexually active student should only take the pill when engaging in sexual activity. Eighty-three (85.6%) of the students agreed, and n=10 (10.3%) were neutral about the importance of following the instructions on how to take the pill. Seventy-four (76.3%) agreed and n=22 (22.7%) were neutral regarding the importance of keeping the return appointment when taking the injectable contraceptive. Fifty-two (53.6%) agreed and n=33 (34%) of the participants was neutral as to whether condoms should be used when taking certain kinds of medication.

Table 10: Statements regarding contraceptive practice among participants (N=97)

PRACTICE STATEMENT	AGREE	NEUTRAL	DISAGREE
Condoms can be used more than once.	16 (16.5%)	6 (6.2%)	75 (77.3%)
A sexually active student has to take the pill daily at the same time to ensure effectiveness.	60 (61.9%)	34 (35.1%)	3 (3%)
A sexually active student needs to only take the pill when she engages in sexual intercourse.	12 (12.4%)	24 (24.7%)	61 (62.9%)
It is important to follow the instructions on how and when to take the pill.	83 (85.6%)	10 (10.3%)	4 (4.1%)
Condoms to be used when taking certain medication.	52 (53.6%)	33 (34.0%)	12 (12.4%)
It is important for a student on the injectable contraceptive to return on the appointed date.	74 (76.3%)	22 (22.7%)	1 (1%)

In analysing Table 10, studies done in South Africa (Hoque, 2011) on sexual practices of female undergraduate students concur with the current study, where a majority of the participants had positive practices relating to contraceptives. A majority of the participants answered positively to the statements relating to practice with contraceptive use. A majority of the participants n=75 (77.3%) disagreed that condoms can be used more than once, but it was alarming to note that n= 22 (22.7%) of the participants were either neutral, or they agreed that condoms can be used more than once. Similar to the study done in Lesotho (Akintade, 2010), a large percentage of participants n=60 (61.9%) agreed that a sexually active student had to take the pill daily, at the same time to ensure its effectiveness and not only when engaging in sexual activity and a large percentage of participants n=83 (85.6%) agreed on the importance of following the instructions on how to take the pill. Similar to studies done in Ghana (El-Adas, 2012) on the resolution of unintended pregnancy, participants in this study n=74 (76.3) indicated the importance of keeping the return appointment when taking the injectable contraceptive. A large percentage of participants n=33 (34%) were neutral on important contraceptive practices on whether condoms should be used when taking certain medication, and n=34 (35.1%) whether one should take the pill at the same time daily to ensure effectiveness, and n=22 (22.7%) whether it is important to return on the appointment date for the injectable. The current study supports the study done in China (Wang, et al., 2015) and Lesotho (Akintade 2010), which found that education on reproductive health is needed to eliminate the uncertainties.

4.6 Barriers and factors promoting contraceptive use

According to Table 11, n=91 (93.8%) of the participants indicated that they have access to reproductive health clinics, and only a small percentage n=6 (6.2%) indicated that they did not know how close reproductive health services was to them. A majority of the participants n=59 (60.8) receive their reproductive health service from health centres and n=19 (19.9%) from pharmacies. In this study, n=80 (82.5%) of the participants were aware of the family planning service in the campus, and n=79 (81.4%) stated that they can easily access the clinic; while n=74 (76.3%) stated that the services were always available. A small percentage of the participants n=12 (12.4%) stated that they were denied reproductive health service at the campus clinic. A very unusual response of n=74 (76.6%) of participants indicated the “other” category in response to the question as to which was the most convenient time for a student to visit the clinic.

Table 11: Barriers/Factors promoting contraceptive use (N=97)

Response categories		N	%
How close is the nearest reproductive health service to you?	Walking distance	62	63.9
	One taxi drop	13	13.4
	Outside your residence	16	16.5
	I don't know	6	6.2
Are you aware if there are reproductive health services in your campus?	Yes	80	82.5
	No	17	17.5
Can you easily access the family planning service at your campus?	Yes	79	81.4
	No	18	18.6
Are the services always available?	Yes	74	76.3
	No	23	23.7
Have you ever been denied reproductive health service at your campus clinic?	Yes	12	12.4
	No	85	87.6
Have you been turned away from your reproductive health clinic during working hours for any reason?	Yes	6	6.2
	No	91	93.8
Is the clinic hours convenient for you?	Yes	51	52.6
	No	15	15.5
	Not applicable	31	31.9
Which is the most convenient time for you to visit the clinic?	Early morning	6	6.2
	Over lunch hour	8	8.2
	Afternoon	3	3.1
	Evening/night	1	1.0
	Weekends	5	5.2
	Other	74	76.3

In analysing Table 11, all the response categories can either be a barrier or a promotion to contraceptive use. The location, participant's awareness of family planning services, the access to the family planning facility, and the availability of the services, can either be a barrier or a promotion to contraceptive use by students. In analysing Table 11, similar to the studies conducted in Lesotho (Akintade, 2010) and South Africa (Hoque & Ghuman, 2012), a majority of the participants n=79 (81.4%) have access to

reproductive health clinics, whereas only a small percentage $n=6$ (6.2%) indicated that they did not know how close the reproductive health service was to them, the reason may be presumed to be that those participants may not be sexually active. A majority of the participants $n=85$ (87.5%) stated that they had not been denied reproductive health service at their campus clinic, which supports the study done in Lesotho (Akintade, 2010). A majority of the participants $n=80$ (82.5%) were aware of the family planning service in the campus, and almost the same numbers stated that they can easily access the clinic. Similar to the studies done in Lesotho (Akintade, 2010), a small percentage of the participants $n=12$ (12.4%) stated that they were denied reproductive health services at the clinic, this may be due to the unavailability of certain methods of contraceptives available at campus clinics.

4.6.1 Statements relating to barriers/factors promoting contraceptive use

All the statements in Table 12, depending on how they were answered, can act as a barrier or a promotion to a participant who wished to use contraceptives. From Table 12 $n=64$ (66%) agreed and $n=23$ (23.7%) of the participants were neutral when it came to whether religion can be a barrier to contraceptive use. When asked whether convenient geographical location was important to influence contraceptive use, $n=46$ (47.4%) of the participants agreed and $n=35$ (36.1%) were neutral. There was $n=69$ (71.1%) of participants who indicated that friendly, approachable staff promoted the use of contraceptives. Sixty-eight (70.1%) agreed and $n=25$ (25.8%) were neutral on whether skilled personnel influenced the usage of contraceptives. Seventy-seven (79.4%) agreed and $n=15$ (15.5%) were neutral on whether health education influenced the usage of contraceptives. Fifty-five (56.7%) of participants agreed and $n=34$ (35.1%) were neutral as to whether a conducive environment influenced contraceptive usage. Sixty-five (67%) agreed and $n=25$ (25.8%) were neutral as to whether the availability of all contraceptive methods promoted the use of contraceptives. Sixty (61.9%) agreed and thirty (30.9%) were neutral on whether ignorance was barriers to contraceptive use.

Table 12: Statements on barriers/factors promoting contraceptive use (N=97)

STATEMENT	AGREE	NEUTRAL	DISAGREE
Religious beliefs can act as a barrier to contraceptive use.	64 (66%)	23 (23.7%)	10 (10.3%)
Does convenient geographical location influence contraceptive use?	46 (47.4%)	35 (36.1%)	16 (16.5%)
Does friendly approachable staff influence the usage of contraceptives?	69 (71.1%)	20 (20.6%)	8 (8.2%)
Does skilled healthcare personnel influence the usage of contraceptives?	68 (70.1%)	25 (25.8%)	4 (4.1%)
Does health education influence the usage of contraceptives?	77 (79.4%)	15 (15.5%)	5 (5.1%)
Does a conducive/private environment influence usage of contraceptives?	55 (56.7%)	34 (35.1%)	8 (8.2%)
Does the availability of all contraceptive methods influence the usage?	65 (67%)	25 (25.8%)	7 (7.2%)
Ignorance is a barrier to contraceptive use.	60 (61.9%)	30 (30.9%)	7 (7.2%)

In analysing Table 12, the current study is similar to the studies done on the awareness and barriers of family planning among university students in Lesotho (Akintade et al., 2011), where over 60% of the participants indicated that religion n=64 (66%) and ignorance n=60 (61.9%) are barriers to contraceptive use. It was alarming to note that only n=46 (47.4%) of the participants in the current study believed that location of the family planning service will influence contraceptive use, conflicting with the findings of the study done in Lesotho (Akintade, 2010), where a majority of the participants believed that convenient geographical location was important to influence contraceptive use. The current study supported the studies done in the Eastern Cape (Ndlebe, 2011) and Lesotho (Akintade, 2010), whereby friendly, approachable n=69 (71.1%) and skilled staff n=68 (70.1%) and the availability of all contraceptive methods n=65 (67%) promoted the use of contraceptives. In the current study, from the eight statements in Table 12, seven of the statements received more than 20% neutral responses from the participants, which may indicate a need for reproductive health education, supporting

studies done in China (Wang, et al., 2015) and Tanzania (Mung'ong'o, et al., 2010), so that students can make decisive and informed decisions on their sexual health.

4.7 Conclusion

This chapter presented the results and the discussion of the of the current study. The summary, recommendations limitations and conclusion of this study will be presented the following chapter.

CHAPTER 5 - SUMMARY, RECOMMENDATIONS, LIMITATIONS AND CONCLUSION

5.1 Summary of results

Contraception and fertility planning is the key to reducing unplanned pregnancies. The South African Department of Health has recognised this problem of unintended pregnancies, and a national policy and guidelines have been formulated to promote the use of contraceptives, which are free of charge in all public health facilities (Patel, 2014). The aim/purpose of the study was to explore the knowledge, attitude and practice of female undergraduate students in tertiary institution residences in KwaZulu-Natal with regards to contraceptive use.

The conceptual framework used in this study was the Health Belief Model by Rosenstock (Hall, 2012). According to the Health Belief Model, personal behaviour can be influenced by knowledge, attitude and practice, thus, reproductive health education on all methods and aspects of contraceptives, may trigger a consciousness in an individual by means of which to make a conscious decision about the usage of a contraceptive method from the numerous methods available. This model predicts and explains variations in one's behaviour, and it views humans as rational beings, who are able to make cognitive decisions as to whether or not to perform a certain behaviour and to recognise the seriousness of one's actions if negative behaviour is adopted. In this study, the student's knowledge, attitude, practices, barriers and factors that promote contraceptive use were explored.

5.2 Objective one: to explore the knowledge, attitudes and practices that university female students have towards the use of contraceptives.

5.2.1. Participants current knowledge of contraceptives

Results in this current study showed (Table 5, p. 36) that participants have a higher knowledge of contraceptives methods that they were most aware of, as compared to the practice/use of the different methods of contraceptives as seen in (Table 8, p. 42).

These disparities were similar to the findings in countries such as Ghana and Tanzania (Nettey et al., 2014; Mung'ong'o et al., 2010). Results of the current study indicated that students are knowledgeable only with regard to certain benefits, namely: prevention of unplanned pregnancy n=89 (91.8%), controls number of births n=58 (59.8%) and certain methods of contraceptives, condoms n=84 (86.6%), oral pills n=65 (67%) and injectable n=61 (62.9%).

The Health Belief Model, which is based on the understanding that persons will take action if there are perceived benefits; thus, if students are educated on all the benefits

and all the methods of contraceptives, this may improve contraceptive use. A large percentage of students indicated a lack of knowledge on the negative effects of contraceptives, where n=86 (88.7%) of the students indicated that they were not aware that oral contraceptive puts one at risk for certain types of cancer (Table 4, p. 34). An unexpected finding included that n=66 (68%) of the students indicated that they were not aware that contraceptives help prevent STIs and n=16 (16.5%) agreed, 6 (or 6.2%) were neutral that condoms can be used more than once, which indicates a need for reproductive education.

It was interesting to note that the contraceptives the participants were most knowledgeable about was the condoms, n=84 (86.6%), oral pills, n=65 (67%) injectable, n=61 (62.9%) and the emergency contraceptive, n=60 (61.9%) similar to the study done in Lesotho (Akintade, 2010) and China (Wang et al., 2015) and that the least knowledge participants had was with contraceptives that they were least aware of as shown in (Table 5, p. 36) which are the IUCD, spermicidal, dermal patch and natural family planning. It was also of interest to note that there were more participants that were aware of both the male and female sterilisation methods of contraception, which are not commonly practiced among university students (Akintade, 2010), as compared to the IUCD, spermicidal, dermal patch and natural family planning methods (Table 5, p. 36). According to the South African Department of Health, massive campaigns through road shows, television and newspapers was carried out on contraceptive awareness, especially on the implant method of contraception (Department of Health, 2015), yet only n=29 (29.9%) indicated themselves to be knowledgeable about this method of contraception.

5.2.2 Participants attitude towards contraceptive use

University students are faced with many health-related problems, including unwanted pregnancy. The HBM is based on the concept that personal behaviour may be positively changed through a positive attitude. A student's desire is to achieve her academic goals and this can be done through informed decisive decisions. By developing a positive self-image, developing the confidence and ability to take positive actions, and perceiving the severity of an unwanted pregnancy, proactive decisions may be made.

The majority of the students indicated that reproductive education should begin at puberty, n=75 (77.3%), similar to the study done in Ghana (El-Adas, 2012) and Lesotho (Akintade, 2010). Contraceptive health education is very important in South Africa, when there is an alarming rate of pregnancy among girls between the ages of 16 and 19 years (Department of Health, 2015) and n=27 (27.8%) of females in this study fell under this age category. A large number of students as shown in (Table 7, p. 41) were neutral on most of the questions addressed to them with regards to their attitudes towards

contraceptive use, were n=41 (42.3%) were neutral as to whether contraceptives reduces sexual pleasure, and n=51 (52.6%) were neutral as to whether contraceptives are inconvenient to use. These uncertainties can be eliminated through reproductive education, influencing the use of contraceptives. The study indicated a positive attitude by female students with regards to suggesting to their partner to use a contraceptive, with n=82 (84.6%) agreed that it was acceptable to suggest to a partner to use a contraceptive. This was a positive finding, when university students are at a higher risk of acquiring STIs, HIV and unwanted pregnancies, due to of their higher levels of sexual experimentation and unsafe sexual practices (Hoque, 2012). Weight gain among university student was a barrier to contraceptive use, n=49 (50.5%) agreed, and n=41 (42.3) were neutral on whether contraceptives caused weight gain. This result was similar to the results obtained by a study in Tanzania (Mung'ong'o, et al., 2010). This indicated a need for student education on all aspects relating to contraceptives emphasising on the barriers, so that contraceptive use can be improved.

5.2.3 Participants practice with contraceptives

The HBM predicts that a person's behaviour may change through knowledge, thus, if students are knowledgeable on contraceptive methods, they will have the ability to practice sexual behaviour responsibly. The main form of contraceptive practiced by students was the condom n=59 (60.8%), followed by the injectable n=34 (35%), and thereafter followed by oral contraceptives n=14 (14.4%). An unexpected finding of such a high percentage of participants not using the implant method of contraceptive n=81 (83.5%) may be as a result of the lack of awareness of this method. Only n=29 (29.9%) of the students indicated that they were aware of the option of implants, although the South African Department of Health has had numerous campaign to promote the various contraceptive methods, particularly the implant. A large percentage of participants responded negatively to a statement relating to the oral contraceptive (pill), that it should be taken on the days that you were sexually active n= 64 (66%) and n=26 (26.8%) were uncertain, suggests a need for education and training of students with regards to reproductive health. The results of this study indicated a significant difference in the non-use of certain methods of contraceptives (Table 8, p. 42), as compared to the awareness of the contraceptive methods as shown in (Table 5, p 36) although they are available free at all campus clinics and public health clinics e.g. the intra-uterine device, of which n=92 (94.8%) of participants in this study were non-users, possibly due to ignorance. If the students perceive the benefits of this method of contraception, according to the Health Belief Model, a change of behaviour towards contraception may result. According to the Health Belief Model, if one perceives the severity of an action e.g. sexual intercourse without contraceptive protection may lead to pregnancy,

resulting in the student not being able to complete her studies, may trigger a consciousness to use contraceptives to prevent pregnancy.

5.3 Objective two: To identify any barriers that may inhibit contraceptive use in female university students living in residence.

5.3.1. Barriers that hinder participants from contraceptive use

A large percentage of participants agreed that religious belief $n=64$ (66%) and ignorance $n=60$ (61.9%) of reproductive health was a barrier to use contraceptives use, similar to the study done in Lesotho (Akintade, 2010). The current study indicated that majority of the students was satisfied with the reproductive health services on campus as shown in (Table 11, p. 47) with a very low percentage of participants having barriers that hindered them from contraceptive use as shown in (Table 12, p. 49). According to the Health Belief Model, the perceived barriers to contraceptive use can be eliminated through education and training on contraceptive use, which may influence a student's behaviour positively, and thus prevent unwanted pregnancies among female students in campus residences.

5.4 Objective three: To identify any factors that may promote contraceptive use among female university students living in campus residences.

5.4.1 Factors promoting contraceptive use

This study showed, a majority of the participants agreed that friendly, approachable, skilled staff, health education, a conducive environment and the availability of all contraceptive methods may promote contraceptive use as shown in (Table 12, p. 49), similar to the studies done in the Eastern Cape and Lesotho (Ndlebe, 2011; Akintade, 2010). According to the Health Belief Model, when one perceives the severity or threat of an unwanted pregnancy, the student may be influenced to use a contraceptive.

5.5 Recommendations

In nursing practice, implementing the Health Belief Model to change the behaviour of the students in campus residences by increasing their knowledge, attitude and practice with regards to contraceptive use, may result in them acknowledging that pregnancy can be a threat to their studies, and that they can remedy this threat by using contraceptives, thereby reaching their academic goals in the specified time frame. Reproductive health education may be included as part of the university first year programme. Regular residence talks and campaigns, which make students aware of the consequences of unwanted pregnancies, HIV and STI infection, must be planned and implemented. Discussions about contraceptives should be raised to every student

during health visits to the campus clinic. In Nursing Administration, surveys can be carried out on how best the clinic staff can provide for the needs of students requiring reproductive health services. Issues on operational matters of the clinic must be conducive for student utilisation e.g. opening and closing times of the clinic.

In Nursing Education, it is imperative that staff are updated with current knowledge, so as to impart up to date information to students with the aim of influencing them positively towards contraceptive usage. Nursing education ought to be conducted on an ongoing basis so as to ensure academic development to campus clinic staff, so that up to date, information is being made available to students, with the aim of influencing them positively towards contraceptive use. Qualitative nursing research can be done on the knowledge, attitudes and practice of university students with regards to contraceptive use, by means of interviews and focus group discussions.

5.6 Limitations

Students living off campus were excluded from the study. The undergraduate students living off campus residences may be having concerns with regard to their KAP of contraceptive use as well, and because this study was done on students that were living in campus residences, they were not able to participate in the study. This study was limited to quantitative data. Participants may have desired to elaborate on certain questions rather than answering closed ended questions, which could have limited their desired responses and influenced the study findings.

5.7 Conclusion

According to the HBM, a person will take action if a health-related problem can be avoided e.g. unwanted pregnancy, thus, every effort ought to be made to encourage and positively influence sexually active female students living in campus residences to use contraceptives. Although the study shows a high percentage of students that are aware of contraceptives (Table 5, p. 36) and that they have a positive attitude towards contraceptives (Table 7, p. 41), and with a low percentage of barriers to contraceptive use (Table 12, p. 49), yet a large number of students are not practicing contraception due to varying reasons (Table 9, p. 44). It is crucial to develop student-friendly strategies to influence students positively, so that they perceive the threat of an unwanted pregnancy, STIs and HIV infections, and make a conscious, informed decision on the usage of a contraceptive from the number of different methods that are available to them at no cost from the South African Department of Health (Department of Health, 2015).

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APPENDICES

APPENDIX 1: INFORMATION DOCUMENT – CONSENT FORM

Study Title: Exploring knowledge, attitudes and practices among undergraduate female students in tertiary institution residences in KwaZulu-Natal with regards to the use of contraceptives.

September 2014

Good day,

My name is Precelia Gopaul. I am a Masters student at the University of KwaZulu-Natal in the School of Nursing and Public Health, Durban, South Africa. I am conducting a study that involves research which focuses on the knowledge, attitudes and practices among undergraduate female students in tertiary institution residences in KwaZulu-Natal with regards to the use of contraceptives. Your right to participate or not to participate is respected. The aim and purpose of this research is to promote contraceptive use among female undergraduate students living in residences so as to reduce the number of unintended pregnancies, STI's and HIV infections. All information collected will be solely for research purpose and will be treated as confidential. It does not require your name or identity. I will be grateful if you participate. The study is expected to enroll three hundred and fifty- four participants in total, over three campuses in KwaZulu-Natal. It may take you approximately 15 to 20 minutes to complete the questionnaire if you choose to participate.

The study may involve the risk of remembering emotional, distressing incidents or other potential psychological harms. The researcher will monitor and observe the participants emotional and mental health and should the need arise the researcher will refer to appropriate qualified personnel (Professional Nurses, Psychologists).

It is hoped that the study may assist in finding ways to, decreasing the number of unintended pregnancies, abortions, and STI's and HIV infections.

This study has been ethically reviewed and approved by the UKZN Human and Social Sciences Research Ethics Committee (approval number: HSS/1566/014M).

Participation in this study is voluntary; there will be no negative penalties if you do not want to participate. If you do wish to participate you may withdraw participation at any time without any fear of any penalty. There will be no incentives or reimbursements for your participation in this study but I am hoping that the information that I will collect will be helpful in promoting the use of contraceptives among undergraduate female students living in residences. The only cost from you will be of your time.

The data obtained from the study will be kept safely in a locked room with controlled access. During the study, the data will be stored on a computer, access to which is by a code known only to the researcher. All data will be kept for a period of five years; thereafter the data stored will be destroyed.

The results of the study will be fed back to the relevant stakeholders.

In the event of any problems or concerns/questions you may contact the researcher or the supervisors.

Contact details of researcher:

Mrs. P. Gopaul, tel. 031 260 7105 or email: Gopaulpr@ukzn.ac.za.

Contact details of supervisor:

Mrs. D. Wentzel, tel.: (031) 260-3729 or email wentzel@ukzn.ac.za.

Contact details of co-supervisor:

Prof. P. Brysiewicz, tel.: (031) 260-1281 or email brysiewicz@ukzn.ac.za

Kind Regards,

Precelia Gopaul

APPENDIX 2: LETTER OF PERMISSION

Hello,

Thanks for your message, I understand from the introduction that yes you can use and adapt the tool. The intro says:

“This instrument is intended to be no more than a point of departure for investigators wishing to study the sexual and reproductive health of young people. It should always be adapted to local circumstances and priorities and, wherever possible, be used in conjunction with qualitative methods of investigation.”

Best regards,

Christine

http://www.who.int/reproductivehealth/topics/adolescence/core_instruments/en/

<http://www.who.int/reproductivehealth/topics/adolescence/questionnaire/en/>

http://www.who.int/reproductivehealth/topics/adolescence/discussion_topics/en/

From: Precelia Gopaulpr [mailto:Gopaulpr@ukzn.ac.za]

Sent: 08 October 2014 16:06

To: reproductive health

Subject: permission to use John Cleland Questionnaire for interview-survey with young people

Gooday Mam/Sir

I am from Africa and am seeking permission to use John Cleland's questionnaire for Interview-Survey with young people.

My research topic is: EXPLORING THE KNOWLEDGE ATTITUDES AND PRACTICES OF UNIVERSITY STUDENTS LIVING IN RESIDENCE'S IN KWAZULU-NATAL WITH REGARDS TO CONTRACEPTIVE USE.

I will use it as a guide and adapted to our circumstances.

Thank You

PERMISSION TO USE CLINIC STATISTICS

CAMPUS HEALTH CLINICS



Postal Address

P/BAG X 10

UKZN

Physical Address

75TH Anniversary Avenue

Durban

4000

To Whom It May Concern

This is to confirm that Mrs. Precelia Gopauls has been granted permission to use the clinics` statistics for her studies/research, in a confidential and professional way which will not put into disrepute the status of the University of KwaZulu-Natal.

Regards

Muzi Mthembu

HOD

Durban Metropolitan Health Clinics

APPENDIX 3: QUESTIONNAIRE

Section A: Demographic Characteristics (Please Tick Relevant Block)

Q. No :

- 1) Age
 17 - 20 ☐ 21 - 25 ☐ 25+ ☐
- 2) Marital Status
 Single ☐ Married ☐ Divorced/Separated ☐ Widow ☐
- 3) Religion
 Christian ☐ Islam ☐ Hinduism ☐ Other ☐
- 4) Cultural Group
 Black ☐ White ☐ Indian ☐ Coloured ☐ Other ☐
- 5) Current Year or Level of study at University
 1st Year ☐ 2nd Year ☐ 3rd Year ☐ 4th Year ☐

Section B – Your Knowledge of Contraceptives

- 6) Have you ever heard of Contraceptives/Pregnancy Preventing Methods?
 Yes ☐ No ☐
- 7) What benefits one can derive from contraceptives? (You can tick more than one)

<input type="checkbox"/> Control number of births	<input type="checkbox"/> Prevent unplanned/unwanted pregnancy
<input type="checkbox"/> Enhance sexual performance	<input type="checkbox"/> Prevent sexually transmitted infection
<input type="checkbox"/> No significant positive effect	<input type="checkbox"/> I don't know
- 8) What in your opinion are the negative effects of contraceptives?

<input type="checkbox"/> Caused cancer	<input type="checkbox"/> Enhances marital unfaithfulness
<input type="checkbox"/> Increases promiscuity	<input type="checkbox"/> Decrease sexual pleasure
<input type="checkbox"/> Unreliable	<input type="checkbox"/> No significant negative effect
- 9) What are your sources of information? (You may tick more than one answer)

Internet <input type="checkbox"/>	Classroom <input type="checkbox"/>	Family/Friends <input type="checkbox"/>
Hospital/Health Worker <input type="checkbox"/>	Mass Media <input type="checkbox"/>	(TV, Radio, etc)
- 10) Which methods of contraceptives are you aware of? (You can tick more than one)

<input type="checkbox"/> Oral pills	<input type="checkbox"/> Norplants/Implants
<input type="checkbox"/> Intra-uterine contraceptive (IUCD)	<input type="checkbox"/> Emergency Contraceptive (morning after pill)
<input type="checkbox"/> Condom/male and female	<input type="checkbox"/> Spermicidal
<input type="checkbox"/> Dermal patch	<input type="checkbox"/> Natural Family Planning
<input type="checkbox"/> Female sterilization (tubal ligation)	<input type="checkbox"/> Other (Please Specify) _____
<input type="checkbox"/> Male sterilization (vasectomy)	_____
<input type="checkbox"/> Injectables	_____

11) Please answer the following Statements by ticking the relevant block below. Where 1 = Strongly Disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree and 5 = Strongly Agree

	1	2	3	4	5
1. Contraceptives pills might cause cancer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Contraceptive pills can cause infertility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Emergency Contraceptive Pills can be used several times a month	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Condoms protect against sexually transmitted diseases, HIV and unwanted pregnancies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Emergency contraceptives can be taken after 120hrs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. You only need to take the pill only on the days that you are sexually active	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Medical history is not an important factor in the choice of contraceptives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Contraceptives have side effects that can be managed effectively	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section C: Attitudes with contraceptives use

12) Please answer the following Statements by ticking the relevant block below

	AGREE	NEUTRAL	DISAGREE
1. Education on Contraceptives should begin at puberty?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Education on Contraceptives encourages a student to engage in sexual intercourse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Does a student lose their self-respect or self-worth if they are on contraceptives?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is it the responsibility of the female student to ensure that contraceptives are used regularly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is it embarrassing to be seen at a Family Planning Clinic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is it acceptable for a female student to suggest to her partner to use a contraceptive method (i.e. Withdrawal/Condom)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Taking/Using contraceptives are the best option to prevent STI's, HIV and unwanted pregnancies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Traditional contraceptive methods are the best? (i.e. Safe Method, Withdrawal)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Contraceptives causes weight gain?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Contraceptive pills are inconvenient to use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Condoms reduce sexual pleasure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section D: Your practice with contraceptive use

13) In your opinion, which is the most convenient method of contraception for undergraduate students?

- | | |
|---|--|
| <input type="checkbox"/> Oral pills | <input type="checkbox"/> Injectables |
| <input type="checkbox"/> Intra-uterine contraceptive (IUCD) | <input type="checkbox"/> Norplant/Implants |
| <input type="checkbox"/> Condom | <input type="checkbox"/> Dermal patch |
| <input type="checkbox"/> Emergency contraceptive | <input type="checkbox"/> Natural family planning |
| <input type="checkbox"/> Spermicidal | |
| <input type="checkbox"/> Other (Please specify) _____ | |

14) In your opinion, what are the reasons for a student not taking/using contraceptives

- | | |
|--|--|
| <input type="checkbox"/> Not sexually active | <input type="checkbox"/> Desire to get pregnant |
| <input type="checkbox"/> Preventing pregnancy by other means | <input type="checkbox"/> I feel I can't get pregnant |
| <input type="checkbox"/> Afraid of possible side effects | |
| <input type="checkbox"/> Other reason (specify) _____ | |

15) Please answer the following Statements by ticking the relevant block below

	AGREE	NEUTRAL	DISAGREE
1. Condoms can be used more than once?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. A sexually active student has to take the pill daily and at the same time to ensure effectiveness?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. A sexually active student only needs to take the pill when she engages in sexual intercourse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is it important to follow the instructions on how or where to commence taking the first pill on the packet?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Students must use a condom when on certain medication?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Students must use condoms to prevent HIV, STI's or unwanted pregnancies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Is it important for a student on the injectable contraceptive to return to the clinic on the appointment date or a few days before?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section E: Barriers and Factors Promoting Contraceptive use

16) How close is the nearest reproductive health service to you?

Within walking distance ☐

One taxi drop ☐

Two taxi drops ☐

Outside your place of residence ☐

I don't know ☐

17) What is the nature of your service provider?

Pharmacy store ☐

Health Centre ☐

Private Hospital ☐

Provincial hospital ☐

Dedicated family planning centre ☐

18) Are you aware if there are reproductive health services on your campus?

Yes ☐

No ☐

19) If yes from, 18. Can you easily access the family planning services?

Yes ☐

No ☐

20) Are these services always available?

Yes ☐

No ☐

21) Have you ever been denied reproductive health service at your campus clinic?

Yes ☐

No ☐

Not applicable ☐

22) If Yes above, what was the problem or reason (Specify)

23) Have you ever been turned back/refused family planning services during official working hours before, for any reason?

Yes ☐

No ☐

Not applicable ☐

24) From question 23. If yes, what was the reason? Please specify

25) Is the hours the facility opens, convenient for you?

Yes ☐

No ☐

I don't know ☐

Not applicable ☐

26) From question 25. If No, what time is most convenient for you?

☐ Early in the morning

☐ Over lunch hour

☐ Afternoon

☐ Evening/night

☐ Weekends

☐ Holidays

☐ Other

27) Please answer the following Statements by ticking the relevant block below

	AGREE	NEUTRAL	DISAGREE
1. Religious beliefs can act as a barrier to contraceptive use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does convenient geographical location influence the usage of contraception?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Does friendly/approachable staff influence the usage of contraception?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Does skilled health care personnel influence the usage of contraception?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Does health education influence the usage of contraception?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Does a conducive/private environment influence the usage of contraception?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Does the availability of all contraceptive methods influence the usage of contraception?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Ignorance is a barrier to contraceptive use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX 4: APPROVAL FROM UNIVERSITY TO CONDUCT RESEARCH



20 April 2015

Mrs Precelia Gopaul
School of Nursing and Public Health
College of Health Sciences
University of KwaZulu-Natal
Howard College Campus
Email: gopaulpr@ukzn.ac.za

Dear Mrs Gopaul

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN) provided Ethical clearance has been obtained. We note the title of your research project is:

"Exploring knowledge, attitudes and practices among undergraduate female students living in tertiary institution residences' in KwaZulu-Natal with regards to the use of contraceptives".

It is noted that you will be constituting your sample by randomly handing out questionnaires to students on the Howard, Edgewood and Westville Campus at UKZN.

You are not authorized to contact staff and students using Microsoft Outlook address book.

Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

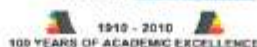
MR B POO
REGISTRAR (ACTING)

Office of the Registrar

Postal Address: Private Bag X54001, Durban, South Africa

Telephone: +27 (0) 31 260 8005/2206 Facsimile: +27 (0) 31 260 7824/2204 Email: registrar@ukzn.ac.za

Website: www.ukzn.ac.za



Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

APPENDIX 5: ETHICS CLEARANCE



15 June 2015

Mrs Precelia Gopaul 981241794
School of Nursing and Public Health
Howard College Campus

Dear Mrs Gopaul

Protocol reference number: HSS/1566/014M

Project title: Exploring knowledge, attitudes and practices among undergraduate female students living in tertiary institution residences' in KwaZulu-Natal with regards to the use of contraceptive.

Full Approval – Committee Reviewed Protocol

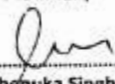
This letter serves to notify you that your application in connection with the above has now been granted full approval.

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach/Methods must be reviewed and approved through an amendment /modification prior to its implementation. Please quote the above reference number for all queries relating to this study. Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

Best wishes for the successful completion of your research protocol.

Yours faithfully



.....
Dr Shenuka Singh (Chair)
/px

cc Supervisor: Mrs Dorien Wentzel and Professor P Brysiewicz
cc Academic Leader Research: Professor M Mars
cc School Administrator: Mrs Caroline Dhanraj

Humanities & Social Sciences Research Ethics Committee
Dr Shenuka Singh (Chair)

Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 260 3587/03504557 Facsimile: +27 (0) 31 260 4600 Email: singhs@ukzn.ac.za / smym@ukzn.ac.za / mohungu@ukzn.ac.za
Website: www.ukzn.ac.za

 1910 - 2010
100 YEARS OF ACADEMIC EXCELLENCE

Evolution Campuses = Edgewood = Howard College = Medical School = Pietermaritzburg = Westville

APPENDIX 6: EDIT CERTIFICATE

GENEVIEVE WOOD
P.O. BOX 511 WITS 2050 | 0616387159

EDITING CERTIFICATE
LANGUAGE EDITING SERVICES

Date: 2016/08/11

This serves to confirm that the examined document entitled:

**UNDERGRADUATE FEMALE STUDENTS LIVING IN TERTIARY INSTITUTION RESIDENCES IN
KWAZULU-NATAL WITH REGARDS TO THE USE OF CONTRACEPTIVES**

has been edited on behalf of its author

PRECELIA GOPAUL



Genevieve Wood
PhD candidate
Wits University