ASSESSING THE USE OF CONTRACEPTIVES BY UNDERGRADUATE FEMALE STUDENTS IN A SELECTED HIGHER EDUCATIONAL INSTITUTION

M Cur/ Full-Dissertation

Researcher: Maria Hannelie Coetzee

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences
School of Health Care Sciences
Department of Nursing Science

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Researcher: Maria Hannelie Coetzee

Student number: 04553226

Contact details:
Address: 11 Marcell crescent, Six Fountains,
Pretoria
Tel: 012 420 6904
Fax: 012 420 2503
Cell: 083 306 5450
E-mail: hermancoetzee@gmail.com

Supervisor: Dr. R. Ngunyulu

Date: November 2014

DECLARATION

I, Maria Hannelie Coetzee, hereby declare that the **"Assessing the use of contraceptives by undergraduate female students at a higher educational institution"** full dissertation submitted to the University of Pretoria, for the degree of masters in Community Health, has not been submitted by me or anyone else for a degree at this or any other university. I also declare that this is my own work and that I have acknowledged all the material contained herein.

13 February 2015

Maria Hannelie Coetzee

Date

DEDICATION

I dedicate this dissertation to God, my Creator, without whom this study would not have been possible.

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ABSTRACT

Introduction/Background

Unplanned pregnancies among students at higher educational institutions are a major concern worldwide, including South Africa. Apart from various social and psychological problems, unplanned pregnancies affect students' objectives of achieving academic success. Research indicated that around 80 per cent of female students are sexually active. Higher educational students between the ages of 18 and 24 have one of the highest rates of unplanned pregnancies due to the lack of contraceptive use, knowledge and awareness regarding the use of contraceptives.

Purpose of the study

The purpose of the study was to assess the use of contraceptives by female undergraduate students in a higher educational institution.

Methodology

In terms of methodology, a cross-sectional, descriptive quantitative survey was used. The survey included 400 female undergraduate students at a higher educational institution who were required to respond to a self-administrative questionnaire. Categorical data, such as race, religion, ethnic group, place of residence and marital status were compared to each group using Chi square. Multiple logic regression analysis was applied to test the models. In addition, frequency tables, bar charts and pie charts were generated for all variables, which served as an input for descriptive statistics, based on frequencies and percentages.

Research findings

Of the 74 per cent sexually active females, 79 per cent reported using contraceptives. The most common used methods were the oral contraceptives, 38 per cent, and male condoms, 25 per cent. The most commonly known methods were condoms, 84 per cent, and the oral contraceptive, 68 per cent. The level of knowledge of the condom use to prevent sexually transmitted diseases was very high, 91 per cent. The knowledge of the benefits of contraceptives was also high, 97 per cent. There were some misconceptions, like contraceptives cause cancer and 75 per cent indicated weight gain as a side-effect of contraceptives. The level of knowledge of the emergency contraceptive was high, 90 per cent, but the awareness that it is free of charge at the campus clinic was low, 30 per

cent. The level of awareness of the services was good, 72 per cent, and the most common first source of information was the school, 65 per cent. Sixteen per cent of participants indicated that religion was a factor for non-utilisation of contraceptives.

Conclusion

A lack of knowledge and awareness on some contraceptives methods was found. Thus educational programmes to increase student's knowledge on all contraceptive methods, including addressing possible side-effects, and its use, are urgently needed to increase the use of contraceptives and assisting in reducing the rate of unplanned pregnancies.

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

The accelerating rate of unplanned pregnancies among students at higher educational institutions is a major concern, worldwide, including South Africa (Zhou, Wang, Ye, Gu, Zeng, & Wang 2012, p.1153). Approximately 210 million pregnancies occur annually across the world, of which 75 million (or about 36 percent) are unplanned or unwanted. Reasons for the high number of unplanned pregnancies include contraceptive failure either due to inconsistent or incorrect use of contraceptive methods or failure of the method itself (Adhikari 2009, p 2).

In South Africa, it is estimated that approximately 35 per cent of women under the age of 20 fall pregnant (Roberts, Moodley, & Esterhuizen 2004, p. 441). In the study entitled „Emergency Contraception: knowledge and practices of tertiary students in Durban, South Africa", it was mentioned that young students at higher educational institutions are often exploring their sexuality. These students are without parental guidance and influenced by peer groups which expose them to risky behaviours. In the process of engaging in risky behaviours they do not always take the necessary precautions especially related to sexual activities, which lead to an increased rate in unplanned pregnancies (Roberts et al. 2004, p. 441). This is supported by Vermaas (2010, p.1) by reporting that since 2005, the number of students who visit their Student Development and Support services for assistance related to unplanned pregnancies, termination of pregnancies and post-abortion stress have increased by approximately 250 per cent in certain higher educational institutions in the Gauteng Province of South Africa.

In the study among sexually active university students, it was suggested that one of the reasons for the high rate of unplanned pregnancies, may be related to lack of knowledge and awareness of the use of contraceptives (Brunner Huber & Ersek 2009, p. 1063).

Young students are not always ready for sexual experiences and due to inadequate knowledge and awareness of the use of contraceptives, may be reluctant to adopt a suitable contraceptive method, to safe-guard them against pregnancy. This may also contribute to an increased rate of unplanned pregnancies (Roberts et al. 2004, p. 441; Akintade, Pengpid, & Peltzer 2011, p. 72).

Unplanned pregnancies amongst students cause variety of challenges for higher educational institutions. These challenges include amongst others, high dropout rates which result in severe financial implications for the academic institutions. In the case of students, unplanned pregnancies have a negative impact on the bio-psychosocial well-being and relationships, while affecting the students‟ academic performance (Vermaas 2010, p.1). Despite the availability of free contraceptive services at higher educational institutions in South Africa, unplanned pregnancies continue to pose challenges (Maja & Ehlers 2004, p. 42). These challenges include identifying reasons for failure in utilising contraceptives effectively and possible barriers preventing such effective use.

Student Health Centres can play a vital role in rendering on-site carefully designed educational and promotional programmes on contraceptive use and practices, as students at higher educational institutions form an important high-risk group in the community (Roberts et al. 2004, p. 445). They can assist in providing effective, accurate information on the use of contraceptive methods; this information can eventually assist in reducing the number of unplanned pregnancies.

The objective of the study was to assess the use of contraceptives by undergraduate students at a selected higher educational institution. The study hoped to improve the sexual and reproductive health of undergraduate students, with the objective of supporting the students to be more successful in their academic career.

1.2 BACKGROUND

Worldwide female students are exposed to the risk of unplanned pregnancies, as a result of ineffective contraceptive use or the non-utilisation thereof (Maja & Ehlers 2004, p. 43). These risks include failure to complete their education, unability to maintain gainful employment and make independent marital decisions (Maja & Ehlers 2004, p. 43). The sexual activities of young students are a communal, municipal and public health concern, as it eventually leads to unplanned pregnancies, and these activities, especially pre-marital sexual activity seems to be increasing among higher educational institution students in countries such as Asia and Africa, as a result of factors like rapid urbanisation and exposure to mass media (Mehra et al. 2012, p. 1).

In several studies it was reported that the lack of adequate knowledge and awareness of effective contraceptive use among female higher educational students, result in the non-utilisation of contraceptives, which eventually contributes to high unplanned pregnancy rates. It is estimated that it contributes to about 8 to 30 million pregnancies worldwide every year (MacPhail et al. 2007, p.5 of 8; Adhikari 2009, p. 2 of 5). This is supported by international

research who reported that students between 18 and 24 years have one of the highest rates of unplanned pregnancies, due to the lack of effective knowledge concerning contraceptive use, resulting in an increase in unplanned pregnancies (Trieu et al. 2011, p. 431; Bryant 2009, p. 12). Approximately 210 million pregnancies occur annually across the world, of which 75 million (or about 36 percent) are unplanned or unwanted (Adhikari 2009, p. 2).

In research studies conducted worldwide among university students, several factors were identified as contributing to the non-utilisation of contraceptives, include, among others, lack of knowledge and awareness, age, culture, ethnicity, religion, poor access, peer pressure, sources of information, alcohol and substance abuse and lack of partner support (Ahmed et al. 2012, p. 2 of 9; Golbasi et al. 2012, p. 81). Another study compiled among university students in the USA estimated that regular contraceptive use can prevent about 12.0 million pregnancies every year (Ersek et al. 2011, p. 497).

Approximately 39 per cent unwanted or unplanned pregnancies occur in Africa (Mehra et al. 2012, p. 1). In a study among 15 to 24 year old South African women, it was estimated that only 52. 2 per cent of sexually experienced women are using contraceptives (MacPhail et al. 2007, p. 3 of 8). Due to the fact that 80 per cent of undergraduate students at higher educational institutions are sexually active, it is vital that they have access to safe, accessible and adequate contraceptive services (Bryant 2009, p. 12). Dreyer (2012, p. 6) suggests that the main reasons for women not utilising or discontinuing the use of contraceptives are side effects, lack of knowledge about different methods available, or just lack of interest in utilising it.

In the study among students in Durban, South Africa, Roberts et al. (2004, p. 441), suggested that an increase in the use of emergency contraceptives might reduce the number of unplanned pregnancies. However due to the lack of knowledge and awareness thereof, the family planning services were underutilised (Roberts et al. 2004, p. 441).

The study intended to identify factors that contribute to the non-utilisation of contraceptives among students in this higher educational institution. The findings aimed to improve the student‟s knowledge that would enable them to make informed decisions regarding their sexual health. In turn this will enhance students‟ success, general well-being and their academic career as well.

1.3 PROBLEM STATEMENT

Every year the rate of unplanned pregnancies among students at higher educational institutions continue to increase worldwide; despite the availability of free contraceptives,

emergency contraceptives and termination of pregnancy services offered by Student Health Centres at higher educational institutions (Maja & Ehlers 2004, p. 43). As a co-ordinator of the student health services, working at a particular higher educational institutional institution, the researcher discovered that the rate of unplanned pregnancies among undergraduate students continue to rise despite the availability of these services.

Table 1: The unplanned pregnancy rate from 2009 to 2013 at the selected higher educational institution:

Campus	2009	2010	2011	2012	2013
A	59	28	42	39	86
B	12	16	9	9	9

Source: The selected higher educational institution.

This is supported by Vermaas (2010, p1), who reported that since 2005, students who attended their Student Developmental and Support Services due to unplanned pregnancies, termination of pregnancy or post-termination of pregnancy stress, increased, by approximately 250 per cent.

Research done in Kwazulu-Natal, South Africa (Roberts et al. 2004, p. 441), has indicated that barriers to the effective use of contraceptive services still exist, among students at higher educational institutions. Lack of awareness and knowledge in the use of contraceptives were associated with the failure of utilising it (MacPhail et al. 2007, p. 5 of 8). This is also linked to lack of effective and adequate information regarding contraceptive use (Roberts et al. 2004, p. 441).

It is estimated that 54 million unplanned pregnancies could be prevented annually, if all the needs for effective contraception use was satisfied in developing countries (Singh et al. 2010, p. 246). Research conducted among South African females between the ages of 15 and 24 years, indicated that the availability and accessibility of contraceptives are still inadequate (MacPhail et al. 2007, p. 2 of 8).

It is recommended that there should be a drive to change attitudes towards the use of emergency contraception, providing more information and expanding health education in this order, to reduce the rate of unplanned pregnancies (Ahmed et al. 2012, p. 8 of 9). The high rate of unplanned pregnancies causes multiple problems for academic institutions across the world. These problems relate to high dropout rates of students, serious financial losses for academic institutions and an increased drain on public sector funds (Vermaas 2010, p1). According to Roberts et al (2004, p. 445); Abera & Tebeje (2009, p.37), was indicated that

there is a need for educational programmes on contraceptive use at Student Health Services of higher educational institutions.

Assessing the use of contraceptives might help in designing a suitable educational programme at higher educational institutions to assist in decreasing the rate of unplanned pregnancies. The assessment of contraceptive use among undergraduate female students determined reasons for the non-utilisation of it (Brunner Huber & Ersek 2009, p.1069). This might have lead to students making informed decisions concerning their sexual and reproductive health. Simultaneously, this might also assist higher educational institutions to address the issue of potential advancement of female students" academic career.

1.4 RESEARCH HYPOTHESIS, AIMS AND OBJECTIVES

1.4.1 YPOTHESIS

Students at higher educational institutions have inadequate knowledge and awareness of the use of contraceptives that may contribute to increased levels of unplanned pregnancies.

1.4.2 AIMS OF THE STUDY

The aim of the study was to assess the use of contraceptives of students at a particular higher educational institution to address the concern of the increased rate of unplanned pregnancies.

1.4.3 THE RESEARSH OBJECTIVES OF THE STUDY WERE AS FOLLOWS:

- To determine the use of contraceptives among undergraduate female students
- To determine the knowledge of contraceptive use among undergraduate female students
- To describe the factors that contributes to the non-utilisation of contraceptives among undergraduate female students.

1.5 SIGNIFICANCE OF THE STUDY

This study aimed to assess the use of contraceptives, as well as the knowledge of contraceptive use. In addition, it described the factors that contribute to the non-utilisation of contraceptives. The outcome of the study could be used by professionals and students to reduce the rate of unplanned pregnancies, by means of assisting students in making informed decisions regarding their sexual health. This may include the provision of a platform for effective intervention, and creating opportunities for higher educational institutions to improve their current sexual and reproductive health services.

Students can advance their academic career within a shorter period which would prevent a financial drain on higher educational and public services. Less unwanted pregnancies may lead to substantial cost-saving in terms of social spending by government.

Due to the increased rate of unplanned pregnancies, it was important to assess the use of contraceptives, the knowledge thereof and describe factors that contribute to the non-utilisation of contraceptives among undergraduate students, in order to provide recommendations to reduce risky sexual behaviour (Zhou et al. 2012 p. 1157). Currently there seem to be limited current research into female student‟s satisfaction with or discontinuation of contraception (Ersek et al. 2011, p. 498).

1.6 ASSUMPTIONS.

Several assumptions related to the increase rate of unplanned pregnancies are:

- The rate of unplanned pregnancies of students at higher educational institutions continues to increase every year across the world, despite the assumption that students have adequate knowledge of the risks of unprotected sex (Vermaas 2010, p.1).
- The availability of free contraceptives in the Republic of South Africa should lead to a decrease in unplanned pregnancies (Maja & Ehlers 2004, p. 43).
- Knowledge of contraceptive use would improve contraceptive practices and the health and wellbeing of students; which will in turn may decrease the rate of unplanned pregnancies (Maja & Ehlers 2004, p. 43).

1.7 DEFINITION OF KEY TERMS

A definition of terms is given to explain to the reader the meaning of some of the concepts in the study (Akintade 2010, p. 13 of 109).

1.7.1 Assessment: means to „decide or estimate the value or quality of a person or thing‟ („Oxford‟ 2004, p. 26). For the purpose of this study, assessing refers to determining the use of contraceptives.

1.7.2. Contraception: The use of birth control methods to prevent unplanned pregnancies, during sexual intercourse (Bafana 2010, p. 13 of 81, Yunos 2010, p. 14 of 95). In this study the use of contraception refers to the use thereof by female undergraduate students between the age of 18 and 24 years.

1.7.3 Higher educational institution: means „any institution that provides higher education on a full-time, part-time or distance basis and which is -

a) merged, established or deemed to be established as a public higher education institution under this Act;

b) declared as a public higher education institution under this Act: or

c) registered or provisionally registered as a private higher education institution under this Act‟, (Higher Educational Act, 1997,(Act No.101 of 1997). For the purpose of this study it refers to female undergraduate students between the age of 18 and 24 years, who are registered to study at the selected higher educational institution.

1.7.4 Student: means „any person registered as a student at a higher education institution" (Higher Educational Act, 1997, (Act No.101 of 1997). In this study student refers to all female undergraduate students between the age of 18 and 24 years.

1.7.5 Unplanned pregnancies: A pregnancy that was not planned during the course of studies, due to not using contraceptives, or due to the incorrect and inconsistent use thereof (Bafana 2010, p. 23 of 81, Ahmed et al. 2012, p. 3 of 9, Singh 2010, p, 242). For the purpose of this study it refers to a female undergraduate student between 18 and 24 years of age who experience an unplanned pregnancy.

1.8 RESEARCH DESIGN

The research design was a cross-sectional, descriptive quantitative survey, which involved the collection of data as soon as the phenomenon under study was captured, during a single point of data collection. A self administrative structured questionnaire was used to collect data to assess the use of contraceptives among female undergraduate students.

The details of the research design will be described in Chapter 3.

1.9 ORGANIZATION OF CHAPTERS

Chapter one: Overview of the study
Chapter two: Literature review
Chapter three: Research methodology.
Chapter four: Data analysis and discussion of results
Chapter five: Discussion, implications, recommendations, limitations and final conclusion

1.10 CONCLUSION

This chapter provided an overview of the study. Unplanned pregnancies are a major reproductive health problem across the world (Maja 2002, p. 39 of 367), and have a negative impact on student success and output, and eventually on the economy of the country.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter one was an overview of the research study. Chapter two deals with the literature review and contain five sections, which include prevalence of unplanned pregnancies, contraceptive use in higher educational institutions, a section on knowledge and awareness of contraceptive use and factors contributing to the non-utilisation of contraceptives and a conclusion. A literature review is the search and review of relevant literature and provides a written summary of evidence on the research problem (Polit & Beck 2012, p. 124).

The high rate of unplanned pregnancies among students at higher educational institutions has become a major concern worldwide (Zhou et al. 2012, p. 1153). Several studies done internationally and in South Africa have found that a lack of knowledge of contraceptives may lead to an increased rate in unplanned pregnancies (Roberts et al. 2004, p. 441; Akintade et al. 2011, p. 72).

2.2 PREVALENCE OF UNPLANNED PREGNANCIES

2.2.1 GLOBALLY

Estimates of the global incidence of unplanned pregnancy and pregnancy outcomes were developed for the first time in 1995 and published more than ten years ago (Singh et al. 2010, p 241). At that time, about 38 per cent of all pregnancies were estimated to be unplanned and more than half of these (22 per cent of all pregnancies) ended in abortion. Of the 208 million pregnancies that occurred worldwide in 2008, it is estimated that 41 per cent, (86 million), were unintended or unplanned, and 185 million of these took place in the developing world (Singh et al. 2010, p. 241). In a study done in 2009 among college students in Nepal, it was indicated that approximately 210 million pregnancies occur across the world, annually, of which 75 million (36 per cent) are unplanned or unwanted, and that the higher rates of unplanned or unwanted pregnancies occur among university age women, with 60 per cent of pregnancies being unplanned. The percentage of unplanned pregnancies was even higher among 18 to 19 year old females (Adhikari 2009, p. 2 of 5). This was supported by another study by Mehra et al. (2012, p.110), among Ugandan university students, where it was reported that more or less 41 per cent of all pregnancies worldwide are unplanned. Unintended/ unplanned pregnancy rate fell by 29 per cent in developed regions and by 20 per cent in developing regions. The highest unintended or unplanned pregnancy rates were found for Eastern and Middle Africa and the lowest for Southern and Western Europe and Eastern Asia. North America is the only region in which the overall

rates have not decline (Singh et al. 2010, p. 241). In a another study done on contraceptive use and attitudes among female college students, it was suggested that college aged women between ages of 20 to 24 have one of the highest rate of unplanned pregnancies due to the lack of contraceptive use (Bryant 2009, p. 12).

This is supported by other studies that reported that almost half of the pregnancies in the United States of America are unplanned, of which mostly occur in 18-24 year old women (Brunner Huber & Ersek 2009, p. 1063; Eisenberg et al. 2012, p. 479.e1).

In even more recent studies the World Health Organization, estimated that about 45 per cent of pregnancies across the world are unplanned, unintended or unwanted, and that about half of it will end in termination of pregnancy (Dreyer 2012, p. 6). There is thus strong evidence that at least half of all pregnancies worldwide are unplanned, and many occur among university age students between 18 and 24 year old.

2.2.2 IN AFRICA

Every year in Sub-Saharan Africa, about 14 million unplanned pregnancies transpire. Of the 14 million unplanned pregnancies, 44 per cent occur among women aged 15 to 24 years (Hubacher et al. 2008, p. 73). In a study by Mehra et al. (2012, p. 110), it was suggested that 39 per cent of the more or less 41 per cent unplanned pregnancies worldwide, occurs in Africa.

2.2.3 IN SOUTH AFRICA

A research study done on contraceptives practices of women in Gauteng Province by Maja & Ehlers (2004, p. 43), stated that if the present population growth rate is maintained, then the population of South Africa could reach 70 million by 2020, and could escalate to 100 million by 2050. In another research study done in South Africa, it was revealed that during the 2003 Demographic Health Survey, the occurrence of unplanned pregnancies in South Africa, was 61 per cent (Bafana 2010, p. 11 of 81).

2.3 CONTRACEPTIVE USE

Contraceptive use is the use of any purposeful means of reducing contraception like oral contraception, injectables or condoms (Yunos 2010, p. 20 of 95). Studies have indicated that girls usually choose to delay having children until they have completed their studies (Yunos 2010, p. 20 of 95).

Worldwide the contraceptive use prevalence was estimated to be 63 per cent in 2000, with higher levels of use in developed countries at 70 per cent, and in less developed countries at 61 per cent (Bafana 2010, p. 7 of 81).

In countries where the incidence of unplanned pregnancies was decreasing, there was an increase in the use of contraceptives (Singh et al. 2010, 246). Worldwide the use of both modern and traditional methods increased steadily, indicating that women have not moved towards more effective methods during this time (Singh et al. 2010, p. 246). It is suggested that the underlying factors for unplanned pregnancies are lack of support from one‟s partner and poor access to family planning services. More proximate factors include discontinuation of contraceptive use due to problems with methods, non-utilisation of contraceptives because of fear of methods side effects, poor understanding of the risk of pregnancy, partner‟s opposition to the use of contraceptives, difficulty in assessing services and or supplies, and unexpected change in life circumstances (Singh et al. 2010, p. 246).
In a study done on contraceptive use and attitudes among female college students, it was suggested that college aged women between ages of 20 and 24 have one of the highest rate of unplanned pregnancies due to the lack of contraceptive use (Bryant 2009, p. 12). In this study it was revealed that of the 120 students, 53.3 per cent did not use contraception (Bryant 2009, p.14).

Research done in the United States of America, among female college students indicated that 52 per cent of girls who experienced unplanned pregnancies reported using contraceptives. Two reasons given for the pregnancies were contraceptive failure or incorrect use. It was suggested by the study that healthcare workers should assist girls in giving adequate information about contraceptive use (Bryant 2009, p.16).

In 2000 it was estimated that Africa had the lowest rate of contraceptive use in the world at only 28 per cent (Bafana 2010, p. 7 of 81). In Sub-Saharan Africa approximately 14 million unplanned pregnancies occur and a fairly large proportion of unplanned pregnancies are due to poor use of short- term hormonal methods (Hubacher et al. 2008, p. 73).

In research done among female students at the National University of Lesotho, it was revealed that at the age of 24 years over two third of young South African girls are sexually active, of which 50 per cent have been pregnant and only half have ever used contraceptives (Akintade 2010, p. 8 of 109).

In a study done in 2009, among sexually active university students, it was reported that 77.1 per cent were using contraception (Brunner Huber & Ersek 2009, p. 1063). This is supported

by another study among female university students that one third of respondents were not currently using any contraception (Akintade et al. 2011, p. 76). There appears to be strong evidence that almost one third to a half of university age girls are not using contraception.

Studies have found that the overall prevalence of contraceptive use in South Africa, during the 2003 Demographic Health Survey was 65 per cent. The majority of this group, namely 64.6 of the 65 per cent was using modern methods and almost 0 per cent traditional methods. The most common method was the injectable (32.8 per cent) and the oral contraceptive was 12.2 per cent. Methods such as abstinence and intra uterine devices were utilised less that 1 per cent (Bafana 2010, p. 7 of 81).

In another study done among higher educational students in Durban, it was suggested that an increase in the use of emergency contraceptives would reduce the number of unplanned and unwanted pregnancies, as well as the number of induced abortion. It was also suggested that emergency contraceptives were found to be underutilised due to a lack of knowledge and awareness of it (Roberts et al. 2004, p. 445).

Age and race are also found to be associated with the use of contraceptives as age increase the use thereof also increase. Some studies found that racial differences also occur in contraceptive use. The 2003 Demographic Health Survey reported that the current use of all contraceptives for Whites were 81 per cent, 75 per cent for Asian women, 70 per cent for coloured women and 62 per cent for Black women (Bafana 2010, p. 7 of 81). Religion influences the use of contraceptives as well. Studies revealed that some religions like the Hindus have no prohibition against it; where as the Roman Catholic Church encourages abstinence and natural contraceptives as suitable methods of contraceptives (Akintade et al. 2011, p. 76). In other studies it was suggested that family, friends and peers also have a big influence in the use of contraceptives (Mehra et al. 2012, p. 8). It is estimated that regular contraceptive use can prevent 12.0 million pregnancies every year, (Ersek et al. 2011, p. 497).

2.4 KNOWLEDGE AND AWARENESS OF CONTRACEPTION USE

Many studies found that a lack of adequate knowledge and awareness of contraceptive use has resulted in inconsistent or incorrect use, and has been associated with an increase rate in unplanned pregnancies (MacPhail et al. 2007, p. 5 of 8).

This is supported by a study done among students in Nepal, where it was estimated that between 8 and 30 million pregnancies occur every year due to inconsistent or incorrect use of contraceptives (Adhikari 2009, p. 2 of 5). Adequate and effective knowledge regarding the

side effects reduce discontinuation and inconsistency of contraceptive use (de Graaf et al. 2010, p. 190; Yunos 2010, p. 25 of 95).

International studies reveal that a positive correlation exists between contraceptive knowledge and sexual behaviour. Evidence of findings of students‟ disturbingly low levels of knowledge, stimulated a need for new strategies. In this study it was suggested that contraceptive knowledge and dispelling misconceptions about contraceptive methods and use may have the potential to have a positive impact on young adult‟s behaviour (Frost, Lindberg & Finer 2012, p. 115).

Another study among sexually active university students suggests that students receiving health education regarding contraceptives seem 6.63 times more likely to use contraceptives, compared to students who received no education at all (Brunner Huber & Ersek 2009, p. 1063).

Furthermore it was found that students have limited knowledge and awareness of emergency contraceptives, which can lead to an increase in unplanned pregnancies (Golbasi et al. 2012, p. 78; Trieu et al. 2011, p. 432). This is supported by a study done in the Western Cape Province, South Africa, where it was found that only 30 per cent of sexually active women were aware of emergency contraceptives (Ahmed et al. 2012, p. 6 of 9).

Although emergency contraception is not recommended as a routine method, it is found to be very useful to use after unprotected sexual intercourse to prevent an unplanned pregnancy (Tajure 2010, p. 91). Unfortunately as many students are unaware of it, it is therefore suggested that health education initiatives should target students as they are more likely to be sexually active. This may contribute to reducing unplanned pregnancies (Roberts et al. 2004, p. 441).

The use of emergency contraceptives is determined by the students‟ knowledge and awareness of its availability. In a survey done in Gauteng, South Africa in 2000, 67 per cent students were unaware of the availability of emergency contraceptives. In the same study it was estimated that 73 per cent had no knowledge about emergency contraception (Maja & Ehlers 2004, p. 49). In a study conducted in Durban, it was found that only 56 per cent of students ever heard of emergency contraception. In the study it was found that they had limited knowledge and use of emergency contraception. An urgent need for health education programmes was expressed to increase the knowledge and awareness of emergency contraception (Roberts et al. 2004, p. 441). This was also supported by another study done

at a university in Southwest Ethiopia, who found that only 53 per cent of respondents ever heard about emergency contraception, and of which only 48 per cent had correct knowledge when to utilise it (Abera & Tebeje 2009, p. 39).

It is suggested that sufficient knowledge could enable girls to postpone having children, until they complete their studies and are ready financially, emotionally and socially to care for a family (Maja 2002, p. 43). There appears to be strong evidence in studies done across the world and in South Africa that there is a lack of knowledge and awareness about emergency contraception and that there is a need for more and accurate knowledge/ information regarding the correct use of emergency contraception (Roberts et al. 2004, p 445; Abera &Tebeje 2009, p. 42; Golbasi et al. 2012, p. 78).

Many studies also suggested that better utilisation of emergency contraception can reduce the high risk of unplanned pregnancies and the request for termination of pregnancies (Maja 2004, p. 43; Tajure 2010, p. 91).

2.5 FACTORS CONTRIBUTING TO THE NON-UTILISATION OF CONTRACEPTIVES

Many factors can lead to the non-utilisation of contraceptives. For contraceptives to be utilised more effectively and consistently, these factors should be identified, avoided or overcome, to prevent unplanned pregnancies.

The following factors are believed to have a contributory effect to the non-utilisation of contraceptives such as, lack of knowledge, age, culture, ethnicity, religion, and poor access to contraceptive services, peer pressure, sources of information, substance abuse and partner support. All these factors can influence whether contraceptives are used consistently or not (Ahmed et al. 2012, p. 6 of 9; Golbasi et al. 2012, p. 78).

Age is a significant factor to take in consideration. Young students are usually ignorant, and many have not received any sexual education from their parents, before coming to the higher educational institution. They may not even understand that they can fall pregnant during their first few months of sexual activity (Mehra et al. 2012, p. 2). This is supported by a study done at a higher educational institution in Durban, South Africa, where it mentions that young students are often exploring their sexuality and are free of parental guidance, influenced by peers, and are exposed to risky behaviour (Yunos 2010, p. 9 of 95).

Girls currently enrolled in universities, usually from the age of 18 years old, are thus an important vulnerable population to consider, as they are more likely to be sexually active (Bafana 2010, p. 24 of 81; Adhikari 2009, p. 5 of 5). This is supported by another study that

found that 80 per cent of students at higher educational institutions are sexually active (Bryant 2009, p. 12).

There is strong evidence that a lack of adequate and correct knowledge, combined with poor awareness of the side-effects of contraceptives, contribute to the non-utilisation of contraceptives (MacPhail et al. 2007, p. 2 of 8; Zhou et al. 2012, p. 1157; Ersek et al. 2011, p. 498).

Poor awareness also exists in terms of the use and knowledge of emergency contraceptives in reducing unplanned pregnancy after unprotected sexual intercourse (Roberts et al. 2004, p. 445; Ahmed et al. 2012, p. 2 of 9; Singh et al. 2010, p. 241). In addition there are negative attitudes towards contraceptives that may negatively influence the use thereof (Ahmed et al.2012, p. 2 of 9; Akintade et al. 2011, p. 8 of 9; Zhou et al. 2012, p. 1154).

Other factors are found to be low accessibility (Mehra et al. 2012, p. 7) and incorrect information from sources about contraceptive use. In Turkey it was found that main sources of information about contraception such as books, journals, friends and family have a high potential of giving wrong and imperfect information to students, which is usually critical and negative (Golbasi at al. 2012, p. 81; Ahmed et al. 2012, p. 7 of 9). Appropriate and accurate educational knowledge by health workers can assist in reducing negative attitudes of contraceptive use (Bryant 2009, p. 16).

In Lesotho, 27.2 per cent of respondents indicated that religion was a factor contributing to the non-utilisation of contraceptives (Akintade et al. 2011, p. 76). In Turkey the misconception exist that the use of contraceptives negatively influences the pleasure experienced and lead to mistrust between couples (Golbasi et al. 2012, p. 85).

Dreyer (2012, p. 6) suggests that the main reasons for women not utilising or discontinuing the use of contraceptives are side effects, lack of knowledge about different methods available or lack of interest. It is thus vital to educate girls in using contraceptives correctly and consistently to assist them in achieving their academic goals.

In a study among Ugandan university students (Mehra et al. 2012, p. 2) and in sexually active university students in the United States it was found that alcohol abuse negatively influences the use of contraceptives (Bruner Huber & Ersek 2009, p. 1063). This is supported by another study done in Durban, South Africa, where influence from peers, often indulging in alcohol and other illegal substances are found to be factors (Roberts et al.

2004, p. 441; Mehra et al. 2012, p. 2) and thus have a negative influence on contraceptive use.

Partner support is another factor contributing to the non-utilisation of contraceptives. Lack of communication between partners on sexual matters may be a reason for the failure of effective use. In some instances partners disapprove of contraceptives and are therefore unwilling to use contraceptives (MacPhail 2007, p. 7 of 8). Many partners are found to lack sufficient knowledge about sexual and reproductive health. It is thus important that both boys and girls receive effective knowledge of contraceptives to prevent unplanned pregnancies (Maja & Ehlers 2004, p. 48).

2.6 CONCLUSION

In South Africa the rate of unplanned pregnancies among students at higher educational institutions remains a major concern (Vermaas 2010, p. 1). There appears to be strong evidence that there is a link between the knowledge of contraceptive use and student‟s sexual behaviour. Combined with findings of inadequate knowledge, it is suggested that there is a need for new health educational initiatives (Frost et al. 2012, p. 115; Wasie et al. 2012, p. 8 of 9; Zhou et al. 2012, p. 1157).

The focal point of this study was to assess the knowledge of contraceptive use of students, and to identify factors for the non-utilisation of contraceptives which contribute to the high rate of unplanned pregnancies. The aim was to eventually improve their knowledge through health education initiatives, and to provide recommendations to improve current sexual and reproductive health services, for students to make informed choices in order to enhance their academic success and general well-being.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The objective of chapter 3 is to describe the methodology used in this study. It describes the study design, study setting, study population and sampling, research instrument, pilot testing, data collection, data analysis, ethical and legal considerations.

3.2 STUDY DESIGN

A cross-sectional, descriptive quantitative survey was used to gather information at a single point in time. A cross-sectional design involves the interpretation of data capturing during a single period of data collection. Cross-sectional surveys are appropriate for describing a survey during a fixed period in time (Polit & Beck 2012, p. 184). A descriptive quantitative survey was used as it was possible to measure and quantify results (Polit & Beck 2012, p. 739; Ahmed at al. 2012, p. 3 of 9).

3.3 STUDY SETTING

The research was conducted among the female undergraduate students, between the age of 18 and 24 years, at the two selected campuses, at a selected higher educational institution in Gauteng, South Africa.

At Campus A, approximately 1250 students are treated per month. Services are rendered five days per week, by three primary health care sisters, one registered nurse and three medical doctors, 11 hours per week. At Campus B, approximately 150 students are consulted per month. Services are rendered by a primary health care sister three days per week and a medical doctor once a week for two hours. The services provided are primary health care, preventative health care, reproductive health services, HIV voluntary counselling and testing services, dietary clinic, health education, handling of student emergencies on campus and the doctor‟s clinic.

3.4 STUDY POPULATION AND SAMPLING

3.4.1 STUDY POPULATION

The use of contraceptives was assessed using female undergraduate students from the two selected campuses of a selected higher educational institution as the population (Ahmed et al. 2012, p. 1 of 9; Abera & Tebeje 2009, p. 38; Akintade et al. 2011, p. 72, 73). Campus A has 12 447 and Campus B has 2 545 female undergraduate students. The population size

was 111 at Campus A and 106 at Campus B. The inclusion criterion was all female which had an equal chance of being selected. Exclusion criteria were all male students, post graduate and students older than 24 years.

3.4.2 Sampling method

Firstly stratified random sampling was used to ensure that the findings represent the experiences of the target population to enhance the objectivity of the study. The population was divided into two strata, namely Campus A and Campus B. This procedure subdivided the population into homogeneous subsets such as gender (female) and age (18 to 24 years) and was used to enhance the representativeness of the samples, and to enhance objectivity. Secondly, to further obtain a representative sample, systematic sampling was applied to select participants, involving the undergraduate female students of two selected campuses (Polit & Beck 2012, p. 447). A list of students from the administration department at Campus A, as well as a list of students from the administrative department at Campus B was obtained. This method involved systematic selecting every 62th student on the list from Campus A and every 12th student from the list of Campus B. A sampling interval of 62 and 12 was thus used (Polit & Beck 2012, p. 282; Akintade 2011, p. 73). This procedure also aimed to enhance the objectivity of the study and ensured that the sample, 200 from campus A and 200 from campus B, was representative of the population under study.

3.4.3 Sampling procedure

Female students in the age categories of 18-20 and 21-24 were selected from the Campus A and Campus B. It was decided to select 200 female students from each of the campuses in order to ensure that a sufficient amount of information will be obtained from each of the campuses. In order to readjust the sample sizes proportional to the respective population sizes, weights were assigned to the observations, which took the population sizes of each campus into account. This ensured that the contribution of each campus to the total number of female students selected in the study was reflected in the weighted percentages. The calculation of the weights is illustrated in the table below:

Table 3.1 Calculation of weights

Campus	Population size	Sample size	Weight
Campus A	12 447	200	62.235
Campus B	2 545	200	12.725

Source: University data base

3.4.4 Sample size

The minimum required sample size was calculated using electronic sample size calculator (with 5 per cent margin of error, 95 per cent confidence level and 50 per cent response distribution); which was 400 (in this case a 100 per cent response rate) . Allowance was made for a 10 per cent non-response rate, (Ahmed et al. 2012, p. 3 of 9; Abera & Tebeje 2009, p. 38).

Table 3.2 Sample

Population size:				**Sample size:**			
Campus A:	18 to 20 years	7002	(51.1%)	Campus A:	18 to 20 years	110	(55.1%)
	21 to 24 years	5704	(44.9%)		21 to 24 years	90	(44.9%)
Total=		12706	(100%)			200	(100%)
Campus B:	18 to 20 years	1127	(45%)	Campus B:	18 to 20 years	90	(45%)
	21 to 24 years	1380	(55%)		21 to 24 years	110	(55%)
Total=		2507	(100%)		Total=	200	(100%)

Source: University data base

3.5 RESEARCH INSTRUMENT

The structured questionnaire included four sections. Section A included six items on social and demographic characteristics, section B included nine items on the knowledge of contraceptives, section C included 10 items on the use of contraceptives, and section D included 12 items on factors contributing to the non-utilisation of contraceptives. Close-ended questions were included; the types of questions were based on findings reported in the literature (Akintade et al. 2011, p. 73). The questionnaires were prepared in simple English and pilot tested with 20 female undergraduate students prior to the study, who was excluded from the study. The selected students received an e-mail, indicating that they were selected to participate in the research study, and requested kindly to complete it and send it back electronically. The email included an attachment that contained a participant information leaflet that briefly described the study; and an anonymous questionnaire that indicated their willingness to participate in the study (Brunner Huber & Ersek 2009, p.1064). It also indicated that should they experience difficulty in completing the questionnaire electronically, they are welcome to visit the Student Health Services to complete it.

After two weeks another email was sent out as a reminder for those who did not respond yet. All the uncompleted questionnaires were excluded from the study. The reliability and validity of the instrument were confirmed by pilot testing the instrument prior to the study.

3.6 PILOT STUDY

A pilot study was done before the formal survey to test the methodology. The research instrument was pre-tested among 20 female undergraduate students using a convenience sampling method whereby the researcher and her colleagues distributed the questionnaires to the 20 students when visiting the Student Health Services at the one selected campus. The questionnaire took seven to 10 minutes to complete. This validated the appropriateness of the tool, clarified uncertainties, confusion and assisted in making improvements (Akintade 2010, p. 29 of 109; Zhou et al. 2012, p. 1154). The students, participating in the pilot study were not included in the actual study (Akintade 2010, p.29 of 109). Participation was voluntary and anonymous.

3.7 DATA COLLECTION

A questionnaire was used to collect data to assess the use of contraceptives among female undergraduate students at a selected higher educational institution in Gauteng, South Africa (Roberts et al. 2004, p. 441; Ahmed et al. 2012, p. 3 of 9; Ersek et al. 2011, p. 498).

Data were collected through structured questionnaires, during June 2014 and July 2014. The questionnaires were emailed to the selected participants, after two weeks a follow up email was sent to participants who did not yet respond. A final email was sent out after four weeks to participants who did not respond, reminding them of the research. Participants who had difficulty in completing the questionnaire on-line were friendly requested to visit the Student Health Services, to complete the printed questionnaire (Abera & Tebeje, 2009, p. 38; Adhikari 2009, p. 2 of 5; Akintade et al. 2011, p. 73). To enhance the quality of the data, the majority of the questions were adapted from previously conducted studies; although some allowance were made to customise for local context (Ahmed et al. 2012, p. 3 of 9).

3.7.1 Quality control

Validity and reliability were used to ensure quality control. Quality control was conducted during every stage of the study, (Zhou et al. 2012, p. 1154). **Validity** refers to the soundness of the study evidence, and in measurement, the degree to which an instrument measures what it is intended to measure (Polit & Beck 2012, p. 197). **Content and face validity** were confirmed by the literature study, as well as by pilot testing the instrument prior to the study, on women who was excluded from the actual study (Maja & Ehlers 2004, p. 45, Akintade 2010, p. 28 of 109). **Content validity** of the research instrument was ensured by using

standarised reproductive health tools as a guide during the preparation of the questionnaire and through consultation with reproductive health professionals (Akintade 2011, p. 73). **Reliability** refers to the accuracy and consistency of information obtained in the study (Polit & Beck 2012, p.197). The instrument‟s reliability was ensured as the characteristics of the group for which it was developed was known. As the group was similar to the population for the study, the accuracy of the instrument was ensured (Polit & Beck 2012, p. 335). By administering the questionnaire to the researcher‟s colleagues who are experts in reproductive health, as well as pilot testing it prior to the actual study, the reliability of the study was confirmed (Maja & Ehlers 2004, p. 45; Akintade 2010, p. 28 of 109).

3.8 DATA ANALYSIS

Of the 400 questionnaires distributed 217 were returned, giving a response rate of 54.24 per cent. Data were entered, and analysed using the Statistical Analysis Software programme, (SAS version 9.3), of the Department of Statistics of the higher educational institution. Depending on the type of data collected, the statisticians presented the analysis. At the time of data entry each questionnaire was given a respondent number, starting at number one. Age was computed as a numerical variable which could only accept two digits with 18 years as the least accepted value and 24 as the most accepted value.

Where response options were only yes, no or I do not know, a yes, no, and do not know field option was used and data entry was done as 1 for yes, 2 for no and 3 for I do not know.
For multiple response questions an option field was used, and coded as 1,2,3,4, etc. depending on the number of options that were related to the drop-down menu. The first option on the response list corresponded to one, the second to two, the third to 3, etc. (Akintade 2010, p. 31 of 109)

Comparative analysis of categorical data such as age, marital status, ethnic group, type of residence and religion were compared to each group using Chi-square testing (Adhikari 2009, p. 3 of 5; Frost et al. 2012, p. 110; Golbasi, et al. 2012, p. 77; MacPhail et al. 2007, p. 3 of 8). Descriptive statistical analyses were used to describe social and demographic characteristics, knowledge, use of contraceptives and factors contributing to the non-utilising of contraceptives and were calculated to describe the study population. Specifically, frequencies and percentages for the overall study population were calculated (Bruner Huber & Ersek 2009, p. 1064; Wasie et al. 2012, p.3 of 9).

For descriptive statistics results were expressed in terms of percentages. Association between variables was calculated using Chi square test and a p-value of <0.05 was considerate as statistical significant (Tajure 2010, p. 92).

Frequency tables were generated for all variables, which was used for descriptive statistics based on frequencies and percentages (Akintade et al 2010, p. 32 of 109, Roberts et al. 2004, p. 442). Graphs and pies were generated when results were analysed.

3.9 ETHICAL AND LEGAL CONSIDERATIONS

Prior to the research, approval from the Director of Student Affairs, and the Student Representatives Council were obtained. In addition, ethical clearance and approval for the study were obtained from the Research, Ethical Committee (Akintade 2010, p. 33 of 109). An official letter to request permission from the higher educational institution administrative office was obtained and permission was granted to conduct the research study. A participant information leaflet and informed consent form for anonymous questionnaires were emailed to the selected participants, before any information was collected (Ahmed et al. 2012, p. 3 of 9).

Basic ethical principles were applied during the entire study, such as beneficence, respect for human dignity and justice (Polit & Beck 2012, p. 152-156; Akintade 2010, p. 33 of 109).

3.9.1 Beneficence

All efforts were made to ensure that participants did not suffer any harm, or discomfort and to assure students that information provided will not be used against them (Polit & Beck 2012, p. 152). In this study the participants were treated with honour and respect. Questions were carefully phrased as not to cause any embarrassment and any sensitive questions were avoided (Akintade 2011, p. 35 of 109).

3.9.2 Respect for human dignity

This principle includes the right to self-determination and the right to full disclosure (Polit & Beck 2012, p.154). All participants were informed in a participant information leaflet that participation is voluntary and without the risk of prejudicial treatment. They also had the right to ask questions, could refuse to give information and could withdraw from the study at any time even after consent was given. Should they decide to withdraw from the study it was indicated on the participant information leaflet that it would not be hold against them, and they would not be judged (Polit & Beck 2012, p. 154). A copy of the questionnaire was attached to the participant information leaflet and it was requested that they read the leaflet and as proof of voluntary consent to complete the questionnaire, after they understood the purpose of the research (Akintade 2011, p. 35 of 109).

3.9.3 Justice

This principle includes participant‟s right to fair treatment, the right to privacy, and confidentiality (Polit & Beck 2012, p. 155). The participants were assured that they would not be judged and that their decisions would be respected, and honoured should they have decided to withdraw from the study or refused to answer questions (Polit & Beck 2012, p. 155-156). It was ensured that their identity would be anonymous at all times (Yunos 2010, p. 33 of 95).

3.10 CONCLUSION

Everything possible was done to ensure that this study was done according to best practice in terms of scientific methodology. Chapter 3 described the methodology used in this study. It described the study design, study setting, study population and sampling, research instrument, pilot testing, data collection, data analysis, ethical and legal considerations. The study design used was a cross-sectional, descriptive quantitative survey, among female undergraduate students between the age of 18 and 24 years old (Ahmed 2012, p. 1 of 9).

The research instrument was a structured questionnaire which was pilot tested prior to the research (Akintade 2011, p. 73). Data were collected through the structured questionnaires and analysed using the Statistical Analysis Software programme of the Department of Statistics of the higher educational institution.

Ethical and legal considerations were adhered to for the duration of the study.

CHAPTER 4

DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

Chapter 4 represents the results of the data analysis. Polit & Beck (2012, p. 724), defines data analysis as the systematic organisation and synthesis of research data and, in quantitative studies, the testing of hypothesis using those data. This study is the result of a cross-sectional, descriptive quantitative survey which assessed the use of contraceptives among female undergraduate students at a higher educational institution.

Descriptive statistical results are presented to systematically portray the research data, enabling the researcher to use the data to test the research hypothesis. The results will be disseminated in a research report and a copy will be available to the institution where the study was conducted. In addition, the results will be reported in conference presentations and article publications.

The results[1] are discussed in different parts, part one describes the social and demographic characteristics of study respondents, part two represents the use of contraceptives, part three portrays the knowledge and awareness of contraceptives and part four indicates the factors for non-utilisation of contraceptives.

4.2 PART ONE: SOCIAL AND DEMOGRAPHIC CHARACTERISTICS OF STUDY RESPONDENTS

A total of 217 female undergraduate students participated in the study. At Campus A, 111 and at Campus B, 106 respondents participated in the study. This part gives a description of the social and demographic characteristics of the study respondents. The following social and demographic variables were used in the study: age, marital status, ethnic group, type of residence and religion.

Polit & Beck (2012, p. 293) indicated that by describing the sample characteristics, important information is gathered about major demographic characteristics, which is crucial for interpreting the results and understanding the population to whom the findings can be generalised.

[1] Kindly note that data reflected in the studies may indicate the average of the two campuses.

4.2.1 Age allocation of respondents

Question: How old are you?

The study was conducted amongst female undergraduate students between the age group of 18 and 24 years. All other age groups were excluded from the study.

At Campus A, a total of 53, (54.72 per cent), respondents were in the 18-20 years age group and 58, (52.29 per cent) were in the 21-24 years age group. At Campus B, a total of 58, (54.72 per cent), respondents were in the 18-20 years age group and 48, (45.28 per cent) were in the 21-24 years age group, as presented in table 1 below.

Table 1: Age allocation by frequency and percentage

Campus	Variable	Frequency	Percentage
Campus A	Age: 18-20 years	53	47.71
	21-24 years	58	52.29
N:		**111**	**100.00**
Campus B	Age: 18-20 years	58	54.72
	21-24 years	48	45.28
N:		**116**	**100.00**

Source: University Department of Statistics

At Campus A, the mean age of the participants was 20.71 years, and the median age was 21.00 years, with a standard deviation of 1.47. At Campus B, the mean age of the participants was 20.58 years; median age was 20.00 years, with a standard deviation of 1.45 (Source: University Department of Statistics).

Table 2: The means procedure of the age of respondents

Campus	Mean age	Median age	Standard deviation	Minimum age	Maximum age
Campus A	20.71	21.00	1.47	18	24
Campus B	20.58	20.00	1.45	18	24

Source: University Department of Statistics

Results showed, as presented in table 3 below, that at Campus A, 53.91 per cent and at Campus B, 71.44 per cent of participants who indicated they were sexually active, were between 18 and 20 years old. At Campus A, 82.67 per cent and at Campus B, 82.58 per cent of the participants who indicated that they were sexually active were between 21 and 24 years old (Source University Department of Statistics).

Table 3: Percentage of sexual activity and age allocation of respondents

Campus	Variable	Sexually active	Not sexually active	Total percentage
Campus A	Age: 18-20 years	53.91	46.09	100.00
	21-24 years	82.67	17.33	100.00
Campus B	Age: 18-20 years	71.44	28.56	100.00
	21-24 years	82.58	17.42	100.00

Source: University Department of Statistics

It is evident from the results that in both campuses there were a high number of students (63 per cent per cent between 18-20 years, who were sexually active compared to those who were not sexually active (37 per cent). Furthermore 83 per cent of students between 21 -24 years in both campuses were sexually active, which place their health at risk of having unplanned pregnancies as compared to the 17 per cent students of the same age who were not sexually active.

MacPhail (2009, p. 5 of 8) reported in a study on contraceptive use and pregnancy that high levels of sexual activity are placing young females between 15 and 24 years at risk on unplanned pregnancies.

The mean age of study respondents at Campus A, when they first used contraceptives was 18.98 years, and at Campus B were 18.69 years. The median age of both campuses A and B, when they first used contraceptives was 19 years (Source: University Department of Statistics).

Table 4: The mean and median age when respondents first started taking contraceptives

Campus	Mean age	Median age
Campus A	18.98	19.00
Campus B	18.69	19.00

According to the results at both campuses, the mean and median age when respondents first started taking contraceptives were 19 years old.

There is inadequate information found in the literature on the age when contraceptives were first started taking contraceptives.

Results indicated that at both campuses almost 70 per cent of respondents between the ages of 18 to 20 years were using contraceptives compared to the 30 per cent of the

respondents who were not using any contraceptives. Results showed that the majority of respondents at Campus A, (82 per cent), between 21 and 24 years were using contraceptives whereas at Campus B, only 59 per cent of the same age were using contraceptives (Source: University Department of Statistics).

Table 5: The percentage of age of respondents regarding the utilisation of contraceptives

Campus	Variable	Percentage of contraceptive use	Percentage of no contraceptive use	Total percentage
Campus A	Age: 18-20 years	68.50	31.50	100.00
	21-24 years	82.17	17.83	100.00
Campus B	Age: 18-20 years	67.22	32.78	100.00
	21-24 years	59.32	40.68	100.00

Source: University Department of Statistics

It is clear from the results that there were a higher number, (69 per cent) of students in Campus A between 18 to 20 years who were using contraceptives as compared to students who were not using contraceptives, (32 per cent). Furthermore only 60 per cent of respondents in Campus B between ages 21 to 24 years were using contraceptives as compared to 82 per cent in Campus A, which increase the risk of this age group in Campus B of having unplanned pregnancies as compared to the 18 per cent of the same age at Campus A who were not using contraceptives.

Bryant (2009, p. 12), indicated that college age females between the ages of 20 to 24 years have one of the highest rate of unplanned pregnancies due to the lack of contraceptive use. Promoting the use of contraceptives among the sexually active students in this age group could assist in reducing unplanned pregnancies.

4.2.2 Marital status of respondents

Question: Please complete with (X) in the appropriate box your marital status

The objective of the question was to describe the marital status of the respondents; and it was found that majority of respondents at both campuses were single.

Results showed that 92.79 per cent of respondents on Campus A, and 95.24 per cent on Campus B were single, whereas at Campus A, 7.21 per cent and at campus B, 4.76 per cent were staying together.

Table 6: Marital status by frequency and percentage, and the utilisation of contraceptives

Campus	Variable	Frequency	Percentage	Percentage of contraceptive use	Percentage of no contracep-tive use
A:	**Marital Status:**				
	Single	103	92.79	67.38	32.62
	Staying together	8	7.21	100.00	0.00
N:		**111**	**100.00**		
B:	**Marital Status:**				
	Single	100	95.24	60.61	39.39
	Staying together	6	4.76	100.00	0.00
N:		**106**	**100.00**		

Source; University Department of Statistics

These results indicated that majority of respondents at both campuses, 64 per cent; who were single, used contraceptives, compared to 36 per cent who were not using contraceptives. Furthermore the respondents at both campuses, who indicated they stayed together, a 100 per cent, were using contraceptives. These results indicated that there were a higher number of students, at both campuses, (100 per cent), that used contraceptives where respondents were staying together, compared to the students that were single, (64 per cent), which place them at risk of having an unplanned pregnancy compared to those students who were single, and not using contraceptives. There is inadequate information in literature on marital status of students and the use of contraceptives.

4.2.3 Ethnic group of respondents

Question: Please complete with (X) in the appropriate box your ethnic group

The ethnic group forms part of the social and demographic characteristics of the study respondents. The majority of respondents belonged to the Black African group.

At Campus A, 73.93 per cent, and Campus B, 77.36 per cent of respondents, were Black African. At Campus A, 1.8 per cent was Asian, 2.70 per cent were Coloured and 21.56 per cent were White, whereas at Campus A 3.77 per cent were Coloured and 18.87 per cent were White. According to the results at Campus A, 100 per cent of Asian respondents, 67.90 per cent of Black African respondents, 66.67 per cent of coloured respondents, and 74.17 per cent of White respondents were using contraceptives. At Campus B, 57.32 per cent of Black African respondents, 100 per cent of coloured participants and 78.95 per cent of White respondents were using contraceptives.

Table 7: Frequency and percentage of ethnic group of respondents and contraceptive use

Campus	Variable	Frequency	Percentage	Percentage of contraceptive use	Percentage of no contracep-tive use
Campus	**Ethnic group:**				
A	Asian	2	1.8	100.00	0.00
	Black African	82	73.93	67.90	32.10
	Coloured	3	2.70	66.67	33.33
	White	24	21.56	74.17	25.83
N:		**111**	**100.00**		
Campus	**Ethnic group:**				
B	Black African	82	77.36	57.32	42.68
	Coloured	4	3.77	100.00	0.00
	White	20	18.87	78.95	21.05
N:		**106**	**100.00**		

Source: University Department of Statistics

It is clear in the results that majority of respondents in all racial groups were using contraceptives. However, Brunner Huber & Ersek (2009, p. 1067) revealed in their study, among sexually active university students, that Black females were considerably less likely to use contraceptives compared to White females.

4.2.4 Type of resident's respondents stayed in

Question: Please indicate your type of residence

The type of residence forms part of the demographic characteristics of the respondents. The majority of respondents at Campus A were staying in a flat, whereas majority of the respondents at Campus B stayed in the university residence.

At Campus A, 43.27 per cent, stayed in a flat, 19.83 per cent, stayed in the parents‟ home, 26.07 per cent stayed in the university residence and 10.82 per cent stayed in the university commune. At Campus B, 58.49 per cent, stayed in the university residence, 20.75 stayed in a flat, 17.92 per cent in their parent‟s home, and 2.83 per cent stayed in the university commune.

Table 8: Frequency and percentage of the type of residence, and the utilisation of contraceptives

Campus	Variable	Frequency	Percentage	Percentage of contra-ceptive use	Percentage of no con-traceptive use
Campus A	**Type of residence**:				
	Living in a flat	48	43.27	79.17	20.83
	Parents home	22	19.83	71.43	28.57
	University residence	29	26.07	48.41	51.59
	University commune	12	10.82	81.82	18.18
N:		**111**	**100.00**		
Campus B	**Type of residence:**				
	Living in a flat	22	20.75	54.55	45.45
	Parents home	19	17.92	50.00	50.00
	University residence	62	58.49	67.74	32.26
	University commune	3	2.83	100.00	0.00
N:		**106**	**100.00**		

Source: University Department of Statistics

It is evident from the results that majority of respondents in both campuses who stayed in a flat, (79 and 55 per cent), and university commune, (82 and 100 per cent) used contraceptives, compared to 21 and 45 per cent who did not use contraceptives. However 71 per cent at campus B who stayed with their parents used contraceptives compared to 50 per cent at Campus B who also stayed with their parents, used contraceptives. It is clear in the results that there were a higher number of students in the university residence at Campus B who used contraceptives, (68 per cent) compared to the students in Campus A who used contraceptives, (49 per cent), which increase the risk of respondents in Campus A who did not use contraceptives, (52 per cent) in the university residence, of having unplanned pregnancies. MacPhail et al. (2007, p.4 of 8) revealed that there is some evidence that females with a parent t home and who could discuss sexual activity with their parents were more likely to use contraceptives.

4.2.5 Religion of respondents

Question: Religion (respondent just had to tick the appropriate box)

In some studies it was found that religion acts as a barrier in the utilisation of contraceptives (Akintade et al. 2011, p.76). The predominant religion of respondents at both campuses was Christianity.

At Campus A, (92.72 per cent) and at Campus B, (96.23 per cent) of respondents were Christians. The rest of the respondents, 7.28 per cent at Campus A and 3.77 per cent at Campus B indicated none of the above religions. At Campus A, 67.38 per cent, and at Campus B, 63.37 per cent, who indicated they were Christians were using contraceptives, whereas 32.62 per cent, at Campus A and 36.63 per cent at Campus B, of Christians were not using contraceptives. At Campus A, 100.00 per cent of respondents who indicated none of the above religion were using contraceptives, whereas at Campus B, 50 per cent were using and 50 per cent were not using contraceptives.

Table 9: Frequency and percentage of religion of respondents, and the utilisation of contraceptives

Campus	Variable	Frequency	Percentage	Percentage of contraceptive use	Percentage of no contraceptive use
Campus A	**Religion:**				
	Christian	102	92.72	67.38	32.62
	None of the above	8	7.28	100.0	0.00
N:		**111**	**100.00**		
Campus B	**Religion:**				
	Christian	102	96.23	63.37	36.63
	None of the above	4	3.77	50.00	50.00
N:		**106**	**100.00**		

These results showed that in both campuses there were a high number of students, 65 per cent, who were Christians, who were using contraceptives than those who were not using contraceptives.

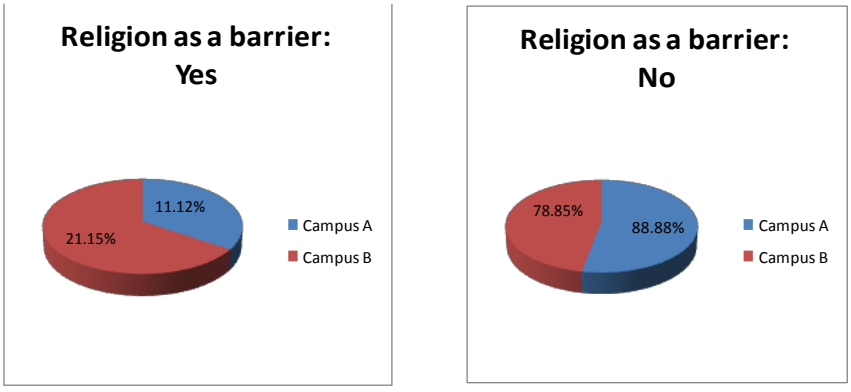


Figure 1: Pie chart indicating religion as a factor for non-utilisation of contraceptives

These results indicated that the religion of 11.12 per cent of respondents at Campus A and 21.15 per cent at Campus B acted as a factor for non- utilisation of contraception.

Akintade, Pengpid & Peltzer (2011, p. 76) revealed in a study among female university students that religion was a barrier to the use of modern contraceptives for 27 per cent of respondents, which might be a contributory factor for high unplanned pregnancy rates.

4.3 PART TWO: THE USE OF CONTRACEPTIVES

This part deals with assessing the use of contraception. Yunos (2010, p. 14 of 95) referred to contraception as the use of birth control methods to prevent unplanned pregnancies during sexual intercourse. The use of contraceptives will be discussed under the following headings, prevalence of contraceptive use, method of contraceptives used, consistency of contraceptive use, correct and incorrect use of contraceptives and the reasons for failure of contraceptive use.

4.3.1 Prevalence of contraceptive use

Question: Are you sexually active and are you currently using any contraceptives?

The prevalence of contraceptive use and sexual activity of the respondents are described in this section. The prevalence of contraceptive use among the respondents was high, and the majority of respondents indicated that they use some method of contraception.

At campus A 70.96 per cent of respondents indicated they were sexually active, among them 88.46 per cent indicated they were using some method of contraception, whereas 11.54 per cent indicated they were not using any contraceptives. At Campus B, 76.92 per cent of respondents indicated they were sexually active, among them 68.75 per cent indicated they were using some method of contraception, whereas 31.25 per cent indicated they were not using any contraception.

Table 10: Percentage of sexual activity and the use of contraceptives

Campus	Sexually active	Percentage of contraceptive use	Percentage of no contraceptive use	Total percentage
Campus A	70.96	88.46	11.54	100.00
Campus B	76.92	68.75	31.25	100.00

Source: University Department of Statistics

It is clear in the results that there were a higher number of sexually active students, (31 per cent) at Campus B who were not using contraceptives compared to 12 per cent of sexually active students at Campus A who were not using contraceptives, which place this group at Campus B, at a higher risk of unplanned pregnancies. Singh (2010, p. 246) indicated that in

countries where the incidence of unplanned pregnancies was decreasing, there was an increase in the use of contraceptives. Promotional reproductive health initiatives should be put in place, to increase the use of contraceptives, to assist in reducing the high rate of unplanned pregnancy among the students.

4.3.2 Method of contraceptives used

Question: Which method are you using?

Contraception may be achieved by using traditional and/or modern contraceptive methods. Modern contraceptive methods refer to contraceptives which are frequently used in western health care services, including oral contraceptives and injections (Maja & Ehlers 2004, p. 44). The most frequently contraceptive methods used were listed in the questionnaire.

At Campus A, 41.46 per cent and at Campus B, 34.21 per cent of respondents were using the oral contraceptives. According to the results at Campus A, 13.41 per cent and at Campus B, 26.32 per cent of respondents used the Depot medroxyprogesterone acetate (DMPA) injection, whereas 9.76 per cent of respondents at Campus A and 9.21 per cent of respondents at Campus B used the Norethisterone enanthate (NET-EN) injection. At Campus A, 4.88 per cent and at Campus B 5.26 per cent of respondents used abstinence as a contraceptive method. Condoms as a contraceptive method were used by 24.39 per cent of respondents at Campus A and 25 per cent of respondents at Campus B. The hormonal patch was utilised at Campus A, 1.22 per cent and at Campus B 0.00 per cent. At Campus A, 4.88 per cent of respondents and at Campus B, 0.00 per cent of the respondents indicated that they used the emergency contraceptive as a contraceptive method.

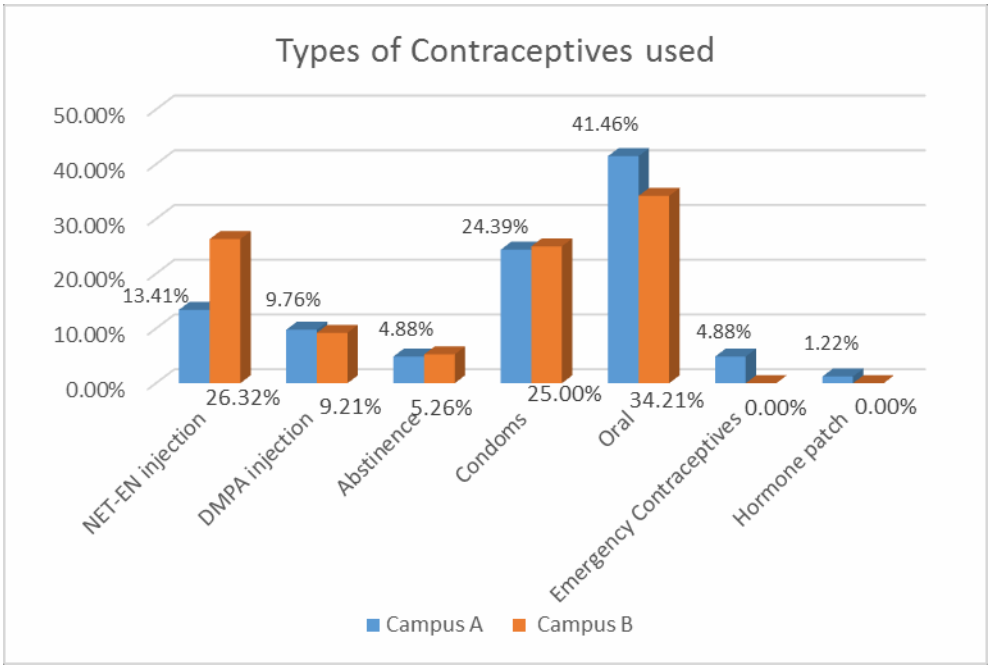


Figure 2: Bar chart showing the types of contraceptives used

The above results clearly indicate that the oral contraceptives were used by the majority of

respondents at Campus A, 41 per cent and at Campus B, 34 per cent. Furthermore there were a higher number of students, 26 per cent, at campus B compared to 13 per cent of respondents at Campus A, who used the NET-En injection. Condoms as contraceptive method were used at both campuses by 25 per cent of respondents. It is evident in the results that there were an underutilisation of the emergency contraceptives at both campuses as only 5 per cent at Campus A and 0.00 per cent of participants at Campus B indicated they used the emergency contraceptive method, which can lead to an increase in the rate of unplanned pregnancies. Maja & Ehlers (2004, p.43) & Tajure (2010, p.91), indicated that an increase in the use of the emergency contraceptive can reduce the high risk of unplanned pregnancies and the request for termination of pregnancies. It is therefore important to educate the students on the use of the emergency contraceptive, to assist in decreasing the rate in unplanned pregnancies.

4.3.3 Consistency of contraceptive use

Question: Are you using the contraceptives consistently?

Consistent use of contraceptives is an important aspect in the prevention of unplanned pregnancies (Maja & Ehlers 2004, p. 50).

At Campus A, 62.50 per cent of respondents and at Campus B, 59.04 per cent of respondents indicated that they were using the contraceptives consistently, whereas 37.50 per cent at Campus A and 40.96 per cent at Campus B indicated they were not using contraceptives consistently.

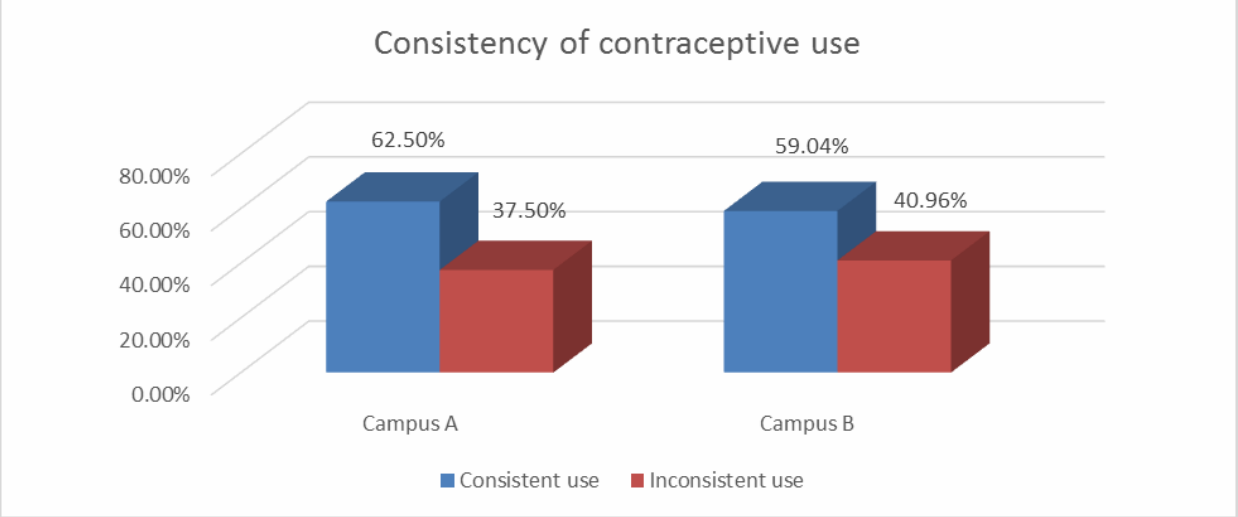


Figure 3: Bar chart showing the consistency of contraceptive use

These results, as indicated by figure 3 above, clearly indicate that 39 per cent of respondents at both campuses were not using contraceptives consistently, which place this group at a higher risk of unplanned pregnancies as compared to 61 per cent who used contraceptives consistently.

Ersek et al. (2010, p.497) indicated that it is estimated that regular contraceptive use can prevent 12 million pregnancies every year and by educating females on a suitable contraceptive method, may improve patient satisfaction and consistent contraceptive use and lead to a decrease in unplanned pregnancies. Appropriate and accurate health education is needed to improve the consistent use of contraceptives at both campuses.

4.3.4 Correct use of contraceptives

Question: Are you using the contraceptives correctly?

The correct use of contraceptives is also a very important aspect to assess in preventing unplanned pregnancies. Health education initiatives can accordingly focus on ensuring students receive accurate information on the method of contraceptive use.

At Campus A, 83.53 per cent and at Campus B, 73.75 per cent of respondents responded that they used contraceptives correctly, 8.24 per cent at Campus A and 12.50 per cent at Campus B reported they did not use it correctly and 8.23 per cent at Campus A and 13.73 per cent indicated they were not sure if they used it correctly.

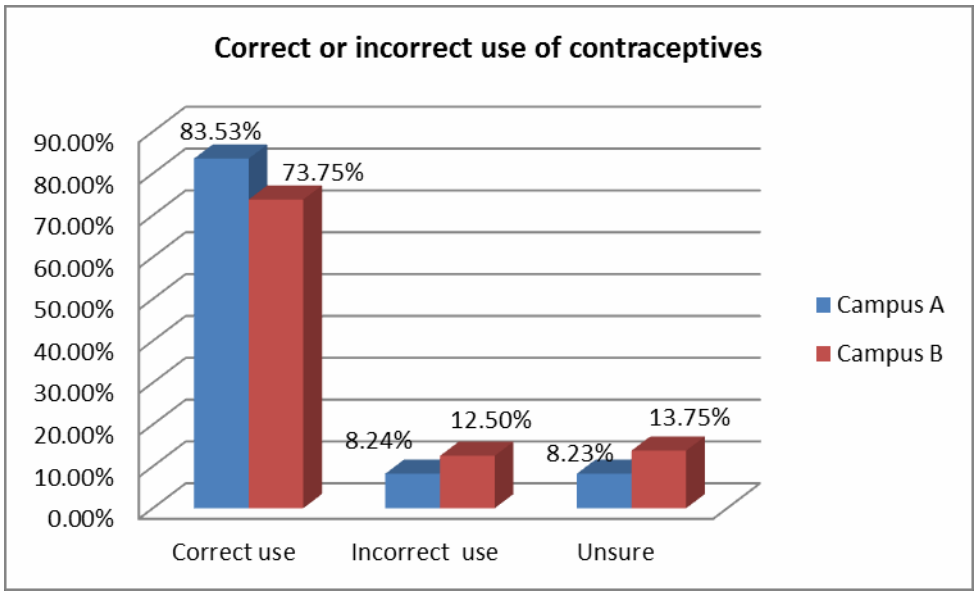


Figure 4: Bar chart showing the correct/incorrect use of contraceptives

The results indicated that even though there were a high percentage of students at both campuses, namely 79 per cent, who were using contraceptives correctly; there were still 10 per cent who were using it incorrectly and 11 per cent who were unsure they use it correctly, which place them at risk of unplanned pregnancies. Adhikari (2009, p. 2 of 5) indicated in a study among college students in Nepal, that it is estimated that between eight and 30 million pregnancies a year result from contraceptive failure either due to incorrect use or inconsistent use of contraceptives. Adequate information should be given to increase the correct use of contraceptives, to assist in decreasing the rate of unplanned pregnancies.

4.3.5. Reasons for failure of contraceptive use

Question: Has any contraceptive method ever failed you before?

By identifying the reasons for failure of contraceptive use, misconceptions and inaccurate information can be eliminated through proper counselling by reproductive health care professionals (Golbasi et al. 2012, p. 81).

At Campus A, 89.53 per cent and at Campus B, 85.37 per cent, of respondents responded that no contraceptive has ever failed them before, whereas 10.47 per cent at Campus A and 14.63 per cent at Campus B indicated a contraceptive method has failed them before. At Campus A, 5.26 per cent and at Campus B, 29.41 per cent indicated the failure due to being afraid of possible side-effects, 36.84 per cent at Campus A and 23.53 per cent at Campus B indicated failure due to inconsistent use, 21.05 per cent at Campus A and 17.65 per cent at Campus B responded failure due to incorrect use, 21.06 per cent at Campus A and 5.88 per cent indicated failure due to pregnancy and 15.79 per cent at Campus A and 23.53 per cent at Campus B indicated that they were not sure why it failed them.

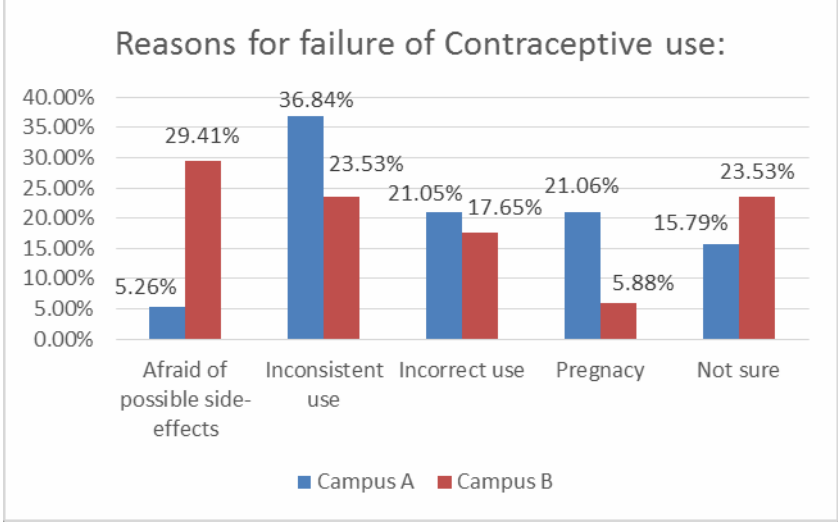


Figure 5: Bar chart showing the reasons for failure of contraceptive use

Results clearly indicated that even though a high percentage of students at Campus A, 36.84 per cent indicated failure due to inconsistent use, and at Campus B, 23.53 per cent, a high percentage of students at Campus B, namely 29.41 per cent, indicated failure due to being afraid of possible side-effects. It is also evident that there were still high percentages at both campuses who indicated failure due to incorrect use, 19 per cent, and also 20 per cent being unsure what reason, which put them also at risk of unplanned pregnancies. It is evident in the results that there were a higher number of students at Campus A, 21.06 per cent, who indicated failure due to pregnancy compared to Campus B, 5.88 per cent. Effective health education initiatives regarding the reasons for failure at the particular campuses could assist students in selecting an appropriate method to improve the use of contraception, and eventually reduce the high rate of unplanned pregnancies.

Akintade (2011, p. 78) indicated that lack of detailed and accurate information has resulted in reluctance to adopt contraceptive methods, due to being afraid of side-effects and that proper counselling about possible side-effects has been found to reduce the discontinuation of contraceptives.

4.4 PART THREE: KNOWLEDGE AND AWARENESS OF CONTRACEPTIVES

This part relates to the knowledge and awareness of contraceptives and entails the following: methods of contraceptives participants are familiar with, knowledge of contraceptive that prevent sexually transmitted diseases, knowledge of the benefits of contraceptives, knowledge of the side-effects of contraceptives, and knowledge of the emergency contraceptive.

Golbasi et al. (2012, p. 78) reported that the lack of knowledge and awareness of contraceptives has been found to be associated with failure to use contraceptives.

4.4.1 Methods of contraceptives respondents are familiar with

Question: Please indicate which method of contraceptives you are familiar with.

The lack of knowledge of contraceptives methods was associated with the failure of utilising it. By assessing the knowledge of respondents effective and adequate information can be given (Roberts et al. 2004, p. 441). This part describes the methods respondents were familiar with.

At Campus A, 79.21 per cent and at Campus B, 57.75 per cent of respondents were familiar with the oral contraceptive, and 36.94 per cent at Campus A and 49.06 per cent were familiar with the NET-EN injection, whereas 45.94 per cent at Campus A and 37.73 per cent at Campus B were familiar with the DMPA injection. About 87.32 per cent of respondents at Campus A and 80.19 per cent at Campus B were familiar with condoms. At Campus A, 64.83 per cent and at Campus B 35.84 per cent of respondents were familiar with the emergency contraceptive. At Campus A, 25.23 per cent and at Campus B, 12.26 per were familiar with the intrauterine contraceptive and 33.33 per cent of Campus A and 23.58 per cent at Campus B were familiar with the implant.

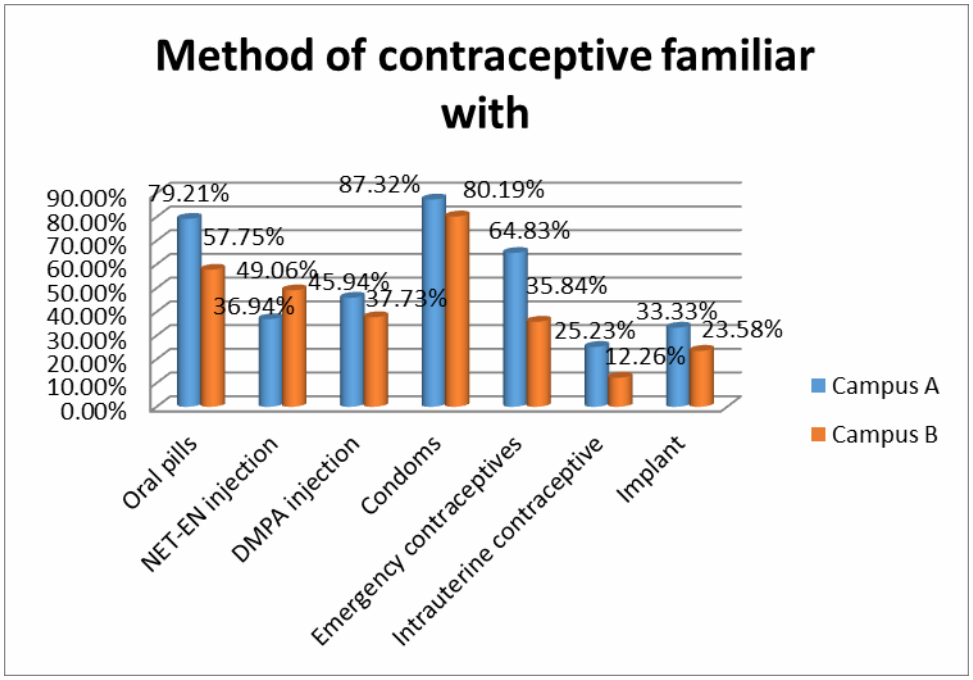


Figure: 6 Bar chart showing which methods respondents were familiar with

It is clear from the results that the majority of respondents at both campuses, 84 per cent, were familiar with the condom as contraceptive method. Results showed that a higher number of students at Campus A, 79.21 per cent, were familiar with the oral contraceptive compared to the respondents at Campus B, where 57.75 per cent were familiar with it, which indicated that respondents at campus B had less knowledge of the oral contraceptives than respondents at Campus A. Based on the findings there were also a higher number of respondents at Campus A, 64.83 per cent, who were familiar with the emergency contraceptives compared to the respondents at Campus B where only 35.84 per cent were familiar with it, which put respondents at Campus B at a higher risk of unplanned pregnancy than the respondents at Campus A.

Eisenberg et al. (2012, p.497.e8) indicated that to increase the use of contraceptives, and to decrease the rate of unplanned pregnancies, healthcare providers must improve education on contraceptives. It is thus important to educate sexually active students on all the methods they are not familiar with, in assisting them in selecting the most appropriate method.

4.4.2 Knowledge of contraceptive that prevent sexually transmitted diseases

Question: Which contraceptive do you think can prevent sexually transmitted diseases?

Condom use is an effective method to combat most sexual transmitted diseases. Ensuring that the respondents have adequate knowledge thereof is vital in our fight in reducing the risk of HIV. This section reveals the knowledge of the respondents (Dreyer 2012, p. 77).

At Campus A 93.69 per cent, and at Campus B, 88.68 per cent, knew that condoms were the contraceptive that can prevent sexual transmitted diseases, whereas at Campus A 4.51

per cent and at Campus B 7.55 per cent indicated that it does not prevent sexual transmitted diseases, and 1.80 per cent at Campus A and 3.77 per cent at Campus B said they did not know.

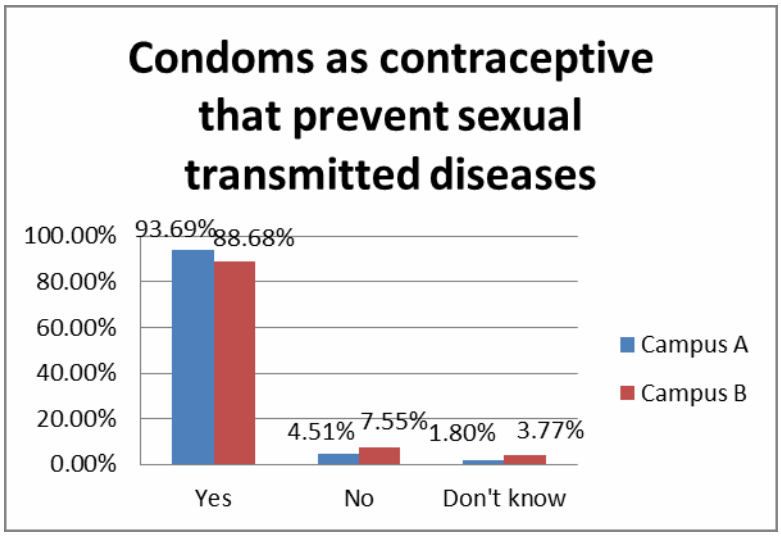


Figure 7: Bar chart showing condoms as contraceptive method that prevents sexual transmitted diseases.

It is evident in the results that at both campuses there were a high number of students, 91 per cent who knew that condoms prevent sexually transmitted diseases. Brunner Huber & Ersek (2009, p.1068) reported that many student health centres should continue to provide condoms at little or no cost to students as it offer not only protection against unplanned pregnancies but also against sexual transmitted diseases.

4.4.3. Knowledge of the benefits of contraceptives

Question: What would you say are the benefits of contraceptives?

The knowledge of the benefits of contraceptives could improve the use of contraceptives and assist in increasing the use thereof to prevent unplanned pregnancies. In this section the knowledge of the respondents regarding the benefits of contraceptives are described and are presented below.

At Campus A, 98.13 per cent and at Campus B, 95.28 per cent indicated it was beneficial to prevent pregnancies. At both campuses 55 per cent said it also controls the number of children. At Campus A, 52.18 per cent and at Campus B, 30.19 per cent indicated that another benefit was that it prevents sexually transmitted diseases, whereas 0 per cent at Campus A and 1.89 per cent at Campus B did not know.

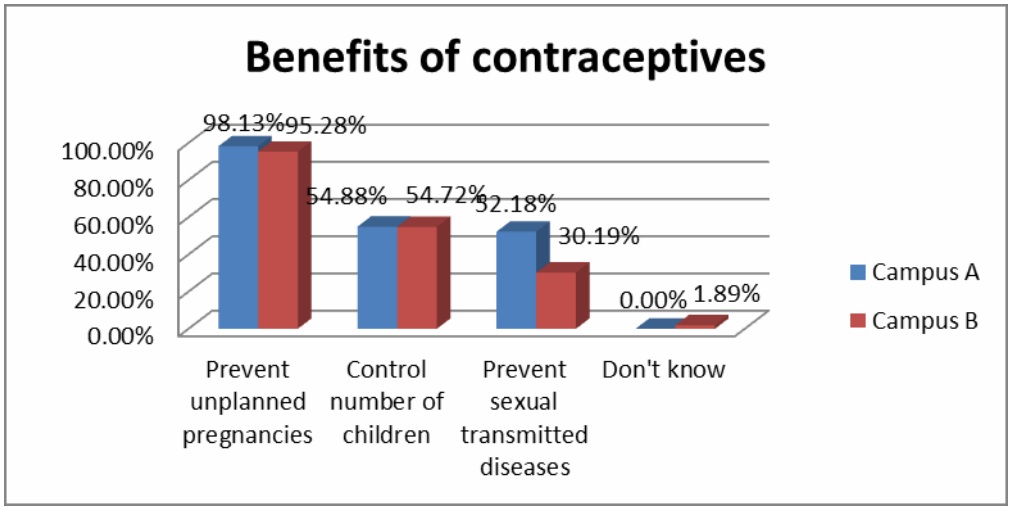


Figure: 8 Bar chart showing the benefits of contraceptives

These results indicated that the knowledge of respondents regarding the benefits of contraceptives, at both campuses, were very high, 97 per cent, however only 32 per cent at both campuses indicated that contraceptives prevent sexual transmitted diseases, which might indicate a lack of knowledge regarding the benefit of condoms as a contraceptive method that can prevent sexual transmitted diseases. Dreyer (2012. p. 77) indicated that correct, consistent and timeous condom use is effective against most sexually transmitted diseases, and reduces the risk of HIV by up to 95 per cent.

4.4.4 Knowledge of the side-effects of contraceptives

Question: Which of the following would you say are the side-effects/ disadvantages of contraceptives?

Side-effects of contraceptives were found to be one of the most common reasons for the non-utilisation of contraceptives (Brunner Huber & Ersek 2009, p. 1067). This section describes the knowledge of the respondents regarding side-effects of contraceptives.

At Campus A, 35.14 per cent and at Campus B, 41.51 per cent of respondents indicated that bleeding disorders were a side-effect of contraceptives. At Campus A, 17.05 per cent and at Campus B, 7.55 per cent responded that a side-effect was cancer. According to the findings 35.97 per cent at Campus A and 15.09 per cent at Campus B indicated it was unreliable, and 69.30 per cent at Campus A and 80.19 per cent at Campus B indicated that weight gain was a side-effect of contraceptives. Results showed that 10.81 per cent at Campus A and 11.32 per cent at Campus B responded that weight loss was a side-effect, and 10.81 per cent at Campus A and 8.49 per cent at Campus B indicated that is decreased sexual pleasure.

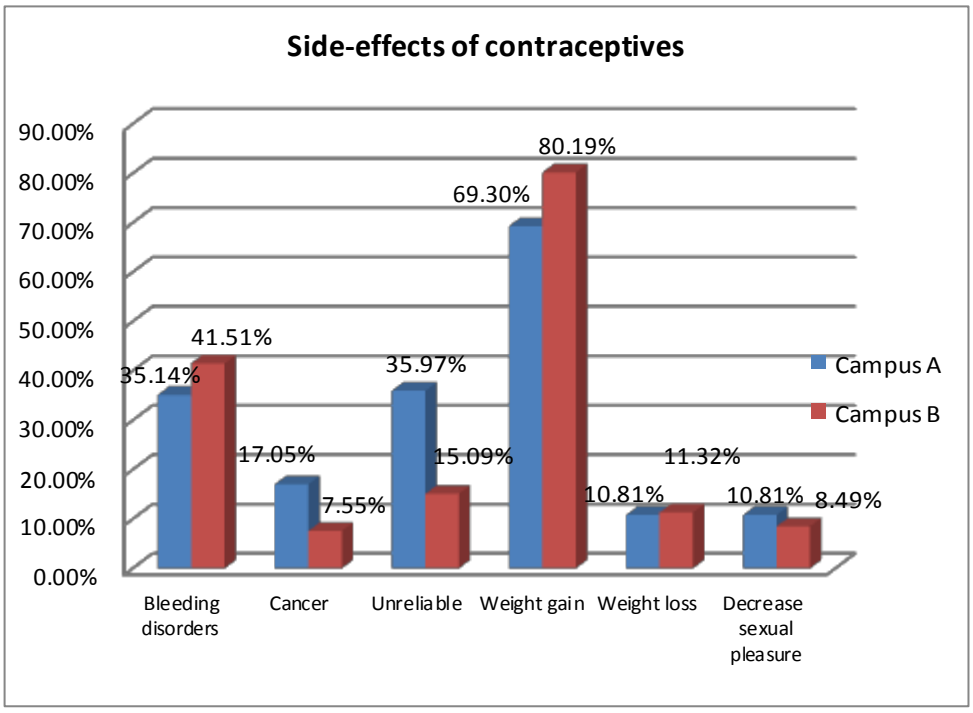


Figure 9: Bar chart showing the side-effects of contraceptives

These results indicated that the majority of respondents at both campuses, namely about 75 per cent, indicated that weight gain was a side-effect of contraceptives, whereas 38 per cent indicated that a side-effect was bleeding disorders. It is evident in the results, as shown in figure 9, that there was a lack of accurate and detailed information on contraceptives and that misconceptions also exist, e.g. that contraceptives cause cancer. Frost et al. (2012, p.115) indicated that better knowledge about side-effects of contraceptives is needed and by dispelling misconceptions about methods and their use, may have the potential to increase the use of contraceptives.

Results indicated there is definitely a need to improve the knowledge of the students regarding the side-effects of contraceptive methods and assisting them in choosing the most effective and appropriate method, to improve the use thereof, which will eventually assist in reducing the rate of unplanned pregnancies. Many studies also concluded that side-effects were the most common reason for non-utilisation of contraceptives, (Brunner Huber & Ersek 2009, p. 1067).

4.4.5 Knowledge of the emergency contraceptive

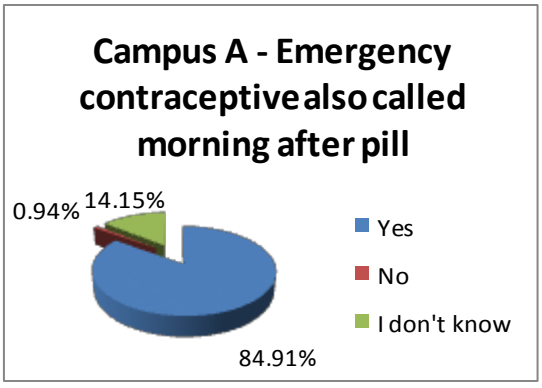
Emergency contraception is any method of contraception which is used after sexual intercourse and before the potential time of implantation (Tajure 2010, p. 91). The following will be discussed in this section, knowledge that the emergency pill is also called the morning after pill, knowledge regarding what it is used for, when it can be taken and knowledge that it is free of charge at the campus clinic.

4.4.5.1 Knowledge that the emergency contraceptive is also called the morning after pill.

Question: The emergency pill is also called the morning after pill

The term "the morning-after pill" might be misleading and many students might be unaware of it. By assessing the knowledge of the respondents a strategy may be designed that might improve the use thereof and assist in decreasing unplanned pregnancies.

At Campus A 84.91 per cent and at Campus B 90.16 per cent indicated that they knew that the emergency contraceptive was also called the morning after pill, whereas 0.94 per cent at Campus A and 0.90 per cent indicated it was not called the morning after pill. At Campus A 1.15 per cent and at Campus B 8.94 per cent indicated they did not know.



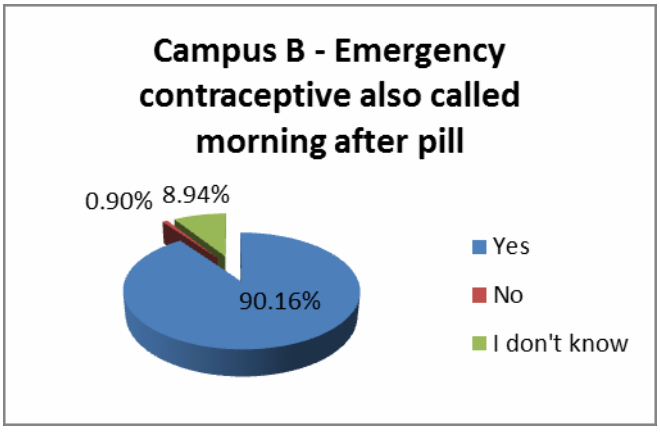


Figure: 10 and 11: Pie charts indicating the knowledge that the emergency contraceptive is also called the morning after pill

Results indicated clearly that majority of respondents at both campuses, 88 per cent, knew that it was also called the "morning after pill". Wasie et al. (2012, p. 3 of 9) reported that emergency contraceptive pills are also called morning-after pills. However according to Dreyer (2012, p.125) current consensus is that the term "emergency contraceptive" should preferably be used than "the morning-after pill", since it might imply a time limitation which may be misleading. It is thus important to inform reproductive health care professionals, as well, on the correct term to be used to prevent confusion.

4.4.5.2 nowledge regarding what the emergency contraceptive is used for

Question: What do you think the emergency pill is being used for?

The importance of emergency contraception is evident in preventing unplanned pregnancies (Ahmed et al. 2012, p. 1 of 9). This part reveals the knowledge of the respondents as follows:

At Campus A 91.89 per cent and at Campus B 87.74 per cent indicated that the emergency pill is used to prevent unplanned pregnancies. Results showed that at Campus A, 3.61 per cent and at Campus B, 5.66 per cent of participants indicated that it prevents unplanned pregnancies and sexual transmitted diseases. At both campuses, 1.89 per cent indicated that it neither prevents unplanned pregnancies nor sexual transmitted diseases and 2.70 per cent at Campus A and 4.72 per cent at Campus B indicated that they did not know.

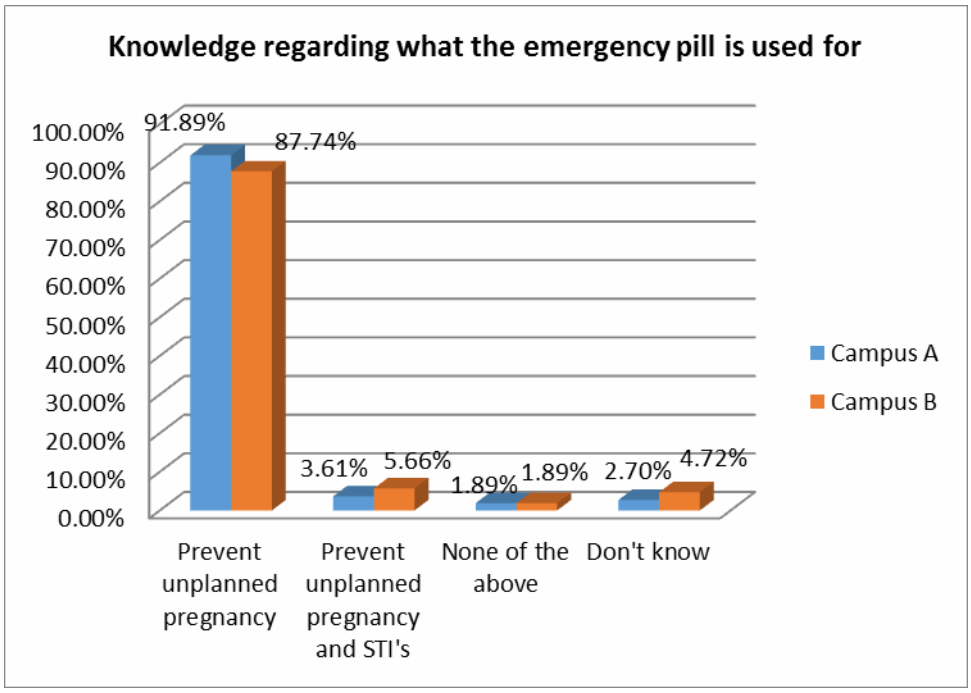


Figure 12: Bar chart indicating the knowledge regarding the use of the emergency contraceptive

These results clearly indicated that there were a high number of students at both campuses, 90 per cent, that knew what the emergency pill is used for.

However this is in contrast with a study by Roberts et al. (2004, p. 445) among tertiary students who revealed that students had limited knowledge regarding the emergency contraceptive method, and that there is a need for educational programmes on emergency contraception in existenting student health-care centres on campuses .

4.4.5.3 nowledge regarding when the emergency pill can be taken

Question: When in your opinion can the emergency pill be taken?

The emergency pill is effective up to 120 hours after unprotected intercourse. Accurate information regarding the timeframe is important to reduce the rate of unplanned pregnancies (Adhikari 2009, p. 2 of 5).

At Campus A, 88.35 per cent and at Campus B, 74.53 per cent, of respondents indicated that the emergency pill can be taken within 72 hours after unprotected sex. Results indicated that at Campus A, 4.51 per cent and at Campus B, 8.49 per cent indicated that it can be

taken any time after unprotected sex, and 3.77 per cent at Campus B indicated that it can be taken as a regular contraceptive. At Campus A, 7.14 per cent, and at Campus B, 13.21 per cent responded that they did not know when it can be taken.

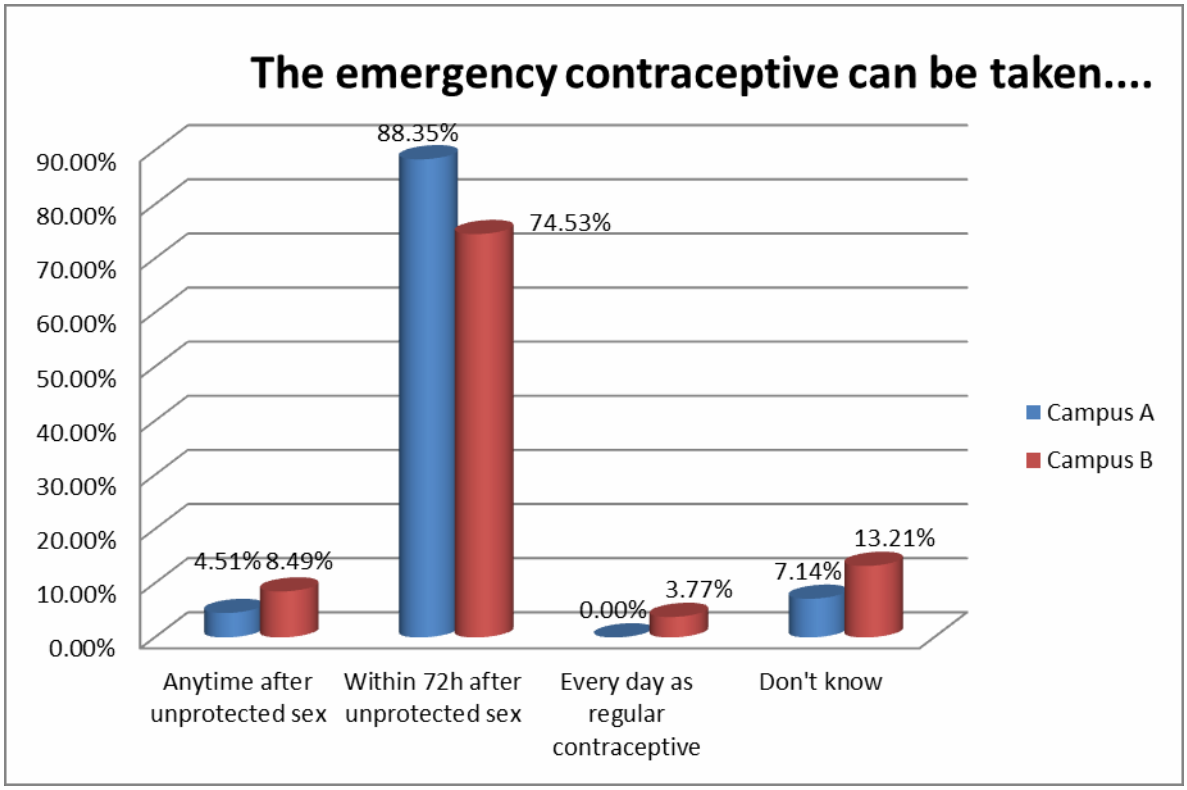


Figure 13: Bar chart indicating when the emergency contraceptive can be taken

These results indicated that the majority of respondents, 81 per cent, knew that it can be taken within 72 hours of unprotected sex. This is in agreement with another study that revealed that students had good knowledge of the timeframe for the use of emergency contraceptives (Wasie et al. 2012, p. 8 of 9).

Formerly, emergency contraception was thought to be effective only within 72 hours, but recent studies have confirmed it is effective for up to 120 hours (Adhikari, 2009, p. 2 of 5).

Reproductive health care professionals should give accurate updated information to students regarding the correct timing for the use of the emergency contraceptive. Tajure (2010, p.96) reported that there is a need to educate young females about emergency contraceptives, with emphasis on the available methods and correct timing of use.

4.4.5.4 Knowledge and awareness that the emergency contraceptive is free of charge at the clinic

Question: Do you know if the emergency pill is free at the clinic

The provision of free-of-charge emergency contraceptives to students could assist in reducing the rate of unplanned pregnancies. Therefore assessing whether students are

aware of it is very important. This part reveals the knowledge of respondents regarding if it is available free of charge at the campus clinic.

At Campus A, 27.95 per cent, and at Campus B, 31.13 per cent, of respondents indicated that they knew the emergency contraceptive is free of charge at the campus clinic, whereas at Campus A, 72.05 per cent and at Campus B, 68.87 per cent did not know that the emergency contraceptive is free at the campus clinic.

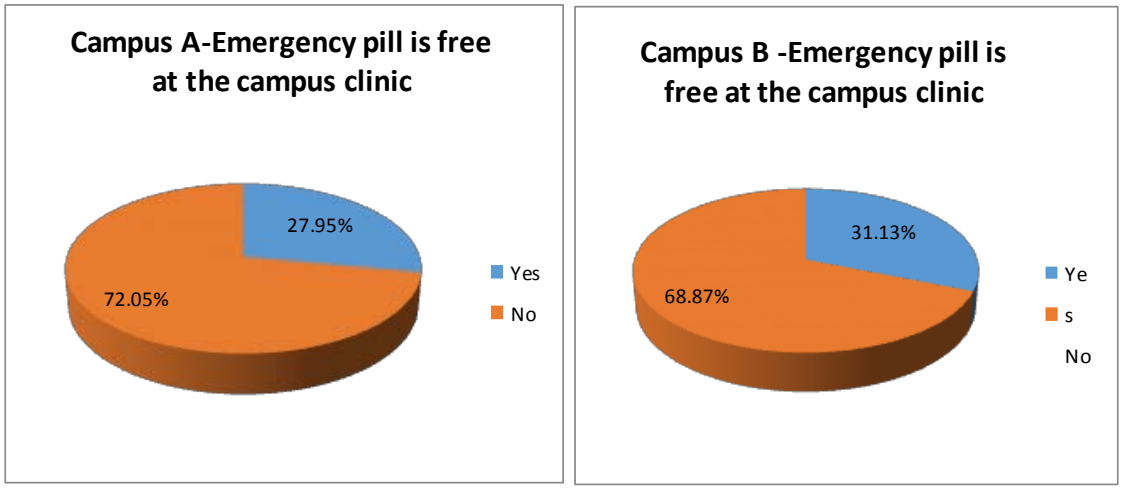


Figure 14 & 15: Pie charts indicating that the emergency pill is free of charge at the campus clinics

It is evident from the results that in both campuses there were a higher number of students, namely about 70 per cent, that did not know the emergency pill is free of charge at the clinic, as compared to 30 per cent of respondents at both campuses that did know, and could be a factor contributing to the non-utilisation of the emergency contraceptives. As 74 per cent of students at both campuses indicated that they were sexually active, it is important for them to know that it is free of charge at the campus clinic to increase the use thereof, which could assist in decreasing the rate of unplanned pregnancies. Maja & Ehlers (2004, p. 49) revealed that the use of the emergency contraceptive is determined by student‟s knowledge and awareness of its availability. The rate of unplanned pregnancies could be reduced by increasing the knowledge of students regarding the availability of free emergency contraceptives at the campus clinics.

4.4.5.5 Knowledge that the emergency contraceptive can be obtained without a prescription at a pharmacy

Question: Can you obtain the emergency pill at the pharmacy without a prescription?

By assessing the knowledge of students regarding whether they are aware that the emergency pill can be obtained without a prescription at a pharmacy is important to consider as it, could increase the use thereof and could reduce the risk of unplanned pregnancies.

At Campus A, 70.05 per cent and at Campus B, 59.43 per cent, of respondents indicated that they knew the emergency contraceptive can be taken without a prescription, and 2.73 per cent, of respondents at Campus A and 5.66 per cent, at Campus B did not know. Findings showed that 27.22 per cent, at Campus A and 34.91 per cent, at Campus B were not sure that it can be obtained without a prescription at a pharmacy.

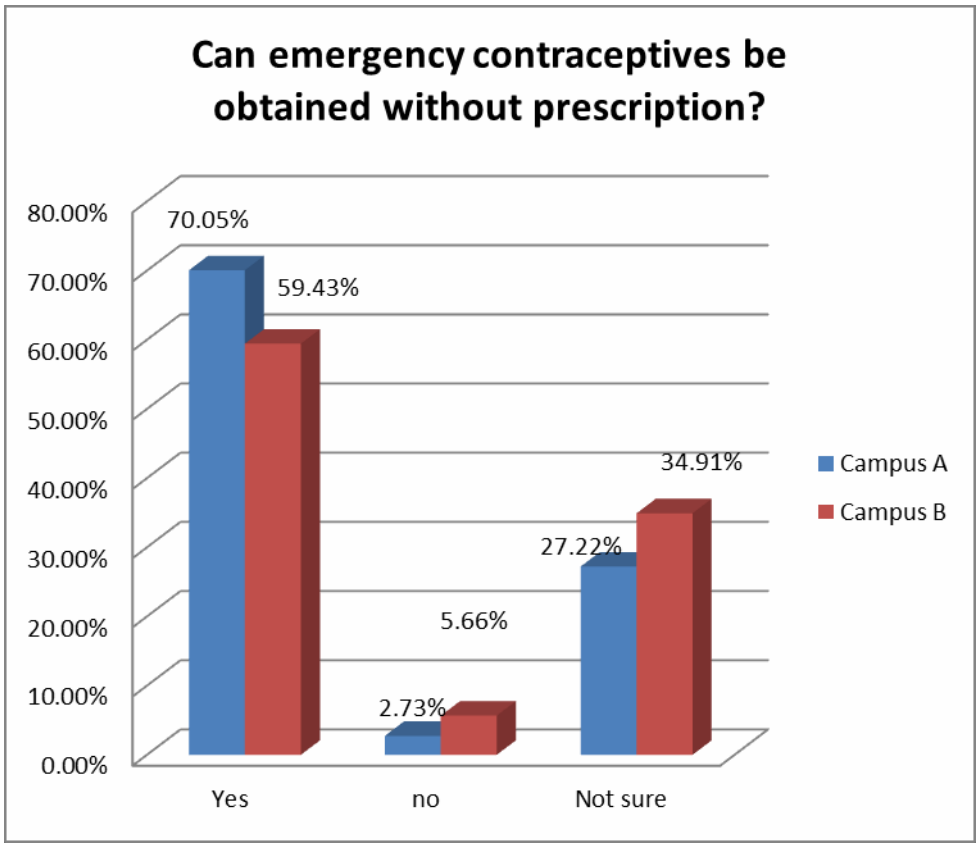


Figure 16: Bar chart indicating the knowledge that the emergency contraceptive can be obtained without a prescription.

The results indicated that even though there were a high number of students, 65 per cent, at both campuses that knew the emergency contraceptive can be obtained without a prescription at a pharmacy, there were still 31 per cent at both campuses that were not sure if it can be obtained without a prescription at a pharmacy. By increasing the knowledge of all students regarding obtaining the emergency contraceptive without a prescription at a pharmacy, might improve the accessibility and use of the emergency contraceptive, which might assist in decreasing the rate of unplanned pregnancies. Dreyer (2012, p.126) indicated that the provision of emergency contraception should be without the restrictions of the normal prescription rules, and access to it should be confidential and unobstructed.

Moreover, health education programmes should be developed for university students to avail accurate information about emergency contraception (Tajure 2010, p.96).

4.5 PART FOUR: FACTORS CONTRIBUTING TO THE NON-UTILISATION OF CONTRACEPTIVES

This part describes factors contributing to the non-utilisation of contraceptives. The following factors contributing to the non-utilisation of contraceptives were identified in the study: poor awareness of the contraceptive services, access of services, first source of information, discuss contraceptive use with partner, partner approval, and alcohol use. Bruner Huber & Ersek (2009, p.1069), indicated in literature, that by assessing the use of contraceptives among students will determine the reasons for the non-utilisation of contraceptives.

4.5.1 Awareness of services

Question: Are you aware of a family planning clinic on your campus?

Lack of awareness on the availability of family planning services could negatively influence the use thereof, and could be a factor contributing to the non-utilisation of contraceptives. By assessing the awareness could assist in reducing the rate of unplanned pregnancies.

At Campus A, 69.14 per cent, and at Campus B, 74.53 per cent of respondents were aware of a contraceptive service on campus, whereas, 30.86 per cent, at Campus A and 25.47 per cent at campus B were not aware.

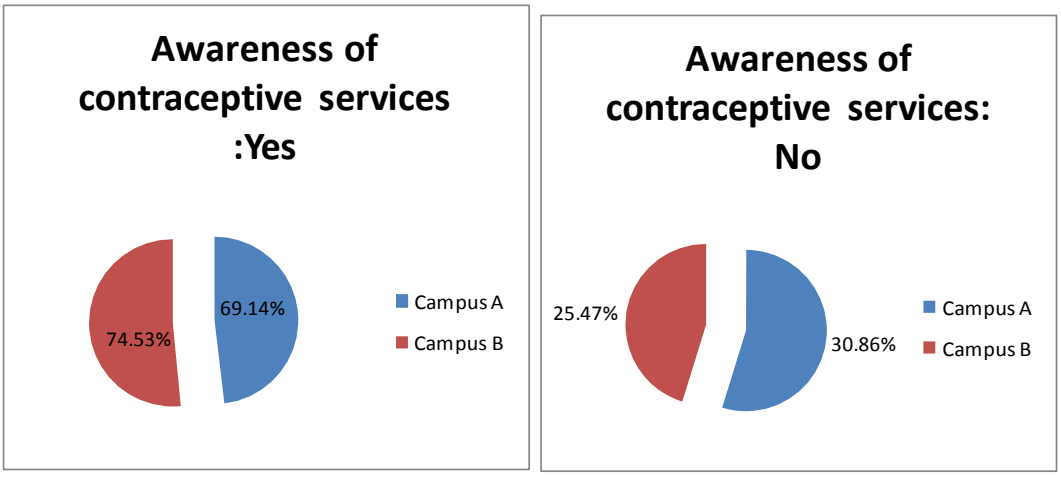


Figure 17 and 18: Pie chart indicating the awareness of contraceptive services

It is evident in the results that at both campuses only two third of students, 72 per cent, indicated they were aware of the contraceptive services on campus, which place 28 per cent of participants at both campuses, who were not aware, at a higher risk of unplanned pregnancies due to not being aware of the services.

Table 11: Awareness of services and percentage of contraceptive use

Campus	Variable	Percentage of contraceptive use	Percentage of no contraceptive use	Total percentage
A	**Awareness of services:**			
	Yes:	78.67	21.33	100.00
	No:	48.60	51.40	100.00
B	**Awareness of services:**			
	yes:	65.82	34.18	100.00
	No:	53.85	46.15	100.00

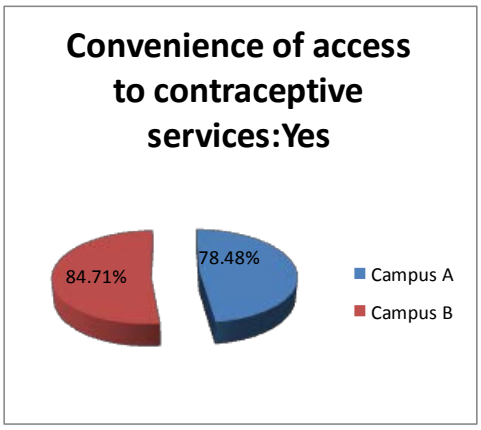
Based on the findings of respondents at both campuses who indicated they were aware of the services, a higher number of students, 72 per cent were using contraceptives, compared to those respondents at both campuses who indicated they were not aware of the services; only 51 per cent were using contraceptives. These results indicated clearly that health education campaigns should promote the awareness of contraceptive services at both campuses to improve the utilisation of the contraceptive services. Akintade (2011, p. 77) reported in a study, on the awareness and use of family planning services, that the level of awareness of family planning in their sample was as high as 98.3 per cent. However, a high level of contraceptive awareness does not always guarantee good knowledge.

4.5.2 Convenience of access to contraceptive services

Question: Are the clinic hours convenient to you?

The convenience of hours of contraceptive services could increase the use of contraceptives, and by assessing it, useful information can be obtained that may reduce the risk of unplanned pregnancies.

At Campus A, 78.48 per cent and at Campus B, 84.71 per cent of respondents indicated that the clinic hours were convenient for them, whereas, 21.52 per cent at Campus A and, 15.29 per cent, at Campus B indicated that it was not convenient.



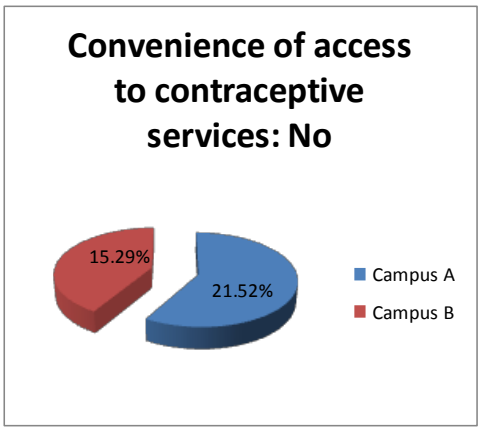


Figure 19 and 20: Pie chart indicating the convenience of access to contraceptive services

Results showed that majority of respondents at both campuses, 82 per cent, indicated that the clinic hours were convenient to them. Akintade et al. (2011, p. 76) indicated in a study on the awareness and use of and barriers to family planning services among female university students that majority of those who used family planning services, 77 per cent, regarded the hours of service as convenient.

Table 12: Convenience of hours and percentage of contraceptive use

Campus	Variable	Percentage of contraceptive use	Percentage of no contraceptive use	Total percentage
Campus A	**Convenience of hours:**			
	Yes:	81.97	18.03	100.00
	No:	64.71	35.29	100.00
Campus B	**Convenience of hours:**			
	Yes:	68.06	31.94	100.00
	No:	61.54	38.46	100.00

Results indicated that although the majority of respondents, 75 per cent, at both campuses who indicated the hours of the contraceptive services were convenient to them were utilising contraceptives, the respondents at both campuses who indicated the hours were not convenient to them, approximately a third, 37 per cent, were not utilising contraceptives, which increase their risk of having unplanned pregnancies. Bryant (2009, P.16) indicated that health professionals should decrease non-utilisation of contraceptives by making contraceptives more accessible.

4.5.3 First source of information

Question: Who was your first source of information?

Possible reasons for the lack of knowledge on contraceptive methods may be linked to sources of information (Tajure 2010, p. 95).

At Campus A, 2.70 per cent, and at Campus B, 5.71 per cent indicated that books/, newspapers/ social media and television were their first source of information, whereas 13.52 per cent, at Campus A, and 17.17 per cent at Campus B indicated that friends, peers were their first source. At Campus A, 64.84 per cent, and at Campus B, 65.71 per cent indicated that their first source of information was the school, (no level were specified), whereas 18.93 per cent at Campus A, 10.84 per cent indicated that parents/ relatives were their first source of information.

Table 13: First source of information and percentage of the utilisation of contraceptives

Campus	Variable:	Percentage of first source of information	Percentage of contraceptive use	Percentage of no contraceptive use
Campus A	**First source of information:**			
	Books/newspaper/ social media/ TV	2.70	33.33	66.67
	Friend/peers	13.52	53.33	46.67
	Parents/relatives	18.93	66.67	33.33
	School	64.84	75.80	24.20
Campus B	**First source of information:**			
	Books/newspaper/ social media/ TV	5.71	50.00	50.00
	Friend/peers	17.14	61.11	38.89
	Parents/relatives	10.84	90.00	10.00
	School	65.71	59.42	40.58

It is clear in the results that at both campuses, majority of students, 65 per cent, indicated the school was their first source of information, of this 65 per cent of students 68 per cent used contraceptives whereas 32 per cent did not use contraceptives. Results indicated that there were a higher number of students at both campuses, 65 per cent, who indicated there first source of information was the school, who used contraceptives, than those who did not use contraceptives. Some studies have concluded that family planning should be taught

formally in schools as part of the academic curriculum, to increase the awareness of family planning, (Akintade 2011, p. 77). Results also showed that at both campuses where friend/peers were their first source of information, there were a slightly higher number of students, 57 per cent, who used contraceptives, than those who did not use contraceptives, 43 per cent. Tajure (2010, p.95), indicated that the possible reason for the lack of detailed knowledge on contraceptives may be linked to the source of information; friends and peers that may not have a good grasp of contraceptives, which can be a factor to be considered in failure to use contraceptives effectively. According to the results, at Campus A there were a higher number of students, 68 per cent, who used contraceptives where parents/ relatives were their first source of information, whereas at Campus B, 90 per cent used contraceptives where their parents were the first source of information. It is thus evident that at both campuses where the parents/relatives were the first source of information, the results indicated an increase in utilisation of contraceptives. De Graaf et al. (2010, p. 190) reported that high levels of parental support and knowledge are associated with more consistent contraceptive use. Results indicated that at Campus A, the participants who indicated that their first source of information were books/social media/newspaper, only 33.33 per cent used contraceptives, however at Campus B 50 per cent indicated they used contraceptives and 50 per cent indicated they did not use contraceptives. Golbasi et al. (2012, p. 81) revealed that sources of information such as books, friends/peers have a high potential of giving wrong or imperfect information about contraceptives, which could be a factor for not using contraceptives effectively.

4.5.4 Discussed contraceptive use with partner

Question: Have you discussed the use of contraceptives with your partner.

Discussing the use of contraceptives with partners might increase the use thereof and might ultimately reduce the rate of unplanned pregnancies.

At Campus A, 63.68 per cent and at Campus B 62.75 per cent indicated that they discussed the use of contraceptives with their partners, whereas at campus A, 9.10 per cent and at Campus B 16.67 did not discuss it with their partners.

Table 14: Discussed contraceptive use with partner and the percentage of contraceptive use

Campus	Variable	Percentage discussed with partner	Percentage of contraceptive use	Percentage of no contraceptive use
Campus A	**Discussed contraceptive use with partner:**			
	Yes:	63.68	85.81	14.29
	No:	9.10	70.00	30.00
Campus B:	**Discussed contraceptive use with partner:**			
	Yes:	62.75	71.88	28.13
	No:	16.67	56.25	43.75

It is clear in the results that at both campuses there were a higher number of respondents, 79 per cent, who discussed the use of contraceptives with their partner, who used contraceptives than those that did not use contraceptives, 21 per cent. The results indicated an increase in the use of contraceptives where respondents discussed the use of contraceptives with their partners. These results are in agreement with another study done by Bafana (2010, p. 21 of 81) who revealed that two thirds of females reported that there is a joint decision making regarding contraceptive use.

4.5.5. Partner's approval

Question: Does your partner approve of you using contraceptives?

The approval of partners in terms of the use of contraceptives might increase the consistent use of contraceptives and might assist in reducing the rate of unplanned pregnancies.

At Campus A 64.27 per cent and at Campus B 51.49 per cent indicated that their partners approved of them using contraceptives, whereas at Campus A, 6.43 per cent and at Campus B, 15.84 per cent indicated their partners did not approve.

Table 15: Approval of partner and the percentage of contraceptive use

Campus	Variable	Percentage approved	Percentage of contraceptive use	Percentage of no contraceptive use
Campus A	**Partner approved**			
	Yes:	64.27	88.57	11.43
	No:	6.43	42.86	57.14
Campus B	**Partner approved:**			
	Yes:	51.49	76.92	23.08
	No:	15.84	50.00	50.00

It is clear in the results in both campuses, the partners who approved the use of contraceptives that there were a higher number of students, 83 per cent, who used contraceptives, than those who did not use contraceptives, 17 per cent. There is inadequate information found in literature about partner support and the use of contraceptives. However, De Graaf et al. (2010, p. 190) revealed that high levels of parental support and knowledge are associated with more consistent contraceptive use.

4.5.6 Alcohol use as a barrier

Question: Do you consume any alcohol? If yes, how often and how many drinks do you have?

A large body of research suggests that alcohol consumption amongst other factors influence the use of contraception (Mehra et al. 2012, p. 2).

At Campus A, 65.43 per cent and at Campus B and 58.49 per cent of respondents indicated they consume alcohol. According to the results, majority of respondents at Campus A, 65.24 per cent and at Campus B, 72.58 per cent indicated that they use alcohol only during a social event.

During a social event, at Campus A, 57.14 per cent and at Campus B, 48.85 per cent of respondents indicated they drink 2 to 3 drinks.

Table 16: Alcohol use and the percentage of contraceptive use

Campus	Variable	Percentage of alcohol use	Percentage of contraceptive use	Percentage of no contraceptive use
Campus A	**Alcohol use:**			
	Yes:	65.43	78.96	21.04
	No:	34.57	51.35	48.65
Campus B	**Alcohol use:**			
	Yes:	58.49	68.85	31.15
	No:	41.51	54.55	45.45

It is clear from the results that at both campuses there were a high number of students, 62 per cent, who indicated they used alcohol, compared to those who did not use alcohol, 38 per cent. Of this 62 per cent, 74 per cent indicated they used contraceptives, whereas 29 per cent indicated they did not use any contraceptives.

Table 17: Alcohol use and the percentage of sexual activity

Campus	Variable	Percentage sexually active	Percentage not sexually active
Campus A	**Alcohol use:**		
	Yes:	82.04	17.96
	No:	48.65	51.35
Campus B	**Alcohol use:**		
	yes:	83.33	16.67
	No:	68.18	31.82

The results indicated clearly that in both campuses there were a high number of students, 83 per cent, who used alcohol, who were sexually active, than those who were not sexually active, 17 per cent. Furthermore as 29 per cent of students in both campuses, who indicated they used alcohol, were not using contraceptives, it places them at risk of having unplanned pregnancies.

Mehra et al. (2012, p. 8) reported that several studies had concluded that alcohol abuse by university students was associated with elevated rates of risky sexual behaviour, and that alcohol use may lead to greater risk-taking behaviour, including that of incurring an unplanned pregnancy.

4.6 CONCLUSION

This chapter described the social and demographic characteristics of the study respondents and represented the results of the data analysis. It includes tables and figures which indicates frequencies and percentages. According to the results that there is a lack of knowledge of most of the contraceptive methods, and many students indicated inconsistent use due to the danger of potential side-effects. There is clearly a lack of awareness that the emergency contraceptive is freely available at the campus clinic. This may be a contributing factor to the non-utilisation thereof and might also lead to an increase in the unplanned pregnancy rate. Chapter 5 will include the discussion, implications, recommendations, limitations and final conclusion of the study.

CHAPTER 5

DISCUSSION, IMPLICATIONS, RECOMMENDATIONS, LIMITATIONS AND CONCLUSION

5.1. INTRODUCTION

Sexual and reproductive health among young females has become a priority for higher educational students. The increasing rate of unplanned pregnancies among students at higher educational institutions is a significant reproductive health challenge, worldwide (Zhou et al. 2012, p.1153). Chapter 5 deals with the discussion, implications, recommendations, limitations and final conclusion of the study.

5.2 DISCUSSION

5.2.1 Social and demographic characteristics

The social and demographic results from the study were conducted reflecting a mean age of 20.64 years and a median age of 20.50 years. The age range of respondents was from 18 to 24 years. About 70 per cent of respondents between 18 to 24 years were using contraceptives of which almost all (94) per cent were single, majority. Black African was the biggest ethnic group (76 per cent) and the predominant religion was Christianity, namely 94 per cent. The majority of respondents indicated they were sexually active, 74 per cent, of which 79 per cent indicated they used contraceptives. This is in agreement with another study among female college students, who revealed that 80 per cent of higher educational females are sexually active (Bryant 2009, p. 12).

5.2.2 The use of contraceptives

The method of contraceptive most commonly used was the oral contraceptive, 38 per cent, followed by the condom, 25 per cent. Almost 40 per cent of respondents indicated they did not use contraceptives consistently. It was estimated in a study that regular contraceptive use can prevent 12 million pregnancies every year (Ersek et al. 2011, p. 497). The majority of respondents, namely 79 per cent, indicated they used contraceptives correctly. A smaller sample of 17 per cent responded that a method has failed them due to them being afraid of possible side-effects. Adequate health education about possible side-effects has been found to reduce discontinuation of contraceptives for this reason (Akintade et al. 2011, p. 78).

5.2.3 Knowledge and awareness of contraceptives

The method of contraceptive respondents in both campuses were most familiar with was the condom, 84 per cent, followed by the oral contraceptive, 68 per cent. The method they were least familiar with was the intrauterine contraceptive, 19 per cent. The level of knowledge of

the condom as contraceptive method that prevents sexually transmitted diseases was very high, 91 per cent, however only 25 per cent indicated they used condoms. The majority of respondents 97 per cent had good knowledge of the benefits of contraceptives. 75 per cent indicated that weight gain was a side-effect and 38 per cent indicated that bleeding disorders were a side-effect of contraceptives. Misconceptions were also found to exist, 12.3 per cent indicated that contraceptives cause cancer.

The level of knowledge regarding the emergency contraceptive at both campuses was very good as 90 per cent knew what it is used for, 81 per cent knew when it can be taken, and 65 per cent indicated they knew it can be obtained without a prescription at a pharmacy. However the level of awareness that the emergency contraceptive is free of charge at the campus clinic was very low, 70 per cent did not know it is free of charge at the campus clinic, which could be a factor for the non-utilisation of the emergency contraceptive.

5.2.4 Factors contributing to the non-utilisation of contraceptives

The majority of respondents in both campuses, namely 72 per cent were aware of a contraceptive service on campus; and 82 per cent indicated that the clinic hours were convenient to them. The school was the first source of information on contraceptives, indicated by majority of respondents, namely 65 per cent. Nearly 80 per cent respondents, who indicated that they use contraceptives, discussed contraceptive use with their partners. Most of the respondents, namely 83 per cent, had partners who approve the use of contraceptives, were using contraceptives. A high number of sexually students, namely 83 per cent, indicated they use alcohol. Nearly 30 per cent of them were not using contraceptives, which would increase their risk of having unplanned pregnancies. Thus alcohol use may lead to greater risk-taking behaviour, including that of incurring an unplanned pregnancy (Mehra et al. 2012, p.8).

5.3 IMPLICATIONS

A major responsibility of healthcare providers at campus clinics is to educate students on sexual and reproductive health issues. Educating females about preventing unplanned pregnancies can decrease some psychosocial challenges associated with having an unplanned pregnancy (Bryant 2009, p.16). Healthcare providers should assist females to make informed decisions about contraceptive use by educating them on concerns about side-effects, and reliability of contraceptives to increase the use of contraceptives. Misconceptions about contraceptive methods can be decreased by accurate, appropriate health education on the methods and assisting them in choosing a most appropriate method for their individual needs, can increase the consistent use of contraceptives, and decrease the rate of unplanned pregnancies (Frost et al. 2012, p. 115).

Ersek et al. (2011, p. 497) reported that the regular contraceptive use prevented 12.0 million pregnancies per year and should therefore be promoted by reproductive health care professionals. By reducing unplanned pregnancies the population growth could slow down, thereby reducing the Government‟s need to expand infrastructure at high cost. This may contribute to substantial cost-saving in terms of social spending by Government. Government grants for children could also be reduced.

Nurses can improve quality care at community nursing clinics by providing caring, culturally appropriate care which may increase client satisfaction with the clinic. Clients who receive excellent nursing care are more likely to return for further care (Bryant 2009, p.16).

5.4 RECOMMENDATIONS

The results of the study led to the following recommendations which could assist to improve the use of contraceptives to prevent unplanned pregnancies (Maja & Ehlers 2004, p.51). This study could also be replicated using a different sample (Bryant 2009, p.15). Programmes to increase young female‟s knowledge on all contraceptive methods and the effective use of contraceptives are urgently needed, to improve the consistent use of contraceptives (Frost et al. 2012. p.107).

Healthcare workers should give adequate, accurate and detailed information about the possible side-effects of contraceptives to increase the consistent use of contraceptives (Bafana 2010, p.55 of 81). They could also ask current users about concerns or problems in obtaining their method and work with them to solve problems, and to also stress the importance of consistent contraceptive use to prevent not only unplanned pregnancies but also sexually transmitted diseases. Considering that only 50.3 per cent of females were familiar with emergency contraceptives, healthcare workers could educate females on how to obtain and use the emergency contraceptive to prevent unplanned pregnancies, (Brunner Huber & Ersek 2009, p. 1069.

As the awareness of the availability of the emergency contraceptive has been found to be low among university students, health education programmes should be implemented urgently to increase the awareness and the use of emergency contraceptives, to assist in reducing unplanned pregnancies (Adhikari 2009, p. 5 of 5). As students are vulnerable because of the lack of knowledge and skills to avoid risky behaviour, suitable and effective health education geared towards higher educational students should be strongly recommended (Zhou et al. 2012, p.1157).

5.5 LIMITATIONS

This study was conducted using respondents of only two campuses at one higher educational institution, in Pretoria, and is thus not necessarily applicable to other campuses or other higher educational institutions. As the data collection instrument addressed a number of questions that students may have felt were personal or sensitive in nature, it may be possible that they have not accurately responded on the use of contraceptives. However the majority of students completed all the sections (Bruner Huber & Ersek 2011, p. 202). Bias may have occurred due to poor recall of information because respondents may not have remembered the details of their contraceptive use (Bafana 2010, p.54 of 81).

The pilot study did not find that some questions may have been repetitive in nature, which could have influenced the accuracy of the results. Another limitation was that the study was limited to females (Wasie et al. 2012, p.8 of 9). The response rate of the study is a concern, as only 55 per cent of respondents responded to the study. Although these results are likely representative of our higher educational institution female undergraduate student population, they may not be generalised to all or other higher educational institutions female undergraduate students.

5.6 FINAL CONCLUSION

Higher educational students form an important high-risk group in the community. The majority of students are sexually active and at risk of an unplanned pregnancy (Roberts et al. 2004, p.445). Despite the availability of free contraceptives at campus clinics, the high rate of unplanned pregnancies remains a major concern. The main aims of the study were to assess the use of contraceptives, assess the knowledge and awareness of contraceptives and to describe factors for the non-utilisation of contraceptives among female undergraduate students at a higher educational institution.

The prevalence of contraceptive use under sexually active students in this study was high, namely 79 per cent, however inconsistent use of contraceptives are a major challenge. Females were aware of the benefits of contraceptives in preventing unplanned pregnancies; however they used contraceptives inconsistently due to being afraid of possible side-effects, which could contribute to the high rate of unplanned pregnancies (Yunos 2010, p. 76 of 95).

Some factors were identified for the non-utilisation of contraceptive use, and a number of misconceptions about contraceptives were found which could affect the use. Overall there was limited awareness and use of the emergency contraceptives indicated in this study. There is thus an urgent need for carefully designed educational programmes on emergency contraceptives in existing campus clinics. Use of regular /consistent use of contraceptives as

well a regular condom use needs to be stressed as well, to reduce not only unplanned pregnancies but also sexually transmitted diseases (Brunner Huber & Ersek 2009, p. 1069).

In conclusion, this study highlighted the lack of knowledge and awareness on some contraceptive methods, thus educational programmes to increase students‟ knowledge on all contraceptive methods, including addressing possible side-effects, and its use, are urgently needed, to increase the use of contraceptives and assisting in decreasing the rate of unplanned pregnancies (Frost et al. 2012, p. 107).

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7 ANNEXURES

ANNEXURE A

Declaration regarding plagiarism

DECLARATION OF ORIGINALITY
UNIVERSITY OF PRETORIA

The Department of Health Care Science places great emphasis upon integrity and ethical conduct in the preparation of all written work submitted for academic evaluation.

While academic staff teaches you about referencing techniques and how to avoid plagiarism, you too have a responsibility in this regard. If you are at any stage uncertain as to what is required, you should speak to your lecturer before any written work is submitted.

You are guilty of plagiarism if you copy something from another author‟s work (eg a book, an article or a website) without acknowledging the source and pass it off as your own. In effect you are stealing something that belongs to someone else. This is not only the case when you copy work word-for-word (verbatim), but also when you submit someone else‟s work in a slightly altered form (paraphrase) or use a line of argument without acknowledging it. You are not allowed to use work previously produced by another student. You are also not allowed to let anybody copy your work with the intention of passing if off as his/her work.

Students who commit plagiarism will not be given any credit for plagiarised work. The matter may also be referred to the Disciplinary Committee (Students) for a ruling. Plagiarism is regarded as a serious contravention of the University‟s rules and can lead to expulsion from the University.

The declaration which follows must accompany all written work submitted while you are a student of the Department of Health Care Science.
No written work will be accepted unless the declaration has been completed and attached.

Full names of student: Maria Hannelie Coetzee
Student number: 04553226

Topic of work: Assessing the use of contraceptives by undergraduate female students, in a Higher Educational Institution.

Declaration

1. I understand what plagiarism is and am aware of the University‟s policy in this regard.

2. I declare that this research proposal is my own original work. Where other people‟s work has been used (either from a printed source, Internet or any other source), this has been properly acknowledged and referenced in accordance with departmental requirements.

3. I have not used work previously produced by another student or any other person to hand in as my own.

4. I have not allowed, and will not allow, anyone to copy my work with the intention passing it off as his or her own work.

SIGNATURE: MARIA HANNELIE COETZEE

ANNEXURE B

PARTICIPANT'S INFORMATION LEAFLET & INFORMED CONSENT FOR ANONYMOUS QUESTIONNAIRES

Researcher's name: Maria Hannelie Coetzee

Student Number 04553226

Department of Nursing Sciences

University of Pretoria

Dear Participant

ASSESSING THE USE OF CONTRACEPTIVES BY UNDERGRADUATE FEMALE STUDENTS IN A HIGHER EDUCATIONAL INSTITUTION

I am a Master Student in Community Health in the Department of Nursing Sciences of the University of Pretoria. You are invited to volunteer to participate in our research project on the use of contraceptives by undergraduate female students in a higher educational institution.

This letter gives information to help you to decide if you want to take part in this study. Before you agree you should fully understand what is involved. If you do not understand the information or have any other questions, do not hesitate to ask us. You should not agree to take part unless you are completely happy about what we expect of you.

The purpose of the study is to assess the use, and knowledge of contraceptives, and to describe factors for non-utilisation of contraceptives by female undergraduate students.

We would like you to complete a questionnaire. This may take about 7 to 10 minutes. We will collect the questionnaire from you before you leave the clinic. It will be kept in a safe place to ensure confidentiality. Please do not write your name on the questionnaire. This will ensure confidentiality. We will be available to help you with the questionnaire or to fill it in on your behalf.

The questionnaire will be pre-tested by 20 female undergraduate students using a convenience sampling method where the researcher and her colleagues will distribute the questionnaires to 20 undergraduate female students on their visit to the Student Health Services. After the questionnaires have been completed, it will be collected by the

researcher and her colleagues and stored in a secure place. The pre-testing is done to clarify any uncertainties, unclearness, and will assist in making improvements.

You need not answer any question that you feel is of a sensitive nature to you.

The Research Ethics Committee of the University of Pretoria, Faculty of Health Sciences, and telephone numbers 012 3541677 / 012 3541330 granted written approvals for this study.

Your participation in this study is voluntary. You can refuse to participate or stop at any time without giving any reason, and have the right to withhold any specific piece of information, even after giving consent. Should you decide to discontinue with the study, no punitive measures will be taken against you. As you do not write your name on the questionnaire, you give us the information anonymously. We will not be able to trace your information. Your privacy will be protected at all times and you will also not be identified as a participant in any publication that comes from this study.

There are no risks and discomfort associated with the study.

The possible benefits of the study include the following:

- By assessing the use, and knowledge of contraceptives, and describing the factors of non-utilisation of contraceptives, it will assist us in reducing the rate of unplanned pregnancies amongst female undergraduate students.
- The findings of the study will provide recommendations to reduce risky sexual behaviour, and empower students in making informed decisions regarding their sexual health.
- It also aims to provide a platform for effective intervention, and create opportunities for higher educational institutions to improve their sexual and reproductive health services.

In the event of questions asked, which will cause emotional distress, then the researcher is able to refer you to a competent counselling.

Note: The implication of completing the questionnaire is that informed consent has been obtained from you. Thus any information derived from your form (which will be totally anonymous) may be used for e.g. publication, by the researchers.

We sincerely appreciate your help.

Yours truly,

Maria Hannelie Coetzee

ANNEXURE C

Questionnaire

For office use only

Respondent number V0 [ ][ ]

Section A. Social and demographic characteristics

1. How old are you? …….... years V1 [ ][ ]

Please complete with (X) in the appropriate boxes.

2. Campus V2 [ ]

Campus A	
Campus B	

3. Marital status V3 [ ]

Single	1
Married	2
Divorced/ separated	3
Widow	4
Staying together	5

4. Ethnic group V4 [ ]

Asian	1
Black African	2
Coloured	3
White	4

5. In which area do you live? V5 [ ]

Informal settlement	1
Rural area	2
Township	3
Urban	4

6. Please indicate your type of residence

Living in a flat	1
Parents home	2
University residence	3
University commune	4

V6 ☐

Section B: Knowledge of contraceptives

7. Please indicate which methods of contraceptives you are familiar with? (You may mark more than one option).

Oral pills	1	V7a ☐
2 months injection	2	V7b ☐
3 months injection	3	V7c ☐
Condoms	4	V7d ☐
Emergency contraceptives	5	V7e ☐
Intrauterine contraceptive device	6	V7f ☐
Implant	7	V7g ☐

8. Which contraceptive do you think can prevent sexually transmitted diseases?

Please choose only one answer.

Oral pills	1
2 months injection	2
3 months injection	3
Condoms	4
Emergency contraceptive	5
Intrauterine contraceptive device	6
Implant	7
I don‟t know	8

V8 ☐

You may choose more than one answer to question 9 and 10

9. What would you say are the benefits of contraceptives?

Prevent unplanned pregnancies	1	V9a ☐
Control number of children	2	V9b ☐
Prevent sexually transmitted diseases	3	V9c ☐
Enhance sexual performance	4	V9d ☐

	Don't know	5	V9e

10. Which of the following would you say are the side-effects/ disadvantages of contraceptives?

Possible bleeding disorders	1	V10a
Causes cancer	2	V10b
Sterility	3	V10c
Unreliable	4	V10d
Weight gain	5	V10e
Weight loss	6	V10f
Decrease sexual pleasure	7	V10g
Expensive	8	V10h
None of the above	9	V10i

11. The emergency pill is also called the morning after pill

Yes	1	V11
No	2	
I don"t know	3	

12. What do you think the emergency pill is being used for?

Prevent unplanned pregnancy	1	V12
Prevent sexually transmitted diseases	2	
Both of the above	3	
Not one of the above	4	
I don"t know	5	

13. When in your opinion can the emergency pill be taken?

Any time after unprotected sex	1	V13
Within 72hours after unprotected sex	2	
Every day as a regular contraceptive	3	
I don"t know	4	

14. Do you know if the emergency pill is free at the clinic?

Yes	1	V14
No	2	

15. Can you obtain the emergency pill at the pharmacy without a prescription?

	Yes	1	V15
	No	2	
	Not sure	3	

Section C: The use of contraceptives

16. Are you sexually active?

Yes	1	V16
No	2	

17. Are you currently using any contraceptives?

Yes	1	V17
No	2	

18a. If yes, please answer the following questions:
Which method are you using?

Oral pills	1	V18a
2 months injection	2	
3 months injection	3	
Emergency pills	4	
Intrauterine contraceptive device	5	
Hormone patch	6	
Condoms	7	
Implant	8	
Abstinence	9	

18b. How old were you when you first started taking contraceptives? ……..years V18b

18c. Are you using the contraceptives consistently?

Yes	1	V18c
No	2	

18d. Are you using the contraceptives correctly?

Yes	1	V18d

	No	2	
	Not sure	3	

18e. Has any contraceptive method ever failed you before?

Yes	1	V18e
No	2	

18f. If yes, why did you think it happened?

Pregnancy	1	V18f
Afraid of possible side-effects	2	
Forget to take it/ inconsistent use	3	
Incorrect use	4	
Not sure	5	

19. Does your partner ever use condoms?

Yes	1	V19
No	2	
Not applicable	3	

20. If you are not using any contraceptives, please indicate why not (You may mark more than one option).

Not sexually active	1	V20
Parents do not approve	2	
Partner does not approve	3	
Against my religion	4	
Afraid of possible side-effects	5	
Not one of the above	6	

Section D: Factors contributing to the non-utilisation of contraceptives

21. How old were you when you first heard about contraceptives? .....years V21

22. Who was your **first** source of information?

School	1	V22

Parents/ relatives	2
Friends/peers	3
Church	4
Books/ newspaper/ social media/TV	5
Family planning clinic	6
Other	7

23. Have you discussed the use of contraceptives with your partner?

Yes	1	V23
No	2	
Not applicable	3	

24. Does your partner approve of you using contraceptives?

Yes	1	V24
No	2	
Not applicable	3	

25. Is it against your religion to use contraceptives?

Yes	1	V25
No	2	
Not applicable	3	

26. Are you aware of a family planning clinic on your campus?

Yes	1	V26
No	2	

27. If yes, are the clinic hours convenient to you?

Yes	1	V27
No	2	

28. Do you consume any alcohol?

Yes	1	V28
No	2	

29. If yes, how often?

Every day	1	V29
Once a week	2	

3 to 5 days per week	3
Once a month	4
Only when attending a social event	5

30. With reference to question 29, how many drinks do you have?

1 drink only	1
2 to 3 drinks	2
4 to 5 drinks	3
> 5 drinks	4

V30 ☐

31. Religion

Christian	1
Hindu	3
Judism	4
Moslem	5
Scientology	6
None of the above	7

V31 ☐

32. Does your religious believe act as a barrier to contraceptive use?

Yes	1
No	2

V32 ☐

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

ANNEXURE D

Letter of Statistical support

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

DEPARTMENT OF STATISTICS

LETTER OF STATISTICAL SUPPORT

Date: 17 April 2014

This letter is to confirm that **Ms MH Coetzee**, studying at the University of Pretoria, discussed the project with the title **Assessing the use of contraceptives by undergraduate female students in a higher educational institution** with me.

I hereby confirm that I am aware of the project and also undertake to assist with the statistical analysis of the data generated from the project.

The sample will consist of a stratified random sample of 200 undergraduate students from each of two campuses of the higher educational institution. Care will be taken to include sufficient numbers of students to represent different age groups, namely 18 – 20 years old and 21 years and older, since age is the most important demographic variable to be taken into account. Students will be randomly selected from the two campuses and age groups which will ensure that every female student studying at the two campuses will have an equal chance of being selected for the study. Making use of this sampling framework will ensure that a representative sample will be selected from the target population.

The data analysis will consist of descriptive statistics such as frequencies, cross tabulations, means and standard deviations. Statistical tests such as Chi square tests will be performed to test for associations between variables. The results of the analysis will be weighed to more accurately represent the sizes of the two campuses.

Mrs J Kleyn
Department of Statistics
Internal Consultation Service
Tel 012 420 2397

ANNEXURE E

Ethical approval

The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.

- FWA 00002567, Approved dd 22 May 2002 and Expires 20 Oct 2016.
- IRB 0000 2235 IORG0001762 Approved dd 22/04/2014 and Expires 22/04/2017.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences Research Ethics Committee

22/05/2014

Approval Certificate

New Application

Ethics Reference No.: 118/2014

Title: Assessment of the use of contraceptives by undergraduate female students in a higher educational institution

Dear Sr. Maria Hannelie Coetzee

The **New Application** as supported by documents specified in your cover letter for your research received on the 3/04/2014, was approved, by the Faculty of Health Sciences Research Ethics Committee on the 21/05/2014.

Please note the following about your ethics approval:

- Ethics Approval is valid for 2 years
- Please remember to use your protocol number (**118/2014**) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, or monitor the conduct of your research.

ETHICS APPROVAL IS SUBJECT TO THE FOLLOWING:

- The ethics approval is conditional on the receipt of 6 monthly written Progress Reports, and
- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

YOURS SINCERELY

Dr R Sommers; MBChB; MMed (Int); MPharMed.

Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

◆ Tel:012-3541330 ◆Fax:012-3541367 ◆Fax2Email: 0866515924 ◆E-Mail: fhsethics@up.ac.za
◆Web: //www.healthethics-up.co.za ◆H W Snyman Bld (South) Level 2-34 ◆Private Bag x 323, Arcadia, Pta, S.A., 0007

ANNEXURE F

Approval from institution

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI VA PRETORIA

Faculty of Health Sciences
School of Health Care Sciences
Department of Nursing Science

ASSESSMENT OF THE USE OF CONTRACEPTIVES BY UNDERGRADUATE FEMALE STUDENTS IN A SELECTED HIGHER EDUCATIONAL INSTITUTION.

Mcur/ Full-Dissertation ·

Researcher: Maria Hannelie Coetzee
Student number: 04553226
Contact details:

Address: 2 Feeklokkie Crescent, Mooikloof Gardens, Pretorius Park, Pretoria
Tel: 012 420 6904

Fax: 012 420 2503

Cell: 083 306 5450

E-mail: hermancoetzee@gmail.com

Supervisor: Dr. R. Ngunyulu

In order.
M Sim
25/3/2014

Date: 20 November 2013

ANNEXURE G

Approval from in-house committee

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

DEPARTMENT OF NURSING SCIENCE
PRIVATE BAG X323, ARCADIA, 0007
TEL: (012) 354-2125
Fax: (012) 354-1490
e-mail: isabel.coetzee@up.ac.za

24 March 2014

The Chair: Research Ethics Committee

Dear Prof,

Letter of approval from Departmental In-house committee

The proposal of student H Coetzee, student number 04553226 served before the In-house committee of the Department of Nursing Science and was approved for submission to the Research Ethics Committee.

Yours sincerely

Isabel Coetzee

Dr Isabel Coetzee
Senior Lecturer
Department of Nursing Science
University of Pretoria
Cell phone: +2711 589 045
Office: (012) 354-2125
Email: isabel.coetzee@up.ac.za
Fax: (012) 354-1490

ANNEXURE H
Editorial letter

Dr. S. L. Mollentze
Tel: (012)39906907
Mobile 083 453 5109

2014-03-20

EDITORIAL SERVICES

This letter is to confirm that Ms MH Coetzee, submitted the Research Proposal with the title: *Assessing the use of contraceptives by undergraduate female students in* a *higher educational institution* for editing and proofreading purposes.

I hereby confirm that editorial and proofreading services were undertaken to assist her in the post-graduate studies. The services would be rendered for the entire research project.

Yours sincerely

Dr S L Mollentze
Professional
Editor