



**UNIVERSITY OF CAPE TOWN**  
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

**AN EXPLORATORY DESCRIPTIVE STUDY OF THE SEXUAL AND  
REPRODUCTIVE HEALTH KNOWLEDGE OF POSTGRADUATE STUDENTS AT  
THE UNIVERSITY OF CAPE TOWN.**

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## DECLARATION

I Bupe Mwamba hereby declare that the work in this dissertation is based on my original work, except where citations have been done and neither the whole work nor part of it has been submitted for another degree in any university, including the University of Cape Town.

I authorize the university to reproduce the research for academic purposes if need be.

Signature:

Signed by candidate

Date: 14<sup>th</sup> August 2017.

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## LIST OF ABBREVIATIONS

ADM-Advanced midwife

AIDS-Acquired immune deficiency syndrome

CDC-Centers for disease control and prevention

DISCHO-Discrimination and harassment office (UCT)

HIV-Human immunodeficiency virus

HPV- Human papilloma virus

FHSHREC-Faculty of health sciences human research ethics committee

MCH-Maternal and child health

MPhil-Master of Philosophy in maternal and child Health

NASRHRFS- National adolescent sexual and reproductive health and rights framework strategy

NN-Neonatal nurse

Pap smear- Papanicolaou smear

RH-Reproductive health

SA-South Africa

SRH-Sexual and reproductive health

STI-Sexually transmitted infections

SSA-Sub-Saharan Africa

UCT-University of Cape Town

UKZN- University of KwaZulu Natal

UNAIDS-United nations program on HIV and AIDS

UNFPA-United nations population fund

WC-Western Cape Province

WHO-World health organization

WMA-World medical association

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## DEFINITION OF TERMS

A **postgraduate student** is a person studying for a degree after having attained the first degree (University of South Africa (UNISA), 2007).

A **young adult** is a person aged between 20 and 39 years (World health organization (WHO), 2012:100).

A **youth** is a person aged between 10years and 19years (WHO, 2012:100).

An **undergraduate** student is a person who is studying for a first degree (UNISA, 2007).

**Breast clinical examination** is when a health care professional checks the breast for any abnormal lumps (Yip, Cazap, Anderson, Bright, 2011: S12)

**Breast self-examination** is a practice which allows an individual to inspect his/her breast tissue for change in the appearance of the breast (Anderson et al., 2008).

**Contraception** is the practice of inhibiting conception (WHO, 2012:130).

**Human immunodeficiency virus** is a virus that causes acquired immune deficiency syndrome (WHO, 2012:120).

**Papanicolaou smear** is a screening test for pre-cancerous cells of the cervix (Jemal, Siegel, Ward, Murray, Xu, Smigal, & Thun, 2006:106).

**Reproductive health** (RH) encompasses everything related to the reproductive system (WHO, 2012:89).

**Sexual and reproductive health** (SRH) addresses the reproductive progressions, roles and structures at all stages of life (WHO, 2012:22).

**Sexual health** (SH) is the ability of a person to make informed decisions about having safe and satisfying sexual life (WHO, 2012:89).

## ABSTRACT

Globally and in South Africa, university students' knowledge of sexual and reproductive health (SRH) is low. This study was conducted in response to the dearth of information about the sexual and reproductive health knowledge of postgraduate students. Research conducted to explore the SRH knowledge of undergraduate students suggests that the level of SRH knowledge among undergraduate students is low. The aim of this study was to determine the SRH knowledge of postgraduate students at University of Cape Town (UCT), in South Africa.

A cross sectional survey design was utilized, using an adapted and pretested online questionnaire. All postgraduate students enrolled in the first semester of 2017 (9444) were invited to anonymously complete the online survey.

Four hundred and six (406) students completed the online survey, of whom 293 were female and 107 males. The age range of respondents was between 18 years and 57 years, with the median age for both male and female respondents being 24 years.

Six survey responses were excluded from the statistical analysis because of incomplete data. Post graduate students from the African continent comprised 90.75% of the respondents. Most respondents were white (51.50%) from both Africa and abroad. The results indicated that respondents knew about sexually transmitted infections, and human immunodeficiency virus (HIV) & acquired immune deficiency syndrome (AIDS). Female respondents were more aware of breast examination, and the role of Papanicolaou smear (Pap smear) in SRH. Almost half of the respondents in this study (49%) stated that they had no need for more information about contraceptives. Lecturers were identified as one of the top five sources of information, which suggests that the university environment provides students with important SRH-related information.

Most postgraduate students had knowledge of sexual and reproductive health with regards to contraception, Pap smear, clinical breast examination, STIs, HIV and AIDS. Further research should focus on the relationship between SRH knowledge and usage among this population. As university lecturers were identified as an important source of information across faculties, the University should consider the incorporation of SRH education in the broader curriculum and as an integral component of student health services.

Key words

Contraceptive, condoms, HIV & AIDs, postgraduate students, sexual and reproductive health knowledge, Papanicolaou smear and STIs.

## CHAPTER 1

### 1. INTRODUCTION AND BACKGROUND

Sexual and reproductive health (SRH) plays an important role in a person's life therefore, it is an important aspect of public health (United Nations Department of Economics, 2005:60). SRH is the state of complete physical, mental and social wellbeing of the reproductive system and it addresses the reproductive progressions, roles and structures at all stages in life (World health organization (WHO), 2012:22). This implies that people are able to have responsible, satisfying and safe sex lives (WHO, 2012:22). Reproductive health (RH) encompasses everything related to the reproductive system, whereas sexual health (SH) denotes the ability of a person in making informed decisions about having safe and satisfying sexual life (WHO, 2012:89). A well-informed person may be able to make informed SRH decisions. SRH is a very broad topic, however, in this study the focus will be on knowledge of postgraduate students about contraception, breast examination, Papanicolaou smears (Pap smear), sexually transmitted infections (STIs), human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDs) at the University of Cape Town (UCT).

Globally, 500 million incidences of STIs, including HIV, are reported annually among people aged between 15 and 49 years (WHO, 2012:92). It is estimated that HIV has infected about 60 million people worldwide, of which 33.4 million are living with the virus. Most people living with the virus may not know their status and they may be spreading the virus to others (Joint United Nations Programme on HIV & AIDS (UNAIDS), 2008:321). This could be the case because of the stigma surrounding HIV testing in many countries. People may be spreading the virus because of the increase in numbers of unwanted pregnancies globally (UNAIDS, 2008:321). Pregnancy might possibly be related to unprotected sexual activity. It is therefore important to focus the attention on SRH because it is a phenomenon that requires more studies to see if it is related.

Students' knowledge of SRH has been presumed to be unsatisfactory, with the rate of unwanted pregnancies and termination of pregnancies having been reported to be high among this group (Williamson, Parkes, Wright, Petticrew & Hart, 2009a:3). The university environment provides an opportunity for young adults to experience their newfound freedom away from the norms and restrictions of the family home (Caetano, Linhares, Pinotti, da Fonseca, Wojitani &

Giraldo, 2010:23; Somba, Mbonile, Obure & Mahande, 2014:7). This level of freedom is, however, often accompanied by experimentation that could lead to risk-taking particularly regarding sexual behaviours (Somba et al., 2014:7).

Several studies have emphasized the high risk-taking behaviours of young adults in South Africa(SA) (Eaton, Flisher & Aarø, 2003:149; Somba et al., 2014:9). The risk taking behaviours among this cohort of people includes, multiple sexual partners and infrequent condom use (Eaton et al., 2003:149; Somba et al., 2014:9). The risk taking behaviour among young adults was associated with lack of knowledge of sexual and reproductive health (SRH) to influence their SRH decisions (Eaton, Flisher & Aarø, 2003:149; Somba et al., 2014:9).

A study conducted in the Western Cape Province (WC) of South Africa found that 70% of young men and 25% of young women visiting an STI clinic reported two or more sexual partners in the previous nine months (Abels & Blignaut, 2011:256). The study also noted that 25% of young adults had two or more sexual partners in the previous year, and only three percent of sexually active participants had used condoms during their most recent sexual encounter. The consequences of not using contraceptives includes, unwanted pregnancies and a high incidence of STIs and HIV infection (Abels & Blignaut, 2011:256).

Unwanted pregnancy is among the common health problems which have negative effects on individuals, families and society. It is estimated that 60% of all unplanned pregnancies can be attributed to not having used a contraceptive ( Bensyl, Carter, Gilbert, Luliano & Santeli, 2005:2; Mosher & National Center for Health Statistics (United States of America(USA), 2004:33). In 2011 about 20 million unsafe abortions were performed globally, of which the largest number was in developing countries (Centers for Disease Control and Prevention (CDC),2011:4). Young adults have been identified as being at risk of unintended pregnancies, unsafe abortions, STIs and HIV, which has been attributed to the low level of knowledge of SRH (WHO, 2011:90).

Unintended pregnancies may affect the health and wellbeing of students, which may place them at increased risk of morbidity and mortality from either abortions or the process of childbirth (Beksinska, Pillay, Milford & Smith, 2014:676; South Africa National Department of Health (SA-NDOH), 2012). Unplanned pregnancies have been estimated at 14 million per year globally, with 50% of these pregnancies occurring in women between the ages of 15 and 24, and the highest rates being among young adults in higher institutions of learning (Bryant, 2009:12; Williamson, Parkes, Wight, Petticrew & Hart, 2009a: 2).

A 2007 survey which was done in all the nine provinces of South Africa, reported that 68% of young adults between the ages of 15 and 24 years have had a sexual experience (MacPhail, Pettifor, Pascoe & Rees, 2007:1). In a study conducted at one of the universities in Kwazulu Natal province, it was concluded that 19.2% of females between 12 and 19 years of age have had at least one pregnancy, most of which were unwanted pregnancies (Mchunu, Peltzer, Tutshana & Seutlwadi, 2013:428). In addition, 5.8% of males between 12 and 19 years of age reported impregnating a young woman (Mchunu et al., 2013:428). About 1,600 new HIV infections per day are reported in South Africa, of which 9.5% are young men and 12.8% are young women (UNAIDS, 2008:24). This may be related to the risk taking behaviours of young adults which includes university students. While most health promotion programs focus on adolescents under the age of 16 years, unwanted pregnancy rates are higher among young adults between the ages of 20 and 35 years (Guillebaud, 2004:492). This age range is very important because most postgraduate students fall into this range of young adults. However, the relationship between power dynamics or agency among dating couples in South African universities, how and why they make decisions to engage in unprotected coitus, is an understudied area of research.

Young adults have some knowledge of sexual and reproductive health (SRH), although it has been shown that their knowledge may be inadequate (Williamson et al., 2009a:5). This inadequate knowledge has resulted in several unwanted pregnancies, and incidences of STIs, including HIV among this cohort of people (Mchunu et al., 2013:428; UNAIDS, 2008:24;). Knowledge of SRH is very important because it can help people make informed SRH decisions. Major SRH issues among young people include premarital sex, unwanted pregnancies, abortions, STIs and HIV & AIDS (Soleymani, Abdul Rahman, Lekhraj, Mohd Zulkefli & Matinnia, 2015:2). University students are part of an important high-risk group of young adults, who are faced with major SRH issues, with the majority of students being within the age range between 18 and 35 years (WHO, 2012:89).

To maintain optimum SRH, people need access to accurate information, which facilitates the ability to make informed decisions as they negotiate through life choices (United Nations Population Fund (UNFPA), 2008:1). A well-informed person may be able to make informed decisions. Education programs which help young adults take control of their SRH could reduce the number of termination of pregnancies (TOPs) by preventing unwanted pregnancies. This could in turn reduce the risk of morbidity and mortality that could occur because of the

pregnancy. In South Africa, 665,087 termination of pregnancies (TOP) were performed between 1997 and 2007, of which 56,442 terminations occurred in 2007 (SA-NDOH, 2012:60). This confirms the extent of risk-taking behaviours in the country in which this study is being conducted.

The increase in TOPs could be attributed to the existence of SRH rights in South Africa. SRH rights were introduced in 1995 when South Africa was reviewing laws on legal abortions after the fourth world congress on women which focused on SRH rights in Beijing (Stevens, 2009:29). The human rights of women include their right to making informed decisions with regards to SRH (Stevens, 2009:29); however, women, may not have adequate knowledge for them to make informed decisions.

The SA-NDOH, (2012:10) reported that SRH knowledge is generally poor among South Africans, because discussions of SRH issues between parents and children is considered taboo in many African families. Therefore, many young adults learn about SRH from their peers. The researcher is interested in postgraduate students because they fall within an important high-risk group and there is limited information about their SRH knowledge. It is presumed that postgraduate students are more mature than undergraduate students and are expected to be well informed on SRH issues.

Students' exposure to the risk of pregnancy and STIs has called for research attention to determine how knowledgeable they are about SRH. Most of the published SRH studies referred to above have focused more on the undergraduate population, and little is known about the SRH knowledge of postgraduate students.

## 1.1 Problem Statement

There is limited published information about SRH knowledge among postgraduate students globally and in South Africa therefore, it is an area which requires further research. Evidence from a study which was done on postgraduate students in Malaysia suggest that students' knowledge on sexual and reproductive health is unsatisfactory. It is against this background that the researcher identified the need for the study that would determine the level of SRH knowledge among postgraduate students in a public university of South Africa, for baseline data to add to the body of knowledge on SRH.

## 1.2 Purpose of the Study

The purpose of this study was to determine the SRH knowledge of postgraduate students at the University of Cape Town (UCT).

## 1.3 Research Question

What knowledge do postgraduate students have regarding their sexual and reproductive health, specifically contraception, pap smears, breast examination and STIs, including HIV & AIDS?

## 1.4 Study Objectives

- i. To determine the SRH knowledge of postgraduate students with regards to contraception, pap smears, breast examination, HIV/AIDS and STIs.
- ii. To determine postgraduate students' sources of information on SRH.

## 1.5 Summary

The background and introduction to the study has been presented in chapter one. Chapter two will focus on the literature review which was conducted on the topic. Chapter three provides detailed description on the research methodology which was applied in this study. In chapter four, the results of the study will be presented and in chapter five, the discussion, recommendations and the conclusion will be presented.

## CHAPTER 2

### 2. LITERATURE REVIEW

This chapter presents an overview of the available literature about SRH knowledge among students. The purpose of this literature review was to determine what is known about students' SRH knowledge, throughout the world. This review is divided in five parts. The first part will provide an overview of students' knowledge of contraceptives and the second part will describe what is known with regards to students' knowledge of Pap smears. The third part will outline available literature on students' knowledge of breast cancer awareness and the fourth part will look at what is known with regards to STIs, HIV and AIDS among students. The fifth part will describe students' sources of information on SRH, thereafter, a summary will be presented.

The search strategy was conducted in all EBSCOHOST data bases, which included Academic Search Premier, Africa-Wide Information, CINAHL, ERIC, Health Source - Consumer Edition, Health Source: Nursing/Academic Edition, MEDLINE, Philosopher's Index, Psycarticles, Psycinfo and Google Scholar. The search period included literature published between 2001 and 2017. The following key words were used in the literature search: Contraceptive, condoms, HIV & AIDs, postgraduate students, sexual and reproductive health knowledge, Papanicolaou smear and STIs.

#### 2.1 CONTRACEPTIVE KNOWLEDGE AMONG STUDENTS

Family planning services offer women the options of barrier methods, hormonal methods, implantable devices as well as permanent methods such as sterilization (Hatcher, 2003:16). Women can also choose abstinence and natural family planning methods. For men, there are five contraception choices, that is, abstinence, withdrawal, outer-course, condoms, and vasectomy (Hatcher, 2003:16). In several studies about contraceptive knowledge among university students, contraceptives were broadly classified into two types, that is modern and traditional methods (Caetano et al., 2010:44; Hoque & Ghuman, 2012:15; Mchunu et al., 2013:222; Protogerou, Flisher & Wild, 2014:223; Somba et al., 2014:6; Oyedeji & Cassimjee, 2006:8). Modern methods include oral contraceptive pills, intrauterine devices, injectable contraceptives, spermicides, condoms (male and female), female and male sterilization and Implant. Traditional methods include periodic abstinence and withdrawal. In some

conservative countries, such as Greece, the known methods of contraceptives include prolonged abstinence, breastfeeding and natural family planning (Simbar, Tehrani & Hashemi, 2005:888; Tountas, 2004:151). The most popular contraceptive methods among undergraduate students in the reviewed studies were oral contraceptives and condoms.

A cross sectional comparative study which was conducted on 2000 Lebanese students from fifteen universities revealed that students had low levels of knowledge of contraception (Barbour & Salameh, 2009:394). This was attributed to the cultural and moral norms surrounding sexual and reproductive health issues. In Lebanon, it is taboo to discuss SRH issues before marriage and with parents (Barbour & Salameh, 2009:394). A Malaysian study which was done on a sample of 434 postgraduate students whose mean age was 27 years, showed that students' knowledge of contraceptives was unsatisfactory (Soleymani, Abdul-Rahman, Lekhraj, Mohd Zulkefli & Matinnia, 2015:77). In a study with a sample of 200 medical and dental university students in Vadodara, Texas, it was concluded that there was insufficient knowledge of contraceptives among this group of students, which was attributed to lack of SRH education in their curriculum (Agrawa, Sadadi, Dat, & Trived, 2013:143). However, the population was small and only focused on two departments therefore results in this study cannot be generalized.

In contrast to the above findings, a study conducted on 283 female undergraduate students in Tanzania concluded that students had knowledge of contraception (Somba et al., 2014:94). The majority (86.3%) of students had knowledge of contraceptives, particularly condoms and contraceptive pills. Studies done in Iran and Greece among university students, have also reported high levels of knowledge of contraceptives, which has been linked to increased educational programs on family planning in all their universities (Simbar, Tehrani & Hashemi, 2005:888; Tountas, 2004:151). Contraception education is important in universities, and it is evident that contraceptive education does not increase sexual activity but emphasises preventive measures on unwanted pregnancies and STIs (Simbar et al., 2005:888; Tountas, 2004:151).

## 2.2 KNOWLEDGE OF PAP SMEARS AMONG STUDENTS

The Papanicolaou smear (Pap smear) is the test used in the screening of cervical cancer among women. It is used for detection of abnormal cervical cells. Cancer of the cervix is among the top causes of death among women globally (Jemal, Siegel, Ward, Murray, Xu, Smigal & Thun, 2006:106). The majority (85%) of these deaths occur in developing countries due to lack of effective screening programs (Cherenji, Rusakanoko & Kirumi, 2001:127). In addition, other predisposing factors to cervical cancer include early onset of sexual activities, multiple sexual partners and smoking (Blanche, 1989:195). The prevalence of HPV is higher among sexually active young women (Burak & Meyer, 1998:365). Many university students may underestimate the risk of contracting an STI by ignoring the fact that the university environment provides an opportunity for risk behaviours that may include multiple sexual partners that may predispose them to high chances of HPV.

In a study on cervical cancer awareness of female university students in South Africa, 205 students were sampled using stratified random sampling (Hoque, 2010:127). Of the 205 students, 40% were sexually active, with 28% having more than one sexual partner in the past 6 months. 33% of the 205 students were knowledgeable about cervical cancer and 31% had knowledge about Pap smears. Less than half of the 205 respondents had knowledge about Pap smear examination as a way of detecting cervical cancer which may indicate low knowledge. Buga, (1998:411) in a study done at another university in South Africa, reported that many respondents had their first sexual encounter at a mean age of 17 years. In another study conducted in South Africa by Buga, Amoko & Ncayiyana, (1996:523), it was reported that respondents had major risk factors for cervical cancer which included having multiple sexual partners, initiation of sexual activity before the age of 18 years and a history of a previous STI. The high incidence of HPV infection among university students may be attributed to the lack of knowledge on the importance of Pap smear check-ups for early detection and education regarding prevention of STIs (Buga et al., 1996:523). In South Africa, Pap smear screening is available for all women from the age of 30 years. All sexually active women who are 30 years old and above should have regular Pap smear check-ups which could prevent the development of cervical cancer. This can be facilitated with the introduction of education programs on universities with the aim of raising awareness for prevention of STIs which includes HPV.

### 2.3 STUDENTS' KNOWLEDGE OF BREAST CANCER AWARENESS

Globally, breast cancer is one of the common type of cancers among women. The incidence of breast cancer is higher in developing countries with the rate of 15-53 per 100,000 women (Ly, Antoine, Andre, Callard, Bernaudin & Diallo, 2011:797). It usually occurs in pre-menopausal women with the incidence between the ages of 35 and 45 years (Elgaili & Abuidris, Rahman, Michalek & Mohammed, 2010:77; Somdyala, Bradshaw, Gelderblom & Parkin, 2010:2420). The type of breast cancer found in African women is an aggressive triple negative subtype, which does not respond to therapeutic drugs when diagnosed in its late stage (Stark, Kleer, Martin, Awuah, Nsiah-Asare, Takyi, Braman, Quayson, Zarbo, Wicha & Newman, 2010:4926: 4926; Yarney, Vanderpuye & Clegg, 2008:510). Breast cancer morbidity and mortality is higher in African women in comparison to women in developed countries (Fregene & Newman, 2005:1540; Kamangar, Dores & Anderson, 2006:2137). This has been attributed to delay in seeking health care by most women in developing countries (Stark et al., 2010: 4927; Yarney et al., 2008:511). Unlike in developed countries where women seek preventive services more often for early detection and prevention, people in Africa seek medical services only when they are sick (Stark et al., 2010: 4928; Yarney et al., 2008:511). Studies have shown that the majority (70-90%) of African women present with stage III and IV breast cancer, which is advanced stages of cancer whose prognosis is poor (Ukwenya, Yusufu, Nmadu, Garba, & Ahmed, 2008:106; Wabinga, Parkin, Namboozee & Amero, 2011:162). In the fight against breast cancer in Africa, there is need to strengthen awareness programs about the importance of preventive services.

In developed countries, breast cancer screening is usually done using mammograms. However, in sub-Saharan Africa mammogram screening is inadequate due to limited resources, therefore, there is need to strengthen breast self-examination awareness as a cost-effective method (Anderson, Braun, Lim, Smith, Tapin & Thomas, 2003: S51; Panieri, 2012:1). With more practice in breast self-examination(BSE) in combination with clinical breast examination, women can become familiar with their normal breasts and it can facilitate the early recognition of any changes (Anderson, Shyyan, Eniu, Smith, Yip & Bese,2006: S2).

University students are at a life stage in which they should understand the importance of clinical breast examination and regular breast self-examination for early detection of any changes in the breast. In Africa, breast cancer awareness is low despite recommendations from the world

health organisation (WHO) and the breast health global initiative (BHGI) for an increase in breast cancer sensitization (Anderson et al., 2006: S3; Yip, Cazap, Anderson, & Bright, 2011: S12). In addition, not much is known with regards to breast cancer awareness among university students in developing countries (Anderson et al., 2006: S3; Yip et al., 2011: S12).

In a study conducted among 595 university students in both non-medical and medical programs in Angola, it was shown that there is a lack of breast cancer awareness and knowledge among students regardless of gender, marital status and program of study (Sambanje & Mafuvadze, 2012:4). In this study, no significance difference ( $p>0.05$ ) between students in the medical and non-medical programs was found; both groups lacked knowledge about breast cancer awareness. Studies around the world have shown that there is limited knowledge of breast cancer awareness even among health professionals (Ahmed, Mahmud, Hatcher & Khan, 2006:1; Powe, Underwood, Canales & Finnie, 2005:257).

#### 2.4 KNOWLEDGE OF STIs, HUMAN IMMUNODEFICIENCY VIRUS AND ACQUIRED IMMUNE DEFICIENCY SYNDROME AMONG STUDENTS

Human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) is a global public health concern and its impact in sub-Saharan Africa has been seen among individuals, society and on countries' economic and social development. Sub-Saharan Africa has the highest (68%) number of people living with HIV in the world (UNAIDS, 2011:12). Young adults have been identified as being at risk of unintended pregnancies, unsafe abortions and STIs including HIV, which has been attributed to low level of knowledge on SRH (WHO, 2011:90). University students fall within this group of young adults.

University students are at an increased risk of sexually transmitted infections which includes HIV & AIDS. This is because the university environment provides an environment which is conducive for high risk behaviour away from parental control. In a study done among 752 undergraduate students in Durban, more than half of the respondents were sexually active and almost one third of the sample reported having multiple sexual partners (Oyedeji & Cassimjee, 2006:10). More than a quarter of students in this population reported having had sex while under the influence of alcohol (Oyedeji & Cassimjee, 2006:10). Several studies have shown gaps in the knowledge of students on HIV and AIDS despite their involvement in high risk behaviours. In a study, which was done in a tertiary institution in Nigeria on 368

students, knowledge of respondents about HIV and AIDS was reported to be unsatisfactory (Odu, Asekun-Olarinmoye, Bamidele, Egbewale, Amusan & Olowu, 2009:90). In contrast, several studies have been done which have shown that students' knowledge of HIV and AIDS is satisfactory (Khalid, Mohammed & Farah, 2013:3; Mkumbo, 2016:6). Mkumbo, (2006:6) conducted a study on more than 400 university students in Tanzania which revealed that majority of respondents had knowledge of HIV and AIDS which included mode of transmission and preventive measures. Similarly, a study in Sudan which was conducted on 395 university students, discovered that majority of students (81.3%) were knowledgeable about HIV and AIDS in all aspects which were evaluated (Khalid et al., 2013:3). The increased knowledge among Sudanese and Tanzanian university students was attributed to an increase in awareness on television and radio (Khalid et al., 2013:3).

## 2.5 STUDENTS' SOURCES OF INFORMATION

Sexual and Reproductive Health (SRH) awareness has been a challenge worldwide because it is considered a sensitive subject in many developing and developed countries (El Gelany & Moussa, 2013:4). Lack of information about SRH leads to a decrease in women's self-assurance and restricts the ability of women to make informed choices with regards to SRH (El Gelany & Moussa, 2013:4). People deserve to be well informed about SRH however, this is not the case in Africa and other developing countries where young people do not have an opportunity to be informed. This could be attributed to the conservative cultures and norms which do not allow SRH discussions among families in developing countries where such discussions are considered as a taboo. This means that young people obtain SRH information from outside their families. Students' sources of information include friends, internet, health professions and print media (Ege, Akin, Can & Arioz, 2011:3; El Gelany & Moussa, 2013:2; Yapici, Oner, Samaz, Bugdayci & Oner, 2010:4; Yilgor, Arslansoylu, Kanik & Erdogan, 2010:1).

A study on 1112 university students in Turkey, reported that most the respondents (57.2%) listed print media as their primary source of information, followed by friends at 21.7% while family was the least at 9.1%. A study on 863 university students in Egypt, revealed that the majority (56%) of the respondents listed the internet and mass media as their source of information, which was followed by health education sessions at 13%, friends at 12% and family was the least at 8% (Yousef, Hamed & Mohamed, 2013:576). A study conducted on

434 postgraduate students in Malaysia, showed a similar trend on the sources of SRH information, with the majority (78.6%) of respondents listing the internet and mass media (61.8%). Friends (32.3%) were considered a better source of information in comparison to parents (8%). The only difference in the above studies is that in Egypt SRH education sessions were conducted on campuses, whereas in Turkey, they were no SRH education sessions. However, the sources of information followed a similar trend with family being the least source of information. This shows that discussions about SRH in families is not a preferred method of obtaining information.

## 2.6 SUMMARY

This literature review shows that indeed there is limited information on the SRH knowledge of postgraduate students, therefore, studies are needed that will focus on postgraduate students' knowledge of SRH. This study aimed to explore SRH knowledge of postgraduate students at the University of Cape Town.

## CHAPTER 3

### 3. METHODOLOGY

#### 3.1 Introduction

In this chapter, the researcher will present the research design, research site, study population, sampling, recruitment of respondents, inclusion/exclusion criterion, data collection instrument and procedure, research quality, data analysis and ethical considerations which were relevant to this study.

#### 3.2 Research Paradigm and Approach

In this study, a quantitative design was chosen because the researcher wanted to determine statistically significant inferences about sexual and reproductive health knowledge of postgraduate students at University of Cape Town.

#### 3.3 Research Design

This cross-sectional study utilised an online questionnaire which was adapted from the Centres for disease prevention and control (CDC) reproductive health survey, which was conducted in Albania and Malaysia on postgraduate students (Morris, Herold, Bino, Yili & Jackson, 2005:1; Soleymani et al., 2015:2). The CDC survey focus was on all aspects of SRH as defined by WHO (2012:89). It was divided into the male and female surveys. In the current study, minor adjustments were made to the questionnaire to suit the South African context. It was a non-gender based questionnaire, which focused on postgraduate students' knowledge of contraceptives, Pap smear, breast examination, STIs, HIV and AIDS.

#### 3.4 Research Site and Study Population

The study site was UCT, which has seven Faculties: Commerce, Engineering and Built Environment, Health Sciences, Humanities, the Graduate School of Business, Law and Science. The total number of registered students in the first semester of the 2017 academic year was 9444. In this year, the Faculty of Health Sciences had the largest student numbers at 2277. Other faculties had student numbers as follows: Faculty of Commerce (1983); Faculty of

Humanities (1692), Faculty of Engineering (1382), Faculty of Science (1033), Graduate School of Business (565) and the Law Faculty (508).

### 3.5 Data collection and Sampling

All 9444 (N) postgraduate students were invited to participate in the study. The z-score is the number of standard deviations a given proportion is away from the mean. The desired confidence interval in this study was 95%, the z-score was set at 1.96 and the p value was set at 0.5. In addition, e value for chi-square test alpha is a percentage in decimal form which was set at 0.0488 for this study. The online survey request was sent out to all postgraduate students through the office of the Director of student affairs at UCT. The questionnaire was formulated in Google docs; therefore, a Google link was sent out to all students via email. The desired response rate was calculated at 403 responses for 95% confidence interval. At the close of the survey, 406 students had submitted responses, of which six were dropped after data cleaning due to incomplete data.

#### 3.5.1 Sample Size Calculation

$$\frac{z^2 \times p(1-p)}{e^2}$$

$$\frac{1.96^2 \times 0.5(1-0.5)}{0.0488^2} = 403$$

### 3.6 Recruitment of Respondents

As this study was conducted with students at UCT, permission to conduct the study was obtained from the UCT director of student affairs and the human research ethics committee of the Faculty of Health Sciences (Appendix 1). Thereafter, the office of the Director of Student affairs sent out the online survey request to all postgraduate students with an online information sheet (See Appendix 1).

### 3.7 Inclusion and Exclusion Criteria

The eligibility criterion for respondent recruitment in this study was all registered 2017 postgraduate students in the first semester, who were willing to participate. The exclusion criterion was postgraduate students who were not willing to participate in the survey.

### 3.8 Data Collection Instrument and Procedure

Participants' consent to participate in the survey was obtained at their completion and submission of the survey. This method was chosen in this study because it was meant to capture a convenient sample and provided subjects with a greater sense of anonymity for provision of honest answers (Brink, Van der Walt & Van Rensburg, 2006:203). A participant was allowed to submit one response only and all identifiers were switched off on Google docs to uphold confidentiality. The questionnaire had 60 non-gender questions to suit the local setting which is gender inclusive (Appendix 3). It consisted of socio-demographic factors, knowledge related to sexual and reproductive health which included contraceptives, Pap smears, breast examination, STIs, HIV and AIDS transmission and prevention and sources of information about SRH. The pilot study provided an estimation of the time required to complete the survey, which was estimated at 15minutes.

### 3.9 Pilot Study

This was conducted to test the instrument prior to data collection. It was tested on 10 undergraduate students at UCT because they were available to ascertain the ease of use of the instrument. The researcher considered the feedback from students undertaking the pilot, specifically regarding ease of access, ease of understanding questions, and any relevant language issues. No modifications were needed as respondents completed the questionnaire with ease. Students were approached by the researcher for consent to participate in the pilot study. There was no use of any incentives and participants could withdraw at any time in the research if they wished to do so. Thereafter, a Google link to the questionnaire was sent out to all the ten respondents individually with information which was explaining the purpose of the study. Their consent to participate was obtained at their submission of the survey. A participant was allowed to submit one response only and all identifiers were switched off on Google docs

to uphold confidentiality. It was from the pilot study that the approximation of the time required to complete the survey was estimated at 15minutes.

### 3.10 Research Quality: Face/Content Validity and Reliability

Face validity refers to the degree to which an instrument measures what it is supposed to measure (Parahoo, 2014:340).The tool has already been used in Albania and Malaysia on postgraduate students. Content validity looks at how well variables to be measured are covered by an instrument (Parahoo, 2014:340). In this study, the focus was on contraceptives, STIs including HIV & AIDS, breast examination and Pap smears, all of which were included in the questionnaire. Reliability refers to the repeatability of a measurement which focuses on whether the same results will be found if the study was repeated (Brink, Van der Walt & Van Rensburg, 2006:163). The instrument is reliable because it was used in Albania and Malaysia before and now it is being used in this study although differences in the results could be noted as seen in both the Malaysian and the current study. The study had more than 90% confidence interval therefore, the conclusion which has been derived from this study could be generalized because it reflects a representative sample of the postgraduate population at UCT.

### 3.11 Data Management and Analysis

This study used a quantitative data analysis method in which descriptive statistics were analysed using Stata 14. Data was collected from 406 postgraduate students at the University of Cape Town in South Africa, using an online survey which was built on Google drive. This was exported to Excel and then analyzed using a STATA software, version 14 developed by Stata Corp, (1985-2001).

In STATA, data was cleaned and six responses were dropped because they were incomplete and therefore could not be used for analysis. About 400 questionnaires were included in the data analysis. Data was checked for normality to determine the process of analysis to use. It was from the test for normality that the decision to report median and interquartile ranges for age were concluded because data was not well distributed.

Data from all questionnaires was coded, entered into Excel and exported to STATA, version 14 software for cleaning and analysis. Data was transformed into a format suitable for analysis. String variables were converted into numeric variables and vice versa. Chi-square tests were

used in the analysis of data because most of the variables were categorical with the only numerical variable being age. The dependent variables were variables of whether a respondent had knowledge of Pap smear, breast examination, contraceptives and STIs, HIV and AIDS. The independent variables were race, relationship status, nationality, religion, education, age, gender and faculty of the respondents.

### 3.12 Ethical considerations

The human research ethics committee (HREC) of the Faculty of Health Sciences, University of Cape Town approved the protocol on 23<sup>rd</sup> March 2017-HREC reference number 040/2017 (Appendix 1). Thereafter, the director of student affairs granted authority for the survey to be conducted on postgraduate students on 19<sup>th</sup> of April 2017.

#### 3.12.1 Autonomy

The protection of the rights of the participants was a priority in this study. The researcher informed participants about the purpose of the online study through an email which was sent out with the link to the survey. Consent was obtained electronically with each submission of the survey.

They were also informed that their participation was voluntary and they could choose to discontinue their participation at any point should they wish to, without incurring ill effects whatsoever. This was to ensure that participants' rights to self-determination and full disclosure was upheld.

Respondents were informed that as the survey was being conducted in an online environment, it was important for them to understand that privacy while taking the survey was their responsibility. Anonymity and confidentiality was ensured by not using personal identifiers and automatic IP collection key was switched off for prevention of collection of IP addresses.

#### 3.12.2 Beneficence and non-Maleficence

##### 3.12.2.1 Minimal Risk

This study was considered to have minimal risks as all respondents were anonymous. None of the respondents requested counselling or help; however, the researcher received requests for more information from students about the study.

#### 3.12.2.2 Benefits

There was no direct benefit to respondents, however the study provided an opportunity for participants to request further information if required; in this regard, only a few of the participants contacted the researcher.

#### 3.12.3 Confidentiality

All data is being stored in a password protected computer and only the investigator has access to the computer. Data will be deleted after five years and no identification by names or email addresses was collected. This was achieved by switching off the automatic IP collection key for prevention of collection of IP addresses. Participants were assured that information obtained during this research was strictly confidential and their identity remained anonymous as the data is to be used for a Master's thesis and possibly for publication in a peer reviewed journal article.

#### 3.12.4 Justice

Convenience sampling was done to accord all participants in the population the right to participation, since it was an online survey. Only those who were willing to voluntarily participate in the survey participated.

#### 3.13 Limitations

It being an online survey, respondents had no chance to ask questions when undertaking the survey.

#### 3.14 Strength

This study reached more than 90% confidence interval which may indicate the suitability of the study for generalizability.

### 3.15 Summary

A presentation of the research methodology has been presented above which provides a clear picture of how this study was conducted.

## CHAPTER 4: RESULTS

This chapter will present the results which have been obtained from the data collection and analysis. The first part provides social and demographic characteristics of respondents who were postgraduate students at University of Cape Town. The second segment focuses on the study objectives which include respondents' knowledge of sexual and reproductive health with regards to contraceptives, Pap Smears, breast examination, HIV and AIDS and sources of information.

### 4.1 Socio-demographic characteristics of respondents

There were 406 responses, however six responses were omitted because they were incomplete. Table 1 summarizes the demographic characteristics of the 400 respondents. The distribution of respondents is presented below.

Gender: Of the 400 respondents, 293 were female and 107 were males.

Age: The median age for females was 24 years and the median age for males was 26 years. The standard deviation for female respondents was 5.64 and that of male respondents was 7.48. The interquartile range for female respondents was between 22 years and 28 years and that of males was between 22 years and 31 years. The minimum age for both male and female respondents was 18 years. The maximum age for female respondents was 57 years and that of males was 55 years.

In summary, the median age for both male and female respondents was 24 years with a standard deviation of 6.25. The interquartile range for both was between 22 years and 29 years with the minimum age for both being at 18 years and the maximum age at 57 years (Graph 1).

Race: The majority (51.50%) of the respondents were white, 29% were black African, 9% were Coloured, 7.25% were Indian, and Asians and respondents who identified as mixed race were at 0.50%. African nationalities were the majority (90.75%) of the respondents, followed by the Europeans at 17%. Indians were among the least represented at 0.50% and minority (0.50%) of respondents chose unspecified other.

Religion: With regards to religion, the highest number of respondents (52.25%) classified themselves as Christian, followed by agnostic at 36.5% and 3% of respondents were Hindus. Of the respondents 2.25% were Muslims, 0.50% were Orthodox, 0.25% were Buddhists and 5.25% chose other without specifying what it meant.

Relationship status: Most the respondents were single at 63.25%, followed by those who were in cohabiting relationships at 21%. Married respondents were 14.75%, divorced students were 0.75% and widowed respondents were 0.25%.

Education: Levels of education for respondents included 16.75% for Postgraduate Diploma (PGDP), Honours students were in the majority at 44.50% and masters' students comprised 27.75% of the sample. Degree of Philosophy (PhD) students comprised 7.75% of the respondents and the Post Doctorate candidates were the least represented at 3.25%.

University Faculty: Distribution of respondents according to UCT faculties were as follows; the majority were from the Faculty of Humanities at 28%, 22.25% were from the Faculty of Health Sciences, 17.50% were from the Faculty of Commerce, 13.50% were from the Engineering and Built Environment (EBE). The Faculty of Science had 11.50% respondents, 4.96% were from the Law faculty, 1.74% were from the Graduate School of Business (GBS) and the Centre for Higher Education was the least represented at 0.5% although it is the smallest Faculty in UCT.

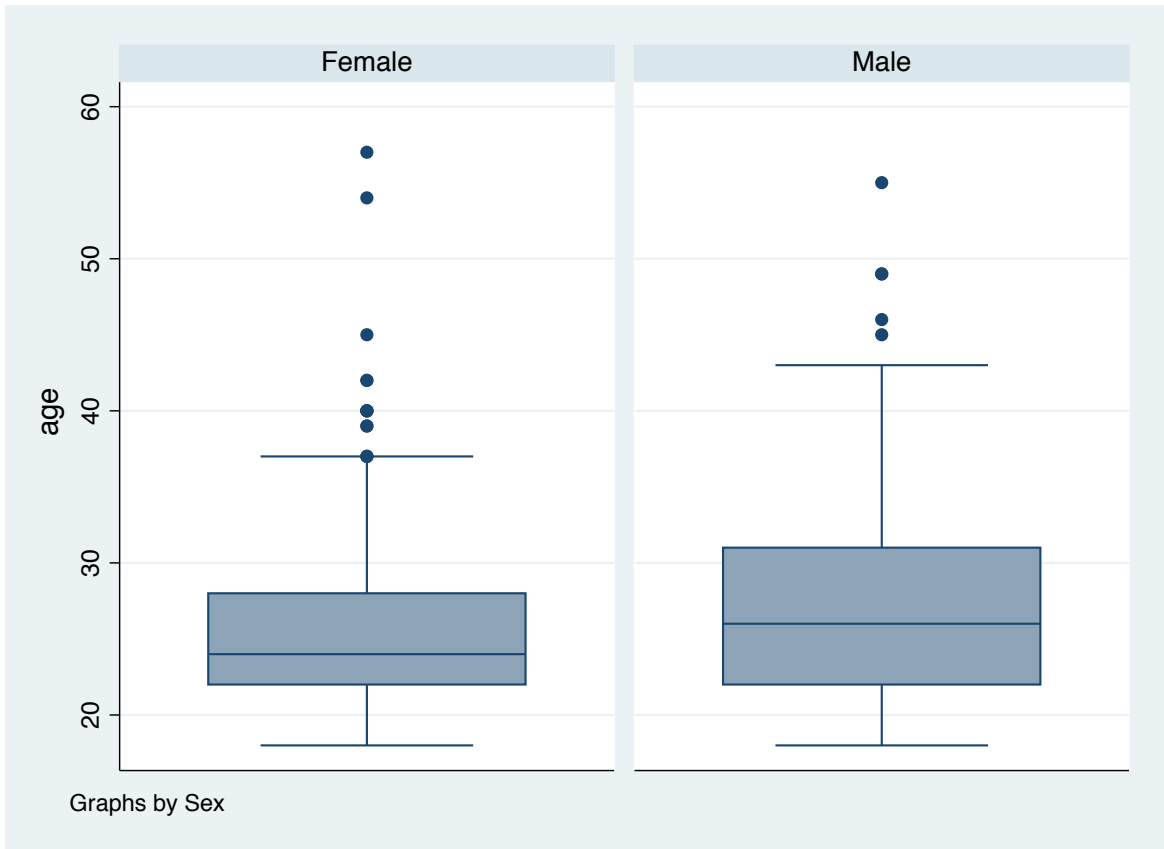
**Table 1: Sociodemographic Characteristics of Respondents (N=400)**

	<b>Number</b>	<b>Percentage</b>
	<b>N</b>	<b>%</b>
<b>Gender</b>		
Female	293	73.25
Male	107	26.75
<b>Race (as per SA classification)</b>		
White	206	51.50
Black African	116	29
Coloured	36	9
Indian	29	7.25
Asian	2	0.50
Mixed race	2	0.50
*Other	19	5
<b>Nationality</b>		
African	363	90.75
European	34	8.50
Indian	2	0.50
*Other	2	0.50

<b>Religion</b>	<b>Number</b>	<b>Percentage</b>
Christian	209	52.25
Agnostic	146	36.5
Hindu	12	3
Muslim	9	2.25
Orthodox	2	0.50
Buddhist	1	0.25
* Other	21	5.25
<b>Relationship status:</b>		
Single	253	63.25
Co-habiting	84	21
Married	59	14.75
Divorced	3	0.75
Widowed	1	0.25
<b>Level of Education</b>		
Honours	178	44.50
Postgraduate Diploma	67	16.75
Masters	111	27.75
PHD	31	7.75
Postdoctoral	13	3.25
<b>Faculty</b>		
Humanities	112	28
Health Science	89	22.25
Commerce	70	17.50
Engineering & Built Environment	54	13.50
Science	46	11.50
Law	27	6.75
CHED#	2	0.50

\*please refer to text

#Centre for Higher Education Development



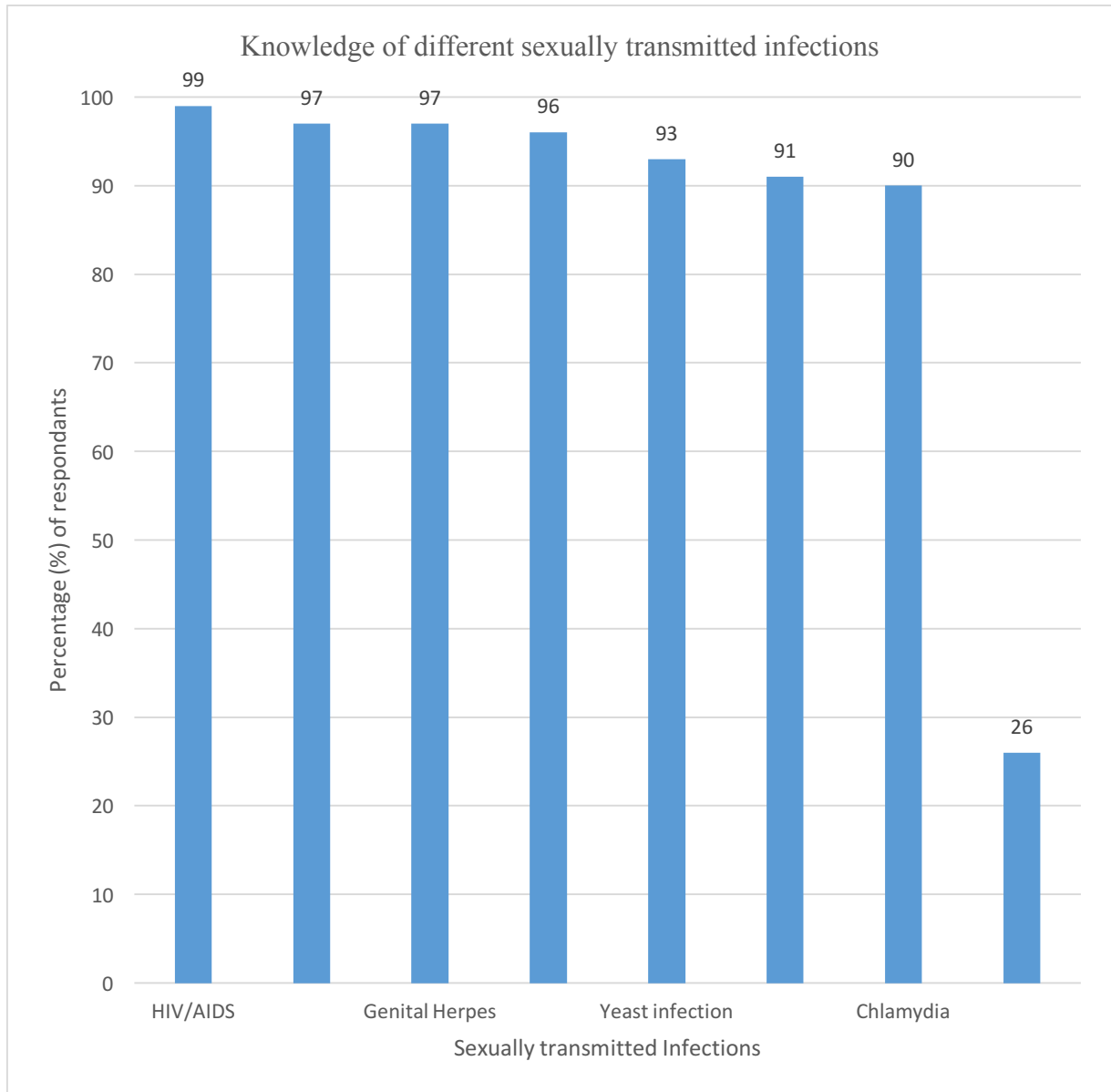
**Graph 1: Illustrating distribution of age in males and females: N=400**

## 4.2 Respondents' General Knowledge of Sexual and Reproductive Health

Respondents were asked about knowledge of the menstrual cycle. Majority (82.5%) of them had knowledge of when a woman is likely to get pregnant focusing on the menstrual cycle. From the question the correct answer was just before her period and halfway between her period. Respondents were also asked about the woman's right to fertility, including whether to have an abortion, majority of them (89.75%) agreed that the woman has the right to decide about her pregnancy (Table 2).

**Table 2: General Knowledge of Sexual and Reproductive Health among Males and Females: N=400**

	Female n (%)	Male n (%)	Chi-squared test p-value
<b>When is it likely for a woman to become pregnant?</b>			
Just before her period	63(21.50)	28(26.17)	0.001
Halfway between her period	191(65.19)	48(44.86)	
During her periods	1(0.34)	1(0.93)	
Right after her period	21(7.17)	12 (11.21)	
Don't know	17(5.80)	18(16.82)	
<b>Women's Right to decide about pregnancy including abortion</b>			
Yes	270(92.15)	89(83.18)	0.009
No	23(7.85)	18(16.82)	
<b>If a woman has an unwanted pregnancy, what should she do?</b>			
Keep the baby	19(6.48)	9(8.41)	0.460
Give up baby for adoption	47(16.04)	23(21.50)	
Have an abortion	116(39.59)	41(38.32)	
Don't know	111(37.88)	34(31.78)	
<b>Who should decide how many children a couple has?</b>			
Both	269(91.81)	101(94.39)	0.243
The woman	18(6.14)	4(3.74)	
The man	0	1(0.93)	
Don't know	6(2.05)	1(0.93)	



**Graph 2: Respondents' knowledge of Sexually Transmitted Infections: N=400**

#### 4.3 Respondents' knowledge of STIs, HIV and AIDs

With regards to STI, HIV and AIDS, most respondents knew about most of the listed conditions. Respondents were familiar with HIV and AIDS (99%), syphilis and genital herpes at (97%). They were also aware of gonorrhoea (93%), yeast infection (93%), genital warts (91%) and chlamydia 90%. However only 26% of respondents had knowledge about trichomonas (Graph 2).

Table 3 illustrates respondents' knowledge of STIs symptoms in both males and females. Responses were divided by gender. In females, the symptoms which were known on average among both genders included redness/inflammation in the genital area (95.71%), genital sores/ulcers or warts (95.11%), foul smelling vaginal discharge (98.47%), burning pain on urination (93.54%), genital itching (92.39%), swelling in the genital region (90.17%), abdominal pain (72.42%), weight loss (52.58%) and infertility (46.12%).

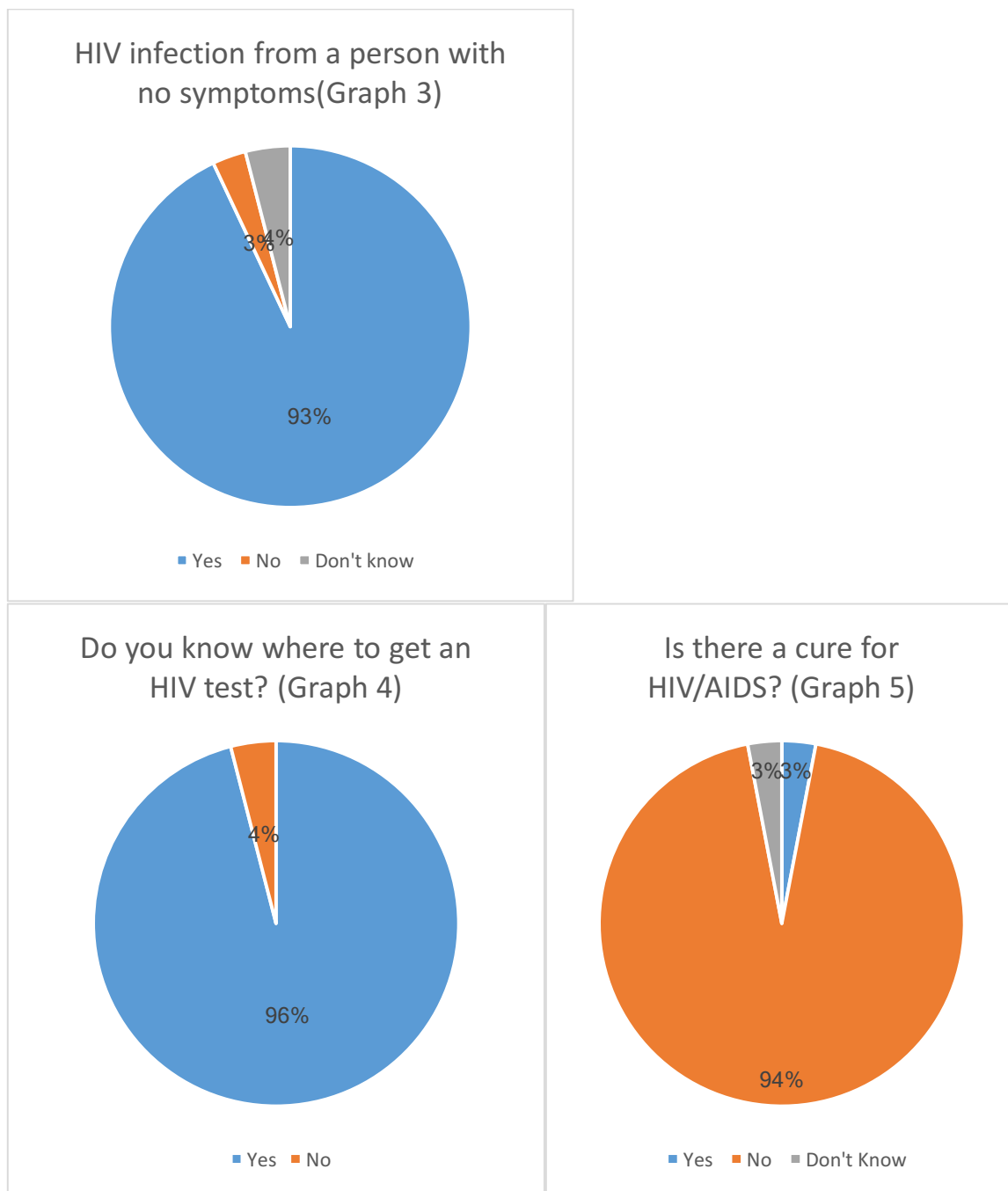
In males, both female and male respondents listed genital itching and genital sores, ulcers or warts as the most known STI symptom with a significant chi-square of 0.009 and 0.02.

In females, both female and male respondents were familiar with specific STI symptoms all of which had significant chi-square test of less than 0.05. The specific STI symptoms included Foul smelling discharge, burning pain on urination, redness or inflammation in the genital area, genital sores, ulcers or warts, genital itching and infertility. Respondents knew about genital sores/ulcers or warts (97.16%), redness/inflammation in the genital area (97.07%), genital itching (95.24%), swelling in the genital area (94.34%), foul smelling discharge (91.83%), burning pain on urination (97.75%), abdominal pain (61.01%), weight loss (56.49%) and infertility (47.60%).

**Table 3: Male and Female respondents' knowledge of STI symptoms (N=400)**

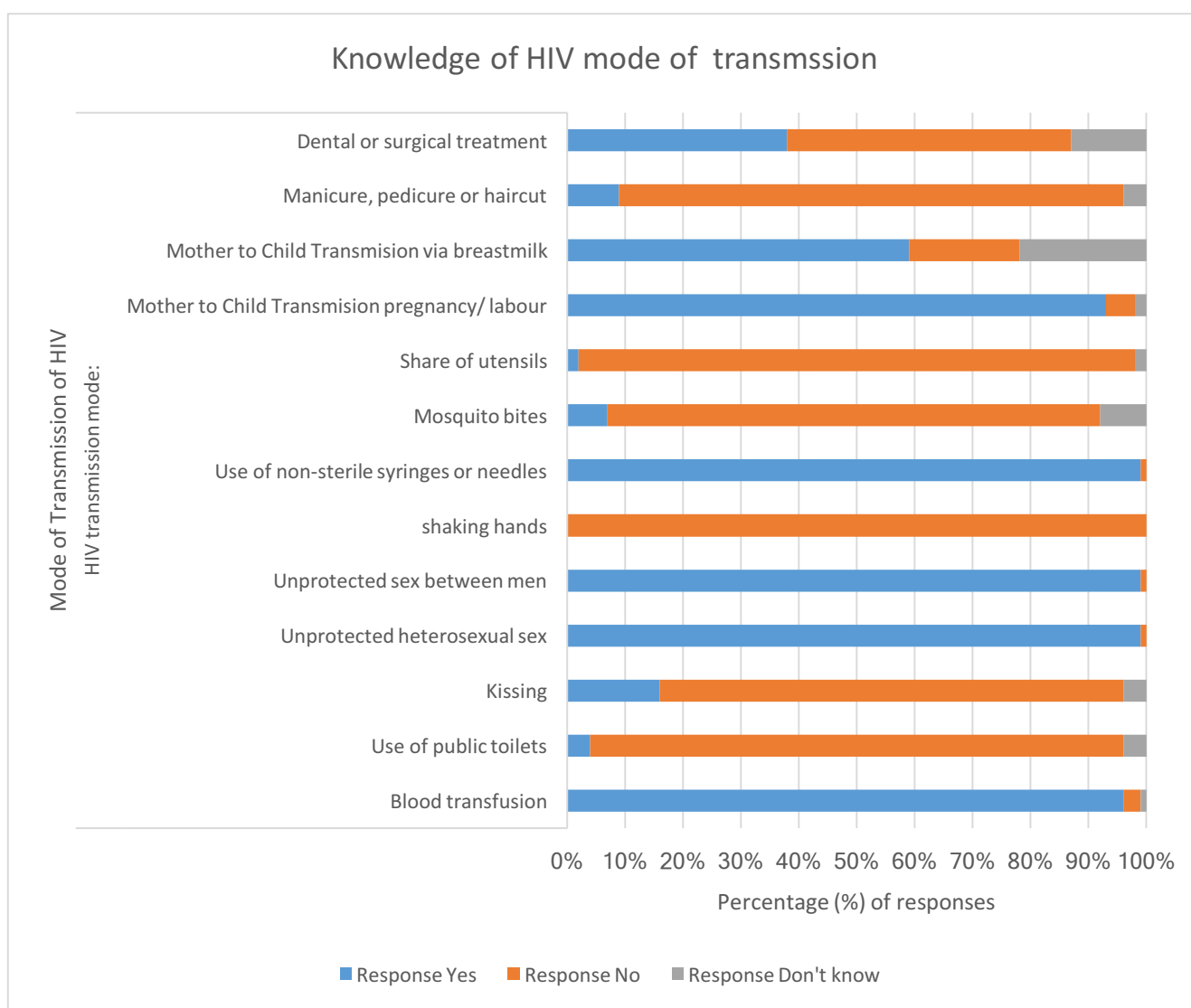
Symptoms of STI	STI symptoms in Men			STI symptoms in females		
	Knowledge Females n (%)	Knowledge Males n (%)	Chi-squared test p-value	Knowledge Females n (%)	Knowledge Males n (%)	Chi-squared test p-value
Abdominal Pain	174 (59.39)	67(62.62)	0.56	219(74.74)	75(70.09)	0.06
Discharge from Penis	280(95.56)	103(96.26)	0.76	272(92.83)	96(89.72)	0.02
Foul smelling discharge	267(91.13)	99(92.52)	0.66	288(98.29)	97(90.65)	0.001
Burning on urination	288(98.29)	104(97.20)	0.49	288(98.29)	95(88.79)	<0.001
Redness/ Inflammation in genital area	284(96.93)	104(97.20)	0.89	287(97.95)	100(93.46)	0.04
Swelling in genital area	279(95.22)	100(93.46)	0.48	271(92.49)	94(87.85)	0.337
Genital sores, ulcers or warts	290(98.98)	102(95.33)	0.02	289(98.63)	98(91.59)	0.002
Genital itching	287(97.95)	99(92.52)	0.009	284(96.93)	94(87.85)	0.002
Weight Loss	164(55.97)	61(57.01)	0.85	163(55.63)	53(49.53)	0.052
Infertility	142(48.46)	50(46.73)	0.76	147(50.17)	45(42.06)	<0.001

Graphs 3, 4 and 5 summarises respondents' knowledge of HIV transmission. Majority (93%) knew that a person can have the HIV infection but shows no symptoms and can even transmit to the virus to others. Most (96%) respondents knew where to get an HIV test and 94% also knew that HIV and AIDS has no cure.



**Graph 3-5 illustrating knowledge of HIV among survey respondents: N=400**

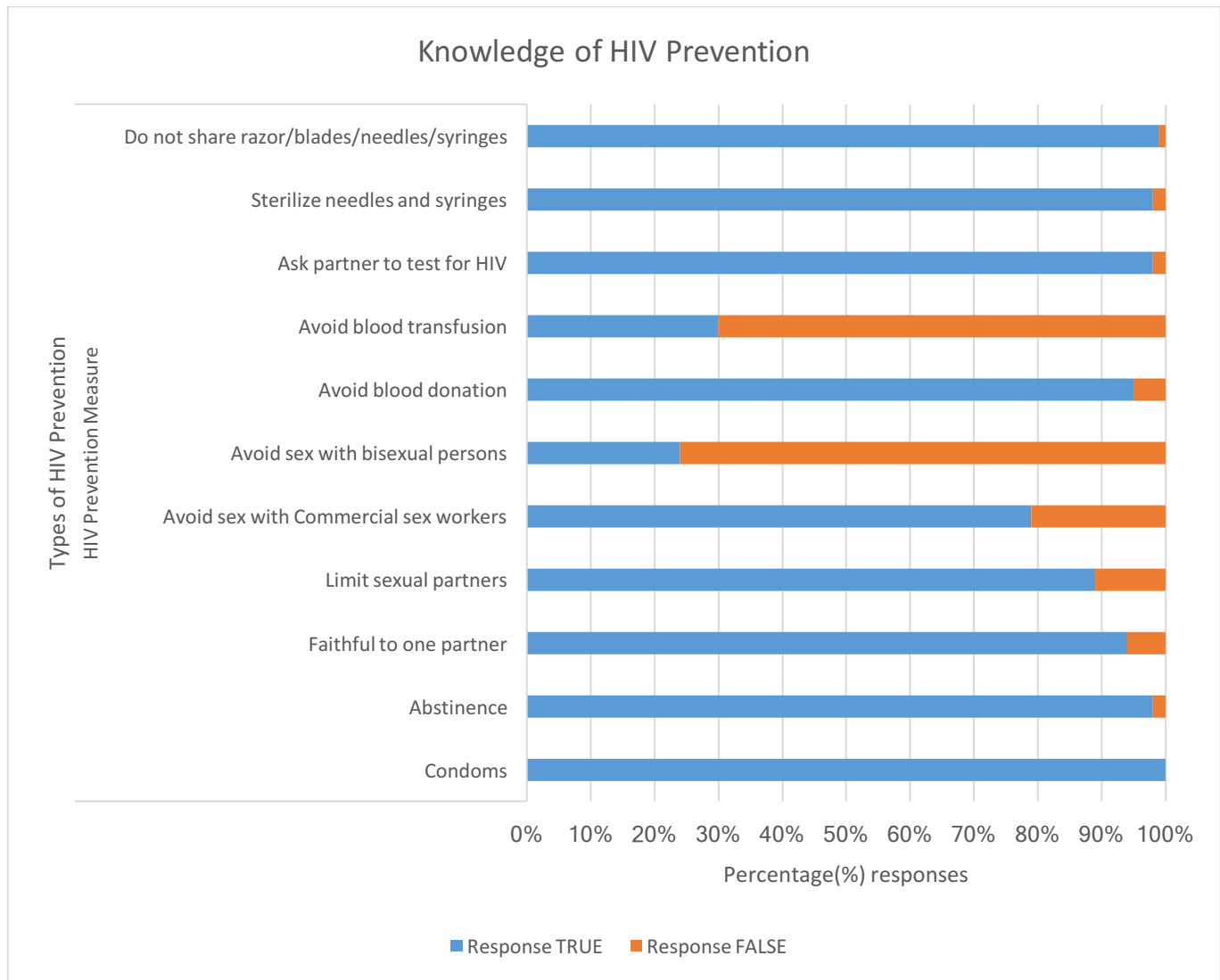
In terms of HIV transmission (Graph 6), most of the respondents said HIV can be transmitted through unprotected heterosexual sex (99%), unprotected sex between homosexuals (98%), use of non-sterile syringes and needles (99%), blood transfusion (96%), mother to child transmission during pregnancy and in labour (93%), and via breast milk (65%). Dental or surgical treatment was also identified as a mode of transmission at 38%, kissing (16%), use of public toilets (4%), mosquito bites (7%), sharing utensils (2%) and manicure, pedicure or hair cut (9%).



**Graph 6: Illustrating knowledge of HIV transmission amongst respondents**

Graph 7 reflects a summary of respondents' knowledge of STI and HIV prevention. Most respondents mentioned that STIs and HIV infections can be prevented using condoms (100%), not sharing razor/blades/needles/syringes (99%), abstaining from sex (98%), use of sterile

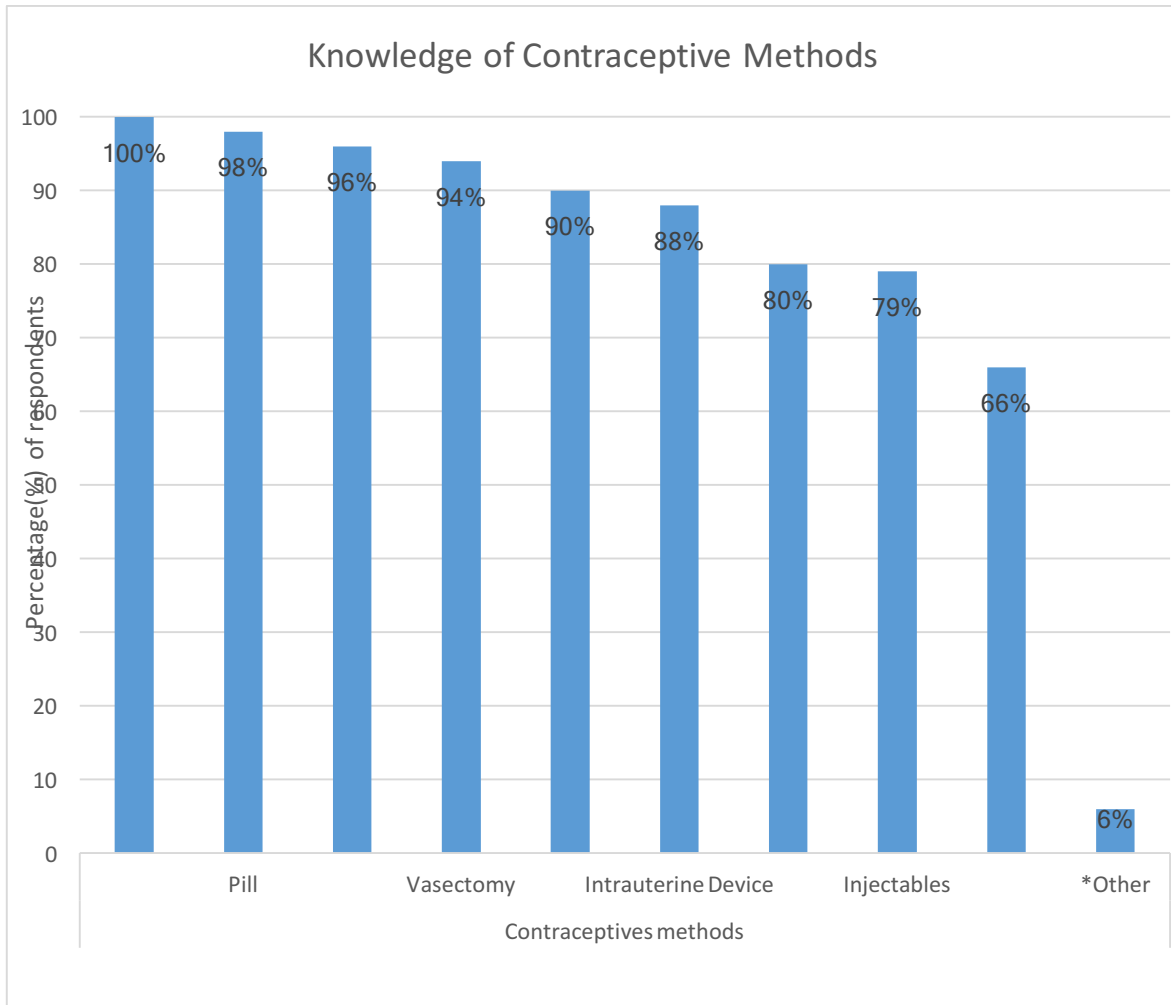
needles and syringes (98%), ask partner to get blood tested for HIV (98%), avoid blood donation (95%) staying faithful to one sexual partner (94%), limit sexual partners (89%), avoiding sex with commercial sex workers (79%), avoid sex with bisexuals (24%), and avoid blood transfusion (30%).



**Graph 7: Illustrating knowledge of HIV prevention amongst respondents**

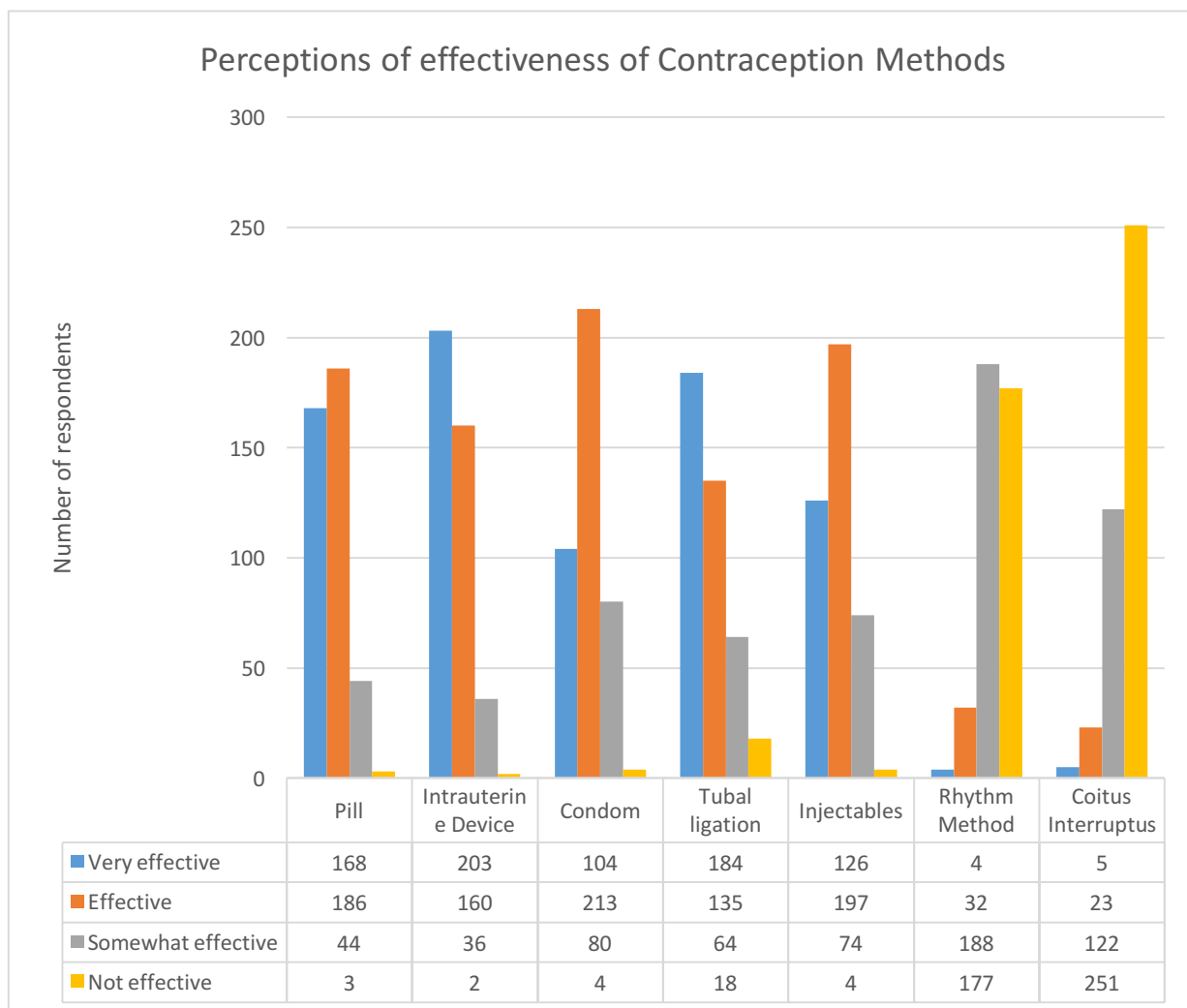
#### 4.4 Respondents' Knowledge of Contraceptive Methods and Perceptions

Graph 8, reflects respondents' knowledge of contraceptive methods. Most of the respondents knew about the condoms (100%), pill (98%), emergency hormonal contraceptive (96%), vasectomy (94%), coitus interruptus (90%), intra-uterine device (88%), rhythm method (80%), injectables (79%), implant (66%) and other (6%) was unspecified.



**Graph 8: Respondents' knowledge of Contraceptive methods**

Graph 9, illustrates respondents' perceptions regarding the effectiveness of contraceptive methods. The perceptions of respondents with regards to effective contraceptive methods was as follows; intra-uterine device (99.75%), condoms (99.25%), injectables (99.25%), pill (99.5%), tubal ligation (95.75%), coitus interruptus (37.5%) and rhythm (37.5%). The majority stated that coitus interruptus (62.75%) and rhythm method (44.25%) were not effective contraceptive methods.



**Graph 9: Respondents’ perceptions of the effectiveness of contraceptive methods**

#### 4.5 Respondents’ Knowledge of Pap Smears and Clinical Breast Examination

Table 4, reflects respondents’ knowledge of Pap smear and clinical breast examination as screening tests for cervical and breast cancer. Most respondents knew about Pap smear (89.25%) and breast examination (91%). By gender 93.52% of female and 77.57% of male respondents had knowledge about Pap smear. With regards to clinical breast examination, 92.83% of female and 85.98% of male respondents had knowledge about clinical breast examination.

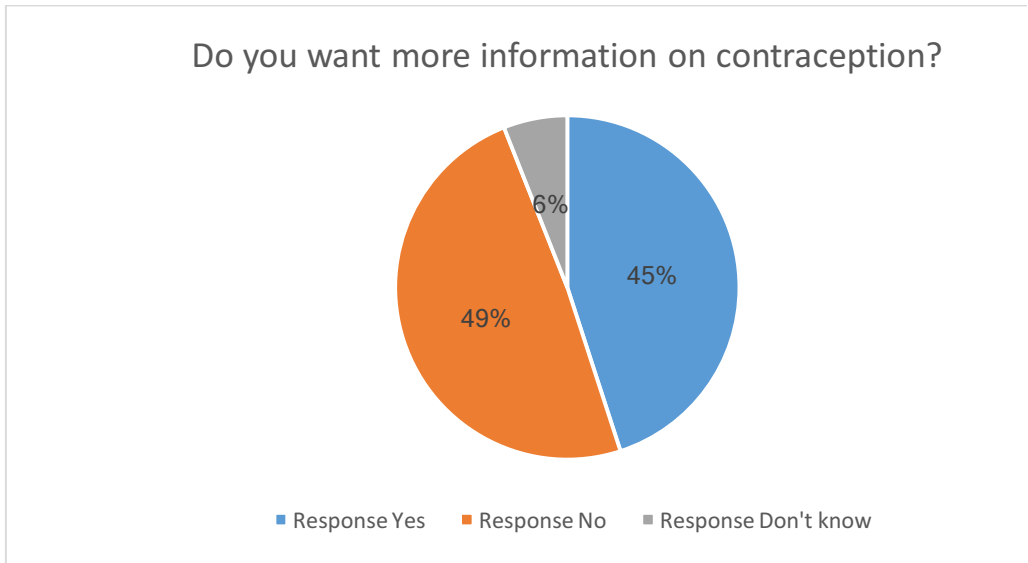
	Total	Knowledge of Pap smear			Knowledge of Clinical Breast Examination		
		Yes	No	Chi-square	Yes	No	Chi-square
	n	n (%)	n (%)	p-value	n (%)	n (%)	p-value
Female	293	274(93.52)	19(6.48)	<0.001	272(92.83)	21(7.17)	0.03
Male	107	83(77.57)	24(22.34)		92(85.98)	15(14.02)	

#### 4.6 Respondents' Sources of Information

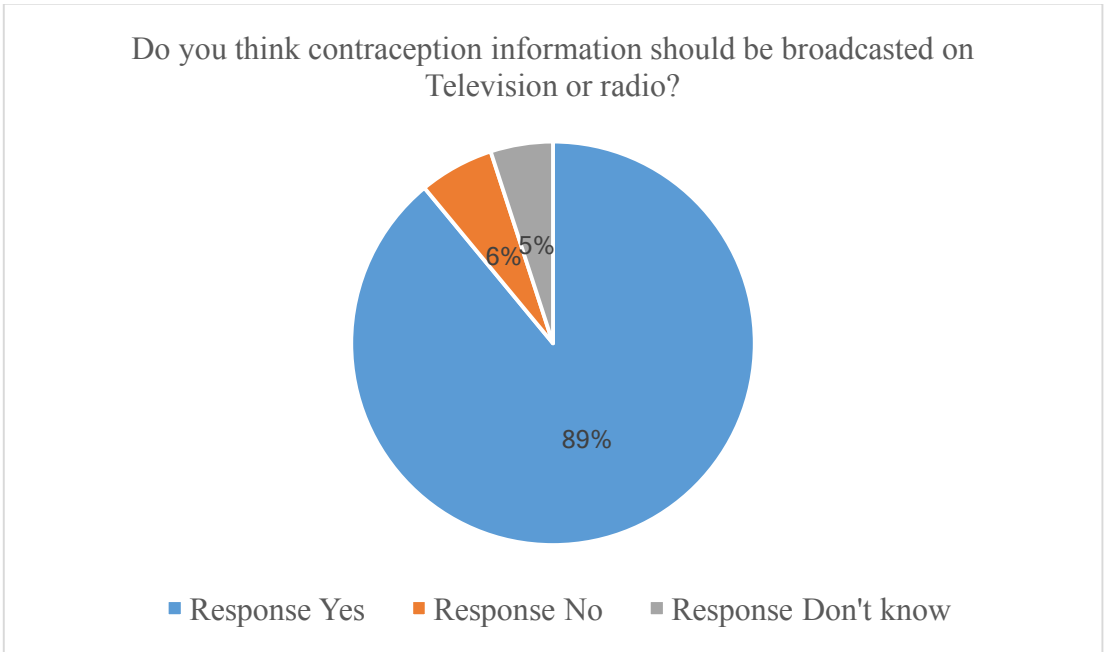
Table 5, is a summary of respondents' sources of information on contraception and sexually transmitted infections including HIV & AIDS. This study shows that the common sources of information about contraception were health professionals (28.61%), internet (21.39%), friends/peers (14.42%), lecturer/teacher (12.69%), print media (11.69%), family member (7.21%), television (1.99), radio (0.02%) and none/don't remember (1.99%). Most respondents had no desire for more knowledge on contraceptive methods (Graph 10). Majority (89%) of respondents thought that contraception information should be broadcasted on television and radio (Graph 11).

**Table 5: Respondents' Sources of Information: N=400**

Source of Information	Contraception	STI and HIV/AIDS
	n (%)	n (%)
Health Professional	115 (28.61)	66(16.42)
Family member	29(7.21)	23 (5.72)
Friends/peer	58(14.42)	26(6.47)
Internet	86(21.39)	91(22.64)
Lecturer/ Teacher	51(12.69)	96(23.88)
Print Media	47(11.69)	67(16.67)
Radio	1(0.02)	3(0.07)
Television	8(1.99)	16(3.98)
None/ Don't remember	8(1.99)	13(3.23)



**Graph 10: Illustrating respondents' desire for more knowledge on contraceptive methods.**



**Graph 11: Respondents' thoughts on the use of television or radio for dissemination of contraception information**

#### 4.7 Summary

In the above discussion, a presentation of respondents' results has been described. It is evident that the postgraduate students at UCT had knowledge about SRH with regards to contraceptives, Pap smear, clinical breast examination, STIs, HIV and AIDS. The two most common sources of information about contraceptives and STIs were health professionals and lecturers.

## CHAPTER 5: DISCUSSION

This study investigated the sexual and reproductive health (SRH) knowledge of postgraduate students at University of Cape Town. In this chapter, a discussion of the results will be presented. The focus will be on respondents' knowledge of contraceptive methods, Pap smear, clinical breast examination, STIs, HIV & AIDS and sources of information.

### 5.1 Socio-demographic characteristics of Respondents

The World Health Organization (WHO) defines people between the ages of 25 and 35 years as young adults (WHO, 2012:18). This study has revealed that postgraduate students fall within this age range, with the median age of 26 years. Christians were the majority of respondents and of interest was the percentage of respondents who considered themselves agnostic (36.5%). Many respondents were single (63.25%), of which 21% were in cohabiting relationships.

The number of single but in cohabiting relationships (21%) could confirm the high risk taking behaviours of university students. Only 14.75% of the sample were married. The respondents were drawn from all Faculties with the most respondents being from the Faculty of Humanities at Honours degree level of education. At the time of the study, the university had 9444 registered postgraduate students who were in the population. At 95% confidence interval, the required sample size was 403 for adequate response rate. The study had 406 respondents which is above the 95% confidence interval, however after data cleaning the sample was reduced to 400 because other responses were incomplete. The response rate was good and may confirm the relevance of the topic to students who were willing to take part in a 15 minutes' online survey on SRH.

### 5.2 General Knowledge of Sexual and Reproductive Health among respondents

Many respondents were knowledgeable about the menstrual cycle because they knew the time point at which a woman would get pregnant. This cannot be generalized because most respondents were female. Females are aware of the menstrual cycle which begins at the onset of menarche and ends at menopause. However, respondents had limited knowledge on lactational amenorrhea as a contraceptive method which could be attributed to the lack of promotion of this method as it requires some level of commitment to achieve its

contraceptive effect. Gelany & Moussa (2013), also reported similar findings to those found in this study with regards to the contraceptive effect of breast feeding. However, it is important to educate people about available contraceptives including natural methods such lactational amenorrhea. The findings in this study differ from a Malaysian study which reported that postgraduate students' knowledge of sexual and reproductive health was unsatisfactory (Soleyman et al.,2015:1). In the current study, many respondents also agreed that a woman has the right to SRH which includes the woman's right to pregnancy, including either to have an abortion or not. This shows that the current young adults have information on SRH rights.

### 5.3 Respondents' knowledge of STIs, HIV and AIDs

This study has shown that students had knowledge of STIs, HIV & AIDS, although only 26% of respondents knew about trichomonas. In terms of HIV transmission, most respondents knew that it can be transmitted through unprotected sexual intercourse between a man and a woman, which affirms that it is the major mode of transmission known among the respondents. Respondents also knew that HIV can be transmitted using unsterile syringes and needles and they also knew that the virus can be transmitted through unprotected sexual intercourse between men and men, which indicates that students know that the transmission rate of the virus is high among homosexuals. The majority of respondents also knew that HIV can be transmitted from the mother to the baby, during pregnancy, at delivery and in breast milk. Of note was the number of respondents (98%) who stated that the virus can be transmitted through blood transfusion. This could be true if transfused blood is not properly screened. However, most governments have put in place measures in which blood is thoroughly screened for HIV and hepatitis before transfusion, which reduces the risk of transmission. It is worrying that few respondents mentioned haircut, manicure and pedicure as a way through which HIV can be transmitted. This calls for health promotion activities on the ways in which the virus can be transmitted.

With regards to HIV prevention, many respondents knew that the risk can be reduced by using condoms, abstaining, being faithful to one sexual partner, use of sterile needles/syringes and not sharing razors/blades/needs and syringes. This is a good reflection of the knowledge levels of postgraduate students with regards to HIV prevention. Respondents also knew that a person can be HIV positive without showing symptoms of the illness and can even transmit the virus

to others. This has clearly shown that respondents had knowledge of sexual and reproductive health with regards to HIV prevention. In addition, they also knew that HIV and AIDS has no cure. Many students knew of a facility which offered HIV testing. However, it is worrying that few (<2%) of the respondents did not know that a person can be asymptomatic to HIV and may even transmit the virus to others. In addition, <2% did not know about a place where to get an HIV test and they also did not know that HIV has no cure.

This study has shown that majority of postgraduate students are aware of STI symptoms. they had more knowledge about specific symptoms of STIs. Most respondents knew that discharge from the penis, burning pain on urination, redness in the genital area, genital sores (Chi-Square test p-value 0.02), genital itching (Chi-Square test p-value 0.009) and discharge were symptoms that a male with an STI may have. Most respondents were unaware of non-specific STI symptoms such as abdominal pain, weight loss and infertility (Chi-Square test p-value >0.05); because they can be symptoms of many other illnesses therefore, this does not mean that their knowledge of STI symptoms was low.

A similar pattern was seen in students' responses with regards to symptoms that may be seen in a female with an STI. Most of the respondents had knowledge of specific STI symptoms. This indicates that postgraduate students are knowledgeable about STIs, which is in contrast with the results of a study on postgraduate students in Malaysia which revealed that postgraduate students' knowledge of SRH was low (Soleyman et al., 2015:1). However, studies done in Greece and Iran reported similar findings to those in this study and the high knowledge levels among postgraduate students in the two studies was attributed to increased health promotion activities in tertiary institutions (Simbar et al., 2005:888; Tountas, 2004:151). The University of Cape Town where the study is being held, usually holds periodic health promotion activities in raising awareness on sexual and reproductive health, which may have contributed to the level of knowledge of respondents in this study.

#### 5.4 Respondents knowledge of Contraceptive Methods and Perceptions

The present study has shown that postgraduate students have knowledge of contraceptives. Condoms (100%) and pills (98%) were identified as the commonest contraceptive methods with the least known method being an implant (66%). An implant is a preferred method in long term family planning goals because it provides contraceptive effects for three years however,

many postgraduate students are still young adults whose goal for using a contraceptive method is for short term. These results are consistent with findings from previous studies where it was reported that the commonest contraceptive methods known by university students were condoms and pills (Simbar et al.,2005:889; Soleyman et al., 2015:1; Tountas, 2009:390), In terms of perceptions with regards to contraceptives, respondents have shown an understanding that natural methods are less effective in comparison to modern methods. This clearly confirms that postgraduate students have knowledge and correct perceptions with regards to contraceptive methods.

#### 5.5 Respondents' knowledge of Pap Smears and Clinical Breast Examination

The difference in knowledge with regards to Pap smear by gender was significant ( $p < 0.001$ ) as being female was associated with having knowledge. Similar differences have been noted with regards to clinical breast examination in which the difference by gender was equally significant ( $p = 0.03$ ) because being female was associated with having knowledge of breast examination. This study has confirmed that female respondents were more knowledgeable on both Pap smear and clinical breast examination. Female respondents had more knowledge about Pap Smears than clinical breast examination. On the contrary, there were more males with knowledge on clinical breast examination than knowledge on Pap smear which is a good indication that men are becoming aware about SRH. This could be attributed to increased health exhibitions across the university community which aims at increasing awareness on SRH.

#### 5.6 Respondents' Sources of Information

Young adults have a right to correct information about sexual and reproductive health (SRH), however the chance to be informed is limited in many developing countries where discussions on SRH are rarely done within families (Wong, 2012:865).

In this present study, family was listed as the least source of SRH knowledge by most of the respondents, which could be attributed to cultural norms and values in many countries (Wong, 2012:865).

With regards to sources of information on STIs, HIV and AIDs, the most common source of information across faculties was a lecturer which could be attributed to the significant role lecturers play in universities. This was followed by internet which is provided freely by the university to all registered students. This shows that students use the internet to increase their

knowledge of SRH. Print media which included books, magazines, journals and newspapers was the third source of information. The fourth listed source was from health professionals who included pharmacists, doctors, nurses and midwives. Family and friends were among the less common sources of information which affirms the strong cultural backgrounds that preclude sensitive SRH discussions. The findings in this study concur with studies conducted with university students in Egypt, Malaysia and Turkey. Globally, very few families openly discuss sexual and reproductive health issues with their children (Ege et al., 2011:3; El Gelany & Moussa, 2013:2; Yapici et al., 2010:4; Yilgor et al., 2010:1). Respondents in this study were students from across the world and having less than 10% of respondents listing family shows the lesser role families play in SRH education.

### 5.7 Summary

Postgraduate students voluntarily participated in this online survey. The results have shown that postgraduate students have knowledge of SRH with regards to contraception, Pap smear, clinical breast examination, STI, HIV & AIDS. The study has also revealed that most of the students have knowledge on the transmission and prevention of STIs including HIV. The most utilised sources of information on SRH among these postgraduate students were the university lecturers and the Internet.

### 5.8 Recommendations

The following are recommendations based on the findings of the study:

1. University policy makers and health services should ensure the incorporation of SRH education in the curriculum across Faculties, as most of the students listed lecturers as their source of information on SRH. The researcher does not expect same expertise across faculties. However, from the results of this study, lecturers across faculties played a role in SRH sensitization which could be from the basic knowledge which they have on the topic with an exception of lecturers from the Faculty of Health Sciences. In addition, the University of Cape Town usually have health expo for all the staff where SRH information is exhibited and discussed by expertise in raising awareness on the SRH. University health expo which are held annually by the institution should be recommended for capturing of the few who lacked SRH knowledge.
2. These findings could inform policy regarding availability of SRH information for young adults.

3. Sexual and reproductive health information should be included in the university printed materials, such as the university newspaper, which are distributed to students free of charge. The university radio station should also be used for awareness programs on SRH and information should be freely available in all university venues.
4. Stage performances, such as plays or dramas portraying SRH issues should be featured often by the drama department of the university in collaboration with the Faculty of Health Sciences.
5. A study is needed which will look at the relationship between having SRH knowledge and access to SRH services.

### 5.9 Conclusion

In conclusion, the results of this study have shown that postgraduate students at the University of Cape Town have knowledge of sexual and reproductive health with regards to contraception, Pap smear, clinical breast examination, STIs, HIV and AIDS. Having SRH knowledge may help people in making informed decisions although it does not equate to usage of SRH services. Lecturers have been identified as one of the major sources of information. Thus, the introduction of educational programs on SRH as part of short modules may improve SRH knowledge among students across faculties.

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## 7. APPENDIX 1: CONSENT TO PARTICIPATION

You are invited to participate in an online survey to explore postgraduate students' knowledge of Sexual and reproductive health at University of Cape Town. This is a research project being conducted by Bupe Mwamba, a masters of philosophy (MPhil) in maternal and child health (MCH) candidate with the department of paediatrics and child health at University of Cape Town, in partial fulfilment for the degree. It should take approximately 15 minutes of your time to complete.

### **BENEFITS**

You will receive no direct benefits from participating in this research study. However, your responses may help the researcher in learning how knowledgeable you are on sexual and reproductive health.

### **RISKS**

There are no risks involved in participating in this study.

### **CONFIDENTIALITY**

Your survey answers will be saved on google docs where data will be stored in a password protected electronic format. It does not collect identifying information such as your name, email address, or student number. Therefore, your responses will remain anonymous. No one will be able to identify you or your answers, and no one will know whether you participated in the study.

### **ELECTRONIC CONSENT:**

Please select your choice below. You may print a copy of this consent form for your records.

Clicking on the “**Agree**” button indicates that

- You have read the above information
- You voluntarily agree to participate
- You are above 18 years old

Agree

Disagree

8. APPENDIX 2: ETHICAL APPROVAL

APPROVAL FROM THE DIRECTOR STUDENT AFFAIRS(DSA-UCT)

	Research Access to Students Approval	DSA 100
----------------------------------------------------------------------------------	--------------------------------------	---------

SECTION B: RESEARCHER/S SUPERVISOR/S DETAILS

Position	Staff / Student	Title and Name	Contact Details
A.1 Student Number	MWMBUP001	MISS BUPE MWAMBA	MWMBUP001@MYUCT.AC.ZA/073 0211055
A.2 Academic / PASS Staff	01450033		
A.3 Visitor/ Researcher ID	ZN249153		
A.4 University at which a student or employee	UNIVERSITY OF	Address if <u>not</u> UCT:	
A.5 Faculty/	HEALTH/PAEDIATRIC AND CHILD HEALTH		
A.6 APPLICANTS DETAILS If different	Title and Name	Tel.	Email
Position	Title and Name	Tel.	Email
B.1 Supervisor	J. Shea	021 658 5030	jawaya.shea@uct.ac.za
B.2 Co-Supervisor/s	P. Mayers	0824672302	pat.mayers@uct.ac.za

SECTION C: APPLICANT'S RESEARCH STUDY FIELD AND APPROVAL STATUS

C.1 Degree – if applicable	M.Phil (MCH)
C.2 Research Project Title	A Descriptive Study on Sexual and Reproductive Health Knowledge of Postgraduate Students of
C.3 Research Proposal	Attached: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
C.4 Target population	Postgraduate Students
C.5 Lead Researcher details	If different from applicant: <input type="checkbox"/>
C.6 Will use research	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
C.7 Research Methodology and	Research methodology: Survey Informed consent: Will be obtained, confidentiality is assured, participation with amendments: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
C.8 Ethics clearance status from UCT's Faculty Ethics in Research Committee (Chair)	Approved by the UCT EIRC: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (c) Attached copy of form UCT ethics approval: Attached <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

SECTION D: APPLICANT/S APPROVAL STATUS FOR ACCESS TO STUDENTS FOR RESEARCH PURPOSE (To be completed by the UCT - ED, DSA or Nominee)

D.1 APPROVAL STATUS	Approved / With	* Conditional approval with terms	Applicant/s Ref No.
	(i) Approved <input checked="" type="checkbox"/>	(a) Access to students for this research study must only be	MWMBUP001/ Ms
	(ii) With terms <input type="checkbox"/> (iii) Not approved <input type="checkbox"/>	undertaken after written ethics approval has	Bupe Mwamba

*Justine Chan*

D.2 APPROVED BY:	<b>Designation</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
	Executive Director Department of Student	<i>Dr Moonira Khan</i>		<i>19 April 2017</i>

Version. DSA 100.2017

DSA 100

## HUMAN RESEARCH ETHICS COMMITTEE (HREC) APPROVAL



**UNIVERSITY OF CAPE TOWN**  
**Faculty of Health Sciences**  
**Human Research Ethics Committee**

Room E53-46 Old M  
Groote Sch  
Obser  
Telephone [C  
Email: [shuretta.thon](mailto:shuretta.thon)  
Website: [www.health.uct.ac.za/fhs/research/huma](http://www.health.uct.ac.za/fhs/research/huma)

23 March 2017

**HREC REF: 040/2017**

**Ms J Shea**  
Paediatrics  
Child health Unit  
Red Cross War Memorial Children's Hospital

Dear Ms J Shea

**PROJECT TITLE: A CROSS-SECTIONAL SURVEY OF POSTGRADUATE STUDENTS' KNOWLEDGE OF SEXUAL AND REPRODUCTIVE HEALTH AT THE UNIVERSITY OF CAPE TOWN (Master's candidate-B Mwamba)**

Thank you for submitting your response to the Faculty of Health Sciences Human Research Ethics Committee dated 15 March 2017.

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned project.

**Approval is granted for one year until the 30 March 2018.**

Please submit a progress form, using the standardised Annual Report Form if the study extends beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.

(Forms can be found on our website: [www.health.uct.ac.za/fhs/research/humanethics/forms](http://www.health.uct.ac.za/fhs/research/humanethics/forms))

**Please quote the HREC REF in all your correspondence.**

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please note that for all studies approved by the HREC, the principal investigator **must** obtain appropriate institutional approval before the research may occur.

**The HREC acknowledges that the student, Bupe Mwamba will also be involved in this study.**

*Yours sincerely*

9. APPENDIX 3: SEXUAL AND REPRODUCTIVE HEALTH KNOWLEDGE QUESTIONNAIRE

DEMOGRAPHIC DATA

1. Relationship Status (tick [✓] one)

- Single
- Married
- Widowed
- Divorced
- Cohabiting

2. Age \_\_\_\_\_

3. Level of Education (tick [✓] one)

- Post Graduate Diploma
- Honours Degree
- Masters
- PHD
- Post Doc

4. Faculty (tick[✓]one)

- Centre for Higher Education Development
- Commerce
- Engineering & the Built Environment
- Graduate School of Business
- Health Sciences
- Humanities
- Law
- Science

5. Religious Affiliation

- Christian
- Hindu
- Moslem
- Other

6. Nationality \_\_\_\_\_

7. Race \_\_\_\_\_

8. Gender

Female

Male

Other (Specify)

CONTRACEPTIVE KNOWLEDGE

9. In the past 12 months, have you visited any health facility for obtaining preventive services, such as contraceptive counselling or health check-ups?

- Yes
- No
- Don't know
- Do Not Remember
- Refuse to answer

10. During your visit in the past 12 months at the health facility, did a doctor or medical provider talk to you about;

- A. Condoms  Yes  No  Don't Know  Don't Remember  Refuse to answer
- B. Sexually Transmitted Diseases(STDs)  Yes  No  Don't Know  Don't Remember  Refuse to answer
- C. Control of Pregnancy  Yes  No  Don't Know  Don't Remember  Refuse to answer
- D. Other (please specify) .....

11. Are you currently in a sexual relationship? (Morris et al., 2005).

- Yes  No  Refuse to answer

12. How old were you when you had your first sexual intercourse? (tick (✓)one) (Morris et al., 2005).

- Never had intercourse
- First time when I started living with my husband/partner
- Does not remember
- When doing undergraduate studies
- At postgraduate level
- Refuse to answer

13. Have you ever heard of the following contraceptives? Tick all that you know.

- The Pill (Oral Contraceptives)
- Intra Uterine Device (IUD)
- Condoms
- Injectables (e.g. Depo-Provera)
- Emergency Hormonal Contraception ("Morning after Pill")
- Rhythm/Calendar Method
- Withdrawal (Coitus Interruptus)
- Tubal Ligation
- Vasectomy (Male Sterilization)
- Implant
- Other contraceptive methods Specify \_\_\_\_\_
- Refuse to answer

14. For the method you chose in question 13, do you know how to use it or them?

- Yes
- No
- Refuse to answer
- Other (specify) .....

15. Have you ever used any of your chosen methods in question 12?

- Yes
- No
- Refuse to answer

16. If yes what method?

- The Pill (Oral Contraceptives)
- Intra Uterine Device (IUD)
- Condoms
- Injectable (e.g. Depo-Provera)
- Emergency Hormonal Contraception (“Morning after Pill”)
- Rhythm/Calendar Method
- Withdrawal (Coitus Interruptus)
- Tubal Ligation
- Vasectomy (Male Sterilization)
- Implant
- Other contraceptive methods Specify \_\_\_\_\_
- Refuse to answer

17. Do you know where to get your chosen contraceptives?

- Yes
- No
- Refuse to answer

18. What was the most important source of information about this method?

- |                                               |                                                      |
|-----------------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> Mother               | <input type="checkbox"/> Lecturer                    |
| <input type="checkbox"/> Father               | <input type="checkbox"/> Pharmacist                  |
| <input type="checkbox"/> Relative             | <input type="checkbox"/> Books                       |
| <input type="checkbox"/> Boyfriend/Girlfriend | <input type="checkbox"/> Newspaper, Magazine, Flyers |
| <input type="checkbox"/> Friends              | <input type="checkbox"/> Radio                       |
| <input type="checkbox"/> Co-worker            | <input type="checkbox"/> TV                          |
| <input type="checkbox"/> Peers                | <input type="checkbox"/> Other (Specify) _____       |
| <input type="checkbox"/> Partner/Husband      | <input type="checkbox"/> Don't Remember.             |
| <input type="checkbox"/> Doctor               |                                                      |
| <input type="checkbox"/> Nurse/Midwife        |                                                      |
| <input type="checkbox"/> Refuse to answer     |                                                      |

19. Which one do you think is the most effective contraceptive method (Morris et al., 2005)?

- The Pill (Oral Contraceptives)
- Intra Uterine Device (IUD)
- Condoms
- Injectables (e.g. Depo-Provera)
- Emergency Hormonal Contraception (“Morning after Pill”)
- Rhythm/Calendar Method
- Withdrawal (Coitus Interruptus)
- Tubal Ligation
- Vasectomy (Male Sterilization)
- Implant
- None of them
- Don't know/not sure
- Refuse to answer

20. How would you rank each of the following birth control methods with regards to their risk of developing health problems; please tell me if the risk is low, medium, or high(Morris et al., 2005):

- A. Pill  Low risk  Medium risk  High risk  Don't know  Refuse to answer
- B. Intra Uterine Device  Low risk  Medium risk  High risk  Don't know  Refuse to answer

- C. Condom  Low risk  Medium risk  High risk  Don't know  Refuse to answer
- D. Tubal ligation  Low risk  Medium risk  High risk  Don't know  Refuse to answer
- E. Injectables  Low risk  Medium risk  High risk  Don't know  Refuse to answer
- F. Abortion on request  Low risk  Medium risk  High risk  Don't know  Refuse to answer

21. Please tell me if you agree or disagree with the following statements about birth control pills (Morris et al., 2005): Answer all from A to J

- A. Pills are easy to use  Agree  Disagree  Don't know  Refuse to answer
- B. Pills are easy to get  Agree  Disagree  Don't know  Refuse to answer
- C. Pills are too expensive  Agree  Disagree  Don't know  Refuse to answer
- D. It is stressful to remember to take the pill every day  Agree  Disagree  Don't know  Refuse to answer
- E. Pills protect against some gynaecologic cancers  Agree  Disagree  Don't know  Refuse to answer
- F. Pills may make you gain weight  Agree  Disagree  Don't know  Refuse to answer
- G. Pills make women's periods more regular  Agree  Disagree  Don't know  Refuse to answer
- H. Pills decrease blood loss during menstruation  Agree  Disagree  Don't know  Refuse to answer
- I. Pills decrease menstrual cramps and pain  Agree  Disagree  Don't know  Refuse to answer
- J. Pills are bad for blood circulation  Agree  Disagree  Don't know  Refuse to answer

22. Do you want to have more information about contraceptive methods (Morris et al., 2005)?

- Yes
- No
- Don't know
- Refuse to answer

23. Who do you think would be the best source of information about contraceptive methods (Morris et al., 2005)?

- |                                               |                                                      |
|-----------------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> Mother               | <input type="checkbox"/> Lecturer                    |
| <input type="checkbox"/> Father               | <input type="checkbox"/> Pharmacist                  |
| <input type="checkbox"/> Relative             | <input type="checkbox"/> Books                       |
| <input type="checkbox"/> Boyfriend/Girlfriend | <input type="checkbox"/> Newspaper, Magazine, Flyers |
| <input type="checkbox"/> Friends              | <input type="checkbox"/> Radio                       |
| <input type="checkbox"/> Co-worker            | <input type="checkbox"/> TV                          |
| <input type="checkbox"/> Peers                | <input type="checkbox"/> Other (Specify) _____       |
| <input type="checkbox"/> Partner/Husband      | <input type="checkbox"/> Don't Remember.             |
| <input type="checkbox"/> Doctor               | <input type="checkbox"/> Refuse to answer            |
| <input type="checkbox"/> Nurse/Midwife        |                                                      |

24. Some people use condoms to keep from getting sexual transmitted diseases. How effective do you think a properly used condom is for this purpose (Morris et al., 2005)?

- Tick [✓] one
- Very Effective

- Somewhat effective
- Not effective
- Don't know
- Refuse to answer

25. Have you ever talked to a partner about him using a condom (Morris et al., 2005)?

- Yes
- No
- Never had a sexual partner
- Don't remember
- Refuse to answer

26. Have you ever asked a partner to use a condom (Morris et al., 2005)?

- Yes
- No
- Don't remember
- Refuse to answer

27. Has any of the following ever happened because you asked a partner to wear a condom (Morris et al., 2005)?

- A. Did a partner refuse to wear a condom?  Yes  No  Don't know  Refuse to answer
- B. Did a partner refuse to have sexual intercourse with you?  Yes  No  Don't know  Refuse to answer
- C. Did a partner threaten to break up with you?  Yes  No  Don't know  Refuse to answer
- D. Did a partner yell at you or threaten to hurt you?  Yes  No  Don't know  Refuse to answer
- E. Did a partner make you have sex anyway without a condom?  Yes  No  Don't know  Refuse to answer
- F. Did a partner physically hurt you?  Yes  No  Don't know  Refuse to answer

28. Please indicate whether you agree or disagree with the following statements about condoms (Morris et al., 2005)?

- A. Using condoms with a new partner is a smart idea  Agree  Disagree  Don't know  Refuse to answer
- B. Using condoms is not necessary if you know your partner  Agree  Disagree  Don't know  Refuse to answer
- C. Women should ask their partners to use condoms  Agree  Disagree  Don't know  Refuse to answer
- D. It is easy to discuss using a condom with a prospective partner  Agree  Disagree  Don't know  Refuse to answer
- E. Condoms diminish sexual enjoyment  Agree  Disagree  Don't know  Refuse to answer
- F. Same condoms can be used more than once  Agree  Disagree  Don't know  Refuse to answer
- G. People who use condoms sleep around a lot  Agree  Disagree  Don't know  Refuse to answer
- H. It is embarrassing to ask for condoms in FP clinics, pharmacies or shops  Agree  Disagree  Don't know  Refuse to answer

#### GENERAL QUESTIONS ON REPRODUCTIVE HEALTH

29. During a woman's menstrual cycle, are there certain days when she is more likely to become pregnant if she has sexual relations? (Morris et al., 2005).

- Yes
- No
- Do not know
- Refuse to answer

30. When is it most likely for a woman to become pregnant, just before her period begins, during her period, right after her period has ended, or halfway between two periods? (Morris et al., 2005).

- Just before her period starts
- During her period
- Right after period ends
- Halfway between her periods
- Don't know
- Refuse to answer

31. Do you think that breastfeeding increases, decreases or has no effect on a woman's chance to get pregnant? (Morris et al., 2005).

- Increases the chance
- Decreases the chance
- Has no effect
- Don't know
- Refuse to answer

32. In your opinion, do you think that a woman always has the right to decide about her pregnancy, including whether or not to have an abortion (Morris et al., 2005)?

- Yes
- No
- Do not know
- Refuse to answer

33. In your opinion, does being a postgraduate student changed your sexual and reproductive health decisions (Morris et al., 2005)?

- Yes
- No
- Not Sure
- Refuse to answer

34. In your opinion, under which of the following conditions is it alright for a woman to have an abortion in your opinion (Morris et al., 2005)? Tick[✓] all that applies

- Her life is endangered by the pregnancy
- The foetus has a physical deformity
- The pregnancy has resulted from rape
- Her health is endangered by the pregnancy
- She is unmarried
- The couple cannot afford to have a (or another) child
- Don't know
- Refuse to answer

35. In your opinion, who do you think should decide how many children a couple should have (Morris et al., 2005)?

- The woman,
- The man,
- Both
- Mother in law, or
- Don't Know
- Refuse to answer

36. In general, how is your health, would you say it is tick[✓] one;

- Excellent
- Very Good
- Fair
- Poor
- Does Not Know
- Not Sure
- Refuse to answer

#### GENERAL QUESTIONS ON HIV/AIDS AND STDs

The next set of questions are about sexually transmitted infections Including HIV/ AIDS. For each of the following conditions please tell me if you (Morris et al., 2005):

37. Have you ever heard of the following sexually transmitted infections? Tick all that you have heard.

- Syphilis
- Gonorrhoea
- Chlamydia
- Yeast Infection
- Genital Herpes
- Genital Warts
- Trichomoniasis
- HIV/AIDS
- Refuse to answer

38. Have you ever been tested for any of the above sexually transmitted infections?

- Yes
- No
- Don't know
- Don't remember
- Refuse to answer

39. Have you ever been told that you have a sexually transmitted infection?

- Yes
- No
- Don't know
- Don't remember

40. Did you take any treatment for the sexually transmitted infection?

- Yes
- No
- Don't know
- Don't remember
- Not Applicable
- Refuse to answer

41. Who treated you for the sexually transmitted illness?

- Hospital
- Family Doctor/General Practitioner
- Nurse/Midwife
- Pharmacist

- Partner
- Friend/Relative
- Self-Treatment
- Other \_\_\_\_\_
- Not applicable
- Refuse to answer

42. If a woman has a sexually transmitted disease, what symptoms might she have (Morris et al., 2005)?

- A. Abdominal pain Yes  No  Refuse to answer
- B. Vaginal discharge Yes  No  Refuse to answer
- C. Foul smelling discharge Yes  No  Refuse to answer
- D. Burning pain on urination Yes  No  Refuse to answer
- E. Redness/inflammation in genital area Yes  No  Refuse to answer
- F. Swelling in genital area Yes  No  Refuse to answer
- G. Genital sores/ulcers or warts Yes  No  Refuse to answer
- H. Genital itching Yes  No  Refuse to answer
- I. Weight loss Yes  No  Refuse to answer
- J. Hard to get pregnant/have a child Yes  No  Refuse to answer

43. If a man has a sexually transmitted disease, what symptoms might he have (Morris et al., 2005)?

- A. Abdominal pain Yes  No  Refuse to answer
- B. Discharge from the penis Yes  No  Refuse to answer
- C. Foul smelling discharge Yes  No  Refuse to answer
- D. Burning pain on urination Yes  No  Refuse to answer
- E. Redness/inflammation in genital area Yes  No  Refuse to answer
- F. Swelling in genital area Yes  No  Refuse to answer
- G. Genital sores/ulcers or warts Yes  No  Refuse to answer
- H. Genital itching Yes  No  Refuse to answer
- I. Weight loss Yes  No  Refuse to answer
- J. Hard to get a woman pregnant/have a child Yes  No  Refuse to answer

44. Do you know a place where you could get an HIV/AIDS test (Morris et al., 2005)?

- Yes
- No
- Refuse to answer

45. In general, what has been your most important source of information about STDs including AIDS? (Where or from whom have you learned the most about STDs?) (Morris et al., 2005)

- |                                          |                                                              |
|------------------------------------------|--------------------------------------------------------------|
| <input type="checkbox"/> Mother          | <input type="checkbox"/> Lecturer                            |
| <input type="checkbox"/> Father          | <input type="checkbox"/> Pharmacist                          |
| <input type="checkbox"/> Other Relative  | <input type="checkbox"/> Books                               |
| <input type="checkbox"/> Boyfriend       | <input type="checkbox"/> Newspaper, Magazine, Flyers         |
| <input type="checkbox"/> Friends         | <input type="checkbox"/> Radio                               |
| <input type="checkbox"/> Co-worker       | <input type="checkbox"/> TV                                  |
| <input type="checkbox"/> Peers           | <input type="checkbox"/> Other (Specify) _____               |
| <input type="checkbox"/> Partner/Husband | <input type="checkbox"/> Never heard of any.                 |
| <input type="checkbox"/> Doctor          | <input type="checkbox"/> Don't remember/ Refuse              |
| <input type="checkbox"/> Nurse/Midwife   | <input type="checkbox"/> Somebody who had the same infection |
| <input type="checkbox"/> Girlfriend      |                                                              |

46. Do you think that a person can be infected with the HIV virus but have no symptoms of disease (Morris et al., 2005)?

- Yes  
 No  
 Don't know  
 Refuse to answer

47. Please tell me whether you think that the Human Immunodeficiency virus can be transmitted in the following ways (Morris et al., 2005)?

- A. Through blood transfusion  Yes  No  Don't Know Refuse to answer   
B. Using public toilets  Yes  No  Don't Know Refuse to answer   
C. Through kissing  Yes  No  Don't Know Refuse to answer   
D. Through unprotected sexual intercourse between a man and a woman  Yes  No  Don't Know Refuse to answer   
E. Through unprotected sexual intercourse between men  Yes  No  Don't Know Refuse to answer   
A. Through unprotected sexual intercourse between women  Yes  No  Don't Know Refuse to answer   
B. By shaking hands  Yes  No  Don't Know Refuse to answer   
C. Using non-sterile syringes or needles  Yes  No  Don't Know Refuse to answer   
D. Through mosquito bites  Yes  No  Don't Know Refuse to answer   
E. Sharing plates, forks, or glasses with someone who has HIV/AIDS  Yes  No  Don't Know Refuse to answer   
F. From a woman who has the AIDS virus to her baby during pregnancy/delivery  Yes  No  Don't Know Refuse to answer   
G. From a mother to her child through breast milk  Yes  No  Don't Know Refuse to answer   
H. Getting a manicure, pedicure or haircut  Yes  No  Don't Know Refuse to answer   
I. Having dental or surgical treatment  Yes  No  Don't Know Refuse to answer

48. What can a person do to reduce the risk of getting AIDS (Morris et al., 2005)? Tick [✓] all that applies.

- A. Use condoms  true  false  
B. Abstain from sex  true  false  
C. Have only one partner/stay faithful to one partner  true  false  
D. Limit number of sexual partners  true  false  
E. Avoid sex with prostitutes  true  false  
F. Avoid sex with bisexuals  true  false  
G. Do not donate blood  true  false  
H. Avoid transfusions  true  false  
I. Ask partner to get blood tested for aids  true  false  
J. Sterilize needles and syringes  true  false  
K. Do not share razors/blades, needles or syringes  true  false  
L. Other (specify) \_\_\_\_\_  
 Refuse to answer

49. How much of a risk do you think you personally have of getting HIV/AIDS? Would you say you are at (Morris et al., 2005): Tick [✓] only one

- Great risk,

- Moderate Risk,
- Little risk, or
- No risk at all
- Don't know
- Refuse to answer

50. Why do you think you have any risk of getting AIDS (Morris et al., 2005)? Tick [✓] all that applies to you.

- Received blood transfusions/blood products
- Had many sexual partners/ traded sex for money
- Had unprotected intercourse with casual partner(s)
- Used intra venous drugs/shared needles
- Partner had/has sex with other women
- Refuse to answer

51. Why do you think you have no risk of getting AIDS (Morris et al., 2005)?

- Only one partner
- No sexual relations
- Uses condoms
- Confidence in partner
- Does not get/need transfusions
- Does not share needles
- Other (specify) \_\_\_\_\_
- Don't know
- Refuse to answer

52. How much of a risk do you think you personally have of getting other STD? Would you say you are at (Morris et al., 2005)?

- Great risk,
- Moderate Risk,
- Little risk, or
- No risk at all
- Don't know
- Refuse to answer

53. Is there a cure for AIDS (Morris et al., 2005)?

- Yes Common  No-Not common  Don't Know  Refuse to answer

54. A clinical breast exam is when a doctor, nurse or other health professional feels the breast for lumps. Have you ever heard about a clinical breast exam (Morris et al., 2005)?

- Yes  No  Does not know  Does not remember  Refuse to answer

55. A Pap smear is a test for cancer of the cervix which is done during a pelvic examination by a doctor or nurse. Have you ever heard about a Pap smear (Morris et al., 2005)? Tick (✓) one.

- Yes  No  Does not know  Does not remember  Refuse to answer

