

# **Awareness of reproductive cancers among students in Durban, South Africa**

By

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**DECLARATION**

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**COLLEGE OF HUMANITIES**

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## **Abstract**

Cancer is emerging as a major public health problem in Sub-Saharan Africa. It is the leading cause of death in economically developed countries and the second leading cause of death in developing countries. In females, cervical cancer is the second most common cancer and in males, prostate cancer is the most commonly diagnosed cancer. However, studies on other cancers that affect the reproductive organs are limited. This study therefore investigates the awareness of reproductive cancers and screening related services among young people. Using a qualitative approach, which is a way of obtaining descriptions of the life world of the subject with respect to interpretation of their meaning, the study investigates the perceived severity of reproductive cancer, perceived barriers and benefits to routine screening for early diagnosis through in-depth interviews. Furthermore, the study aims for the depth of understanding of the awareness of reproductive cancers among young people.

The findings of this study suggest that there is very low awareness of reproductive cancers among young people. This study reveals that students were more aware of cervical and prostate cancer than other reproductive cancers. Furthermore, the study found that there was very low awareness of HPV and knowledge and awareness of screening services were lacking greatly. An important finding of the study was that students did not know that there is a link between engaging in risky sexual behaviors and spreading of HPV and development of reproductive cancers. It was then recommended that intensive programmes informing and educating young people about their sexual and reproductive health are needed. The department of health together with other government departments as well as organizations dealing with cancer should work together in increasing awareness programmes.

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*“Any friend will say, 'I am your friend too,' but some friends are friends only in name”*  
Ecclesiasticus/Sirach 37:1

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## **DEDICATION**

My dearly departed sister **Everjoice Mambondiani** who always believed in me.

## **List of Acronyms**

AORTIC	African Organization for Research and Training in Cancer
CANSA	Cancer Association of South Africa
CDC	Centers for Disease Control and Prevention
CIN	Cervical intraepithelial neoplasia
DRE	Digital Rectal Exam
GLOBOCAN	Global Burden of Cancer Study
HPV	Human papillomavirus
IARC	International Agency for Research on Cancer
PSA	Prostate-specific Antigen
SSA	Sub-Saharan Africa
StatsSA	Statistics South Africa
TSE	Testicular Self-exam
UN	United Nations
WHO	World Health Organization

# Table of Contents

Abstract.....	
Acknowledgements.....	
Declaration.....	
Table of contents.....	
Acronyms and Abbreviation.....	
List of figures.....	

## CHAPTER ONE

1.1 Introduction.....	
1.2 Background of the study.....	
1.3 Rationale of the study.....	
1.4 Significance of the study.....	
1.5 Aim of the study.....	
1.6 Theoretical framework.....	
1.7 Organization of the dissertation.....	

## CHAPTER TWO

### 2. LITERATURE REVIEW

2.1 Introduction.....	
2.2 Definition of cancer.....	
2.3 Global overview of cancer.....	
2.4 Cancer in Africa.....	
2.5 Male reproductive cancers.....	
2.5.1 Prostate cancer.....	
2.5.1.1 Overview of prostate cancer.....	
2.5.1.2 Awareness of prostate cancer.....	
2.5.2 Testicular cancer.....	
2.5.2.1 Awareness of testicular cancer.....	
2.5.3 Penile cancer.....	
2.5.3.1 Risk factors of penile cancer.....	
2.6 Female reproductive cancers.....	
2.6.1 Epidemiology of cervical cancer.....	
2.6.1.1 Burden of cervical cancer.....	
2.6.1.2 Cervical cancer and women living with HIV/AIDS.....	
2.6.1.3 Awareness of cervical cancer.....	
2.6.2 Uterine cancer.....	
2.6.3 Ovarian cancer.....	
2.6.4 Vulvar/Vulvar cancer.....	
2.6.5 Vaginal cancer.....	
2.7 Factors influencing the use of cancer screening services.....	

2.8 Human papillomavirus (HPV).....	
2.9 Summary .....	

### **CHAPTER THREE**

#### **3. RESEARCH METHODOLOGY**

3.1 Introduction .....	
3.2 Study Setting.....	
3.3 Research Method.....	
3.4 In-depth interviews.....	
3.5 Sampling.....	
3.6 The process of data collection.....	
3.7 Ethical considerations.....	
3.8 Validity and Reliability.....	
3.9 Data analysis.....	
3.10 Limitations of the study.....	
3.11 Summary.....	

### **CHAPTER FOUR**

#### **4. RESULTS**

4.1 Introduction.....	
4.2 Characteristics of the participants.....	
4.3 Awareness of cancer.....	
4.4 Awareness of reproductive cancers.....	
4.5 Knowledge of reproductive cancers.....	
4.5.1 Female knowledge of female reproductive/gynecological cancers.....	
4.5.2 Female knowledge of male reproductive cancers.....	
4.5.3 Male knowledge of male reproductive cancers.....	
4.5.4 Male knowledge of female reproductive cancers.....	
4.6 Sources of information.....	
4.7 Satisfaction with the information.....	
4.8 Knowledge on screening services.....	
4.8.1 Knowledge of screening services among female students.....	
4.8.2 Knowledge of screening services among male students.....	
4.9 Too much focus on HIV/AIDS.....	
4.10 Awareness of Human papillomavirus.....	
4.11 Perceived benefits of routine screening.....	
4.12 Perceived severity of reproductive cancers.....	
4.13 Barriers to routine screening.....	
4.13.1 Lack of awareness.....	
4.13.2 Fear.....	
4.13.3 Culture and Religion.....	

4.13.4 Ignorance .....  
4.13.5 Financial costs.....  
4.14 Summary.....

**CHAPTER FIVE**

**5 DISCUSSION**

5.1 Introduction.....  
5.2 Discussion.....  
5.3 Recommendations.....  
5.4 Conclusion.....

Appendix A.....  
Appendix B.....  
Appendix C.....

References.....

**List of tables**

Table 4.1.....

**List of figures**

Figure 1.1.....  
Figure 3.1.....

## CHAPTER 1:

### INTRODUCTION

*“The quality of life is the central issue and nowhere is it more important than in the areas that deal with the beginning of life sexuality and reproduction”*

(Margot Joan Fromer, 1983)

#### **1.1 Introduction**

The 2010 WHO's Global status report reported that nearly 80% of noncommunicable disease (NCDs) deaths occur in low and middle income countries, of which cancer forms part (WHO, 2010). In Africa, cancer is an emerging public health problem (Jemal et al., 2011) and the burden is increasing in Africa because of increased prevalence of risk factors associated with economic transition, including smoking, obesity, physical inactivity and sexual and reproductive behaviours (Boyle and Levin, 2008). Cancer is a group of diseases characterized by uncontrolled growth and the spread of abnormal cells and if the spread is not controlled, it can result in death. The disease is caused by both external and internal factors. The external factors include; tobacco, chemicals, radiation, and infectious organisms and internal factors include inherited mutations, hormones, immune conditions, and mutations that occur from metabolism (American Cancer Society, 2011).

These causal factors may act together or in sequence to initiate or promote carcinogenesis. The development of most cancers requires multiple steps that occur over many years. Worldwide, one in eight deaths is due to cancer; and it is increasingly causing more deaths than AIDS, tuberculosis, and malaria combined (American Cancer Society, 2011). When countries are grouped according to economic development level, cancer is the leading cause of death in developed countries and the second leading cause of death in developing countries after heart diseases (WHO, 2012; American Cancer Society, 2011). According to a 2008 publication by the World Health Organization (WHO), cancer will have replaced ischemic heart disease as the overall leading cause of death worldwide by 2010 (WHO, 2008).

Reproductive cancers are types of cancers that affect the reproductive organs. Due to cultural and social beliefs surrounding reproductive organs, these types of cancers are not given much attention as compared to other cancers and they are often neglected. The female reproductive cancers are

cervical cancer, ovarian cancer, uterine cancer, vaginal cancer and vulvar cancer (Foundation for Women's Cancer, 2012). Alternatively, reproductive cancers in women are also known as gynaecological cancers. In males, there are three types of cancers that affect their reproductive organs namely prostate cancer, penile cancer and testicular cancer (Tvrda et al., 2015, Office of Population Affairs, 2015). The study mainly focuses on reproductive cancers.

## **1.2 Background of the Study**

Cancer has been found to be the leading cause of death in economically developed countries and the second leading cause of death in developing countries (WHO, 2008; American Cancer Society, 2011). In a 2010 report, WHO stated that cancer is predicted to be an increasingly important cause of morbidity and mortality in the next few decades, in all regions of the world (WHO, 2010). Most importantly, population projections suggest that in the next two decades if current global cancer rates remain unchanged, the estimated incidence of 12.7 million new cancer cases in 2008 (UNAIDS, 2008) will rise to 21.4 million by 2030, with nearly two thirds of all cancer diagnoses occurring in low- and middle-income countries (WHO, 2009).

The corresponding estimates for total cancer deaths in 2008 were 7.6 million (about 21,000 cancer deaths a day), 2.8 million in economically developed countries and 4.8 million in economically developing countries (American Cancer Society, 2011). It is estimated that by 2025 there will be an estimated 19.3 million new cancer cases and 11.4 million cancer deaths and the proportions of these occurring in developed and developing regions will increase to 59% and 68% respectively (American Cancer Society, 2016) By 2030, the global burden is expected to grow to 21.4 million new cancer cases and 13.2 million cancer deaths simply due to the growth and aging of the population, as well as reductions in childhood mortality and deaths from infectious diseases in developing countries. (WHO, 2010).

Although global mortality decreased between 2008 and 2012, from 57 million deaths to 56 million deaths, there was an increase in mortality attributable to cancer, which increased from 7.6 million deaths in 2008 to 8.2 million deaths in 2012 (WHO, 2014). The burden of cancer is increasing in economically developing countries because of population aging and growth (Jemal et al., 2011). This just shows that with the African continent moving towards economic development and South Africa, which is already in the middle-income countries' category, cancer cases will rise dramatically. As per to estimates from the IARC there were 12.7 million new cancer cases in 2008

worldwide, of which 5.6 million occurred in economically developed countries and 7.1 million in economically developing countries (Ferlay et al., 2010).

In all female reproductive cancers, uterus cancer, which is cancer of the lining of the uterus (also called the endometrium cancer) (Foundation for Women's Cancer, 2012) is according to (Burke et al., 2014) the most common gynecologic malignancy. Cervical cancer has been identified as the second most common cancer in women (Burke et al., 2014). Furthermore, the Centre for Disease Control and Prevention (CDC), reported that cervical cancer is the most common Human Papillomavirus (HPV) related cancer and almost all cervical cancer is caused by HPV (CDC, 2015). In Sub-Saharan Africa (SSA) the numbers of cases and rates of cervical cancer are almost equal and comprise 50% of the overall burden (American Cancer Society, 2016).

Ovarian cancer ranks among the top ten diagnosed cancers and top five deadliest cancers in most countries (Ferlay et al., 2010). Vaginal cancer is a rare malignancy, representing about 3% of all gynecological cancers and it is frequently associated with human papillomavirus (HPV) (Lee et al., 2013). The CDC (2015) estimated that 75% of vaginal cancers are linked to HPV. Vulvar cancer is a cancer which affects the outer portion of the female genital organs is about 3% to 5% of all primary gynecological malignancies (Thakur et al., 2013). According to CDC (2015) about 69% of vulvar cancers are linked to HPV too. Therefore, HPV need to be very well understood since it is not limited to only these reproductive cancers but also cause the likes of anal cancer of which about 91% are linked to HPV and 71% of throat cancers (CDC, 2015).

Prostate cancer is a common condition worldwide (Kumar et al., 2004). Globally, prostate cancer is the sixth most common cancer (Ajape et al., 2010) and the most commonly diagnosed cancer among men. Furthermore, it is the second leading cause of death in men (Brawley, 2012) and it is still very difficult to understand its cause (Egbera, 2015). In Sub-Saharan Africa (SSA), prostate cancers dominates in terms of the number of cases comprising of 27.9% of the total estimated cases in the region (American Cancer Society, 2016). Penile cancer is a relatively rare disease and accounts for less than 0.5% of all cancers in men worldwide (Backes et al., 2009). Though the global incidences of penile cancer are low, in some developing countries it is much higher reaching 18% to 20% of all male tumors (Salvioni et al., 2009). According to Albers et al. (2015) testicular cancer represents 5% of urological tumours affecting mostly younger males. Testicular cancer is

liable for about 1% of all cancers in men and is one of the most common in males between the ages of 15 and 19 (Lozano, 2012).

In 2000 the South African Cancer Registry recorded 3958 cases of prostate cancer, 130 cases of penile cancer and 152 cases of testicular cancer (South African Cancer Registry, 2000). In 2005, 4345 cases of prostate cancer, 148 cases of testicular cancer and 113 cases of penile cancer were recorded (South African Cancer Registry, 2005). There was an increase in the incidences of prostate and a decline in penile and testicular cancers. In 2010, 4652 cases of prostate, 147 cases of testicular and 135 cases of penile cancer were recorded (South African Cancer Registry, 2010). Prostate cancers maintained an increment while prostate and testicular cancers fluctuate around the same level of incidences. There are high chances that many more prostate cancer cases went unreported or undiagnosed.

In females, 4680 cases of cervical cancer, 789 cases of uterus cancer, 668 cases of ovary and 333 cases of vulva and vagina cancers (combined) were recorded (South African Cancer Registry, 2000). In 2005, 4851 cases of cervical, 986 cases of uterus, 418 cases of ovarian cancers and 317 cases of vulva and vagina cancers (combined) were recorded (National Cancer Registry, 2005). In 2010, 5433 cases of cervical cancer, 1082 cases of the uterus, 414 cases of ovarian, 225 cases of vulvar and 185 cases of vagina cancer were recorded (South African Cancer Registry, 2010). It is very significant to note that there was an increase in cervical cancer incidences as well as uterus cancer from 2000 to 2010. There was however, a notable decrease in ovarian cancer between 2000 and 2010. Though it is out of scope of this study, literature points out that the usage of oral contraceptive reduces the risk of women developing ovarian cancer.

### **1.3 Rationale of the Study**

A large number of university students engage in various forms of risky sexual behaviours, which can potentially expose them to the risk of contracting sexually transmitted diseases (STIs) including human papillomavirus (HPV). Yet, according to some scholars Baseman and Koutsky (2005; Moscicki et al., 2006; Hoque et al., 2014) HPV is the most common sexually transmitted infection which plays the most significant role in the development of cervical cancer and also plays a huge role in the genesis of vaginal and vulvar cancers as well as penile cancer in males. Chikandiwa et al. (2013) found that women in South Africa have a high prevalence of HPV and the highest rates of infections are found in sexually active adults who are younger than 25 years of

age (Alan et al., 2001). Yet studies have found that there is low knowledge and awareness on HPV and reproductive cancers such as cervical and prostate (Egbera, 2012; Hoque and Hoque, 2009; Hoque et al., 2014; Owoye and Ibrahim, 2013; Ombech et al., 2012; Ndlovu, 2011).

According to the Mayo Clinic, the risk factors for HPV infection include; number of sexual partners, in the sense that the more sexual partners one has the more likely they are to contract HPV infection (Mayo Clinic, 2014). Secondly, age; adolescents and young adults are more vulnerable to HPV infection and people with weakened immune systems are at greater risk of HPV infections such as those living with HIV/AIDS (Mayo Clinic, 2014). Though studies have been conducted on awareness of cervical and prostate cancers, very few studies if any have been done among the youth to assess their awareness of these reproductive cancers and their relationship with HPV. The main aim of the study is to shed insights into whether young people are aware that other than contracting HIV/AIDS, their risky sexual behaviours have other negative even fatal impacts on their reproductive lives.

#### **1.4 Significance of the Study**

According to the American Cancer Society (2016; Adewole et al., 2013) cancer is emerging as a major public health problem in SSA because of aging and growth as well as the prevalence of key risk factors, including those associated with social and economic transition. In the recent literature on the knowledge and awareness of cancers especially the reproductive ones, it has been found that, firstly, there is low awareness of reproductive cancers in young people (Abduwahab et al., 2010; Adanu, 2002). Secondly young people are at risk of engaging in risky sexual activities and behaviours while a huge body of scientific research has established that human papillomavirus (HPV), which is a sexually transmitted virus is overwhelmingly responsible for most of the reproductive cancers namely cervical, vaginal, vulvar and penile cancers.

The study seeks to find if young people are aware of the links between risky sexual behaviours and the development of reproductive cancers. Among females, cervical cancer, which is the second most common malignancy and the most common genital tract cancer (Ombech et al., 2012; Adewole et al., 2013) is mainly caused by HPV (Ayiende et al., 2004). Furthermore, Ayinde et al. (2004) states that certain sexual behaviors are known to predispose women to cancer of the cervix. According to scholars Cherie and Berhane (2012; Mavhandu-Mudzusi and Asgedom, 2015), young adults are at high risk of acquiring HIV due to their risky sexual practices. These risky

sexual behaviours include early sexual debut and not using protection while having concurrent multiple sexual partners (Mavhandu-Mudzusi and Asgedom, 2015; Mturi and Gaearwe, 2014). In a study at Mafikeng campus, Gaerwe (2014) found that a high number of both males and females had their first sexual intercourse before the age of 17 and sometimes it can go as low as 12 years of age. Furthermore, Gearwe (2014) found that the students had multiple concurrent sexual relationships and were not consistent in using protection. These are the risky sexual behaviours that increase the risk of HPV.

Despite the reported variability, 90%–93% of anal cancers, 36%–46.9% of penile cancers, 40%–64% of vaginal cancers, and 40%–51% of vulvar cancers are potentially attributable to HPV infection (Chaturvedi 2010; Giuliano et al., 2011; Miralles-Guri et al., 2009). Most importantly, acquisition of HPV is very common, particularly among sexually active young adults, and the incidence of infection with oncogenic HPV types appears to be higher than the incidence of infection with non-oncogenic types (Baseman and Koutskyl, 2005).

According to Tarpert et al., (2001) many adults and young adults who are diagnosed with AIDS contracted HIV at an earlier age. Most importantly, rates of other STIs are also high among adolescents, and studies indicate that females are more vulnerable to the consequences of risky sexual activities than males (Mturi and Gaearwe, 2014). Though young females are more susceptible than males, when one has HPV both are at risk because HPV is also an underlying cause of penile cancer in males and vulva and vaginal cancer in women and anal cancer as well as throat cancer (AORTIC, 2013). Apparently, one can get HPV by having vaginal, anal or oral sex with someone who has the virus.

Young people constitute a significant portion of the population both at global and national level. According to United Nations (2015), the median age of the global population in 2015 was 29.6 years. The UN further found that populations in many regions comprises mostly of the youth. In Africa, children under 15 account for 41% of the population and young persons of ages 15 to 24 account for a further 19 percent. In South Africa, for 2015, Statistics South Africa estimated that the population was 54.96 million (Statistics South Africa, 2015). About 30.2% of the South African population was aged younger than 15 years and a further 19% is aged between 15 and 24 (Statistics South Africa, 2015). This shows that Africa is really dominated by a younger population both on continental and national level.

The study uses the university students as the study sample because they often become agents of social change in their societies and can serve as an indicator on how much people know about their reproductive health, in this case reproductive cancers. Critical consciousness when fostered in university setting can set the foundations for change in societies and in this case, if the students are made aware of the issues surrounding reproductive cancers, they would be able to share it with the outside wider world for the benefit of the society.

## **1.5 Aim of the Study**

The overall aim of this study is to shed insights into the awareness of reproductive cancers among young people.

The objectives of the study are to:

- To investigate the awareness of reproductive cancers and screening related services
- To investigate perceived benefits to routine screening for early diagnosis of reproductive cancers
- To investigate the perceived severity of reproductive cancers
- To investigate the perceived barriers to routine screening for early diagnosis of reproductive cancers

The study seeks to answer these key questions:

- What kind of reproductive cancers have young people heard of?
- What do young people know about HPV?
- What kind of reproductive cancer screening services are young people are aware of?
- What are the perceived benefits and barriers to undergoing routine screening?
- What is the perceived severity of reproductive cancers?

## **1.6 Theoretical framework**

This study will use the Health Belief Model (HBM) as its theoretical framework. The HBM is a psychological model that attempts to explain and predict health behaviours (Rosenstock, 1974) by focusing on the role of perception in determining the attitudes and beliefs of individuals (Munro et al., 2007). It was first developed in the 1950s by social psychologists Hochbaum, Rosenstock and Kegels in the US Public Health Service to explain the widespread failure by people to participate in programmes aimed at preventing and detecting diseases (Rosenstock, 1974).

The HBM is a value-expectancy theory (Janz et al., 2002) which suggests that behaviour is a function of the expectancies one has and the value of the goal toward which one is working and people orient themselves to the world according to their expectations (beliefs) and evaluations. Such an approach predicts that, when more than one behaviour is possible, the behaviour chosen will be the one with the largest combination of expected success and value (Palmgreen, 1984). Expectancy-value theories also hold that people are goal-oriented beings and the behaviours they perform in response to their beliefs and values are undertaken to achieve some end.

It is believed that people will take action to prevent, to screen for, or to control ill-health conditions if they regard themselves as susceptible to the condition, if they believe it would have potentially serious consequences, if they believe that a course of action available to them would be beneficial in reducing either their susceptibility to or the severity of the condition and if they believe that the anticipated barriers to taking the action is outweighed by its benefits (Janz et al., 2002). According to Gorin and Anorl (1998) the HBM's intention was to determine why some persons who are illness-free take actions to avoid illness, whereas others fail to take preventive actions. Another aim of the HBM was to predict the conditions under which people would engage in simple preventive behaviours (Gorin and Anorl, 1998).

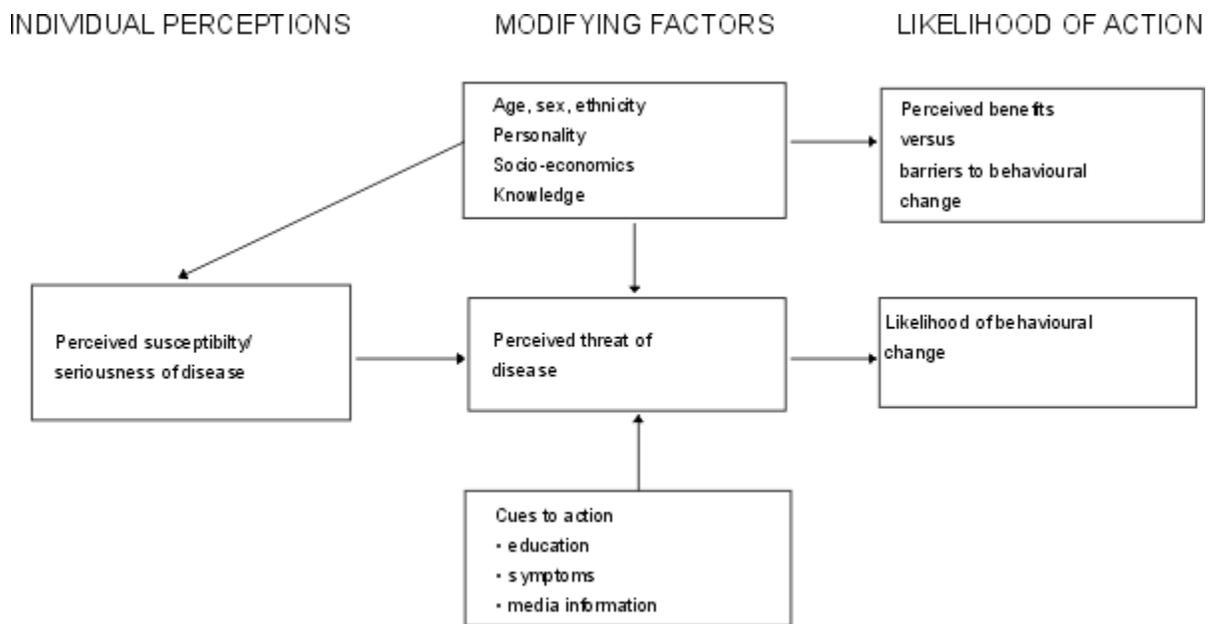
The HBM suggests that before an individual takes action, he/she must decide that the behaviour creates a serious health problem that an individual is personally susceptible to its health harm and that moderating or stopping the behaviour will be beneficial (Gorin and Anorl, 1998). The perceived barriers to undertaking a behaviour are considered most salient to health promotive efforts (Janz and Becker, 1984). Perceived susceptibility and perceived severity of harm are based to a great extent on the person's knowledge of a disease and its potential outcome (Gorin and Anorl, 1998). The model addresses the "cues to action" that motivate the decision-making process

and self-efficacy about executing the target behaviour. Although the combination of perceived susceptibility to and severity of harm provides the force for action and the perception of high benefits and low barriers provides a course of action, it is the “cues to action” that start the process of change (Rosenstock, 1974). According to Becker (1974; Rosenstock, 1974) the HBM is based on the understanding that a person will take a health-related action, in case of this study, cancer screening, if that person:

- Feels that a negative health condition can be avoided. If a person feels that cancer can be avoided or prevented, they are likely to take health-related action.
- Has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition. If a person feels that if they take a cancer screening procedure, they will avoid or minimize the chances of getting cancer, they are highly likely to take action.
- Believes that he/she can successfully take a recommended health action. If a person can go for screening and successfully do the screening and comfortably without any problems or complications, they would take a health-related action.

An important concept of the model is self-efficacy which is defined as “the conviction that one can successfully execute the behaviour required to produce the outcome” (Bandura, 1977) or simply one’s confidence in the ability to successfully perform an action (Glanz et al., 1997; Janz et al., 2002). Self-efficacy is very vital since one has to have confidence in oneself in order to look for help in this case that would be going for reproductive cancer screening.

Figure 1.1 **Conceptual Model**



Source: Glanz et al., (2002: 52)

On an individual level, perceived susceptibility and perceived seriousness of the disease are very much likely to drive a person to take health-related action. Modifying factors that would help in driving individuals to take a health-related action include age, sex, ethnicity, personality, socio-economic status and knowledge, these determine a person's level of perceived threat. This study aimed at investigating the extent which these modifying factors influence an individual's decision to take health-related action. The cues to action that motivate the decision-making process are education, awareness of symptoms and media information. The likelihood of action is more influenced by the perceived benefits versus barriers to behavioural change and the perceived threat of disease will likely lead to behavioural change.

This model has been used in related studies especially in breast cancer studies in the United States in particular (Champion and Menon, 1997; Friedman et al., 1998; Phillips, 1998; Champion et al., 2000). Applying the model to the study, the study would seek to investigate individual perceptions towards reproductive cancers and the modifying factors that lead individuals to health-related action. Among the modification factors the study would seek to find which factors have more weight in influencing an individual to take a health-related action.

## **1.8 Organization of the dissertation**

This dissertation is divided into five chapters. The first chapter gives an introduction and provides a brief background to the study as well as outlines the theoretical framework. The second chapter reviews the relevant literature on awareness of reproductive cancers among young people. The third chapter explains the methodology employed by the study followed by the fourth chapter

which reports on the findings of the study. The last chapter provides a discussion of the key findings as well as conclusions and recommendations.

# **CHAPTER 2:**

## **LITERATURE REVIEW**

### **2.1 Introduction**

This chapter reviews previous studies on reproductive cancers and more broadly the awareness of the different types of cancers and factors influencing screening of reproductive cancers. Research in this area is inadequate in South Africa as few of the existing studies mainly focus on cervical and prostate cancer while neglecting other kinds of reproductive cancers. A huge number of studies have focused on establishing statistical knowledge without seeking in-depth knowledge and sources of information (Kristenson et al., 2004). It is very paramount to identify the contribution made by previous studies on awareness of reproductive cancers among young people.

### **2.2 Definition of Cancer**

The word cancer is said to have originated when the ‘father of medicine’, Hippocrates (460-370) used the term carcinos and carcinoma to describe tumours both ulcerous and non-ulcerous (Herbst, 2015). Another Roman physician, Galen (130-200 AD) used the word oncos (swelling in Greek) which is now used to describe oncologists (Herbst, 2015).

According to Herbst (2015) cancer, known medically as a malignant neoplasm is a broad group of diseases involving unregulated cell growth. In other words, CANSA (2015) defined cancer as an abnormal, uncontrolled growth and multiplication of cells and is characterized by the uncontrolled growth of abnormal cells occurring in multiple phases (Herbst, 2015). Furthermore, Herbst (2015) went to state that cancer is a term for a group of over 100 different diseases (solid tumours and hematological cancers), which includes malignant tumours of different sites and most of them are named after the organ or type of cell in which they originate. Most importantly cancer can develop in almost any organ or tissue (Herbst, 2015).

The American Cancer Society (2016) wrote that cancer starts when cells in the body begin to grow out of control. In cancer, cells divide and grow uncontrollably, forming malignant tumours, and invading nearby parts of the body (Herbst, 2014). The cancer may also spread to more distant parts of the body through the lymphatic system or bloodstream. Herbst (2014) wrote that not all tumours are cancerous as benign tumours do not invade neighbouring tissues and do not spread throughout

the body. It has reported that there are more than two hundred (200) different kinds of cancers that affect humans (Herbst, 2014; 2015).

Of more than 200 different kinds of cancers known, this study will focus on the cancers that only affect the reproductive organs mainly known as reproductive cancers. Since cancers are named for the part of the body where they start (Office of Population Affairs, 2015), this section will review the literature on cancers that originate from reproductive organs. In females, reproductive cancers are also known as gynecological cancers (Foundation for Women's Cancer, 2012; Office of Population Affairs, 2015) and the female gynecological cancers are cervical, uterine, ovarian, vaginal and vulvar carcinomas. Male reproductive cancers are prostate, testicular and penile carcinomas (Office of Population Affairs, 2015).

### **2.3 Global Overview of Cancer**

Though in Africa, there has been more deaths from infectious diseases than NCDs, the prevalence of NCDs is rising rapidly (Adewole et al., 2013). Adewole et al. (2013) also reported that cancer is predicted to be an increasingly important cause of morbidity and mortality, both globally and in Africa, with 12.7 million new cases diagnosed in 2008. Approximately 47% of cancer cases and 55% of cancer deaths occurred in the developing regions of the world in which countries are at a low or medium level of human development index (HDI) (United Nations, 2008). One thing we should be really worried about is the fact that if recent trends in major cancers are seen globally in the future, the burden of cancer will increase to 21.4 million in 2030 (WHO, 2009; Adewole et al., 2013). The International Agency for Research on Cancer (IARC) (2012) projected this figure to be as high as 22 million annually and there will be over 13.2 million deaths from cancer.

The Global Burden of Cancer Study (Globocan) project reported that there were 14.1 million new cancer cases and 8.2 million cancer deaths and 32.6 million people living with cancer worldwide (IARC, 2012). Almost 57% (8 million) of the new cancer cases, 65% (5.3 million) of the cancer deaths and 48% (15.6 million) of the five-year prevalent cancer cases occurred in the less developed regions (IARC, 2012). One vital aspect to note is that there has been an increase from 2008 at 12.7 million new cancer cases to 14.1 million new cases in 2012. The GLOBOCAN 2008 demonstrates that a higher proportion of the cancer burden occurs in less developed regions of the world, both in terms of cancer incidence (56% of new cancer cases in 2008 occur within

developing regions) and cancer mortality (63% of cancer deaths) (IARC, 2010). Furthermore, both the rates of incidences and mortality have also increased to 57% and 65% respectively in developing regions for the year 2012 (IARC, 2012).

Cancer is neither rare anywhere in the world, nor confined to high-resource countries. Striking differences in the patterns of cancer from region to region are observed. According to IARC (2012), worldwide, 2 million (16.1%) of the total 12.7 million new cancers in 2008 are attributable to infections. Furthermore, IARC (2012 citing de Martel et al., 2012) went further to say that this fraction is higher in less developed countries (22.9%) than in more developed countries (7.4%) and varies 10-fold by region from 3.3% in Australia and New Zealand to 32.7% in SSA.

## **2.4 Cancer in Africa**

With over 1 billion people, Africa is the world's second-largest and second-most populous continent. In addition to having a significant proportion of the world's human population, Africa carries a disproportionate burden of communicable and non-communicable diseases (AORTIC, 2013). While still struggling with the clinical, humanistic, and economic impact of communicable diseases, non-communicable diseases such as cancer are creating devastating effects that will need to be stopped before they overwhelm the continent. Hence, cancer is seen as an emerging public health problem in Africa (Boyle and Levin, 2008). According to Jemal et al. (2012) it may also be in part because of a general lack of awareness among policy makers and the general public.

For many African countries, the challenges facing the control of cancer are significant, but not impossible to address. According to AORTIC (2013) the process begins by recognizing the extent of the problem. This has not been done well in most African countries due to poor quality data where only 8% of deaths in Sub-Saharan Africa (SSA) are medically certified (AORTIC, 2013). Further, due to very limited pathology services in many countries in Africa the diagnosis of cancer is not made prior to death, nor are the causes of death notifiable and centrally maintained.

Despite this growing burden, cancer continues to receive low public health priority in Africa, largely because of limited resources and other pressing health problems which include HIV/AIDS, TB and malaria (American Cancer Society, 2011). According to Berer (2008) because of this neglect there is high morbidity and mortality and very few specialist services in Africa to respond

to the cases of the disease. Berer (2008) went further to say that there is almost total neglect of research on reproductive cancers and the few that exist only focus on cervical cancer.

According to American Cancer Society (2011) cancer should be recognized as a critical health problem in Africa. About 715 000 new cancer cases and 542 000 cancer deaths occurred in Africa in 2008 (Ferlay et al., 2010). These are just the reported cases, there are many cases that went unreported. These numbers are projected to nearly double to 1.28 million new cancer cases and 970 000 cancer deaths by 2030 (Ferlay et al., 2010). This increase is simply due to the aging, growth of the population and some risky behaviours among the general population (Ferlay et al., 2010; Jemal et al., 2011). According to WHO (2008) the potential is even higher because of the adoption of behaviours and lifestyles associated with economic development such as smoking, physical inactivity, change in diet and lifestyle. It is important to note that WHO did not mention the role of risky sexual behaviours as another contributing factor to the rise in cancer incidences since it is the main underlying cause of cervical, vulvar, vaginal, throat, anal and penile cancers.

The occurrence of cancer in Africa varies remarkably from that in economically developed regions such as North America by major type of cancer, stage at diagnosis, survival, incidence and mortality rates (American Cancer Society, 2011). This is largely due to differences in exposures to major risk factors, detection practises (availability of diagnostic and screening services), awareness of early signs and symptoms and availability of treatment. Further to that, the American Cancer Society (2011) found that cancers related to infectious agents such as cervix, Kaposi sarcoma and urinary bladder are among the dominant types of diseases in Africa. In 2008 cervical cancer accounted for 21% of the total newly diagnosed cancers in females (American Cancer Society, 2011). Due to the adoption of unhealthy behaviours and lifestyles associated with economic development (Kanavos et al., 2006; Jemal et al., 2010), prostate cancer in men has now become the most common diagnosed cancer in some parts of Africa (American Cancer Society, 2011).

Knowledge about the cancer burden enables the development, implementation, monitoring and evaluation of cancer strategies that prevent, cure and care. This knowledge is lacking in many low- and middle-income countries, making cancer control efforts less effective. According to the American Cancer Society (2011), a majority of cancer in Africa are diagnosed at an advanced

stage of the disease because of lack of screening and early detection services as well as limited awareness of early signs and symptoms of cancer among the public and health care providers.

Berer (2008) wrote that in cases where cancers are caught early and good quality, timely treatment with combination of drugs, surgery and radiotherapy is available has increased survival rates. In this case what matter the most is awareness among the people so that they can be made conscious about the disease and encouraged to screen for early detection. Developing countries have been seen to handle reproductive cancers poorly (Berer, 2008). It is not that they handle them poorly, in most cases it is because they do not have the necessary infrastructure and resources to respond to the disease. In SSA which lacks diagnostic equipment and national prevention programmes, only 5% of women are regularly screened for cervical cancer (WHO, 2008). Berer (2008; Anorlu, 2008) strongly opposed the system of waiting for women to turn up on their own for screening, or screen them only if they come for other health care, which is what most developing countries are currently doing. It does not work; critical consciousness is needed to be instilled on the ground.

## **2.5 Male Reproductive Cancers**

### **2.5.1 Prostate Cancer**

Prostate cancer begins in the prostate, which is a gland that surrounds the urethra (Office of Population Affairs, 2015). Prostate cancer begins when cells in the prostate gland start to grow uncontrollably (American Cancer Society, 2016). The risk factors of prostate cancer include age (prostate cancer rarely affect men younger than 40), race or ethnicity (prostate cancer occurs more often in African men than any other races), family history, gene changes, obesity, chemical exposures, sexually transmitted infections and diet (American Cancer Society, 2016).

#### **2.5.1.1 Overview of Prostate Cancer**

Globally, prostate cancer is the second most common cancer in men and the sixth most common cause of death in men (Kumar et al., 2005; Jemal et al., 2011; Adewole et al., 2013; AORTIC, 2013). With an estimated age-adjusted incidence rate of 17.5/100 000 and mortality rate of 12.5/100 000, prostate cancer ranks first in cancer incidences and deaths among men in Africa (AORTIC, 2013). The incidences of prostate cancer in African vary across regions: 53.9/100,000 in Southern Africa; 22.2/100,000 in Western Africa; 16.4/100,000 in Middle Africa; 14.5/100,000 in Eastern Africa; and 8.1/100,000 in Northern Africa (AORTIC, 2013). In turn, the mortality of

prostate cancer in men across the African regions is: 19.3/100,000 in Southern Africa; 18.3/100,000 in Western Africa; 13.4/100,000 in Middle Africa; 11.7/100,000 in Eastern Africa; and 6.2/100,000 in Northern Africa (AORTIC, 2013). With these statistical results, it shows that Southern Africa is heavily affected and impacted by prostate cancer more than other African regions. What leads to that would need to be investigated.

Cancer of the prostate is increasingly becoming a worldwide public male health concern (Abdulwahab et al., 2010) and according to Greenlee et al. (2001; Jemal et al., 2007) there is a progressive increase in the reported incidence of prostate cancer. Ajape and colleagues (2010) asserts that prostate cancer is the most commonly diagnosed cancer in men and ranked second as the cause of cancer-related deaths in men.

According to Jemal et al. (2012) prostate cancer is the most commonly diagnosed cancer among men in Southern Africa, Western Africa including South Africa, Nigeria and Cameroon. However, the incidence rate in Southern Africa is twice as high as the second highest rate in Western Africa (Jemal et al., 2012). Jemal et al. (2012) pointed that high prostate cancer rates in Southern Africa may reflect increased diagnosis rather than disease occurrence. It is important to note that the incidence rates reported for African regions may be underestimated due to limited prostate cancer screening and the sparse use of prostate-specific antigen (PSA) testing in low resource countries (AORTIC, 2013). Despite that, prostate cancer remains one of the highest cancers in incidence and mortality among African men. Thus, addressing prostate cancer in Africa is very significant to men's health given the burden of the disease in Africa.

Prostate cancer is the leading cancer diagnosed among men in the United States (Woods et al., 2004). Black men in America continue to have the highest incidence rate of prostate cancer in the world with 180.6 incidences per 100 000 populations (Bethesda, 2004). According to the National Centre for Health Statistics (2005) the death rate among black men from prostate cancer was higher than of any other group in the world, particularly in the United States. Woods et al., (2004) shared the same sentiment when they wrote that worldwide incidence of prostate cancer is higher among American black men than any other male group. Furthermore, after being the most common cancer in men, prostate cancer was found to be the second leading cause of cancer death in American men (American Cancer Society, 2016). Egbera (2015) also reported that in Nigeria, prostate cancer is

the most common male cancer. In South Africa, research indicates that black men are more at risk of developing prostate cancer when compared to men from other race groups (Mfecane, 2010).

### **2.5.1.2 Awareness of Prostate cancer**

Prostate cancer can be a serious disease but most men diagnosed with prostate cancer do not die from it (American Cancer Society, 2016). This could be due to them having regular screening, and early detection. In the United States, according to Woods et al. (2004) lack of participation in screening for prostate cancer by black men is influenced by several cultural factors, including knowledge, health beliefs, barriers, and relationships with primary healthcare providers. Furthermore, Woods et al. (2004) wrote that the causes of higher rates of prostate cancer among black men are largely unknown. However, higher mortality is associated with late detection. This shows that regular screening is very important for early detection and early onset of treatment which will help in decreasing the mortality rate.

Egbera (2015) in a study among male university students in Benin City in Nigeria, found that male students had relatively low knowledge about prostate cancer. The students had never received information from their health care provider about prostate cancer and very few were able to identify the possible symptoms of prostate cancer. Of worrying concern, there was low level of knowledge about prostate cancer screening and all the male participants did not know what is abnormal prostate specific antigen (PSA) (Egbera, 2015). Egbera's findings mirror the findings of Abdulwahab et al. (2010) who among 156 respondents found that only nine of them had heard about PSA and none of the respondents in their study had ever 'contemplated' screening for prostate cancer. Actually, in Egbera's study the majority of the participants gained information about prostate cancer from the study.

Woods et al. (2004) also found in their study that the respondents reported that completing the questionnaire had increased their personal knowledge about prostate cancer. Furthermore, Woods et al. (2004) found that nearly half of the respondents were not aware of the PSA and 27% of the 277 respondents had never heard of the digital rectal exam (DRE). Almost unanimously, respondents stated that prostate cancer was a topic that was not to be discussed because it is one of those things that black men do not talk about and black people think it is a taboo to talk about it because they do not want to hear anything bad (Woods et al., 2004). The findings of Woods et

al. (2004) are similar to those of Weinrich et al. (1998) who cited knowledge as a predisposing factor to prostate cancer screening.

Respondents were unsure about signs and symptoms of prostate problems. Although the participants fared well with respect to knowledge, they indicated that they were not sure questions were answered correctly and stated they guessed at most of the answers. Many men attributed the uncertainty about prostate cancer to not having access to professional information that is culturally appropriate and understandable, and they also noted that healthcare providers do not take the time to meaningfully talk with them (Woods et al., 2002). Collectively, these responses indicate that credible information is an important determinant for black men when making decisions about cancer screening in America.

### **2.5.2 Testicular Cancer**

Testicular cancer is a disease in which one or both testicles become malignant and this form of cancer is relatively rare when compared to other types of cancer (Herbst, 2012). Testicular cancer accounts for approximately one percent of all cancers in men, however, it is the most common male cancer in men between the ages of 15 and 39 (Herbst, 2012; Andrology Australia, 2010; Peltzer and Pengpid, 2015) and according to CANSA (2016) there were 147 cases of testicular cancer in South Africa in 2010.

#### **2.5.2.1 Awareness of Testicular Cancer**

In a study by Peltzer and Pengpid (2015) among university students in developing countries, they found that awareness of testicular cancer was very low. In Iran, only 5% of the university students had knowledge of testicular self-examination (TSE) and only 10% were practising TSE (Ramim et al., 2014). In Turkey, 88%-93% had no knowledge about TSE (Ozbas et al., 2011; Altinel and Avci, 2013) and only 12%-17.7% performed the practise of TSE before the study (Ozbas et al., 2011; Ugurlu et al., 2011). In Uganda, Muliira et al. (2012) found that 14% of the university students performed TSE regularly. In their study, Pultzer and Pengpid (2015) found that of the previous 12 months to their study TSE was highest in South Africa with 17.6% having done TSE regularly. Most importantly in South Africa 17.6% of the male students had knowledge about testicular cancer and many male students reported that they know how to perform TSE (Pultzer and Pengpid, 2015).

Peltzer and Pengpid (2015) wrote that regular TSE have not been studied enough to show if they lower the risk of dying from this cancer. It is important to try to do a TSE every month so one can become familiar with the normal size and shape of their testicles, making it easier to tell if something feels different or abnormal in the future. However, studies have shown low awareness and practice of TSE (Shallwani et al., 2010), in particular among young populations such as university students. In Malaysia 65% of male students have never performed TSE (Norhaini et al., 2014) and among Hispanic college men in the USA, 64% had never performed TSE (Cooper et al., 2014). Several studies have highlighted the importance of increased knowledge of testicular cancer, positive attitude and self-efficacy in relation to better TSE uptake (Muliira et al., 2012; Cooper et al., 2014; Ramim et al., 2014) and lack of awareness of TSE and poor attitudes towards TSE were identified as barriers to TSE.

In their sample of 2061 male undergraduate university students Pultzer and Pengpid (2015) found that only 17% indicated that they know how to perform TSE. In Bangladesh and Singapore 20% had knowledge of performing TSE while in Madagascar only 12.2% had TSE knowledge (Pultzer and Pengpid, 2015). Testicular cancer is the most common male cancer in men between the ages of 15 and 39 and further to that, 9 out of 10 cases of testicular cancers occur in ages between 20 and 54 (Cancer Association of Southern Africa, 2012; Andrology Australia, 2010). With evidence that testicular cancer is almost always curable if it is detected and treated early (Mark Kantrowitz, 2016; KidsHealth, 2016), this study therefore emphasize that it is very imperative that males, especially young males know about this kind of disease since it will affect them greatly at older ages. The advantage of knowing about the disease at earlier ages is that young men will be able to perform the TSE procedures regularly, which will greatly improve early detection and increase survival rates from the disease.

### **2.5.3 Penile Cancer**

Penile cancer is cancer that develops within the skin and/or soft tissues of the penis (CANSA, 2013). According to American Cancer Society (2016; Pompeo et al., 2008), penile cancer is rare in North America and Europe but very common in some parts of Asia, Africa and South America. Salvioni et al. (2009) found that though the incidence of penile cancer is 1 per 100 000 in western countries, the incidence is very high in developing countries where it reaches 18% to 20% of all male tumours. In some parts of the world such as South America, South East Asia and parts of

Africa, the incidence of penile cancer is much higher and can represent 1-2% of malignant diseases in men (Parkin and Bray, 2006). According to Parkin and Bray (2006) the annual age-adjusted incidence of penile cancer is 0.7-3.0 per 100 000 men in India, 8.3 per 100 000 men in Brazil and even higher in Uganda, where it is the most commonly diagnosed cancer in men.

The burden of penile cancer has been estimated to be 22 000 cases worldwide with incidence rates strongly correlating with those of cervical cancer (de Martel et al., 2012). Though rare, penile cancer incidences are higher in less developed countries than in more developed ones, accounting for up to 10% of male cancers in some parts. The incidence of penile cancer in South Africa in 2009 was 111 constituting 0.41% of all cancer (CANSAs, 2015). The American Cancer Society estimates that in the US in 2016 about 2 030 new cases of penile cases will be diagnosed and about 340 deaths from the disease.

According to da Silva and da Cruz (2014), the incidence increases with age, although the disease has also been reported in young men. Early diagnosis may not only be lifesaving but also essential to functionally and aesthetically acceptable treatment. Many patients still seek medical attention at a late stage, when a conservative therapeutic approach is no longer feasible. Awareness of penile cancer and its prevention are at the heart of the recent controversies about circumcision and about the necessity to treat HPV infections (Micali et al., 2006).

### **2.5.3.1 Risk factors of penile cancer**

According to AORTIC (2013) penile cancer is highly associated with HPV. Palefsky (2010) wrote that, penile cancer is common in regions with high prevalence of HPV. Penile cancer can develop anywhere on the penis but most commonly develops under the foreskin in men who have not been circumcised (Cancer Research UK; Heinlen and Culkin, 2014). The risk of penile cancer is about 3 times higher for men who are uncircumcised or who are circumcised later in life (Larke et al., 2011; CANSAs, 2015).

Phimosis or an unretractable foreskin has also been associated with up to a 10-fold increase in the risk of penile cancer (Palefsky, 2010; CANSAs, 2013). Possible mechanism by which circumcision may decrease the incidence of penile cancer include avoiding the development of phimosis and preventing the retention smegma (CANSAs, 2013). Men who were circumcised as children have a lower chance of getting penile cancer than those who were not but the same protective effect is not

seen if the foreskin is removed as an adult (Tobian et al., 2009; American Cancer Society, 2015). Men who are circumcised cannot develop a condition called phimosis and do not accumulate smegma whilst men who are not circumcised will develop phimosis and accumulate smegma which will increase their risk of penile cancer. de Martel et al. (2012) wrote that HPV-DNA is detectable in approximately 50% of all penile cancers.

Penile cancer is mainly related to poor hygiene with retention of smegma, sexual history and smoking (CANSA, 2013). Having HPV also increase a man's risk of developing penile cancer. According to Caltellsagué et al. (2002; Chaturvedi, 2010; CANSA, 2015) 36-46.9% of penile cancers are potentially attributable to HPV infection. Similar to anal, gynaecological and other genital cancers, HPV has a strong association with penile cancer (CANSA, 2013) and the incidence of penile cancer is approximately eight-fold higher in HIV-infected men (CANSA, 2013).

Early age at first sexual intercourse, high lifetime number of female sexual partners, smoking, and lack of condom use are identified risk factors for penile cancer (Reis et al., 2010). Some studies have also identified chronic smoking as an associated risk factor for the development of penile cancer (Pow-Sang et al., 2010). Tseng et al. (2001) in a study in Los Angeles (USA) found that the incidence of penile cancer among men who had ever smoked cigarettes was 2.4 times that of men who had never smoked. Harish and Ravi (1995) found a significant association between smoking or chewing tobacco and the development of penile carcinoma. Maden et al. (1993) in their study in Washington state (USA) and province of British Columbia (Canada) found that the risk of penile cancer among men who smoked at diagnosis was 2.8 times that of men who had never smoked, and lifetime smoking of >45 pack-years of cigarettes elevated the risk to 3.2 times that of men who had never smoked.

It is very vital to note that effort was done to find literature that has been done on the awareness of penile cancer and its risk factors in South Africa but to no avail. This just shows that studies focusing on these other kinds of reproductive cancers is lacking which thus leads to the increase in the incidence rate.

## **2.6 Female reproductive cancers**

According to the literature, there are five females' reproductive cancer or gynaecological cancers, namely cervical cancer, uterus, ovarian cancer, vaginal cancer and vulvar cancer.

### **2.6.1 Epidemiology of Cervical Cancer.**

Many studies have been done in the area of cervical cancer epidemiology. Cervical cancer is a type of cancer that forms in tissues of the cervix (AORTIC, 2013). Carcinoma of the cervix is a major public health problem and is referred to as one of the most common cancers in women both in South Africa and worldwide (Robin et al., 2007; Galadanci et al., 2003). This statement was echoed by a number of studies (Ayinde et al., 2003; Conje, 2004; Uzoigwe and Seleye, 2004; Wong et al., 2009; Ombech et al., 2012; Adewole et al., 2013) when they wrote that cervical cancer is a public health challenge as it is the second most common malignancy in women worldwide and the most common female genital tract cancer worldwide and Africa at the moment shared the largest burden. In a recent research by Adejumo (2012) it was found that women older than 50 years of age were more likely to present with cervical cancer above stage 3.

It is the most common cancer in women in the developing countries where over three quarters of the estimated half a million newly diagnosed cases occur annually (Babarinsa et al., 1998; Schoell et al., 1999), with about 85% percent presenting with advanced disease when curative intervention is not feasible in developing countries that are mostly in Africa (AORTIC, 2013). In light of that Denny (2006) reported that in South Africa and Uganda about 80 percent of women diagnosed or referred with cervical cancer would have the disease in its advanced stage. Ogunbode and Ayinde (2005) stated that cervical cancer, though being one of the most preventable, remains a leading cause of death among females in the developing world.

According to Waktola et al. (2005) cervical cancer generally takes many years to develop. The majority of women are likely to develop only mild dysplasia and invasive cervical cancer has prolonged, asymptomatic pre-invasive stages which can be easily detected and treated accordingly (Adejumo, 2012). According to Waktola et al. (2005), indications of pre-invasive stages are readily identified through cancer screening because it takes about 10-15 years for pre-invasive stages to progress to invasive cancer.

Apart from the burden in terms of number borne by the developing regions, other peculiar negative trends observed are lower mean age of diagnosis, late presentation and resultant very low five-year survival data (Omigbodun and Akanmu, 1991; Edozien and Adewole, 1993). One important aspect to note is that in developing countries, cervical cancer tends to present about 15 years earlier than it does in developed countries (Ayinde et al., 2004). In South Africa, current estimates indicate that every year 7735 women are diagnosed with cervical cancer and 4248 die from the disease (HPV Information Centre, 2015). Cervical cancer in South Africa ranks as the second most frequent cancer among women and the first most frequent cancer among women between 15 and 44 years of age.

Evidence from epidemiological studies coupled with recent advanced molecular biology findings have established a strong causal association between infection by certain serotypes of HPV and cervical cancer (Ayinde et al., 2004). The virus exerts greater effects during the period of rapid metaplasia in the cervical epithelium, mostly in the period of adolescence (Bosch et al., 1997; Ogunbode and Ayinde, 2005). Therefore, certain sexual behaviours are known to make cervix prone to cancer (Ayinde et al., 2004). These would include early sexual debut (earlier than the age of 20), sexual promiscuity either in the female or male (Ayinde et al., 2004), high parity and low socio-economic status (Emembolu and Ekwempu, 1998; Ekanem and Abidoeye, 1987). Denny (2005) later found that cervical cancer rates in Africa especially in black females, are among the highest in the world, this could be due their low socio-economic status and high parity.

#### **2.6.1.1 Burden of cervical cancer**

According to a study conducted in 187 countries between 1980 and 2010, undertaking the annual age-specific assessments, global cervical cancer incidence increased from 378 000 (256 000-489 000) cases per year in 1980 to 454 000 (318 000-620 000) cases per year in 2010 a 0.6% annual rate of increase (Adejumo, 2012). Though cervical cancer death rates have been decreasing, the disease still kills a large number of people, killing 200 000 (139 000-276 000) women in 2010, of whom 46 000 (33 000-64 000) were aged 15 to 49 years in developing countries (Foreman et al., 2011).

IARC (2012) found that 2 million of 12.7 million new cancer cases in 2008 were attributable to infections. It however stated that many infection-related cancers are preventable particularly those associated with hepatitis B and C viruses and HPV. According to de Martel et al. (2012) the

absolute number of cancer cases due to infection increased by half a million since 1990. What is scary here is that according to IARC (2012) cervical cancer accounted for about half of the infection-related burden of cancer in women. Since the main causal factor for cervical cancer is infection by the HPV, which is mostly transmitted sexually (AORTIC, 2013) it means the increasingly risky sexual encounters among the young people will greatly put their sexual and reproductive lives in danger. Women are mostly prone to HPV infection between 10 to 25 years of age (AORTIC, 2013), which is also the very same age category that are very vulnerable to HIV infection. Africa has the highest rate of HPV infection burden amongst women by location (AORTIC, 2013).

Cervical cancer is preventable provided its pre-invasive precursors are detected early and promptly treated, as is widely done in developed countries (Ogunbode and Ayinde, 2005). As many as 80% of diagnosed cases are detected in the advanced stages in which treatment, even when available, has markedly reduced likelihood of success (Luthra et al., 1988). According to Ayinde et al. (2004) in most environments, many cases remain undiagnosed. Although screening has become a routine in developed countries such as Britain and United States leading to extensive reductions in mortality, opportunistic screening or no screening at all is still the norm in developing countries like Nigeria such that most cases present late with attendant high mortality (Emembolu and Ekwempu, 1988; Udigwe, 2006).

Aboyaji et al. (2004) found that in Nigeria as in many other developing countries no organized screening services are available. (Nnatu and Durosinmi-Etti, 1985; Omigbodun and Akanmu, 1991) found that the absence of organized screening programmes in Nigeria and other developing countries explains why presentation in late stages with resultant poor prognosis is common. According to Sankaranagayanan et al. (1998) in developed countries about 75% of patients present early while in developing countries 75% of patients present in advanced stage when cure is not to be expected.

The recorded decrease in incidents and mortality rates of 70-80% of cervical cancer in western countries over the years is largely due to widespread screening (Nieminen et al., 1995; Shingleton and Ori, 1995). Before people take a decision for screening, they need to be aware of the threat they are facing. This means that awareness was increased in these western countries of which that worked as a stimulating factor for the females to take action of screening.

Cervical cancer has a prolonged phase of premalignancy called cervical intraepithelial neoplasia (CIN) (Ogunbode and Ayinde, 2005). This coupled with the accessibility of the cervix is responsible for the success of screening in reducing the prevalence of the tumour (Ogunbode and Ayinde, 2005). According to CANSA (2015) all women who have ever had sex should start having Pap smear tests between the ages of 18 and 20 years or two to three years after commencement of sexual activity. Pap smears do not diagnose cancer but it detects 95% of cervical cancer at a stage when they cannot be seen with the naked eye.

South Africa's cancer mortality review from 1949-1990 suggest that screening disproportionately benefited white women who are the population group at lowest risk of cervical cancer (Bailey et al., 1996). Incidence rates for cervical cancer in black females are similar to rates found in the rest of Africa and in other developing countries, and rank amongst the highest in the world. Significant population differences exist between black and white females: the lifetime risk among black women was 1 in 34, whereas in white women, it was 1 in 93, representing approximately a threefold difference. In Asian and coloured females the lifetime risk is 1 in 50.

#### **2.6.1.2 Cervical cancer and women living with HIV/AIDS**

Many studies worldwide have shown a higher prevalence of cervical intraepithelial neoplasia (CIN) among women living with HIV than among women who test negative for the HIV virus. In one study, CIN was present in 19% of women living with HIV and only in 5% of the HIV-uninfected women (Duerr et al., 2001). Silverberg and Abrams (2007) report that infection with HIV weakens the immune system and reduces the body's ability to fight infections that may lead to cancer. According to the study by Engels et al. (2008), people infected with HIV have a substantially higher risk of some types of cancer compared with uninfected people of the same age. Three of these cancers are known as "acquired immunodeficiency syndrome (AIDS)-defining cancers": Kaposi sarcoma, non-Hodgkin lymphoma, and cervical cancer.

A study by Adejumo (2012) at a South African hospital found that people infected with HIV were at least five times more likely to be diagnosed with cervical cancer. Furthermore, Massad, et al. (2008) reported that people infected with HIV are also infected with other viruses that cause certain cancers like the Human Papillomavirus (HPV) which causes cervical cancer. A later study by Adejumo (2012) found similar results in that infection with HPV is more common among people infected with HIV than among uninfected people. Another recent study conducted on the

utilization and outcomes of cervical cancer prevention services among HIV-infected women in South Africa, also showed a high prevalence and incidence of pre-cancerous cervical lesions in women infected with HIV (Batra et al., 2010). The study showed that women with lower CD4 counts were more likely to have abnormal Pap smears (Batra et al., 2010).

### **2.6.1.3 Awareness of Cervical Cancer**

Various studies have been conducted globally to evaluate women's awareness of cervical cancer and screening practises. A qualitative study conducted in West Virginia to evaluate awareness and knowledge of breast and cervical cancer among women, found that women were more knowledgeable about breast cancer than cervical cancer (Lyttle and Stadelman, 2006). Another study by Wong et al. (2009) in Malaysia among women aged between 21 and 56, found that most women had poor knowledge of cervical cancer while most of them had previously heard of cervical cancer but were not aware that it could be prevented. Furthermore, the role of Pap smear in early detection was poorly understood and most surprisingly, most of the women thought the Pap smear is performed to diagnose sexually transmitted infections (Wong et al., 2009).

In most cases, according to Ndlovu (2011) in a study done in KwaZulu-Natal (South Africa), the proportion of women who had ever had a Pap smear is far less than half of the women who report awareness of the Pap smear. In a study conducted in Nigeria amongst professionals, public servants and students, the level of awareness of cervical screening was average (52.8%), with only 7.1% had ever done Pap smear test (Ezem, 2007). In another study in Ghana, 93% of women have heard of cervical cancer but only 37% of those had adequate knowledge about the disease (Adanu, 2002). Furthermore, almost half of the women in the study reported doing a Pap smear because the doctor asked for it as part of patient management. To make matters worse, of those with adequate knowledge, only 8.5% have ever had a Pap smear test (Adanu, 2002).

Earlier studies conducted in the South African city of Cape Town also revealed a lack of knowledge on cervical cancer and Pap smears. Most of the women interviewed thought the Pap smear was done to diagnose infections, infertility and also to clean the uterus following severe vaginal bleeding (Ndlovu, 2011). A study by Hoque et al. (2013) among female university students in South Africa reported that general knowledge about cervical cancer is not sufficient. A later study by Hoque et al. (2014) among female university students found that though females were getting educated, they lacked information on cervical cancer. Another study by Hoque (2013)

among female final year undergraduates in Durban found that level of awareness regarding cervical cancer and its detection was low.

A study conducted at the University of KwaZulu-Natal's Howard College reported a lack of knowledge regarding cervical cancer and cervical screening (Nxumalo, 2014). In the study, less than half of the students had heard of cervical cancer and the risk factors were poorly understood (Nxumalo, 2014). Half of the students mentioned HPV as the main cause of cervical cancer. This raised some hope that at least some young people were aware that HPV is behind cervical cancer. The question then would be; do these young people know that HPV is an STI and it does not really need penetration to take place?

An important aspect which is rarely looked at is the awareness of males of cervical cancer. In a study by Maree et al. (2011), in Ga-Rankuwa (South Africa) it was found that men did not have knowledge of cervical cancer and by men not having knowledge of this disease, it adds to the cervical cancer burden in the country. This is due to the fact that cervical cancer is mainly caused by HPV which is an STI and it is understood that if men understand this intricate relationship, they might change their sexual behaviours so they will not put their partners at risk.

Owoeye and Ibrahim (2013) in their study on university staff and students found that 48.9% of the interviewed staff did not know of any cervical screening test. A study in Malaysia by Wong and colleagues (2009) found that women had poor knowledge and awareness of cervical cancer and many respondents perceived cervical cancer as a deadly disease with absolutely no cure. Furthermore, less than half of the respondents recognized the risk factors of cervical cancer (Wong et al., 2009). Ombech and colleagues (2012) in Kenya found that though more women knew about cervical cancer, they only knew that the disease exists but they did not have information about its symptoms therefore the screening was low.

### **2.6.2 Uterine Cancer**

Uterine cancer which is medically known as endometrial cancer is the cancer of the lining of the uterus (called endometrium) (Foundation for Women's Cancer, 2012). According to Burke et al. (2014) endometrial carcinoma is the most common gynecological malignancy. A thorough understanding of the epidemiology, pathophysiology and management strategies for endometrial

carcinoma allows the obstetrician-gynecologist to identify women at increased risk, contribute toward risk reduction and facilitate early diagnosis (Burke et al., 2014).

The most common risk factors for the development of endometrial cancer in young women according to Soliman et al. (2005; Burke and Gold, 2015) include increasing BMI, nulliparity, irregular menstrual cycles and early age of menarche. According to Burke et al. (2014) up to 30% of patients diagnosed with endometrial cancer are younger than 54, approximately 9% of women diagnosed with the disease are younger than 44. The risk for developing endometrial cancer may be increased by as much as 22-fold in women younger than 45 years of age whose BMIs are greater than 35 (Thomas et al., 2009). It is vital to note here some contradictions. The literature and studies point that one of the causes of cervical cancer is high parity, while on the other hand, the studies further report that nulliparity is one of the underlying cause uterine cancer (Uzoigwe and Seleye-Fubara, 2004). This is one important aspect the youth would need to be made aware about.

In South Africa, the National Cancer Registry (2010) reported that there were 1082 cases of cancer of the uterus which accounted for 3.64% of all cancers and the lifetime risk was 1 in every 163 women. In Canada, it was found that 1 in 42 Canadian women is affected by endometrial cancer and one in 175 is expected to die from it (Canadian Cancer Statistics, 2010). It is the fourth most common cancer and the 8<sup>th</sup> leading cancer causing death among Canadian women (Canadian Cancer Statistics, 2010). Also in the United States, uterine cancer is the fourth most common cancer in women and an estimated 54,870 women learned they had uterine cancer in 2010 (Burke and Gold, 2015). Burke et al. (2014) wrote that endometrial carcinoma is the most common gynecological malignancy National Cancer Institute (2013; CDC, 2013; Canadian Cancer Statistics, 2010; Burke and Gold, 2015).

Though endometrial cancer is the most common gynecological malignancy in industrialized countries, South Africa with a mixed economy has seen the number of patients with endometrial cancer also increasing over the last years (Robbert Soeters, 2013). Furthermore, mortality of endometrial cancer is higher in low-resourced countries compared to industrialized regions. Of utmost importance here is that there seem to be no studies that have been done on the awareness of uterine cancer and the available ones only focus on statistical incidences and mortality. This study is therefore going to attempt to cover this gap.

### **2.6.3 Ovarian Cancer**

Ovarian cancer begins in the ovaries (American Cancer Society). Ovarian risk factors include increasing age, obesity after menopause, family history of ovarian cancer, family history of breast or colorectal cancer and breast cancer. However, pregnancy, breastfeeding, birth control pills, contraceptive injection, tubal ligation, hysterectomy and low fat diet were found to lower the risk of ovarian cancer.

Ovarian cancer is diagnosed in nearly a quarter of a million women globally each year (Gubbels et al., 2010) and it has been found to be a deadly gynecological malignancy worldwide. According to Gubbels et al. (2010) ovarian cancer has the highest morbidity rate of all gynecological cancers. Ferlay et al. (2010) states that ovarian cancer ranks among the top ten diagnosed cancers and top five deadliest cancers. About 224 747 new cases of ovarian cancer were reported in 2008 with 99 521 cases being diagnosed in more developed region and 125 226 being diagnosed in less developed countries (Ferlay et al., 2010). In the USA the American Cancer Society estimates that in 2016 about 22 280 women will be diagnosed with ovarian cancer and about 14 240 women will die from it (American Cancer Society, 2016).

The prognosis for ovarian cancer patients is poor and symptoms are ambiguous and often misdiagnosed (Goff et al., 2000; Goff et al., 2004), so the majority of patients are only identified in the advanced stages of the disease (Heintz et al., 2006). Because of its ambiguities, ovarian cancer is therefore often referred to as “The Silent Killer” (National Comprehensive Cancer Network, 2015). However, there seems to be very little literature about the awareness of the cancer of the ovary. Much of the literature available on ovarian cancer focuses on the incidence and mortality statistics as well as the curative aspects. There seems to be no studies ever done testing the knowledge, awareness and attitudes of people towards the disease like there are on cervical and prostate cancer.

### **2.6.4 Vulval/Vulvar Cancer**

Vulva cancer is an abnormal growth of cells that can occur on any part of the vulva. Cancer of the vulva is rare among women worldwide, with an estimated 27 000 new cases in 2008, representing 4% of all gynecological cancers (de Martel et al., 2011). About 60% of all vulva cancers occur in more developed countries (HPV Information Centre, 2015), but with the developing world

adopting the lifestyles of the developed world, this should not be ignored. According to Thakur et al., (2013) vulvar cancer is about 3-5% of all primary gynecological malignancies. Though vulvar cancer usually affects people over the age of 45, it is increasingly becoming common in women aged late twenties upwards (Stehman and Look, 2006) and has been ascribed to the effect of increasing human papillomavirus infection (Creasman et al., 1998).

In United States, according to Stehman and Look (2006) there are approximately 4 000 new cases of vulvar cancer each year which represents between 5-8% of all gynecological cancers. Further to that the American Cancer Society (2014) estimated that approximately 5950 cancers of the vulva will be diagnosed in the US in 2016. In Australia, about 300 women are diagnosed with cancer of the vulva (Cancer Council, 2014). In the UK there were 1172 new cases in 2010 which gave a crude incidence rate of 3.7/10 000 women (British Gynecological Cancer Society, 2014).

According to Giuliano et al., (2010) about 40-51% of vulvar cancer are potentially attributable to HPV infection. De Martel et al., (2012) posits that HPV attribution of vulvar cancer is about 43% worldwide. According to CDC (2012) many vulvar cancers are caused by HPV, a common virus that is passed from one person to another during sex. According to previous studies, there has been a significant rising trend of vulvar cancer in young women (Hampl et al., 2006).

### **2.6.5 Vaginal Cancer**

Cancer of the vagina is a rare cancer with an estimated 13 000 new cases in 2008, representing 2% of all gynecological cancer (de Martel et al., 2012). Similar to cervical cancer, the majority of vaginal cancer cases, about 68% occur in less developing countries (HPV Information Centre, 2015). Most vaginal cancers are squamous cell carcinoma about 90% which generally attributable to HPV (HPV Information Centre, 2015). Carcinoma of the vagina is a rare malignancy, representing 3% of all gynecological cancers and is diagnosed in an estimated 2 900 women annually in the US (Siegel et al., 2013).

Like vulvar cancer, the majority of vaginal cancers are frequently associated with HPV (Creasman et al., 1998; Daling et al., 2002). So, there is a huge need for people to know the linkages between vulva and vaginal cancer. About 40-65% of vaginal cancers are potentially attributable to HPV infection (Chaturvedi, 2010; Giuliano et al., 2010; CANSA, 2015). HPV-DNA is detected among 70% of invasive vaginal carcinomas (de Martel et al., 2012). In the United States, about 4620 new

cases were estimated to be diagnosed in 2016 (American Cancer Society). According to CANSA (2015b) there were 185 cases of vaginal cancer which constituted 0.62% of all cancers.

## **2.7 Factors influencing the use of cancer screening services**

According to Kang et al. (2009), factors associated with health seeking behavior include the impact of disease on the quality of life, lack of embarrassment in talking about symptoms and attitudes towards healthcare use. The lack of effective screening programmes to detect precancerous conditions, are said to be the possible factors for the observed higher incidence rate of cervical cancer in developing countries (Peltzer, 2001). Waktola et al. (2005) report that lower socio-economic status has been associated with a higher risk of developing cervical cancer, probably due to lack of access to good health care and pap-smear tests. According to the National Comprehensive Cancer Network, cervical cancer screening should begin approximately three years after the onset of vaginal intercourse and begin no later than 21 years of age (Walker et al., 2002). In South Africa, that is not the case, women can only begin the public Pap smear programme at the age of 30, unless they are HIV positive.

Aboyeji et al. (2004) found that factors identified as responsible for non-utilization of screening services included cultural based embarrassment, fear and hopelessness concerning diagnosis of cancer, cost and access barrier, lack of physician referral, perception of test as being unnecessary and discomforting. Studies (Bakemeier et al., 1995; Nieminen et al., 1995) found fear of vaginal exposure, and gender of practitioner also to be inhibiting factors. In Nigeria, Egbera (2015) found that lack of awareness about cancer screening programmes was also identified as a major barrier why many Nigerian men do not go for screening. Furthermore, Egbera (2015) found that the majority of the respondents reported that some treatment of cancer can cause problems with man's ability to have sex. Sexual dysfunction is a sensitive issue for black men, discouraging them from participating in prostate cancer screening and early detection strategies (Clarke-Tasker and Wade (2002; Lambert, 2002).

Braithwaite (2001) discusses the concept of "stoicism" as a possible explanation of why men and in most cases black men are reluctant to participate in health-related activities. The theory of stoicism suggest that black men become "indifferent to pain or discomfort and do not seek healthcare services until absolutely necessary, and then most often in the emergency room" (Braithwaite, 2001). This could also be applied to their black female counterparts since they mostly

put their family wellbeing first even when in pain. Additional factors that contribute to nonparticipation in screening include lack of adequate health insurance, traditional attitudes about male gender roles, fear of a poor prognosis, and distrust of the medical community.

According to Woods et al. (2004) lack of discussion about the decision to screen for prostate cancer and general lack of culturally appropriate communication with healthcare providers has engendered distrust, created fear, fostered disconnect, and increased the likelihood of nonparticipation in prostate cancer screening among men. Researchers attribute the lack of participation in prostate cancer prevention activities to economic limitations, low level of education, poor access to health care, lack of awareness about studies, past negative experiences, physicians' attitudes, and cultural and religious beliefs/attitudes (Royal et al., 2000; Steele, 2000).

A major concern for the respondents was the issue of testing. The digital rectal exam (DRE) in particular was seen as problematic. In men's view, the digital rectal exam was threatening to their sexuality. Even though the participants were willing to take the rectal exam, they did not like the examination, they thought it was embarrassing, and felt it was associated with homosexual tendencies (Woods et al., 2004).

According to Ezem (2007) the most common reasons given for not doing a Pap smear test included the lack of awareness, fear of a bad result and some felt there was no need for it. Hoque et al. (2008) found that some obstacles to Pap smear verbalized by women are fear, embarrassment, lack of time and stigma. In a study at a KwaZulu-Natal university, the main reasons for not doing a cervical screening test were fear of the procedure and a positive result (Hoque and Hoque, 2009). Hoque and Hoque (2009) further found that other barriers include lack of trained staff to provide service and education, fear caused by misunderstanding and lack of adequate communication with clinicians, especially of the referring hospital.

## **2.8 Human papillomavirus (HPV)**

In the understanding of reproductive/gynaecological cancers, human papillomavirus (HPV) would need to be well understood, its transmission and its deadly effects if one is not immunized early. It has been medically established that HPV infection is a necessary factor in the development of nearly all cases of cervical cancer (Robin et al., 2007). According to Bosch (2005) HPV infection is primarily acquired through the early initiation of sexual intercourse, a history of multiple sexual

partners and a history of sexually transmitted infections. Early onset of sexual activity is thought to be associated with a high risk of cervical cancer because, during puberty, cervical tissue undergoes a variety of changes that may make the area more vulnerable to damage (Adejumo, 2012).

The HPV is a virus from the papillomavirus family that is capable of infecting humans (CANSA, 2015a), in different ways. While the majority of the known types of HPV cause no symptoms in most people, some types can cause warts, while others lead to cancers of the cervix, vulva, vagina, penis, oropharynx and anus (CANSA, 2010). More than 30 to 40 types of HPV are typically transmitted through sexual contact and infect the anogenital area. HPV infection is a cause of nearly all causes of cervical cancer. The risk factors for HPV infection include having multiple sexual partners; the greater the number of sexual partners the more one is likely to contract a genital HPV infection. HPV infections mainly occur in younger women and are less common in women over 30.

HPV is passed from one person to another during skin-to-skin contact with an infected area of the body. HPV can be spread during sex; including vaginal intercourse, anal intercourse, and oral sex, but sex does not have to occur for the infection to spread (American Cancer Society). All that is needed is for there to be skin-to-skin contact with an area of the body infected with HPV. The virus can be spread through genital-to-genital contact. It is even possible for a genital infection to spread through hand-to-genital contact. An HPV infection also seems to be able to be spread from one part of the body to another. This means that an infection may start in the cervix and then spread to the vagina and vulvar.

It can be very hard to avoid being exposed to HPV. It might be possible to prevent genital HPV infection by not letting others come in contact with your anal or genital area, but even then there could be other ways to become infected that are not yet clear. For example, a recent study showed that HPV can be present on sex toys, so sharing sex toys could potentially spread HPV. Infection with HPV is common, and in most cases the body is able to clear the infection on its own. But in some cases the infection does not go away and becomes chronic. Chronic infection, especially with high-risk HPV types, can eventually cause certain cancers, including vaginal cancer and pre-cancer.

Certain types of sexual behaviors increase a woman's risk of getting a genital HPV infection, such as having sex at an early age and having many sex partners. Although women who have had many sexual partners are more likely to get infected with HPV, a woman who has had only one sexual partner can still get infected. This is more likely if she has a partner who has had many sex partners or if her partner is an uncircumcised male.

## **2.9 Summary**

What can be seen from the literature is that only cervical and prostate cancers receive much attention and there are many studies that focus on knowledge and awareness of these diseases among people. Testicular cancer does have research done but it is very limited. Very limited attention is given to other reproductive cancers which are; ovarian, vaginal, uterus, vulva and penile cancers, and research is almost non-existent on penile, vaginal and vulva cancer. HPV was found to be the main culprit in the genesis of cervical, vaginal, vulvar and penile cancer. There is less awareness on reproductive cancers as well as screening related services among the general population as well as the youth in the university settings. There is not much research on them socially and this study also aims to contribute to the field by researching what the students know about these reproductive cancers. The study mainly aims to find out if young people know these reproductive cancers or ever heard of them.

# CHAPTER 3

## RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter presents the methodology employed in carrying out this study. The study was designed to explore the knowledge and awareness of reproductive cancers among young people; their knowledge about the cancer screening services; their perceived severity of reproductive cancers and their knowledge about HPV. Thus, the study is very qualitative in nature and the researcher primarily utilized in-depth interviews as a way of gathering data. Qualitative research was found to be useful in discovering unexpected issues and topics which could not be discovered in a structured design or questionnaire (Denzin and Lincoln, 2000). Thus, qualitative approach was very vital in this study in exploring the knowledge and awareness of reproductive cancers among young people. This chapter is organized as follows: the study setting, research method, sampling, interview situation, data collection and analysis, ethical consideration and lastly limitations of the study.

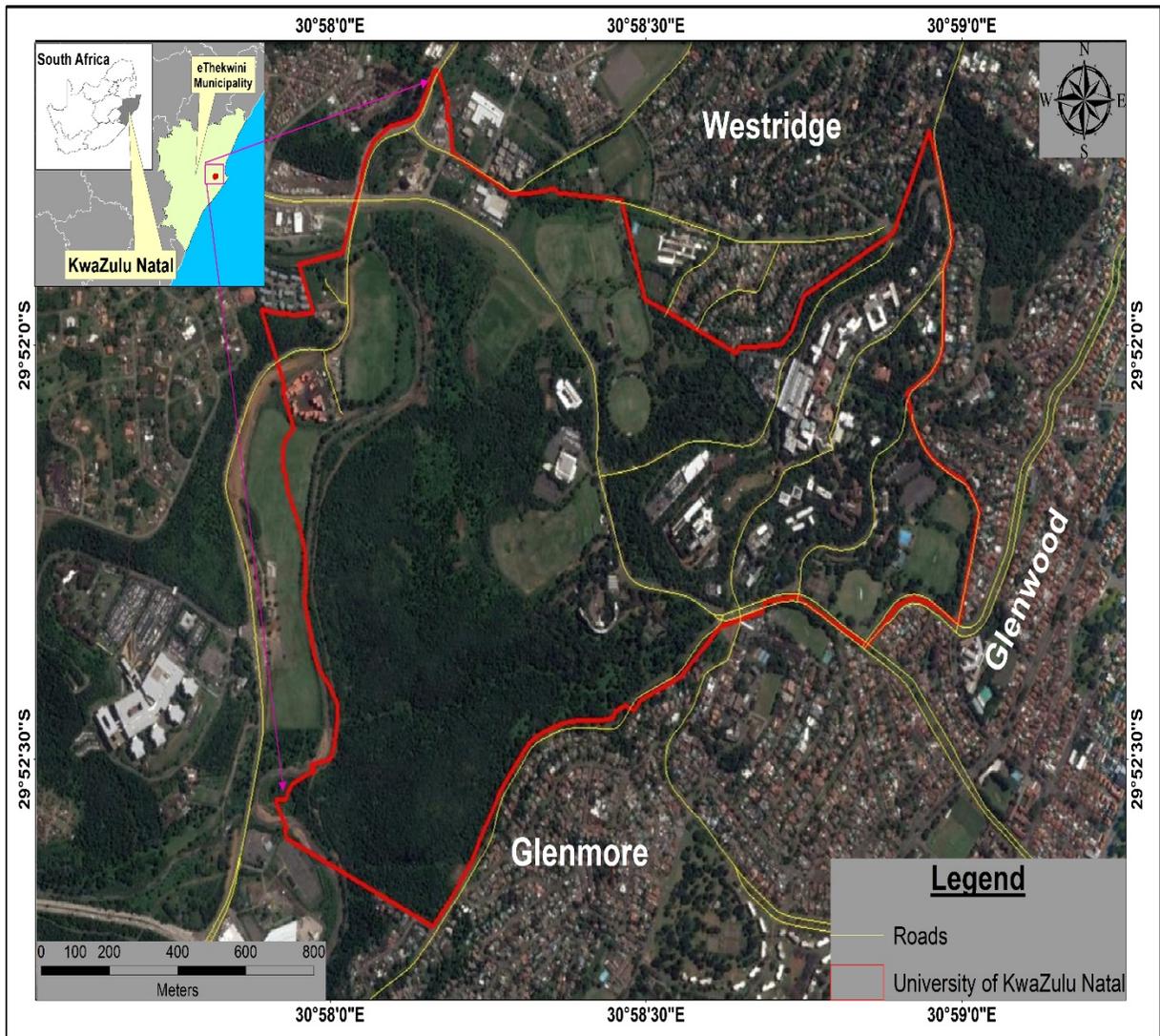
### 3.2 Study Setting

The study was conducted at the University of KwaZulu-Natal's Howard College Campus in Durban, South Africa. Durban which falls under the eThekweni Metropolitan is the largest city of the KwaZulu-Natal province of South Africa. The eThekweni Metropolitan Area is ranked the second among the most populous urban areas in South Africa. This could be attributed to the fact that it attracts many people who would want to pursue their tertiary studies in its universities, colleges and FETs. Also, being the second most important manufacturing hub in South Africa, it attracts the economically active population. This makes Durban a relatively young city, demographically. EThekweni population is young, with 66% of the population below the age of 35 (Census 2011 cited in eThekweni Municipality Integrated Development Plan, 2012). Durban is ethnically diverse, with a cultural richness of mixed beliefs and traditions. Zulus form the largest single ethnic group. It has a large number of people of British descent and has the most Indians of any city outside India (eThekweni Municipality Integrated Development Plan, 2012).

Howard College campus was the location of the University of Natal until the 2004 merger with University of Durban-Westville (now Westville campus) to become the University of KwaZulu-Natal. There were about 46 514 registered students, with 26 634 females and 19 880 males in the year 2016. There were 32 625 undergraduate students and 11 655 postgraduate students. The university had 31 591 African students, 916 Coloureds, 9 822 Indians, 1 766 whites and 235 classified as other. Howard college where the research study took place had 14 805 students made up of 8 636 females and 6 169 males, making it the campus with most students among all five of them. Howard college campus had 11 817 undergraduates and 2 988 postgraduates registered students in 2016. Undergraduates are made up of 6 899 females and 4 918 males and postgraduates are made up of 1 737 females and 1 251 males (University of KwaZulu-Natal, 2016).

The university has five faculties namely College of Agriculture, engineering and science, college of health sciences, college of humanities and college of law and management studies.

Figure 3.1: Map of Howard College Campus



### **3.3 Research Method**

The study utilized qualitative research methodology which is defined by Punch (2005) as empirical research where the data are not in the form of numbers and in-depth interviews are one of the main methods of data collection. A qualitative approach is a very significant way of finding new additional insights through discovering meaning. According to Moch and Gates (2000) qualitative inquiry seeks to understand the experiences of people living, working and going to school in their natural living environments. Hennink et al. (2011) put forward that qualitative research is an approach that allows one to examine people's experiences in detail, by using a specific set of research methods such as in-depth interviews, focus group discussions, observations, content analysis, visual methods and life histories or biographies.

Qualitative approach properly seeks answers to questions by examining various social settings and the individuals who inhabit these settings (Berg, 2001). Therefore, qualitative researchers are mostly interested in how humans arrange themselves and their settings and how inhabitants of these settings make sense of their surroundings through rituals, social structures and social roles (Berg, 201). Hennink et al. (2011) argue that qualitative researchers study people in their natural settings, to identify how their experiences and behaviours are shaped by the context of their lives such as the social, economic, cultural or physical context in which they live. Therefore, qualitative research seeks to embrace and understand the contextual influences on the research issues (Hennink et al., 2011).

Qualitative approach provides rich and in-depth information (Bryman, 1984; Holland and Campbell, 2005) because it aims for depth of understanding rather than quantity of understanding (Henning et al., 2004). Punch (2005) emphasizes that the qualitative approach focuses on exploring in as much detail as possible, aiming for understanding rather than scope. This sentiment was shared by Hancock et al. (2007) when they stress that the qualitative research approach attempts to broaden and deepen our understanding of how things came to be the way they are in our social world.

Thus, the qualitative approach is a way of obtaining descriptions of the life world of the subject with respect to interpretation of their meaning (Kvale, 1996). Hennink et al. (2011) shared a similar argument when they explained that qualitative approach allows one to identify issues from the

perspective of their study participants and understand the meanings and interpretations that they give to behavior, events or objects. Vidich and Lyman (1994) added that qualitative approach is usually useful when describing a phenomenon from the subjects' point of view. Hall and Hall (2004:150) note that qualitative research focuses on "understanding the world of the subjects, listening to their voices and allowing those voices to be heard in the analysis and the report."

Greenhalgh and Taylor (1997) stress that the strength of the qualitative approach is its ability to provide complex textual descriptions of how people experience a given research issue, in this case what young people know about issues surrounding reproductive cancers. It provides information on people's beliefs, opinions and attitudes. Qualitative approach is very useful according to Hannink et al. (2011) in exploring new topics or understand complex issues; for explaining people's beliefs and behavior and for identifying the social or cultural norms of a culture or society. This makes the qualitative research approach the most suitable for addressing 'why' questions to explain and understand issues or 'how' questions that describe processes or behavior. The choice of a qualitative approach is very vital in this study because it has been found that where little has been written on a subject, the qualitative research approach is a very useful tool to proceed due to its exploratory nature (Denzin and Lincoln, 2000).

Therefore, it is very appropriate to use the qualitative approach in this study because there is very little that has been written on the subject of the awareness of the reproductive cancers among young people in South Africa. With that said, qualitative research embarks on discovery rather than on verifications as such it is likely to stimulate new leads that the quantitative researcher is unlikely to underpin, but which can be used as a basis for further research (Bryman, 1984). On that point Hancock et al. (2007) stated that qualitative research approach focuses on description and interpretation and might lead to development of new concepts or theory. Additionally, qualitative data deals with exploring people's life, everyday behavior and it provides a deeper understanding of social phenomena than quantitative data (Silverman, 2003). An argument shared by Hancock et al. (2007) when they argued that the qualitative research approach focuses on reports of experience or on data which cannot be adequately expressed numerically, while Welman and Kruger (2003) identifies qualitative research as type of research involving the interpretation of non-numerical data.

Most importantly, qualitative research is a scientific way to understand the world from the subjects' point of view, to unfold people's experiences and to uncover their lived world (Kvale, 1996). Hennink et al. (2011) remarks that the qualitative approach seeks to understand people's lived experience from the perspectives of themselves which is often referred to as emic or insider perspective. Furthermore, the primary focus of qualitative research is to understand behavior, perceptions or experiences (Hennink et al., 2011). Sewell (2008) hold the position that qualitative research allows the participants to describe what is meaningful or significant to them using their own words rather than being restricted to predetermined categories. In other words, Hennink et al. (2011) confirm that qualitative approach is conducted to uncover the meaning that people give to their experiences. Significantly also, interviewers have the flexibility to use their own knowledge, expertise and interpersonal skills to explore interesting or unexpected ideas or themes raised by the participants (Sewell, 2008).

### **3.4 In-depth Interviews**

The study used in-depth open-ended interviews as a way of collecting data. The in-depth interview is defined by Burgess (1982; Lofland and Lofland 1995) as a form of conversation, while Webb and Webb (1982:130) described it as being conversation with a purpose. According to De Vos (2001) in-depth interviews are focused, discursive and allow the researcher and participant to explore an issue in detail. Boyce (2006:1) defined in-depth interview as a "qualitative research technique that involves conducting intensive interviews on a particular idea, program or situation." In-depth interviews become very much indispensable when collecting data on individual's personal experiences by making use of open-ended questions which makes it easier for the researcher to make broad investigations of the topic.

This method is appropriate because according to Cohen and Marion (1994) in-depth interviews are flexible and allows the researcher and participant to explore an issue in more detail as well as for the interviewees the opportunity to say all they want about the issue under investigation. In-depth interviews are very vital in helping respondents to tell their story. The advantage of in-depth interviews is that they provide a relaxed environment in which to collect information. Interviews were used as the main research tool to allow flexibility in understanding the knowledge of young

people on reproductive cancers, specifically what do they know about them, what do they know about screening services and what influences their decisions on screening among other factors. This further emphasizes the importance of using the qualitative approach in this study which according to Creswell (2000) allows for broad discussions of the topic where the respondent feels free to communicate their feelings. As such it produces a fundamental process through which knowledge about the social world is constructed in normal human interaction (Rorty, 1980).

The purpose for using in-depth interviews was to gain an in-depth understanding of what and how much young people know about reproductive cancers. The in-depth format also permits the researcher to explore fully all the factors that underpin participants' answers: reasons, feelings, opinions and beliefs (Lofland and Lofland, 1995). This furnishes the explanatory evidence that is an important element of qualitative research. In-depth interview is generative in the sense that new knowledge or thoughts are likely to be created at some stage (Lofland and Lofland, 1995). It is likely that the participants will at some point direct themselves or be directed by the researcher down avenues of thought they have not explored before (Burgess, 1982). This is one of the purpose of the study, to stimulate consciousness about reproductive cancers in young people. Participants may also be invited to put forward ideas and suggestions on a particular topic and propose solutions for problems raised during the interview.

An interview guide which served as a basis for discussion was provided. In this study, the purpose of the in-depth interviews was to gain an in-depth understanding of what and how much people know about the reproductive cancers. Open-ended questions were used because they allow a room for flexibility on the interviewees. The in-depth interviews examined the knowledge surrounding reproductive carcinomas and cancers in general.

### **3.5 Sampling**

It is very difficult to include everyone when doing research. As Nueman (2011) stated, when sampling we select some cases to examine in detail, and then we use what we learn from those cases to understand a much larger set of cases. According to Neuman (1994) sampling is a process of systematically selecting cases of inclusion in a research project. Therefore, this study will use a sample of twenty (20) people to conduct its in-depth interviews. These twenty participants will be ten males and ten females between the ages 20 and 24.

The sampling method the study used was purposive sampling. Punch (2005; Neuman, 2011) argues that purposive sampling means sampling in a deliberate way, with some purpose or focus in mind. According to Neuman (1994; Dane, 2011) purposive sampling is used in exploratory research. Furthermore, it was stated that purposive sampling is appropriate in three situations which are, if the researcher uses it to select unique cases that are especially informative, if a researcher wants to select members of a difficult-to-reach specialized population and if a researcher wants to identify particular types of cases for in-depth investigation (Neuman, 1994).

Maxwell (1997 cited in Clark and Cresswell, 2008: 201) defined purposive sampling as a type of sampling in which “particular settings, persons or events are deliberately selected for the important information they can produce that cannot be gotten as well from other choices.” The reason for purposive sampling in this study was that, the study is aimed to interview young people between the ages of 20 and 24, who are at a university, who are regarded as agents of change in their respective communities and countries at large to understand their awareness of the topic under study. The sample size is made up of twenty (20) students, ten (10) males and ten (10) females. The aim of the study was to shed insights into reproductive cancers among young people in Durban.

### **3.6 The process of data collection**

The field work took place in mid-August 2016 and the permission to conduct interviews and collect data was obtained from the University. Data was collected through interviews with the study participants. Data was tape-recorded and transcribed and notes were taken during the interviews.

The interviews were held at times and venue convenient to the participants. In total 20 interviews were conducted and on average an interview lasted between 20-30 minutes. An interview guide which indicated the direction of the interview and its sequence was provided. The interview was semi-structured which involved open-ended questions. Olsen (2012) defined the semi-structured interview as more systematic and slightly more pre-planned method than unstructured interview. The purpose for open-ended questions was to allow as much flexibility for the respondents and encourage greater openness. Olsen (2012) mentioned that an unstructured interview should not be

pre-planned to such an extent that there is no freedom in the response pattern. (This shows the importance of freedom and flexibility in in-depth interviews). Furthermore, it enables changes in the sequence and forms of questions in order to follow up the answers given and stories told by the subject (Kvale, 1996: 124). Open-ended questions were used to enable the respondents to explain their experiences and understanding in their own words. The use of open-ended questions allowed for new information to be revealed that the researcher might not be aware of or have thought of.

### **3.7 Ethical considerations**

According to de Vos (2000) “ethics is a set of moral principles that are suggested by an individual or group and are subsequently widely accepted and offer rules and behavioral expectations about the most correct conduct towards experimental subjects.” Babbie (2001) asserts that anyone involved in research needs to be aware of the general agreement about what is proper and improper in a scientific research. According to Banister et al. (1994) participants need to be protected from harm; their psychological well-being, health, values and dignity need to be preserved at all times.

Therefore, before the interview, the background of the study, what is involved in it, its nature and purpose was explained to the participants. The informed consent was obtained from the students who were the participants in the study through the signing of a consent form. Signing of a consent form ensures that the researcher is legally bound to respect anonymity and confidentiality of the respondents. The participants were fully informed about the research in which the interview was going to be used. They were informed that participation is voluntary and they have the right to withdraw from the study without any negative consequences.

This is emphasized by De Vos (2000) who argues that participants must be legally and psychologically competent to give consent and they must be aware that they are at liberty to withdraw from the investigation at any time. The participants are informed that their identities are kept confidential and nowhere in the study are their identities mentioned. Confidentiality is defined by Sieber (1982) as a continuation of privacy, which refers to agreements between persons that limits others’ access to private information. De Vos (2000) further asserts that confidentiality indicates the handling of private information in a confidential manner while according to Banister et al. (1994) confidentiality is being kept secret. The gate keeper’s letter and the ethical clearance

were obtained from the University of KwaZulu-Natal Ethics Committee before the study was conducted.

### **3.8 Validity and Reliability**

According to Neuman (1994) reliability and validity are central issues in all scientific measurement which are defined by Neuman (2011) as ideas that help to establish the truthfulness, credibility or believability of findings. Furthermore, Neuman (1994) as well as Goddard and Melville (2001) state that reliability tells us about an indicator's dependability and consistency while Neuman (2011) states that validity suggests trustfulness and it refers to how well an idea fits with actual reality. Validity tells us whether an indicator actually captures the meaning of the construct in which we are interested (Neuman, 1994; Goddard and Melville, 2001)). At its core, measurement validity is the degree of fit between a construct and indicators of it (Neuman, 1994; Dane, 2011). It refers to how well the conceptual and operational definitions mesh with each other (Neuman, 1994).

Warwick and Lininger (1975) state that every data collection method, including interviews provides a glimpse of reality. This study collected information on the knowledge and awareness of young people about reproductive cancers and their screening related services, their perceived severity of the disease and perceived barriers and benefits to routine screening through in-depth interviews. Since data collection methods provides a glimpse of reality (Warwick and Lininger, 1975), the study focused on collecting data about what young people know about reproductive cancers and their attitudes towards them.

### **3.9 Data analysis**

According to de Vos et al. (2002:339) data analysis is the process of bringing order, structure and meaning to the mass of collected data. For Neuman (2011) to analyse data means systematically to organize, integrate and examine and in doing so, one is searching for patterns and relationships among specific details. Braun and Clarke (2006: 79) defined thematic analysis as a qualitative analytic method for identifying, analysing and reporting patterns (themes) within data. Thematic analysis minimally organizes and describes data set in rich detail (Braun and Clarke, 2006: 79). However, thematic analysis goes further to interpret various aspects of the research topic (Braun and Clarke, 2006). Analysis allows us to improve understanding, expand theory and advance knowledge. The study use thematic content analysis in analysing its data.

### **3.10 Limitations of the Study**

Methodologically, the use of qualitative research approach limited the amount of participants because of its complexity, hence, though the limited number of participants will provide rich information, the study cannot be taken as representative. Qualitative research is extremely time consuming particularly when it comes to data collection and data analysis, and this usually restricts the researcher to have as few participants as possible, which ultimately will affect the representativeness of the findings.

### **3.11 Summary**

This chapter provided detailed information about the methods used in the study. The study is purely qualitative acquiring information about young people's knowledge of reproductive cancers by means of in-depth interviews. The next chapter will present the findings from this study. The sample size is 20 participants consisting of ten males and ten females.

# **CHAPTER 4:**

## **RESULTS**

### **4.1 Introduction**

This chapter looks at and gives an account of the key research findings from a qualitative study on knowledge and awareness of reproductive cancers among young people in Durban. To ensure that the research questions in the introductory chapter are properly addressed, this chapter was divided into sub-themes that relate to the specific objectives of the study as outlined in the first chapter of the study.

### **4.2 Characteristics of the participants**

In total, 20 interviews were conducted consisting of 10 males and 10 females. The study was conducted with participants between the ages 20 and 24. All the participants were registered students and they included both undergraduates and postgraduates. The sample of participants 70% were Africans and 30% were Indian. Furthermore, the majority of the respondents (90%) were Christians.

**Table 4.1: Sample Characteristics of Participants of In-depth Interviews**

Interview	Age	Sex	Ethnic group	Marital Status	Level of study
1	24	Male	African	Single	Honours
2	23	Male	African	Single	Masters
3	22	Male	African	Single	Third Year
4	23	Male	African	Single	Masters
5	24	Male	African	Single	Masters
6	23	Male	African	Single	Masters
7	21	Male	Africa	Single	Third Year
8	22	Male	Indian	Single	Third Year
9	21	Male	Indian	Single	Second Year
10	22	Male	Indian	Single	Third Year
11	20	Female	Indian	Single	Third Year
12	25	Female	Indian	Single	Third Year
13	22	Female	Indian	Single	Honours
14	24	Female	African	Single	Honours
15	22	Female	African	Single	Honours
16	23	Female	African	Single	Honours
17	22	Female	African	Single	Third Year
18	21	Female	African	Single	Honours
19	22	Female	African	Single	Second Year
20	22	Female	African	Single	Third Year

### **4.3 Awareness of cancer**

All the participants in the study mentioned that they have heard about cancer. In fact, all the participants mentioned that they were aware of the existence of the disease but it is not a disease they would say they know much about. Some participants had this to say:

*“My understanding of cancer is that it can be found anywhere”* (Male participant).

*“Breast throat, lung cancer, like every part of the body can be affected”* (Male participant)

*“Lung cancer, breast cancer, ok that’s all I know about but am sure there is a lot more”* (Female participant).

The most common cancer among all the participants was breast and lung cancer. All the students, both females and males reported having heard about breast and lung cancer. Cancer of the cervix was more commonly known by females whilst on the other hand males were more aware of breast cancer than other cancers. The African students were aware of cancer by hearing about it from the media and other distal sources such as the media, televisions and reading about in newspapers and internet, while students of Indian descent were more knowledgeable about cancer because they had family history. All the student participants of Indian descent reported that cancer run in their families.

### **4.4 Awareness on reproductive cancers**

Though all the participants stated that they have heard about cancer, not all were aware of the cancers that affect the reproductive organs. Out of the total 20 participants in the study, 17 of them were aware of reproductive cancers. In light of all the participants being aware of cancer as a disease, three of the participants were aware of other cancers but had never heard of the cancers that could potentially affect their reproductive organs. Not being aware about these types of cancers was an occurring theme with some participants having this to say:

*“I don’t know much about cancer and am not much aware about it, I just know it is for women and men”* (Female participant).

*“I know lung and breast cancer but I am not aware of any cancer that can affect my reproductive organs”* (Female participant)

*“I think people don’t know about reproductive cancer. Like you just brought it up to me now. I don’t know much about it”* (Female participant)

The same applied to males when they were asked about their awareness of these reproductive cancers. Some had this to say:

*“No I don’t know about reproductive cancer, I haven’t heard of any”* (Male participant).

*I didn’t know that cancer does affect reproductive organs. I had no idea, I am only hearing it now”* (Male participant).

*“...Honestly I have never heard and I don’t even know what organs it affects and I don’t know how people contract it. I don’t even know if it goes from one person to the other. I really really don’t know about reproductive cancer”* (Male participant).

Though participants were aware that cancer as a disease exists, the above expressions show that they were not aware of those types of cancers that affect the reproductive organs. The participants mentioned that cancer especially those that affects ones’ reproductive organs are not given much priority by the healthcare providers therefore, this hinders their awareness about them.

## **4.5 Knowledge of Reproductive Cancers**

### **4.5.1 Female knowledge of female reproductive/gynecological cancers**

Most females have heard about cervical, with nine of the 10 female participants reported having heard about it. The situation gets scarier with only two female participants having heard about ovarian cancer, and worse with only one female having heard of vulvar cancer. Shockingly, none of the females have heard about uterus and vaginal cancer.

It should be noted that the female participants who indicated that they have heard about cervical, ovarian and uterus cancers reported that they were only aware about them but they did not know much beyond their medical terms. In other words, the participants were only aware that cervical, ovarian and uterus cancers exist but did not have much knowledge about them in terms of their genesis, symptoms and risk factors. Females stated that they have heard about cervical cancer but firmly stated that they did not know much about it

*“I heard about cervical cancer from my friend, but I don’t know what is about”*  
(Female participant).

*“...The only thing that I know about on reproductive cancer is only cervix cancer  
but I believe there is more to it than what I have heard about”* (Female participant).

When the researcher asked the participants what they have heard or know about cervical cancer their responses were:

*“You know, that it affects women on their cervix, that’s all, don’t know much I  
guess”* (Female participant)

*“I don’t say I know much but I do know these two cancers (cervix and vulvar) that  
affect our reproductive organs do exist”* (Female participant)

*“I only know about cervical cancer but I don’t know enough, like specific  
information. I know there is something called cervical cancer but how do people  
get it I don’t know”* (Female participant).

Two female participants had this to say when the researcher told them about the existing reproductive cancers:

*“I actually thought ovarian cancer is an umbrella term for the entire area”* (Female  
participant)

*“Really....ok, I didn’t know about that”* (Female participant).

The females knew that cervical cancer affect women on their cervix but did not have any other information beyond that. Some female students heard about cervical cancer from their friends who might also have heard about it somewhere but did have much knowledge about it. So, hearing about the disease from someone who is also not much knowledgeable about it can work as a factor for the students not to understand the disease better. Some thought ovarian cancer was an umbrella term for all the cancers that affect females’ reproductive organs. The findings reveal that the females had both low awareness and very low knowledge about the cancers that affect their reproductive organs.

#### **4.5.2 Female Knowledge of Male Reproductive Cancers**

Female students' awareness of male reproductive cancers was very low. Only three out of ten females reported having heard about prostate cancer, the same number of participants reported being aware of penile cancer too and only one female participant had heard about testicular cancer. The only female participant who knew about testicular cancer credited Pink Drive, an organization that deals with cancer awareness where she volunteers for knowing about testicular cancer. Still, it should be noted that though these female participants noted that they have heard about these reproductive cancers, they also firmly stated that they did not know much about them. In other words, they have heard the names of these cancers but they do not have the necessary information about them.

*"I heard of testicular cancer but I thought that was the same as prostate cancer"*  
(Female participant).

*"In males, I only know of STIs"* (Female participant).

*"Even the clinic here at campus (Howard) most of the pamphlets were of breast cancer, there is virtually no mention of any male related cancer"* (Female participant)

This can be seen through their classifying of testicular cancer as the same as prostate cancer. That the female students were aware that the two cancers (prostate and testicular) exist was very encouraging but one can see that knowledge was very limited since they were classifying the two as one cancer. Also, students expressed that there is no information about male related reproductive cancers at the campus clinic. The students make use of the campus clinic mostly since they spend the greater part of their times on campus, and the campus clinic not having information about male related cancers is one reason why the females as reported are not aware or knowledgeable about these types of male cancers.

#### **4.5.4 Male knowledge of male reproductive cancers**

Of the total male sample eight were aware of prostate cancer, while three were aware of testicular cancer. All of the male participants reported that they had never hearing of penile cancer before until the time of the study. Of great significance is the fact that those who knew about any of these

reproductive cancers reported that have only heard about them and they put forward that they did not know much beyond just knowing the name and that they exist.

*“For males I know it is prostate cancer but I don’t know much about prostate cancer, they always say that if early detected it is not very dangerous if I may use that type of word”* (Male participant).

*“I think it is prostate cancer. I heard it because my friend’s grandfather had prostate cancer. I don’t know much about it though”* (Male participant)

The male students expressed that they have heard about prostate cancer though they had limited knowledge about it. The males reported their main source about prostate cancer was someone they know of. Though males were aware of prostate and testicular cancer, they also just know that they exist in theory but were not very knowledgeable about them in terms of risk factors, susceptibility, and screening services.

#### **4.5.4 Male knowledge of female Reproductive cancers.**

There was very low awareness of males of female reproductive cancers. Out of all five female gynecological cancers, the males were only aware of cervical cancer. Six male students were aware that there is a female reproductive cancer known as cervical cancer. No male participants reported ever having heard of uterus, ovarian, vulvar and vaginal cancer. Just like their female counterparts, the male students also stated that they know cervical cancer exist and that it attacks women but they reported that they did not understand it fully.

The males though reported being aware of cervical cancer, they had doubts about what body parts it affects and some were not sure whether it affects men or women. Some knew breast cancer only, some knew that cervical cancer exists but did not know what it was called. They just knew it can be detected by the Pap smear.

*“The only one that I just remember is the cervical cancer and I am not sure if it affects your reproductive system and I am assuming it does affect reproductive organs in women”* (Male participant)

*“In females, I don’t know what it is called but they do Pap smear to detect it”*  
(Male participant).

*“I always hear people especially the women talking about something called cervical cancer but I wouldn’t say I know anything about it because I don’t even know how and when it starts”* (Male participant).

As can be seen from above, some male students could not name the main gynecological cancers in females. The male students were not knowledgeable at all when it comes to female students. The good news is that the students know that cancer can affect any part of the body but they did not know of cancers that affect the reproductive organs.

#### **4.6 Source of information**

In order to establish why the students were not knowledgeable about the reproductive cancers, the study looked at the sources of information.

Most of the participants get their information about cancers and reproductive cancers from the media. Slightly above half of the participants (12) get their information from awareness campaigns, seven source their information from the internet and five came to know about cancer through family history. The issue of sources of information is very imperative in order to see how the information and knowledge about these reproductive cancers can be disseminated to the masses. With these different sources of information, why then the students were not much knowledgeable about these types of cancers? The study further probed on what the students think about their sources of information, asking if the information they received was enough for them to understand the disease.

#### **4.7 Satisfaction with the information given**

The students reported that at the health facilities they are always encouraged to test for their HIV status and no healthcare worker has ever mention to them to go for cancer screening or teach them about reproductive cancers. Even the pamphlets in the clinics were found to have limited information when it comes to reproductive cancers.

*“I don’t think there is enough information because they just tell you to go and test and then the pamphlets I read from the clinic only has little information about cancer”* (Female participant)

The African culture which highly permits sensitivity around the issues of sexual and reproductive health was seen as another reason for not having much information about reproductive cancers. The students mentioned that reproductive cancers are not openly spoken about.

*“... I don't think so, to think of it now, I don't know. My view now that you asking is that perhaps in South Africa generally we do not you know, this is not something that is talked about so not so much information is given out about reproductive cancers (Male participant)*

For some students, though they have heard about reproductive cancers before, they expressed that the information they received was just very basic and minimal. The students expressed that the health care workers do not provide them with detailed information about reproductive cancers.

*“I would say no, it was just for us to know but they didn't go deep on how we can avoid, what are the symptoms that are there and also if you have been diagnosed how can you be cured” (Male participant)*

*“I can say what I have noticed in most of the people who teach about cancer, most of them they just hit on the surface, they don't get into details to explain that these cancers you mentioned happen this way... They don't expand and get into detail. So as a result, I would say personally there is not enough information” (Male participant).*

The students expressed that their sources of information do not provide enough information. Some mentioned that just because they have a family history does not make them knowledgeable about these types of cancers. The students did however state that information is available somewhere because there are people who study cancers, but it is not conveyed to the general public the way they do with other diseases such as HIV/AIDS and TB. The lack of detail was a major problem among the students, which hinders them to know more about these diseases.

## **4.8 Knowledge of Screening Services**

### **4.8.1 Knowledge of Screening services among female students**

Females were highly aware of Pap smear with 90% (9) of the females being aware of it. Surprisingly enough, 70% (7) of the females were aware of the testicular self-examination (TSE)

technique, while 20% (2) were aware that there is a digital rectal exam (DRE). None of the 10 female participants reported ever hearing of the prostate specific antigen (PSA) technique.

It should be noted that even though the female students were highly aware of Pap smear, they were not really knowledgeable about its use and function or purpose. Though the female students have heard about Pap smear and they know that it performs some duties on female reproductive organs, they were not sure why it is undertaken. Some thought it is undertaken so that cancer may not develop and others thought it is a way of cleaning females' reproductive organs.

*“I do know about Pap smear. Well its purpose is for cancer cells not to develop, cervical cancer I think”* (Female participant)

*“Yes, I have heard about Pap smear. I have heard that it is a way of cleaning in females. Cleaning their reproductive system, I think. I don't know but to clean something”* (Female participant)

Also, the source of information determines if a person is not just aware of these screening services exist in theory but make sure they know what their function is. Hearing from television, family members or friends could also be the reason why female students did not understand the screening procedures. Some even question which body part the Pap smear procedure is done on.

*“Yes I have heard about it. I just hear like people talking on TV about it, my aunt told me about it. I don't know much about it. You can check for diseases and cancer, just to check if everything is ok. The vagina, is it that part?”* (Female participant)

*“There is this thing, I don't know if it is for cancer screening, it is called Pap smear. The thing is I don't know about it but I know there is Pap smear because I heard my friend telling me she went for Pap smear”* (Female participant).

#### **4.8.2 Male awareness of screening services**

Just like their female counterparts, the male students were more aware of Pap smear more their own screening services. Just above half of the male student participants (6) were aware of Pap smear or have heard of the name, while three have heard of testicular self-examination (TSE). Only one male student had heard of digital rectal exam (DRE) and none of the male participants had ever heard of the prostate specific antigen (PSA) technique. Generally, males are less aware

of reproductive cancer screening services than females. Males were aware of Pap smear but they had something different to say when asked what they know about it.

*“I know the word but I don’t know Pap smear, is it for females? I don’t know what for, but yes I have heard the word but I don’t know what process it is used for”*

(Male participant)

*“Yes I once heard one of my relatives talking about it. I don’t know what it does”*

(Male participant)

The reasons why male students were more aware of Pap smear than their own screening services were that they see the information in health care facilities and advertisement in TVs.

*“In clinics you see pamphlets written about Pap smear and encouraging women to do it. I have never seen any pamphlets talking about these other screening methods for males that you mentioned”* (Male participant)

*“In TVs they talk about Pap smear and tell all the women to do it. But nothing for males”* (Male participant)

Also, hearing female family members talking about Pap smear made male students more aware of the screening services. In families with more female members, male students were more likely to be exposed to female related health needs.

*“At home I always hear my sisters and aunties talking about it but I have never heard any of the older males at home talking about screening for prostate cancer”*

(Male participant)

Most of the male participants had only heard about Pap smear in the media, campaign programmes, and pamphlets at the clinics and from family members as well as friends. Therefore, this did not make the participants more knowledgeable about screening service. Those who reported that they know about testicular self-examination also noted that they had to assume it deals with testicular cancers by guessing from the name of the screening technique. Additionally, they had to guess when hearing the name that it must be dealing with that kind of the body from hearing the name.

#### 4.9 Too much focus on AIDS

In the interviews, participants stressed that there is not enough information or if there is, often reproductive health is not given priority. The participants stressed that whether on campus clinic, hospitals, or the in the media there is just too much focus on HIV/AIDS, STIs and TB and there are not enough awareness campaigns on cancers.

*“No, our campus I think they focus too much on HIV/AIDS and they forget about other stuff...Their main focus is HIV/AIDS”* (Female participant).

*“They could do a whole lot of things. I just feel like they don’t do enough awareness campaigns on cancer itself. They always focus on STIs, TB and AIDS”* (Female participant)

The students acknowledged that there is not enough information when it comes to reproductive cancers and especially reproductive cancers. The youth are the least informed group. This is because the focus is more on STIs and AIDS.

*“I think in terms of reproductive cancer; the youth are kind of the largest under informed because the focus is telling more about STDs and AIDS”* (Female participant).

*“I don’t think there is enough information about it. We do not even have places such as organizations that deal with cancer. We only know about HIV. HIV, yes we do know”* (Female participant).

The male participants also shared the same sentiment stressing that focus is too much on AIDS. They also felt cancer does not get as much attention as AIDS and it is not spoken about as much as AIDS. Therefore, students stated that it is vital for people to obtain information about this deadly disease.

*“I think it will be very important for people to be knowledgeable about cancer. Cancer is very dangerous but it doesn’t have as much attention as compared to AIDS”* (Male participant).

*“...My view now that you asking is that perhaps in South Africa generally...this is not something that is talked about so much, not much information is given out about*

*reproductive cancers. I think we are still prioritizing HIV/AIDS, TB, and prevention of pregnancy. When we look at those posters you get a bulk of information but with cancer this is not the case.”* (Male participant).

Some students put forward that there are not enough awareness campaigns about reproductive cancers. There is a huge focus on HIV/AIDS, and even in the media, there is hardly any information about cancer.

*“Maybe there are not enough awareness programmes about these kind of cancers or if they are, they are not as detailed as HIV/AIDS. There is quite a huge focus on HIV/AIDS.”* (Male participant).

He continued:

*“Even with the media itself, you hardly see cancer itself but you always see HIV/AIDS. You hardly see cancer...people like me wouldn't know what is the cause of it because it is sort of like classified information, not that it is hidden from people but you actually have to go out there and find it. It is different from HIV/AIDS, they come to you and tell you”* (Male participant)

*“If the issue of reproductive cancer like cervical or prostate could be spoken of as much as the issue of HIV/AIDS then people like me and other people would know about them”* (Male participant).

They also pointed out that even campus outreach health programmes do not provide information on reproductive cancers. The campus health clinic in-conjunction with Chasu, the campus HIV/AIDS support unit have these initiatives where they would come to the Shepstone foyer and in front of Student Union building to educate people about HIV/AIDS. These campaigns assist in making students aware of the potential consequences of their risky sexual behaviours, but they only focus on HIV/AIDS and pregnancy. There is no mention of HPV which is the main cause of cervical and penile cancers as well as vaginal, vulvar, anal and throat cancers

*“I think there is not enough information because most of the health programmes I go to even on campus they all talk about HIV awareness and other illness but I*

*never heard of any programme or anything that does awareness on cancer especially on reproductive cancer” (Male participant).*

One female student who was aware of some of the female gynecological cancers which were cervical and vulvar cancer had this to say:

*“I don’t say I know much about them but I do know these two cancers that affect our reproductive organs. But maybe if there is more focus on them as much as there is focus on HIV/AIDS and there is more focus on STIs, I would have more information on it because I know about STIs and I know less about these two cancers” (Female participant).*

From the students’ point of view, HIV/AIDS is given more time, funding and focus when compared to other sexual and reproductive health diseases such as reproductive cancers. If only they can get as much attention as AIDS does, then the awareness of these kind of diseases will increase too.

#### **4.10 Awareness of Human papillomavirus (HPV)**

There was very low awareness of HPV among the students’ participants. Only four out of the 20 students had heard about HPV. Of the ten male participants, only two males have heard of HPV and similarly of the ten female participants, only two have heard about HPV. Of utmost significance, it should be noted that though some students mentioned that they have heard about HPV, they reported that they do not have enough knowledge about how it is spread, what causes it and if it can be cured or vaccinated. Some were even questioning if it is an STI. They only know the word but did not understand it.

*It is an STI. I heard about it a long time ago in high school. I know them term but, I don’t know anything else about it” (Male participant)*

*“No what is that? What animal is that? (Male participant)*

*“No, okay I have heard about it but I just don’t know what it was. I didn’t research it to know more about it” (Female participant).*

*“Yes, I have read about it somewhere. Is it the same thing that women go to do Pap smear for?” (Female participant).*

The above comments show that awareness was very low and students did not understand the main routes and transmission of HPV. Some students did agree that they have heard about it but did not have detailed information about it.

#### **4.11 Perceived benefits of routine screening**

Generally, all the participants knew that it is beneficial and advantageous to go through routine screening. The study found that participants knew the advantages of routine screening though they interpreted them differently. Students generally expressed that the benefits of routine screening include early detection so it can be treated. It should be noted that the study found that the participants knew or had a great knowledge of the benefits of routine screening even though they had a low awareness of the reproductive cancers themselves.

*“I think being able like to know where you are standing in terms of like you have or you don’t have it and if you do, like starting early to get treatment”* (Female participant)

*“Just to know where you stand. People do a lot of risky sex and they don’t even know that it can lead to someone developing cancer. So it would be wise to screen so you can know your reproductive organs are good”* (Female participant)

Other students expressed that early diagnosis would be beneficial for medication to be administered while the disease is in its infancy was some of the benefits of routine screening. Some mentioned the benefits include getting to know the status of one’s health rather than living under assumptions that one’s health is good.

*“So that the diagnosis will be made earlier and that you can be given medication.....you can be treated soon as possible and you can be educated early about coping strategies”* (Male participant)

*“The fact that you know early on if you have a problem and deal with it there and then. So I think the benefits is like getting to know the status of your health and then proceed from there rather than assuming everything is good until you get to a stage where there is no way to help you”* (Male participant)

From the comments above, it can be seen that the students know that it is beneficial to undertake routine screening. Though interpreted differently and that they have never done it, the students are very much aware of the positive long-term impacts of routine screening.

#### **4.12 Perceived severity of reproductive cancers**

One of the objectives of the study was to investigate the perceived severity of reproductive cancers. The participants really did express that cancer is a dangerous disease and it is not a disease they would wish they or one can have or be diagnosed with. This resulted from students watching movies in the media in which if a person is diagnosed with any kind of cancer, they would be given certain limited amount of time to live. Students equated being diagnosed with cancer with a death sentence, while some went as far as stating that it is better to be diagnosed with HIV/AIDS than cancer. This is because according to the participants, AIDS has medication that if taken consistently, a person can function well and live long. On the other hand, if a person is diagnosed with cancer, they usually do not live a long time and its medication or treatment is painful when compared to AIDS treatment. The students went further to express that taking ARVs seems better than undergoing chemotherapy.

*“It is worse than AIDS. It’s something you wouldn’t wish to have; AIDS is actually better”* (Male participant)

Though some were scared of HIV/AIDS, to them reproductive cancers were more severe than HIV/AIDS. They were more scared of cancer than of AIDS, to the point that they would prefer to be HIV positive than to be diagnosed with any of the reproductive cancers.

*“Death. I am actually more scared of it than I am of HIV/AIDS. I am scared of HIV/AIDS, don’t get me wrong but I will prefer to be HIV positive than to be diagnosed with cancer”* (Male participant).

Furthermore, other students expressed that being diagnosed with cancer, one’s death has already been calculated. This is due to what they see in western movies, which in most cases portray cancer as a deadly disease.

*“Death. It’s that propaganda that you get every day from the western media. If you watching a movie now, a Hollywood movie it is likely that a person who has cancer*

*will be told by a doctor that you will only live for six months or three months” (Male participant)*

Some saw cancer as very deadly because they reported that of all the people they knew who had been affected by cancer, none of them had ever survived it. This made other student participants to conclude that cancer has a very low survival rate.

*“Death, because cancer has a very low survival rate, like all the people I know eventually died from it. A friend I think he had it for two years, he passed away last year. My uncle had cancer as well just not sure what kind of cancer and he passed away from it. So I guess death comes to mind because even when you watching these shows when someone has cancer they eventually they die” (Female participant).*

For some students, the word cancer was unpleasant to hear. Though they reported not having any cancer family history, the word cancer brought some form of discomfort and pain to them, largely due to what they watch in the media mostly in movies. So to them cancer was not a nice thing or disease to talk about because it is something they see as really bad.

*“It’s something really bad. It’s something that is really sad and not nice to talk about” (Female participant).*

*“Death because most of the people who have been diagnosed with it. They have never made it. You see like it was with Steve Jobs, Mandoza and my friend’s grandfather, so it’s a tough disease to handle. It’s a tough pill to swallow” (Male participant).*

From the statements from above, cancer is seen as worse than HIV/AIDS. It should be noted that HIV/AIDS was at some point a disease that people were scared to speak about because among other things, it was seen as a very dangerous disease that no one ever wished to have. However, students expressed that it is better to have HIV than to have cancer, which suggests that students perceive cancer to be very much severe than AIDS. The students further stated that no other disease can be as unimaginably painful as cancer.

### **4.13 Barriers to routine screening**

The other objective for this study was to investigate the perceived barriers to routine screening for early diagnosis of reproductive cancers. The study found out that only two out of 20 (one male and one female) of the participants had ever gone for screening. Some gave the following reasons for not going for screening which include; not being aware of these kinds of reproductive cancers, where to do screening and other personal reasons. Many people feared going for screening because of fear. They stated that they will not know how to deal with it.

Students repeatedly stated that they had never gone for screening because they had never thought of it. When probed further, they revealed that they did not see the need to go for screening because they did not know about the disease. Secondly, the students stated that they did not even know that there were those different types of screening services which were such as digital rectal exam, prostate specific antigen and testicular self-examination and those who were aware of Pap smear, did not have much knowledge about it.

#### **4.13.1 Lack of awareness**

In order for routine screening to be undertaken, one has to at least has been screened before, in order to understand the benefits and know where to be screened. All the participants stressed the lack of awareness either of the reproductive cancers themselves or of the screening methods. Not having enough information about the reproductive cancers was a huge barrier because people need to have been told or made aware of such disease in order to take action, and students mentioned that there is not enough information. The students reported that there is not enough information in the clinics and many people screen late because there is no information about these types of cancers which would make people be aware of the symptoms. All the participants in the study did stress that there is not enough information about reproductive cancers and even the pamphlets in the health facilities were said to provide not enough information to go by.

*“...usually when I go to the clinic, I usually see posters about breast cancer only. I have never heard about these ones (reproductive ones) (Male participant).*

*“I don't think there is enough information about these cancers because many people would be tested and take care of themselves and not many people would be diagnosed with cancer at a later stage” (Female participant).*

*“...most people do not have enough information especially older people”* (Female participant).

Some female students did not understand the Pap smear process very well. Lack of information acts as a barrier for them not to go for cervical cancer screening. Pap smear process needs to be known, advised to females so that all the misconceptions they might be having around it can be cleared. Some female students themselves were not sure about what the purpose of Pap smear is.

*“I have heard about Pap smear. I heard that it is a way of cleaning females their reproductive system, I think. I don’t know but to clean something”* (Female participant).

*“There is this thing, I don’t know if It is for cancer screening. It is called Pap smear. This thing is I don’t know much about it but I do know there is Pap smear because I heard a friend telling me that she went for Pap smear”* (Female participant).

Among males, they were aware of screening of breast and cervical cancer but not aware of reproductive cancer screening among themselves. Those who had heard about Pap smear reported that they only know the word but did not know what it for was.

*“No I have never heard about cancer screening of the reproductive organs in males, but yes I do know there is screening for breast cancer”* (Male participant).

*“I know the word but I don’t know Pap smear. It is for females? I don’t know what for, but yes I have heard the word but I don’t know what processes it is used for”* (Male participant).

#### **4.13.2 Fear**

Some participants expressed fear as a barrier for them to go for screening, while some mentioned that they avoid talking about the disease. By avoiding talking about the disease, it would act as a barrier to screening because by avoiding, it would instill fear about the disease. Students’ source of fear was influenced by different things. Since cancer was perceived to be a very bad disease, some students as Christians then avoid talking about it because they believe they would invite it on themselves or their loved ones.

*“I am normally reluctant to speak about diseases like cancer...I’m a Christian, I believe that if you talk about certain things more often, you are inviting it” (Male participant).*

Other students’ source of fear stem from the situation in public hospitals. They expressed that since the public hospitals are over-crowded and under-resourced, how will they survive if they cannot afford to treat the disease. Furthermore, students put forward that it is better to stay in dark than to know because they feared being diagnosed with it and living with it.

*“...if I got cancer then what next? Because our hospitals are so full and under-resourced, what chance do I have of surviving if I don’t have money or the resources to treat what I’ve got? Have I not given myself negative outlook on life or you know something you can’t do nothing about? (Female participant).*

*“Being scared. If I go and I find that I have it, that kind of feeling. That means am I about to die. How will I deal with it if I find out that I have it? So it would be fear of finding out that I have it” (Female participant)*

These two student participants expressed fear as their main barrier to screening. One is scared to talk about it and the other is scared to go for screening citing that she would not know what to do when she found that she has it. For these two participants, it would be better for them to not know therefore they would prefer not be diagnosed.

#### **4.13.3 Culture and Religion**

Culture and religion were also found to influence the participants’ decision to screen. The participants mentioned that cultural beliefs act as barriers to reproductive cancer screening. From a cultural perspective, some male students expressed that among Africans reproductive cancers is something that does not affect them much. Hence this thought, would inhibit young males from undertaking screening.

*“What we normally know is that in most of men it is rare to see them suffering from this particular disease. Like us Africans it is taken as something that doesn’t affect us much” (Male participant).*

It is well known that when it comes to sexual and reproductive health, communication is minimal due to cultural influences. Some female students reported that in African culture, it is not allowed to talk openly about issues pertaining to their reproductive organs. By not allowing people to communicate freely about this, it will hinder those who come from very traditional areas to openly discuss their reproductive problems and seek assistance.

*“Mostly in African black culture, our culture does not allow us to talk about reproductive organs”* (Female participant).

Due to culture, when one has any reproductive problem in some African societies, the first thought is that it is a result of traditional practices. There is the belief that they have been bewitched. The students expressed that visiting a health facility is the last thing when one has any reproductive cancer, because due to culture, it is blamed on witchcraft.

*“Where I am from, my community in general we don’t really know much about cancer. Cancer is like what are the chances? We stress about HIV and TB. Like when you have cancer especially reproductive cancer, we usually associate that with traditional and cultural stuff”* (Male participant).

The above participants’ sentiments were echoed by another male participant who mentioned that in African households, this kind of disease is not really taken serious.

*“Look, I don’t want to over-generalize but amongst the black household...I feel like it is still treated as a white man’s disease and so we don’t really take time to learn above these things”* (Male participant).

#### **4.13.4 Ignorance**

Others cited ignorance as a barrier to knowing about reproductive cancer thus acting as a barrier to screening. This is due to the fact that when one visits a clinic they reported that there would be pamphlets but they do not even read them.

*“...I think it’s just a matter of ignorance or something because pamphlets are all lying around and no action initiated to look at them. Ignorance from us basically. When people like you go to the clinic why would you read about cancer. You are*

*not there for that. Okay, I am talking from personal experience” (Female participant).*

Others expressed they do not even pay much attention to the diseases because they believe that it affects certain type of people. The students expressed that they do not even attempt to find information. Others expressed that they never had any family history or anyone close to them who experienced it so they did not see the need to know more about the disease.

*“I don’t pay much attention to it. I think I am ignorant” (Female participant)*

*“I am so ignorant. I think these kind of things happen to certain type of people you know. So going for screening for what? It makes me see that there is no need to go. I am fine” (Female participant)*

*“...cancer, maybe it is just because I had never had anyone near me experiencing it so I don’t feel like I should know more about it” (Female participant)*

#### **4.13.5 Financial costs**

Other participants pointed to this issue of costs. They expressed that if cancer screening was free like HIV test they would know about the disease therefore they would take action, but because of costs involved, it is difficult for them.

*“...one thing I know is that cancer screening is not available and not everybody can afford it” (Female participant).*

When one female participant was asked if she had been screened before or if she would recommend someone to go screening, she had this to say:

*“No I wouldn’t actually. The thing is if I pay R120 to find out if I got cancer, but if I got cancer then what next? I don’t have the money or the resources to treat what I would have found out. So I would not. (Female participant).*

Some students mentioned that screening should be free because by imposing a fee, people who are marginalized will not be able to afford that kind of amount. On top of that they would need to travel to a healthcare facility.

*“I think they should encourage people to come and screen for free of charge...The problem is that some of the people particularly those who are marginalized, they do not have the money to pay for cancer screening” (Male participant).*

Some students were of the view that if cancer screening was free as HIV/AIDS, maybe there is a chance they would know about screening procedures. They went further to state the reason they do not know about types of reproductive cancers and their screening methods as well as not having undertaken any screening service is because there are financial costs involved.

*“If cancer screening was free as an HIV/AIDS test, I would know it. Maybe the reason I don’t know it is because there is money involved”*

#### **4.14 Summary**

The lack of awareness of the reproductive cancers is very worrisome. Prostate and cervical cancers were found to be the only reproductive cancers that the students were aware of, and this could be attributed to the fact that there are studies conducted on them. None of the respondents had ever heard of uterus and vaginal cancers and there was very poor awareness of vulvar, ovarian, penile and testicular cancers. Both male and female students were aware of Pap smears but revealed that they were not very knowledgeable about it. There was virtually no knowledge or awareness of digital rectal exam, prostate specific antigen and few had ever heard of testicular self-exam.

Students expressed there is no information about reproductive cancers which they say it could be the reason why they have limited awareness of both the disease and the screening services. Furthermore, the students revealed that there is too much focus on HIV/AIDS, TB and diabetes while overlooking the issue of reproductive cancer. Only two students in the sample had gone for screening while the rest had not yet. Students revealed that they had never thought about it, they did not have time to do that, they did not know where to screen, they were scared to screen and also, they did not have finances to do the screening. The students requested that there is an integration of reproductive cancer information in HIV/AIDS campaigns since they all attack their sexual and reproductive organs.

# CHAPTER 5

## Discussion and conclusion

### 5.1 Introduction

The aim of the study to investigate awareness of different types of reproductive cancers among young people. The study draws on in-depth interviews conducted with twenty (20) participants who are full time university students at the University of KwaZulu-Natal's Howard College in Durban.

It should be noted that the data is not generalizable to the entire student population because it is based on a relatively small sample. However, the study does provide some insights into awareness of reproductive cancers among the young people. Furthermore, it is very significant to note that the key findings of this study are in most instances consistent with existing research in the literature.

The study is framed around the Health Belief Model (HBM) which attempts to explain and predict human health behaviours. In this study, the HBM framework was used to explore the awareness of the young people on reproductive cancers. In doing so, the framework was used to study young people's sexual and reproductive health behaviours, their perceived susceptibility, perceived severity, perceived benefits and perceived barriers to reproductive cancers. And for the end goal of the study using the framework, what are the "*cues to action*" that young people use in maintaining their sexual and reproductive lives healthy.

### 5.2 Discussion

Overall, the participants did not have knowledge about the different types of reproductive cancers that exists. The two main cancers that the participants were very much aware of were cervical and prostate cancers. Both males and females were aware of these two types of reproductive cancers but they firmly stated that they only know they exist but did not have further information about them. This statement by students echoes those of findings in Kenya done by Ombech and colleagues (2012) The participants stated that they have heard of cervical or prostate cancers but

they did not know much about them. By not knowing much about the disease they meant that they did not know how it affects them, what are the risk factors, and signs and symptoms

Females were highly aware of cervical cancer and very few had heard of ovarian cancer. The main reasons why female students were highly aware of cervical cancer is because there is considerable information about it in health facilities and media, moreover there is more research on it compared to other reproductive cancers. Most importantly cervical cancer is the only reproductive cancer that is openly spoken about and somehow young females have heard someone talking about it, which could also explain why females were highly aware of it. The results of this study that females are highly aware of cervical cancer are consistent with other findings from the literature both in and outside South Africa (Chikandiwa and Van Wyk, 2013; Hoque et al., 2013; Owoeye et al., 2013; Ombech et al., 2012; Kalua, 2012; Chikandiwa, 2010; van Schalkwyk et al., 2008). The study found that among females, there is very low awareness of ovarian and vulvar cancer and all the females in the study sample reported never hearing of uterus and vaginal cancer before. On the awareness of females on male reproductive cancers, the awareness was very low.

Very few females had heard of prostate and penile cancer and the awareness of testicular cancer was very low. This is due to the fact that prostate and penile cancers are hardly spoken about if ever spoken about at all. Since these two cancers affect males, cultural boundaries affect the lines of open communication, therefore men will not discuss the disease with their female counterparts. Since prostate cancer affect males at their older ages, it makes the communication very difficult between the older males and the younger females. There is very little information about prostate cancer in health facilities and is almost non-existent when it comes to penile cancers. It should however be applauded that at least some of the females surprisingly knew about penile cancer since none of the males in the study sample was aware of that kind of cancer.

Male awareness of prostate cancer was high as expected since it affects them. There was however, low awareness of testicular cancer and all of the males in the study, knew nothing nor never heard of penile cancer. A similar study by Peltzer and Pengpid (2015) among university students in developing countries also found that awareness of testicular cancer was low. On the other hand, male knowledge of female reproductive cancers was very low. Just above half of the male study sample was aware of cervical cancer and none of the males in the study sample had ever heard of uterus, ovarian, vulvar and vaginal cancer.

It should be noted that there is a difference between being aware or ever having of any of the reproductive cancers and having enough knowledge to understand it. Though both genders were highly aware of cervical cancer they reported that they did not understand or have knowledge about it in terms of what causes it, what are the symptoms and risk factors. They stated that they only heard the word cervical but did not know what causes it, how it is transmitted and how it can be cured when found which is consistent with other finding in the literature (Wong et al., 2009).

All the participants had never heard of Prostate Specific Antigen (PSA) at the time of the interview and it was their first time learning about the method, while the majority was not familiar with Digital Rectal Exam (DRE) and very few had heard about Testicular Self-Examination (TSE). Similarly, in the recently published study (Egbera, 2015) students did not know what was abnormal PSA. In a study by Ramim et al. (2014) there was very low knowledge of TSE among male university students. These results are consistent with other findings in the literature on low awareness and knowledge of TSE (Ozbas et al., 2011; Ugurlu et al., 2011; Altinel and Avci, 2013). Male students in the study reported that they have never performed TSE because they were not aware of it, the findings that are very similar to those by Muliira et al. (2012).

Females were found to be very highly aware of Pap smear and surprisingly they knew more about Testicular self-examination (TSE) than their male counterparts. Though the female students were very aware of Pap smear, they did not understand the procedure and many thought that it is performed to diagnose sexually transmitted diseases and these findings are similar to those of Wong et al. (2009). The policy on Pap smear in South Africa is very limiting on its own, because it only allows females to undertake Pap smear when they get to the age of 30. This would make the young females not to understand the reasons to undergo Pap smear because they would perceive it as something that is for older females. Furthermore, most of the participants in the study were not sure where they can do any kind of reproductive cancer screening which acts as a barrier for them to screen.

The main source of information for the study participants was the media. Though participants had various sources of information, they did raise some very important concerns about these sources of information and the quality of information they are getting. There was an outcry that though they were getting information, it was not enough. The participants mentioned that most of the people who teach about cancers do not go into detail or provide any elaboration. All the

participants in the study did stress that there is not enough information about reproductive cancers and even the pamphlets in the health facilities were said to provide not enough information to go by. Other participants stressed that though there is inadequate information on reproductive cancers in the health facilities, the little available information focus more on breast, cervical and lung cancer. This could help explain the reason why the participants were not aware of other reproductive cancers beyond cervical and prostate cancer. Participants bemoan that there is too much focus on HIV/AIDS.

Most participants in the study expressed that there is too much focus on other diseases like HIV/AIDS and TB which could be diverting focus from reproductive cancers. The focus on HIV/AIDS makes it seem like it is the only deadly disease out there and the silence on reproductive cancers makes students not to seek information further. Though the participants did acknowledge that HIV/AIDS and TB are a big problem globally and in this country, they also acknowledged that cancer is growing too and it needs considerable focus and attention. The participants also expressed that for AIDS to be known in societies, there were community outreach programmes like Love Life, Soul City and Brothers for Life. In addition, efforts were made to fight it from a societal level because it had been realized that there was a need for two approaches to fight the disease; socially and medically. The participants expressed concerns on why reproductive cancers are not being addressed as social diseases too since they seem to be originating from the way people live socially. This is what most of the participants asked after the researcher had explained to them the intricate relationship between HPV which is the most prevalent STI, and cervical, vaginal, vulvar and penile cancer.

The findings of this study suggest that there was extremely low awareness of HPV. Even the only four participants who had heard of it claimed they only heard the word but they did not understand it. They did not understand it because it is not spoken about, even in healthcare facilities there is no attempt to educate people about it. This lack of knowledge on HPV found by this study is consistent with the findings in the literature (Maree and Makua, 2011) which found that males had poor knowledge about HPV and Chikandiwa (2010) in his study at the University of Western Cape. Also, studies from around the world show that there is lack of knowledge on HPV (Ombech et al., 2012; Klug et al., 2005; Avonts and Vermorken, 2004; Wallace et al., 2004; Pitts and Clarke, 2002).

Among university students Hoque et al. (2013) in a study sample of 163 females, found that only 12 students were aware of HPV and that it causes cervical cancer. Another study done at the University of Cape Town shows that out of a sample of 150 students, only 34 had heard of HPV (Chikandiwa and Van Wyk, 2013). Disturbingly, HPV is the most prevalent sexually transmitted infection (Ebrahim et al., 2016) and women in South Africa have a high prevalence of HPV (Chikandiwa et al., 2013) and yet the females in the study sample did not know much about HPV.

The study found that most of the participants both male and female students knew about cervical cancer but they did not know about its intricate relationship with HPV which is consisted with what Chikandiwa and Van Wyk (2013) found in their study at the University of Western Cape. A study by Ebrahim et al. (2016) found that HPV prevalence was high among young women in KwaZulu-Natal with prevalence of 76.3%. This study having been conducted in KwaZulu-Natal (Durban) found that most participants did not have an idea of what HPV is and how it is transmitted. This low level of knowledge about this virus will only keep the prevalence high or fuel the prevalence because both the males and females do not know about it and how it is spread. One can only act on what they know, and in this study, there is no way the students can act to curb the spread of HPV because of their low level of understanding.

The students stressed that they are aware that there is high burden of reproductive cancers especially cervical and prostate cancer but it is not prioritized in the country with some students even stating that they have never heard of any organization that deals with cancer. This is what made the students think that there is low focus of cancer thus making them think they were not at risk when compared to other sub-populations. The findings of the study that these kinds of cancers are just not prioritized or given much attention are consistent with findings by other studies (Berger, 2008; Ezemu, 2007; Denny, 2006) who found that there is high burden of reproductive cancers and it is increasing and yet there is low level of priority.

The participants in the study shared the same sentiment about who is susceptible to these cancers. The findings were that though the participants were aware that cancer is dangerous and that it can affect anybody, they however, expressed a belief that white people are at higher risk of developing cancer more than other racial groups. This is similar to what van Schalkwyk et al. (2008) found in their study at a certain South African hospital. All the participants in the study both males and females pointed out that females are more at risk of developing any of the reproductive cancers

than males. This is due to the females' biological make up which makes females vulnerable to many diseases sexually and that females usually get into sexual relationships with older males who would have had many sexual partners.

The study shows that participants knew the benefits of routine screening for reproductive cancers. The data shows that the students knew that routine screening was very beneficial and it can save lives. The students knew that if detected early, cancer can be treated and the survival rate would be high when compared to when it is diagnosed late. It should be noted that as much as students were aware of the benefits of routine screening, most of the students had never done any reproductive cancer screening. Only two students had done their screening. One other important point to note is that when students were talking about the benefits of screening, they were talking about cancer in general rather than reproductive cancers because they were not much aware of these kinds of cancers.

One of the core assumptions of the Health Belief Model is that a person will take a health-related action if they feel that a negative health condition can be avoided. In line with that, the study found that the majority of the participants felt strongly the same way. This assumption strongly correlates with the feelings of the female participants in the study. The only female participant who had done Pap smear did it because she had a relative who had cervical cancer. She did state that by doing Pap smear she was trying to avoid herself from getting cervical cancer. The rest of the female participants, though they have never done Pap smear, did confirm that they would do it so they can prevent themselves from cervical cancer. The main reason for them not having done it was that they lacked knowledge about cervical cancer and also, they have not thought about it yet.

The main barriers to routine screening were influenced by lack of awareness of reproductive cancers, screening services, fear, cultural and religious beliefs, ignorance and finances. De Nooijer et al. (2001) identified lack of knowledge, social support and interpretation of symptoms, fear, age, socio-economic status and gender as issues influencing health seeking behavior. Lack of knowledge was put forward by the students as the main barrier to routine screening because as they put it, males were not aware of screening services such as prostate specific antigen (PSA) and digital rectal exams (DRE). This is similar to the results found by Egbera (2015) that lack of awareness was a barrier to prostate cancer screening. The fact that cancer in many cases results in death, made the participants in the study to express that they are scared to go and get screened for

it, a statement echoing the findings of Woods et al. (2004) in the USA. Some participants even went as far as asking, what would happen if they go for screening and they found out that they have it. So, fear was another barrier to screening.

Some participants were very religious and cultural, as they stated that, culturally Africans do not talk about reproductive problems openly which will in the end hinder them from going for any reproductive cancer screening. The study found that students considered cancer a very bad disease and reported that they fear talking about diseases such as cancer as they believe that religiously or through superstitions, talking about something bad will make it happen to you. Similarly, Woods et al. (2004) in their analysis found similar trends of black people considering prostate cancer as bad. The study found that Africans did not see themselves to be at that much risk when compared to other racial groups. They did not prioritize seeking screening services. Furthermore, female participants mentioned that African cultures do not allow people to openly talk about their private parts, therefore inhibiting them from getting vital information on their sexual and reproductive health. This is very similar to what van Schalkwyk and colleagues (2008) found in their study.

The study also found that another barrier to screening is ignorance. The participants stated that ignorance seriously puts them at risk of many diseases. Ignorance makes students not to seek information, ignore the information even when they see it and pay no attention to the kind of diseases such as cancer of the reproductive organs. Participants mentioned that ignorance is when one goes to a health facility for a certain health condition and see pamphlets talking about cervical, breast or prostate cancer and never bothering to read them because one would not have come to the health facility for that. Furthermore, the attitude of saying that cancer can affect anyone anytime was found to act as a barrier to screening as participants mentioned why they go for screening when cancer can affect anyone.

The issue of finances was also found to be another barrier to routine reproductive cancer screening. This can be heard through participants' views stating that the main barrier for them not to know about reproductive cancers is because there is money involved in the screening of which many people would not be able to afford. This is similar to what Aboyeji et al. (2004) found in their study. Thus, as students they have other pressing issues that require their financial attention, so forking out cash for cancer screening is not something that is on a students' budget, unless if it is a really pressing matter as one female student who did a Pap smear stated. So, the issue of paying

for screening becomes a barrier and the students went on to say that it is then an extreme financial burden for people in rural areas, where most struggle to make ends meet already, and they would want money to pay for screening.

The issue of low coverage of the population by healthcare services especially in rural areas was also raised as a barrier to screening. Some participants in the study did not know about the Cancer Association of Southern Africa (CANSA) before the study. Those who had heard about it were not aware that it provides cancer screening services. Furthermore, participants who were from townships reported that there is very low coverage when it comes to cancer and those from rural areas reported that coverage and information about reproductive cancers is very much non-existent. This is because priority is on HIV/AIDS and TB and in townships where risky sexual activities are frequent, this just redirects the focus from cancers to HIV/AIDS.

Since HBM is a psychological model that attempts to explain and predict health behaviours, its added concept of *cues to action* which is defined as strategies that would activate and stimulate overt behaviour is very much applicable in this study. The study has found that most of the participants were ready to take action after the interview they had with the researcher. This is because the researcher had provided information on screening for reproductive cancers and the researcher had raised awareness among the participants. Most of the students had never thought of screening before the study was conducted. So, the study acted as a cue to action for them to undergo screening.

The likelihood of an individual to go for cancer screening was found to be influenced by the individual perceptions towards the disease and modifying factors. The individual perceptions were determined by the perceived susceptibility of an individual towards the disease. Though the study did find that students expressed cancer as a very dangerous disease however, they expressed that they believe they were not that highly susceptible to reproductive cancers or at great risk of developing any of them. Though female participants expressed that females were at greater risk of developing these types of cancers, they however, believed that they were not at high risk. This is due to the fact that they believed that reproductive cancers in females affect those who initiated sexual activities very early in their lives, promiscuity and early child-bearing. Males however, mentioned that they did not see themselves at greater risk since in most cases men suffer from reproductive cancer in their older ages. Furthermore, males expressed that they in most cases do

not take diseases like penile and testicular cancer serious because they have never heard anyone who had suffered from them.

On the modifying factors that influences the likelihood of an individual to go for screening, age was found to be the reason why the participants did not see themselves at a greater risk of developing these reproductive cancers. This is because in most cases, these types of cancers affect people in their older ages. The female sex was found to be more highly likely to go for cancer screening than the male sex. This might be caused by the fact that females were aware that reproductive cancers affect more women than it affects men.

The study found that participants who were from disadvantaged backgrounds were less likely to go for screening when compared to their counterparts from more privileged societies. Those from privileged background had access to a wide range of information and as a result were more knowledgeable. They had the financial means to go for screening and were in close proximity to health facilities that offer such services. The participants from disadvantaged backgrounds expressed that they lack information and awareness, they do not have financial means to utilize private health facilities and furthermore they live far away from health facilities that offer such services.

Level of education also was found to play a vital role in influencing the participants to go for screening. Those who were doing their postgraduate studies seemed to be more aware about their sexual and reproductive health than those who were doing their undergraduate studies. The study found that participants who were more educated (postgraduates) were more likely to go for screening than those who were less educated (undergraduates).

One other important aspect was that some female participants had only heard about Pap smear and did not know what it does and therefore it never occurred to them to think of doing it. But because of watching television and dramas, (in this case Muvhango), they related that there is an actress who was diagnosed with cervical cancer through Pap smear. This then acted as a cue to action to them in the sense that they did not know what Pap smear is and what it does but upon watching someone being diagnosed with the condition through Pap smear, they said they were now ready to go for a Pap smear. What the television programme (Muvhango) did was to promote awareness of cervical cancer and Pap smear thus prompting the females who watched it some cues to action.

### **5.3 Recommendations**

The gains that South Africa has achieved since the eradication of the apartheid regime are proof that this country has the potential to enhance its health policies and programmes, especially to accommodate young people. South Africa has one of the best and most comprehensive HIV/AIDS programmes in the world. It also has one of the most advanced social assistance programmes in Africa (Kallmann, 2003). Most importantly, it also has one of the best constitutions in the world and some of the best progressive policies (Kende, 2003). All these show that South Africa has the potential to develop and sustain a good cancer programme that would focus on reproductive cancers that will be specifically designed for better understanding by the young people. It should be noted that these recommendations are significant in the sense that they were not solely devised by the researcher but because they came from the participants themselves.

According to the report of the GAVI-UNFPA-WHO meeting on strengthening cervical cancer prevention and control in 2009, two major outcomes were reached; policy commitment and funding strategy for HPV vaccine. HPV vaccination can be an entry point to other adolescent health services as well as screening of precancerous lesions of the cervix in the women in the reproductive age (immunize girls, screening their mothers). The national government, the international organizations and other organization such as CANSA should work in collaboration in dispensing HPV vaccinations. The CDC recommends that the HPV vaccinations should be given to girls between the ages of 11 and 12 before they become sexually active. Therefore, the study recommends that there should be an HPV vaccination programme targeted at primary schools. The HPV vaccination should also be done in communities and clinics to cater for those who might not be going to school.

Currently the policy in South Africa offers all asymptomatic women aged 30 years and older, three free cervical smears in a lifetime. Findings from the South African HPV Advisory Board (2010) reported that the national policy on cervical screening has been implemented in some areas but not throughout the country. The National Health Laboratory Service where cytology laboratories in the public sector are to be found, has not fully rolled out a programme to become a part of the process (South African HPV Advisory Board, 2010). The Board went on to state that there is no population wide-screening programme in South Africa. This is exactly what this study found when the participants expressed that there is not enough attention on reproductive cancer as compared

to HIV/AIDS and the evidence is shown here when it is reported that there is no population-wide screening programme for cervical cancer. Cervical cancer is known to be the most common cancer among women in Africa and South Africa in particular (South African HPV Advisory Board, 2010) and yet there is not much priority on it.

The study does hereby recommend that the current policy on cervical cancer screening be scrutinized and made some changes if possible. These changes may include the changing of the age female should begin their free cervical smear by reducing the age from 30 to 25 years. The reason for this is that unlike before when the policy was adopted females used to begin their sexual lives a little older than in the current generation. Nowadays, females are increasingly initiating sex at a very early age in some case as early as 12 or 13 years of age and in most cases with older partners. So, if they were to acquire HPV in these ages, by the time they will get to 30 years of age to initiate cervical smears, it would be too late for many.

On the campus health facility level, the main recommendation that was emphasized by the participants was that of having awareness campaigns that will educate people about reproductive cancers. Awareness campaigns are very important since they raise critical consciousness among people. The study found that students had not done any reproductive cancer screening because they were not aware of reproductive cancers that exist, therefore there has to be awareness campaigns around the campus to make the students aware of these different types of cancer. Furthermore, the female students put forward that the campus health facilities should try having a Pap smear programme for those with certain conditions and also quickly make referrals when necessary. Females also expressed that there should be more information about other reproductive cancers not just cervical cancer only.

Males on the other hand also put forward that there should be more pamphlets that also have information about male reproductive cancers since much of the current available information focuses mostly on females. Education is a very vital aspect to any successful public health intervention. Most importantly education should focus more on the intricate association between sexual lifestyles, HPV and how HPV is the leading cause of these reproductive cancers. That is the sexual and reproductive education aspect that is not available to the youth. Sexual education is an important part of giving people knowledge about safe and unsafe sexual behaviours. A lack of sex education is often cited in the literature as the reason for the perpetuation in the spreading of

STIs (Varkey et al., 2000) of which HPV is the most prevalent one and the most poorly known and understood.

In this era of advanced technology, social networks form part of our daily lives. Organizations that deal with cancer such as CANSA should try as much as they can to broaden their reach by making use of the social networks such as Facebook and Twitter to disseminate this reproductively vital information to young people. It would be a good strategy to use these kinds of platforms since the lives of today's youth revolve around social media. Additionally, more research is needed to probe the prevalence and incidence of reproductive cancers in the general population of South Africa. Furthermore, the research should be done to improve the population's awareness of HPV.

#### **5.4 Conclusion**

The main objective of the study was to explore what students know about the disease that can affect their reproductive organs. Although the sample used was small, it did provide some insights into what young people think about the state of the health system when it comes to information dissemination. The study found that the majority of the respondents did not know about the kind of cancers that affect their reproductive organs, and they revealed that there is no information about these types of cancers that is disseminated when they compared it to HIV/AIDS. Furthermore, the study found that there is poor knowledge about these reproductive cancers because when the participants were asked about these kind of cancers, they referred their knowledge to cancer in general. The data from the study also showed that the students were not aware about the kinds of screening services used to screen reproductive cancers. Awareness about HPV was found to be very low. The study concluded by making some recommendations which could be adopted in order to increase the awareness of the types of cancers.

## Appendix A: Consent form

### **Topic: Awareness of reproductive cancers among young people in students in Durban**

My name is **Liberty T. Mambondiani** from the University of KwaZulu-Natal (Howard College campus) in Durban. My contact details are as follows: cell number is 083 975 7167 and my email address is [liberty.mambo@yahoo.com](mailto:liberty.mambo@yahoo.com).

You are being invited to consider participating in a research project entitled: **Awareness of reproductive cancers among students in Durban, South Africa**. The aim of the project is to shed insights into knowledge and awareness about the reproductive cancers among young people. The study will be conducted by myself at a venue and time that is convenient for you. You are advised to choose a time slot that is not in conflict with your timetable and academic activities to conduct the interview. I do not anticipate any risks to you participating in this study. I hope the study will create an awareness of the reproductive cancers among young people.

If you would like to know more, please do not hesitate to contact me on the above contact details.

I..... have been informed about the study entitled **Awareness of reproductive cancers among students in Durban** provided by **Liberty T. Mambondiani**.

- I understand the purpose and procedures of the study project.
- I have been given an opportunity to answer questions about the study and I have had answers to my satisfaction.
- I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits I usually am entitled to.
- I have been informed about any available compensation or medical treatment if injury occurs to me as a result of study-related procedures.
- If I have any further questions, concerns or queries related to the study I understand that I may contact the researcher at the provided contact details above.

- If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researcher then I may contact:

**Humanities and Social Science Ethics Administration**  
**Research Office, Westville Campus**  
**Govan Mbeki Building**  
**Private Bag X54001**  
**Durban**  
**4001**  
**KwaZulu-Natal, South Africa**  
**Tel: +27 31 260 4557 – Fax: +27 31 260 4609**  
**Email: HSSREC@ukzn.ac.za**

I confirm that I have read and understand the contents described above and the nature of the research study and my questions have been answered to my satisfaction. I give my informed consent to participating in the research study. I understand that my participation is completely **voluntary** and I am at liberty to withdraw from the study at any time, should I so desire, without incurring any penalties. I acknowledge and agree to information I provided, been used collectively in the form of a completed theses, for conference purposes and for publication in a recognized journal.

**I hereby provide consent to:**

Audio record my interview:  **YES** OR  **NO**

\_\_\_\_\_  
Signature of participant                      Date                      Personal Email (optional)

\_\_\_\_\_  
Signature of researcher                      Date                      liberty.mambo@yahoo.com

## **Appendix B: Interview guide (Males)**

1. Have you ever heard about cancer?
  - If yes, what kind of cancer?
2. Do you know any kind of cancers that affect the reproductive organs?
3. What was your source of information?
4. Do you think that source of information provides enough information?
5. Have you ever heard about cancer screening?
6. If yes, what was the source?
7. As far as you are aware, is there any CANSA cancer screening programme?
8. Do you think there is enough information on cancer in general?
9. Do you think there is enough information on reproductive cancers?

### **Beliefs and attitudes**

1. What do you think of cancer?
2. Who do you think is at risk of being affected by reproductive cancers?
3. What do you think are the risk factors for reproductive cancers?
4. Is there a relationship between reproductive cancers and an individual's sexual lifestyle?
  - If yes, how?
5. Have you ever heard about Human Papillomavirus (HPV)?
  - What about it did you hear?
6. Have you ever heard of Pap smear? (What is its purpose?)
7. Have you ever heard of Prostate-specific Antigen (PSA)?
8. Ever heard of Digital Rectal Exam (DRE)?
9. Do you know testicular-self-examination (TSE)?
  - How do you feel about it?
  - Would you try it?
10. Have you ever gone for screening?
  - If no, why?
11. Would you recommend someone to go for screening?

## **Suggestions**

1. Is there enough information about reproductive cancers in health facilities?
2. Do you think the campus health facilities provides enough information on reproductive cancers and what do you think should be done?
3. What do you think should be done by the Department of Health on this issue?
4. May you please give your suggestions, recommendations and views on what you think should or can be done and how do you suggest this can be done.

### **Appendix C: Interview guide (Females)**

1. Have you ever heard about cancer?
  - o If yes, what kind of cancer?
2. Do you know any kind of cancers that affect the reproductive organs?
3. What was your source of information?
4. Do you think that source of information provides enough information?
5. Have you ever heard about cancer screening?
6. If yes, what was the source?
7. As far as you are aware, is there any CANSA cancer screening programme?
8. Do you think there is enough information on cancer in general?
9. Do you think there is enough information on reproductive cancers?

#### **Beliefs and attitudes**

1. What do you think of cancer?
2. Who do you think is at risk of being affected by reproductive cancers?
3. What do you think are the risk factors for reproductive cancers?
4. Is there a relationship between reproductive cancers and an individual's sexual lifestyle?
  - o If yes, how?
5. Have you ever heard about Human Papillomavirus (HPV)?
  - o What about it did you hear?
6. Are you aware of Pap smear? (What is its purpose? Ever done it?).
7. Have you ever heard of Prostate-specific Antigen (PSA)?
8. Have you ever heard of Digital Rectal Exam (DRE)?
9. Have you ever heard of testicular-self-examination (TSE)?
10. Do you see a gynecologist?
11. Have you ever gone for screening?
  - o If no, why?
  - o What was the reason for screening?
  - o If yes, how was the experience?
12. Would you recommend someone to go for screening?

### **Suggestions**

1. Is there enough information about reproductive cancers in health facilities?
2. Do you think the campus health facilities provides enough information on reproductive cancers and what do you think should be done?
3. What do you think should be done by the Department of Health on this issue?
4. May you please give your suggestions, recommendations and views on what you think should or can be done and how do you suggest this can be done.

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