An investigation of the knowledge of and attitudes towards cervical cancer among female students at Rhodes University.

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Abstract

South African and African studies on the knowledge of cervical cancer show that there is generally a limited understanding and knowledge of cervical cancer among women. It is for this reason that this qualitative study examines the knowledge of and attitudes towards cervical cancer among female students at Rhodes University, with the aim of determining whether or not this specific group of women (young and educated) has a better understanding and knowledge of cervical cancer. Semi-structured in-depth interviews were conducted with ten female RU students, and two members of staff at RU campus. Using thematic analysis, the study found that there is also a lack of understanding and knowledge of cervical cancer among the participants. Participants were mostly unaware of its causes, preventative methods, screening methods, and they did not know any cervical cancer-based organisations or initiatives in their communities. The two RU members of staff participants confirmed the latter as they stated that the Rhodes University First Thing's First is the only organisation in Makhanda that deals with cervical cancer awareness and screening.

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Contents

Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ARV	Anti-retroviral
BMI	Body Mass Index
CANSA	Cancer Association of South Africa
DoH	Department of Health
FTF	First Thing's First
HBM	Health Belief Model
HCC	Health Care Centre
HEAIDS	Higher Education and Training HIV/AIDS Programme
HIV	Human Immunodeficiency Virus
HPV	Human Papillomavirus
HR	Human Resource
LO	Life Orientation
Pap Smear	Papanicolaou Smear
RU	Rhodes University
SES	Socio-economic status
SHD	Social Determents of Health
SRC	School Representative Council
STIs	Sexually Transmitted infections
STD	Sexually transmitted disease
SRHR	Sexual and Reproductive Health and Rights
SAMRC	South African Medical Research Council
TB	Tuberculosis
UFS	University of Free State
UN	United Nations
UNFPA	United Nations Population Fund
WHO	World Health Organisation

1 Introduction

This study investigates the knowledge of and attitudes towards cervical cancer among female students at Rhodes University (RU). Although a complex problem, cervical cancer is a cancer that can be actively prevented when women are made aware of it and they decide to take action against contracting it. However, cervical cancer is responsible for the death of many women in Africa, particularly in South Africa. Most studies have found that the vast majority of women are not aware of cervical cancer, its causes, preventative methods and screening methods. For example, researchers such as Hoque *et al*. (2014), who have conducted extensive research among South African university students, note that the gap lies in the education and awareness of cervical cancer among South African women.

Cervical cancer has multiple causes, but the primary cause of cervical cancer is Human Papilloma Virus (HPV) (Hoque, 2010: 127). This is a common sexually transmitted infection, which men and women are susceptible to contracting (Osazuwa-Peters, Boakye, Mohammed, Tobo, Geneus, & Schootman, 2017). However, it is only in women where re-infection of HPV can result in cervical cancer in the cervix (Castellsague, 2008). This means that education on cervical cancer is an imperative tool in bringing awareness to vulnerable groups, such as university students. This would help in decreasing the rate of cervical cancer, and cervical cancer deaths in South Africa.

Young adults, particularly students in places of higher education, are a vulnerable group as they engage in sexually risky behaviour (Eisenberg, Lust & Garcia; 2014:128). Therefore, infection and re-infection with HPV among the female students may explain the prevalence of cervical cancer among older women in South Africa. This is why the current study is particularly interested in this age group as a starting point for further studies to explore the knowledge of and attitudes towards cervical cancer among South African women.

Despite organisations such as the World Health Organisation, the Cancer Association of South Africa, and the RU First Thing's First (FTF), the screening uptake and general knowledge of cervical cancer is still low among South African women. The study used a qualitative research design to investigate the knowledge of and attitudes towards cervical cancer among female students at RU. Data was collected through semi-structured, in-depth face-to-face interviews. Data was interpreted using thematic analysis. Symbolic interactionism, health belief model (HBM), and Marxist-feminist perspective are the theories that underpin the study.

1.1 Study objective

The primary objective of the study was to explore the knowledge of and attitudes towards cervical cancer among female students at RU, which was achieved through the following goals:

- To assess the knowledge of the risk factors associated with, and detection methods of cervical cancer among RU students;
- To assess the perceptions and attitudes that RU students have towards the human papillomavirus vaccinations;
- To assess the perceptions and attitudes that RU students have towards pap smear testing;
- To investigate whether there is enough education about cervical cancer aimed at young women in South Africa.

1.2 Methodology

The purpose of the study was to investigate the knowledge of and attitudes towards cervical cancer among RU female students, specifically examining the knowledge of the causes, preventative methods and screening methods. In order to achieve this, the study used a qualitative research method. Qualitative research method is widely used in the social sciences and it has strong roots in the social sciences where participants create their own meanings (Denzin & Lincoln, 2003:13; Ntshinga, 2019:5). As Goethals, Sorenson and MacGregor (2004:1) note that "qualitative researchers seek to interpret phenomena by analysing the meanings that people attach to their experiences within their natural context". Using qualitative research is specifically of benefit to this study as this methodological approach allows for the appreciation of the participants' subjective awareness of the causes of cervical cancer.

Data collection was done through semi-structured, in-depth interviews which are a type of interviewing technique in qualitative research. According to Boyce and Neale (2006:3), in-depth interviews are a type of interviewing technique that involves intensive individual interviews that are conducted with a small number of participants to examine their perspectives on an idea, situation or programme. This technique enabled the study to get answers to specific questions, but also allowed the participants to branch into other aspects that the researcher may not have included on the interview schedule.

The study used purposive sampling, a technique is dependent on the judgement of the researcher as to who will be suitable for the study and if they can provide the study with the best information to accomplish the objectives of the study (Etikan & Bala, 2017:215). Study

participants included 10 RU female students, and two members of staff - one from the RU Health Care Centre (HCC), and the other from the RU FTF campaign. All interviews were conducted at RU campus, the students were interviewed in venues that they felt comfortable in and that were convenient to them, while the employees were interviewed in their respective offices. All student participants have been given pseudonyms to ensure anonymity and maintain confidentiality. However, the two RU employees, who are the managers of their respective departments, have been named with their consent.

Data was analysed using thematic analysis, which is used in the social sciences to identify themes in qualitative data (Terry et al., 2017:18). This analysis method involves searching for recurring themes in a data set, which help us to identify ideas, topics, and patterns that are common across the interviews (Riger & Sigurvinsdottir, 2016:33). This method of analysis allows the researcher a lot of flexibility in terms of interpreting the data that has been collected by allowing the researcher to place data into broad themes (Heap & Waters, 2019).

The study conclusions are limited to the ten participating students and the two members of staff. Therefore, the numbers are not enough to conclude that the research findings can be generalised to other universities in South Africa or the entire RU female population. The study was conducted with the approval of the Rhodes University Ethics committee.

1.3 Dissertation outline

This thesis is divided into five chapters that arranged as follows: the introductory chapter which includes the introduction to the study, the study objectives and the methodology of the study. The second chapter is the literature review which begins with an introduction, followed by cervical cancer prevalence. Then a discussion on WHO, CANSA and RU FTF initiatives and awareness campaigns on the symptoms and causes of cervical cancer, prevention, barriers to cervical cancer screening in South Africa and Africa. The chapter includes stories of women and the socio-economic impact on their health, specifically reproductive health. Chapter 3 presents the theoretical framework of the study – a brief discussion of the symbolic interactionist and Marxist-feminist perspectives, and the Health Belief Model. Chapter 4 presents the study findings using thematic analysis research method. and this is followed by The final chapter 6 provides a conclusion to the study, recommendations and the limitations of the study.

2 Literature Review: Introduction

South Africa, like many African countries, is faced with many health challenges, especially among historically disadvantaged black people. These health problems, such as cervical cancer, are not responded to quickly due to lack of resources. This chapter is on cervical cancer as a disease, its causes, preventative methods and its screening methods. Moreover, this chapter highlights some of the reasons why cervical cancer, although it is a healthcare problem, impacts the socio-economic lives of women as will be shown in this review.

2.1 Cervical Cancer Prevalence

Although preventable, cervical cancer is the second most common cancer amongst South African women and the most common cancer amongst black women (Maree & Moitse, 2014: 1). Cervical cancer is a rare disease in countries where there are active screening programmes and educational programmes that help women with awareness and education of the disease (Denny & Anorlu, 2012: 1434). However, it is not the same for many areas of the world where more than 80% of new cases of cervical cancer are diagnosed, and "…affects women in the prime of their lives causing premature and needless suffering and death in a critical important segment of the world's population, despite being one of the few cancers that can be prevented with simple testing" (Denny & Anorlu, 2012: 1434). For African women, the diagnosis of cervical cancer often means death as "an estimated 78 671 women living in Africa will be diagnosed with cervical cancer annually, whilst 61 671 will die from this disease, which translates into a higher incidence to mortality ratio than those of the developed world" (Maree, Lu & Wright, 2012: 105).

Cervical cancer is a major global health challenge, and it is one of the leading causes of death among women worldwide (Cohen, Jhingran, Oaknin & Denny, 2019: 169; Hoque & Hoque, 2009: 21). It is the most common cancer in women in sub-Saharan Africa (Maree, Langley & Nqubezelo, 2015: 240). And according to Maree *et al.* (2012: 105), cervical cancer is the most common HIV/AIDS related cancer in women. However, it is important to recognise that even though almost 83% of all cervical cancer diagnosis come from developing countries, it is not limited to these countries as western European countries have 32 000 cervical cancer deaths annually (Maree *et al*., 2013: 240).

In 2008, the South African Medical Council (SAMRC) noted that cervical cancer was responsible for approximately 3498 deaths in South Africa. However, Maree *et al.* (2012: 105) acknowledge that the exact numbers of cervical cancer deaths in South Africa is unknown due to poor maintenance of the pathology-based cancer registry. According to Denny and Kuhn

(2017: 190), of all the recorded cases of cervical cancer in South Africa, about 87.7% were diagnosed in black women, while 9% were white women. And most alarming is the fact that, if left untreated, cervical cancer is almost always fatal (Maree *et al.*, 2013: 240).

Studies have found that young women, especially university students, are at a higher risk of cervical cancer as they tend to be sexually active, and have higher numbers of sexual partners (Hoque, Ghuman, Coopoosmay & Van Hal, 2014:1). Furthermore, researchers note that young women are poorly informed on cervical cancer and the associated risk factors, and that they are unclear about the purpose of cervical cancer screening and hold negative or inaccurate beliefs or attitudes about pap testing (Hoque *et al*., 2014). It is for this reason that the current study sought to investigate the knowledge of and attitude towards cervical cancer among female students at Rhodes University. The following section discusses organisations involved in cervical cancer awareness campaigns.

2.2 The World Health Organisation, Cancer Association of South Africa, and First Things First

Research in developed countries has shown that "well planned, organised screening programmes with high coverage can significantly reduce the number of new cases of cervical cancer and the mortality rate associated with it" (WHO, 2006:16). Moreover, there is evidence that general awareness about cervical cancer, effective screening programmes, and the improvement of existing health care services can reduce the burden of cervical cancer for women and the healthcare system (WHO, 2006:16). Among the ways in which the World Health Organisation's suggests achieving cervical cancer control are two points that speak on the importance of organisational and policy implementation. The World Health Organization (2006:20) says that national policy on cervical cancer control should exist, based on the natural history of the disease and on local prevalence and incidence in different age groups, and to implement programmes of public education and advocacy for prevention are in place to support national policies.

According to the WHO (2023) no woman should die from cervical cancer because there is medical expertise, policy and procedures to eliminate it. However, the WHO (2023) recognises that cervical cancer prevalent among women from low- and middle-income countries who lack access to health services. This is why the World Health Assembly adopted a global strategy that focuses on the elimination of cervical cancer as a public health problem and has set up targets that countries need to reach before 2030 (WHO, 2023). These targets include: 90% of the girls should be fully vaccinated with the HPV vaccine by the age of 15 years, 70% of women

screened by the age of 35 years, and again by the age of 45 years, and that 90% of women identified with cervical cancer disease receive treatment. However, these goals cannot be reached without the prioritisation of cervical cancer awareness and education aimed at women, especially young women (Cancer Association of South Africa [CANSA], 2023).

In line with this strategy, the WHO (2023) has identified other factors that would need work in order to eliminate cancer as a health problem. The global health strategy for the elimination of cervical cancer is aligned with human rights instruments, which uphold health as a human right. It also contributes to the attainment of several Sustainable Development Goals by 2030, such as:

- Ending poverty in all its forms, ensure healthy lives and promote well-being for all at all ages;
- Reduce by one third premature mortality from noncommunication diseases through prevention and treatment;
- Promote mental health and well-being;
- Ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes;
- Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all;
- Achieve gender equality and empower all women and girls;
- Finally, reduce inequality within and among countries.

2.3 The Cancer Association of South Africa

CANSA, a non-profit organisation founded in 1931, is a leader in the fight against cancer in South Africa. Its mission is to enable research, educate the public and advocate for and support all people living with and affected by cancer. Their programmes are focused on health education campaigns, particularly around awareness of cancer symptoms, the importance of screening and lowering cancer risk. CANSA also aims to promote awareness of HPV and its link to cervical cancer. This involves educating women on the risk factors and symptoms of cervical cancer, promoting early detection through screening, enabling patients and their

families to understand their rights within the public health care system. It also provides palliative support to cancer patients with a terminal diagnosis.

2.4 Rhodes University First Things First

The Higher Education and Training HIV/AIDS Programme (HEAIDS) initiated a programme of the prevention, care and treatment of HIV (HEAIDS, 2018:12 & 17). In response, South African universities, including RU, started The First Things First (FTF) HIV testing Campaign, which is a voluntary HIV testing, counselling and education campaign. At RU, the FTF HIV testing campaign is a voluntary HIV testing, counselling and education campaign which aims to encourage students to get tested for HIV, know their status and commit to behaviour that would benefit them and their peers. Their campaign drives include free tests for HIV and AIDS, TB and STI screening, Diabetes, Blood pressure (BP), Nutrition Assessment (BMI), family planning and pap smear. Pap smear tests are done at the Rhodes University Health Care Centre (HCC). However, based on information on the RU website, FTF campaign is not focused on cervical cancer education. Even though FTF deals with a number of health-related issues, its main focus is on HIV/AIDS testing and preventative methods. Regardless, FTF is a resource for cervical cancer awareness, and provides free pap smear tests during their campaign drives. As Dr Mabizela, the vice-chancellor at RU comments on FTF: "This initiative is part of the university's wellness programme to help students and staff make informed and healthy choices that can reduce health care costs, increase vitality and enjoy better quality life". FTF is a holistic health programme that is supported by other organisations and initiatives with the similar healthcare goals.

The above discussion shows the importance of organisations aimed at educating and raising awareness about cervical cancer. Organizations such as the WHO's international initiative, CANSA a South African initiative, and the FTF an RU initiative, all have a goal that prioritises the health of people, specifically women. However, when women do not have access to such organisations and initiatives, or they are not visible to most South African women, how can women, especially black women, become aware about cervical cancer?

2.5 Symptoms and causes of cervical cancer

Behtash and Mehrdad (2006: 684) note that cervical cancer cells are asymptomatic and therefore are unrecognizable on palpation. Palpation is "a method of feeling with the fingers or hands during a physical examination. The health care provider touches and feels your body to examine the size, consistency, texture, location, and tenderness of an organ or body part" (Swartz & Swartz, 2021). However, the most common symptom of invasive cancer of the

cervix is abnormal vaginal bleeding (Behtash & Mehrdad, 2006). This, however, is not the only symptom of cervical cancer, it has various symptoms, which can be divided into early, late and very late symptoms (Maree *et al.*, 2013: 240). Early symptoms include irregular bleeding in women of reproductive age, postcoital bleeding, postmenopausal bleeding or spotting (Maree *et al*., 2013: 240). Late symptoms include lower abdominal pain, backache, and urinary urgency and frequency (Maree *et al.*, 2013: 240). Very late symptoms include severe back pain, weight loss, swelling of the lower limbs, decreased urinary outputs, and breathlessness (Maree *et al.*, 2013: 240).

There are two major histological types of cervical cancer, the first is the squamous cell carcinoma (about 75%), which mostly starts at the transformational zone of the ectocervix (Ngoma & Autier, 2019). The second is adenocarcinoma (about 25%), which is found in the glandular columnar layer of the endocervix (Ngoma & Autier, 2019). The human papillomavirus (HPV), a sexually transmitted infection, is central to the development of cervical neoplasia and it can be detected in 99.7% of all cervical cancers (Ngoma & Autier, 2019). In addition, cervical cancer is mostly caused by chronic infection with high-risk strains of HPV which are mainly type 16 and type 18 (Ngoma & Autier, 2019). The HPV subtypes associated with the first type of cancer, squamous cell carcinoma cancer, are different from those associated with the adenocarcinoma type of cancer (Ngoma & Autier, 2019).

As stated earlier, the primary cause of cervical cancer is a sexually transmitted infection called HPV, which is the most common sexually transmitted infection worldwide (Hoque & Hoque, 2009: 21; Lopez, Baker, Maza, Fontes-Cintra, Lopez & Carvajal, 2017: 625, Maree *et al.*, 2012: 105; Ngoma & Autier, 2019). Maree *et al*. (2012: 105) note that nearly all cancers (99%) are linked to an infection with an HPV genotype. As Denny and Kuhn (2017:190) point to studies that prove that there is a relationship between the HPV infection and the development of cervical cancer. The causal relationship is between infection with one or more of the 14 HPV types and cervical cancer (Denny & Kuhn, 2017). It has also been found that 50% to 80% of sexually active women are or will be infected with one of the HPV types at least once in their lifetime (Hoque & Hoque, 2009). Other known risk factors for cervical cancer include the early onset of sexual activities, long use of contraceptives, multiple sex partners, smoking, immunosuppressants, and specific dietary factors (Hoque & Hoque, 2009: 21, Maree *et al.*, 2012: 105). Additionally, other sexually transmitted infections that have been linked to cervical cancer are gonorrhoea, HIV, chlamydia trachomatis and herpes simplex type 2 (Maree *et al.*, 2012: 105). Moreover, Ngoma and Autier (2019: 2) argue that factors such as early marriage,

polygamy, a history of multiple infection with sexually transmitted diseases, low education, education deprivation, and non-attendance or non-access to cervical cancer screening are generally overlooked when discussing the risk factors that are associated with cervical cancer. However, as Lopez *et al.* (2017: 615) and other researchers note, nearly all (99%) cervical cancers are caused by the exposure to and persistent infection with the high-risk oncogenic HPV genotype (Denny & Kuhn; 2017; Hoque & Hoque, 2009; Maree, Lu & wright, 2012: 105).

In addition to the above-mentioned risk factors and causes of cervical cancer, an impaired ability to clear HPV infection is the strongest risk factor for cervical cancer in Africa (Ngoma & Autier, 2019). The "impairment of the immune system due to being infected with human immunodeficiency virus (HIV) is associated with persistent HPV infection which is the primary cause of cervical intra-epithelial neoplasia that may progress into an invasive cancer if left untreated" (Ngoma & Autier, 2019: 2). Additionally, HIV-positive African women have a higher risk of intraepithelial neoplasia (CIN) compared to HIV-negative women. It is for this reason that HIV-infected women, and women with full-blown AIDS are at risk for the development of cervical cancer. Cervical cancer is said to appear at a much earlier age among women who are infected with HIV, and the disease is more aggressive among these women than in women who are not infected with the virus (Ngoma & Autier, 2019).

Although preventable, cervical cancer is not always easy to prevent. This is due to a number of reasons including issues of ethnicity, socio-economic status, and low levels of education that lead to poor screening opportunities in developing countries such as South Africa. According to Wellensiek, Moodley, Moodley, and Nkwanyana (2002), all women in South Africa have access to cervical cancer screening facilities which are available in all primary health care clinics, but only 20% screening uptake has been recorded. It is, however, not the women's fault as Wellensiek *et al.* (2002) found that women were willing to be tested and diagnosed with cervical cancer, it was the health care system that failed these women. This means that although primary health care clinics have facilities for the cervical cancer screening, the uptake of the has been low. This could be due to several reasons such as health practitioners not recommending the tests or that the women have no knowledge of the screening services therefore they never enquire about them.

2.6 Prevention

Sub-Saharan countries have a long way to go when it comes to controlling the high burden of cervical cancer. As Ngoma and Autier (2019: 2) note that, although "effective prevention

methods exist, such as HPV vaccination and screening, but their affordability and implementation remain challenging for most of *sub-Saharan* countries". Cervical cancer can be prevented through primary and secondary preventative measures (Mofolo, Sello, Lesolo, Chabanku, Ndlovu, Naidoo & Joubert, 2018: 1). The primary preventative measures involve targeting people who have not contracted HPV, and introducing the idea of abstinence, mutual monogamy or using condoms as a sexually transmitted infection preventative method (Mofolo *et al*., 2018). In addition to preventative measures, there are vaccines that boost immunity against cervical cancer. For example, in April 2014, South Africa joined Rwanda and Seychelles as one of the first sub-Saharan countries to offer nationwide HPV vaccination (Amponsah-Dacosta, Blose, Nkwinika & Chepkurui, 2022: 4). The vaccines are offered free of charge to adolescent girls in grade 4 or girls who are younger than 9 years old attending public schools across South Africa (Amponsah-Dacosta *et al*., 2022: 4). This method is the most cost-effective way of delivering the vaccine to eligible adolescent girls in South Africa (Amponsah-Dacosta *et al*, 2022).

There are currently three vaccines aimed at different strains of HPV (Ngoma & Autier, 2019: 2-3). The WHO recommends that two doses of the HPV vaccine be given to girls who are aged 9 to 14 years who have not yet become sexually active, as this age group has shown a better immune response to the vaccine. The HPV vaccine prevent up to 95% of HPV infections that are caused by some HPV strains, and the vaccine can also protect against other strains that are less common but likely to cause cervical cancer (Ngoma & Autier, 2019). The HPV vaccines work better when they are administered before an individual is exposed. Cervical cancer primary preventative methods largely overlap with STI's, including HIV, preventative methods (Ngoma & Autier, 2019).

Secondary prevention focuses on screening and early detection, followed by the treatment of pre-cancerous lesions (Mofolo *et al*., 2018: 1). Its purpose is to ultimately decrease the mortality rate associated with cervical cancer. This is done through detection methods that target disease in its early and curable stages, additionally, to detect precursor lesions (Mofolo *et al*., 2018). It also includes removing lesions during screening, which leads to reduced incidences of invasive cervical cancer.

2.7 Barriers to cervical cancer screening in South Africa

In a study by Sibiya and Grainger (2010) titled *Registered Nurses' perception of cervical cancer screening programme in primary health care clinics in the Kwazulu-Natal province of South Africa*, it was found that Cervical cancer was a huge problem in the KwaZulu-Natal area.

However, according to Sibiya and Grainger (2010: 15), “the implementation of the provincial cervical screening programme has been slow”. They, additionally, identified challenges to the implementation of the cervical screening programme as:

1. There are long periods between the time of taking the pap smears and receiving the results of said pap smear. This period usually takes 6 weeks.
2. The follow-up system at the clinics was inadequate, which created problems with tracking clients with abnormal smears.
3. There were difficulties locating clients due to incorrect client details, a lack of proper addresses, and incorrect or outdated address details.

Furthermore, there seems to be a disagreement and concern about the pap smear screening age and intervals (Sibiya & Grainger, 2010: 22). The study found that there was a disagreement among nurses who provide the pap smear service, about the ages and the intervals which one should have a pap smear done. The participants of this particular study believed that one should have the first pap smear before the age of 20 and thereafter at intervals of five years. However, a study by Smith and Hoffman (2000) found that half of the registered nurses in Mitchelle’s Plain, Cape Town, thought that women should have their first pap smear when they start engaging in sexual activity. However, a quarter of the nurses in the same hospital said that this should happen when the woman is younger than 30. The nurses’ opinion is not accepted, as Sibiya and Grainger (2010:22) have noted, “such sentiments could be criticised on the grounds that the registered nurses might not understand the natural course of the disease nor the rationale behind the screening programme”.

The above confusion on pap smears is not the case in developed countries as “… reductions in cervical cancer mortality have been attributed to the institution of widespread screening for cervical cancer precursors” (Behtash & Mehrdad, 2006: 684). Ideal pap smears, which are the mainstay of these screening programs are “cost effective, minimally invasive, and acceptable to patients, and are able to detect diseases in a preinvasive or early state” (O'Meara 2002 cited in Behtash & Mehrdad, 2006: 684). However, according to McFarland (2003: 167), there is inadequate use of pap smear tests in Southern Africa, this is attributed to factors such as financial constraints, lack of national cytology screening programmes, and lack of adequately trained health care personnel. She argues that the infrequent use of screening methods, such as pap smears, is a reality among women from low socio-economic backgrounds. She further notes that “beliefs, attitudes, and knowledge about the disease and pap smear tests have been

documented as determinants of the individual's participation in cancer screening in developed countries" (McFarland, 2003: 168). Other researchers have found that women's compliance with screening for cervical cancer, using pap smear, is associated with women's knowledge of the disease (Razaie, Mohammad & Kamalifard, 2012; Sachan, Singh, Patel & Sachan, 2018: 337).

A study conducted by Razaie, Mohammad and Kamalifard (2012) on the knowledge, attitudes and practice regarding pap smear among women attending a public hospital found that participants lacked knowledge of cervical cancer and the screening methods. They found that the most common reason why women had a pap smear test was after a medical practitioner had advised them to do so. Those who chose not to test, even though they knew about the test, gave reasons such as being embarrassed, fear of the test results and economic problems. Another study by Bakheit and Haroon (2004) titled *The knowledge, attitude and practice of pap smear among local school teachers in the Sharjah district*, found that the overall, and the most frequent reasons why women did not have a pap smear, were fear of pain and embarrassment. A literature review on *the perceived barriers within the health belief model on pap smear screening as a cervical cancer prevention measure* confirms the finding that the fear of pain and discomfort is the main reason why some women don't have a pap smear test (Julinawati, Cawley, Domegan, Brenner & Rowan, 2013). These women assume that the pap smear will be painful, uncomfortable and that they will be embarrassed during the process. These rumours, according to Julinawati *et al.* (2013), are often spread by close friends and family members.

A study by Kangmennang, Thogarapalli, Mkandawire and Luginaah (2015) which investigated the disparities in cervical cancer screening among Namibian women, examined the influence of knowledge and information, health care access and different socio-economic variables on women's decisions to screen for cervical cancer using a nationally representative dataset. They found that there is a great variety across health care and power dynamics which result in the variation of cervical cancer screening. The impact of financial constraints, access to health care and household dynamics hold the most power on a woman's ability to utilize health care. They found that women who did not have power on their health care decisions were less likely to use cervical cancer screening methods. The opposite is true for women who had complete autonomy on their health care decisions. Therefore, gender roles and household power may be a barrier to screening for cervical cancer. According to Kangmennang *et al.* (2015:414), other studies that have been done in Namibia showed a wide disparity in the utilization of health care facilities because of income and health access inequalities in the areas of immunisation and

maternal services. Which leads to other disparity barriers found by Kangmennang *et al.* (2015), which are the employment status, region of residence and wealth levels of women. All of these were found to be determinants of cervical cancer screening. As Kangmennang et al. (2015: 214) conclude, "the lower testing level among unemployed, underemployed and poorer women raises issues of financial accessibility to testing services as adverse living conditions associated with low socio-economic status may constitute barriers to access cervical cancer testing services." They also found that it is women who have full employment or even seasonal employment that have the ability to screen for cervical cancer, and some of these women can access private healthcare.

Mookeng, Mavundla, and McFarland (2010), in the article *Barriers to cervical cancer screening within private medical practices in Soshanguve, South Africa*, identify the following barriers to cervical cancer screening:

- Age and the gender of the medical practitioner;
- Few opportunities for private medical practitioners to conduct cervical screening tests;
- Failure of the medical practitioners to inform patients;
- The high cost of screening.

When examining the age and gender of the medical practitioner and the age of the patient barrier, they found that older women were less likely to accept medical professionals of the younger age to conduct a pap smear on them, even when the patient had gynaecological problems. However, there was even more resistance from this age group when there was no complaint or need for gynaecological intervention (Mookeng *et al*., 2010: 34). Mookeng *et al*. (2010: 35) found that the main issue for patients was embarrassment, one of the reasons why patients often resisted to participate in the cervical cancer screening programme. Moreover, apart from the age of the medical practitioner, the gender affected the screening rates. Most of the private practitioners in the study were males, therefore, the female patients preferred not to have any vaginal examinations if they did not have any gynaecological complains. Since there were not many patients who had symptoms of cervical cancer, private practitioners had limited opportunities to conduct screening tests. The only time the screening was done is if the patient asked for the medical practitioner to conduct the pap smear. Mookeng *et al*. (2010:36) found that most medical practitioners did not inform their patients about cervical cancer and its predisposing factors, and that they did not even use the term pap smear to describe the test in consultations. The medical practitioners only attended to the needs of the patient when

presented with a medical problem during a consultation. And lastly, Mookeng *et al*. (2010:36) note that the cost of getting a pap smear was a barrier to screening for patients who paid for their consultation in cash. This excluded low-income women from being screened as the test was expensive. Some doctors referred the low-income patients to public clinics where free screening was offered.

In a similar study by McFarland, Gueldner and Mogobe (2016) titled *Integrated review of barriers to cervical cancer screening in sub-Saharan Africa,* which reviewed published studies that identified and described barriers to pap smear screening among women in sub-Saharan Africa. They reviewed articles from 10 sub-Saharan countries and from different settings, which were published between 2006 and 2015. Their findings were presented into three categories namely, client barriers, provider barriers and system barriers. Client barriers are individual factors that directly prevent women from participating in pap smears; provider barriers factors prevent healthcare providers from effectively offering the pap smear services; and system barriers are related to inaccessibility and unavailability of the screening services and screening policies. Client barriers include the lack of knowledge and awareness of cervical cancer screening methods, which was cited as the most common barrier. Other client barriers were fear of cervical cancer and the pap smear test; beliefs and attitudes; cultural and religious factors; and socio-demographic variables. Provider barriers included practitioners not providing health education; providers not advising women to screen for cervical cancer; not recommending a pap smear test; and the negative attitude of health providers towards clients/patients. For system barriers, inaccessibility was the most common system barrier, and this was linked to the price of the pap smear; lengthy waiting times to get appointments for pap smear tests; and unavailability of testing resources – in some facilities pap smear tests were unavailable and in some cases women had to be a certain age to qualify for free screening.

According to WHO (2006:20), attitudes and beliefs about cervical cancer among the general population and health care providers can also present barriers to cervical cancer control. This is due to the fact that "cancer is often thought to be an untreatable illness, leading inevitably to death" (WHO, 2006: 20).

2.8 Real women, real issues

Many women in sub-Saharan African countries are never given the opportunity to screen for cervical cancer in their lifetime (Maree *et al.,* 2012). For this reason, those who are diagnosed with cervical cancer are often diagnosed in the late stage of the disease where treatment is not as effective. Studies on cervical cancer often use these numbers as an indication of the severity

of the disease, and what is often not found in literature, are the real-life stories of African women who have survived or have gone through the stages of being diagnosed and treated for cervical cancer, and how this experience affect their lives. These women's stories are important because they reflect what most sub-Saharan African women go through, their reality. This section reviews two women's stories, one from Zambia and the other from Lesotho.

2.8.1 "It almost claimed my life…cervical cancer is deadly"

The first story is about Loyce Kabali from Zambia, who is an AIDS and cervical cancer survivor. Her opening sentence on the YouTube video is "It robbed me off all my happiness, all my life" (Conquering Cancer, 2020). She found out that she had cervical cancer when she went to a clinic to collect anti-retroviral (ARV) medication for AIDS. Although she had been living with HIV for a long time, she only heard of the high risk of cervical cancer for women living with AIDS on this particular visit to the clinic. There was a peer educator at the clinic, who was educating women about cervical cancer. After listening to the talk, she made a connection between the symptoms she had been experiencing to the cervical cancer symptoms described by the peer educator. She decided to have a pap smear test, and a scan, which revealed that there were abnormalities in the shape and structure of her cervix. She was shown a scan of with a normal cervix, and even with her untrained eye, she understood, from the scan, that her own cervix was abnormal. She describes the experience and the realisation as "scary".

Unfortunately, even after the scan result, it was a challenge to get the pap smear result from the laboratory. She said that she had to wait for weeks to get the results: "… it wasn't easy, I had to start pushing for my results". She endured heavy bleeding, almost on a daily, while waiting for the results, and she had been experiencing before she took the tests. When she eventually got her results back, she was formally diagnosed with cervical cancer. She describes that day as the worst day of her life.

Being told that she had cancer was like a death sentence to Loyce. This is because she had lost her mother to leukaemia, lost her dad to liver cancer and has a sister who died of oesophagus cancer. Therefore, this diagnosis led her to believe that her fate would be just like those she had lost. She only started believing that there was hope because she had heard that there was now a Zambian hospital that is dedicated to cancer treatment. However, she had to wait for a long time to start treatment as there is a long waiting list at the cancer hospital. The process of getting treatment was long and strenuous on her, but she endured it as she had no other option.

Although her family were supportive, she lost her job because of she was constantly bleeding and could not work for long periods of time. She became financially dependent on her family, and the lack of money became a barrier to her social life.

According to Dr Sharon Kapambwe, the Assistant Director of Cancer in the Ministry of Health in Zambia, cervical cancer is the most common cancer in Zambia (Conquering Cancer, 2020). She noted that women who are living with HIV are five to seven times more likely to develop cancer of the cervix. She also noted that women from 30 to 45 years old have the highest rate of cervical cancer diagnosis. This is a prime age when women have great potential for financial, cultural and social contribution to society.

Loyce's experience is similar to many women from low- to middle-income class in most sub-Saharan African countries, especially in South Africa, a country with a high HIV prevalence. There are health inequalities, and a dire need for quality healthcare services in most sub-Saharan African countries. For example, a study in Tshwane titled *Cervical cancer: South African women's knowledge, lifestyle risks and screening*, found that even when facilities were available in the community, not every woman visiting the health facility was screened, only those who requested test were screened (Maree *et al.,* 2012). The researchers concluded that "women who lack knowledge may not be able to request a pap smear and therefore might never have a single pap smear done during their lives" (Maree *et al.,* 2012). This was the case with Loyce, because she only found out about cervical cancer screening by chance when she went to collect ARV medication. Unlike women who do not have access to information on cervical cancer, Loyce was fortunate as she had the opportunity of listening to the peer educator's presentation on cervical cancer symptoms, and she was able to relate the information to her heavy bleeding. According to Van Schalkwyk *et al* (2008: 9), nearly all South African primary health care clinics have professionals that are trained in conducting pap smears, but the screening rate is only 1.3%.

Like Loyce, South African women have difficulty accessing treatment centres or general treatment after diagnosis of cancer. It took weeks for her to get the pap smear screening results, and she later struggled to get treatment due to the long waiting list at the cancer treatment centre. Again, this is the similar to South African women, as van Schalkwyk *et al.* (2008:12) note that on average women wait 17.3 months to get treatment in rural areas and 11.8 months for women living in urban areas. These estimates do not take into account the time it took between consultation, misdiagnosis and treatment of incorrect diagnosis.

2.8.2 “I survived cervical cancer”

The second real story is about 52-year-old Madaemane Alphocina Tsunyane, a cervical cancer survivor, from Roma, Lesotho (Elizabeth Glaser Paediatric AIDS Foundation, 2021). She started experiencing cervical cancer symptoms in 2018, which were pain during sex and bleeding after sex. However, she was not aware that these are some of the cervical cancer symptoms. As her illness worsened, she started feeling weak to a point where she was unable to do any work for herself. Although her children fully supported her, she hated the feeling of being a burden to them. As she said: “My 27-year-old daughter, who was already married, would come home and look after me at times. But my younger daughter, who was just 16 at the time, took care of me full-time. She would wash my clothes, which would be dirty because of the heavy bleeding.”

As a mother, Tsunyane always took pride in caring for her children, but cervical cancer took that away from her, as her children had to care for her. Cervical cancer affected both her self-esteem, psychological and mental well-being, and she isolated herself from her family and friends. One day in December 2018 she was rushed to the hospital due to heavy bleeding and was diagnosed with advanced cervical cancer. As Lesotho does not have advanced cancer treatment, such as radiation or chemotherapy, she was sent to South Africa for treatment, and later, along with some Basotho women, was sent to India for treatment. After chemotherapy, she experienced pain, hair loss, darkened nails, developed teary eyes, weight loss, pink lips and felt fatigue all the time. All these changes that she experienced affected her emotionally, yet she lives to tell the story of how she survived.

Like many women, Tsunyane did not know what was happening to her body when she began to experience some of the symptoms of cervical cancer. She was not informed and was not aware that her experiences were something to be concerned about. And like many women, the lack of education and information only resulted in her having to be diagnosed with cervical cancer at a much later stage, where little could be done in her home country of Lesotho. Her story shows how life changes and how women’s lives are drastically changed when they experience cervical cancer. Her illness affected her family as she was no longer able to provide for them financially, and she was also unable to take care of herself or her children. Instead, the roles changed, her children started taking care of her due to the advanced cervical cancer.

2.9 New hope for a reduction in cervical cancer deaths in East and Southern Africa

The United Nations Population Fund’s (UNFPA) Regional Director for East and Southern Africa, Lydia Zigomo, uses the poignant story of a Malawian woman to highlight the need for

improved cervical cancer screening and treatment centres in sub-Saharan Africa, particularly East and Southern Africa (Zigomo, 2023). The following is a brief account of the Malawian woman:

> At the age of 40, Mary went for cervical cancer screening and tested positive. Because the cancer had spread to her uterus, her only option was a hysterectomy. But Mary had been trying for 10 years to start a family. Sadly, she declined the operation and passed away from the disease in November last year (Zigomo, 2023).

Unfortunately, Mary's story is a common one in Malawi as it is a reality for many poor women. However, "this is a narrative that must change- because cervical cancer is one of the preventive and treatable forms of cancer" (Zigomo, 2023). There is a trend of inadequate screening of women and girls, late diagnosis, limited access to timely and quality treatment, and high HIV prevalence in East and Southern Africa that contribute to women's experiences.

Zigomo (2023) commends the WHO Health Assembly's adoption of a global strategy that recognises cervical cancer as a public health concern in 2020, and its recommendations on a comprehensive response to cervical cancer. However, she recognises that there is an even bigger need for smaller, more accessible programmes that need to emerge in communities of Southern African countries. This is important as there is a high HIV prevalence rate in East and Southern Africa. Therefore, an integrated programme, which offers a package of same-day services for sexual and reproductive health and rights (SRHR) was introduced (Zigomo, 2023).

In addition to an integrated programme, Zigomo (2023) calls for a change in attitudes as "many women in the region face several barriers to screening and treatment of cervical cancer. Their male partners are often reluctant to allow screening for cervical cancer, particularly if the health worker is male. Rumours abound that the instruments used could cause infertility."

There is evidence for 'new hope for a reduction in cervical cancer deaths in East and Southern Africa' as the results speak for themselves - the number of women and girls screened for cervical cancer increased from 2000 in 2019, to more than 9900 in 2020, and close to 11 000 in 2021 (Zigomo, 2023).

2.10 Cervical cancer research in South Africa

Several studies have been conducted to explore women's knowledge and beliefs about cervical cancer at South African universities. For example, Hoque, Ghuman, Coopoosmay and Hal's (2014) study titled *Cervical cancer screening among University students in South Africa: A social theory-based study*, which used the Health Belief Model (HBM) to investigate some of the factors influencing women's willingness to schedule and obtain screening. The researchers

note how "the health impact of college or university students' sexual behaviour has been a primary concern, due to their higher levels of sexual experimentation and unsafe sexual practices" (Hoque *et al*. 2014: 2). According to the Hoque *et al*. (2014: 4), this was the first study to explore the knowledge and beliefs about cervical cancer screening among the university population in South Africa. The researchers found that there was a lack of knowledge on cervical cancer among these 'educated women' because health campaigns at universities focus on HIV/AIDS. The study found that 55.2% of the respondents had knowledge about cervical cancer, and yet only 15% of the students had taken a pap smear test. There was an overall low awareness level related to issues of screening because of the gap in knowledge about risk factors. They argued that this finding is "not unexpected, given that literate young women in a college environment might have been exposed to public health education messages on sexually transmitted diseases, but mainly HIV/AIDS" (Hoque *et al*, 2014: 4). For them, a key "concern is that even in these highly educated populations, there is a lack of knowledge about cervical cancer and about the role of HPV in cervical cancer" (Hoque et al., 2014: 4).

Similarly, a study by Eche and Vermaak (2022) titled *Knowledge, attitude and practice of female university students regarding human papillomavirus and self-sampling in KwaZulu-Natal, South Africa: a cross-sectional survey.* The sample size was 386 (94% black students), and participants ranged from 18 years to 24 years old. The study found that 64% of the participants did not know what HPV is, and how it is transmitted. In addition, about 70% of the participants did not know that there is a vaccine for the prevention of HPV. Similar to Hoque *et al*. (2014) finding, Eche and Vermaak (2022) also found that there was lack of knowledge on HPV infection, its causative relationship with cervical cancer, and participants did not know about the HPV vaccine. The "implication is that students will not be inclined to carry out preventive practices that leaves them vulnerable to the disease" (Eche & Vermaak, 2022: 12). They concluded that awareness and educational campaigns about HPV and its causative relationship with cervical cancer will occasion better attitude towards screening participation (Eche & Vermaak, 2022).

Another study titled *Knowledge of cervical cancer, human papillomavirus and prevention among first-year female students in residences at the University of Free State* by Mofolo *et al.* (2018) also explored first-year female students' knowledge on cervical cancer and HPV. Like others, they found that students had limited knowledge of cervical cancer, HPV and vaccine availability. However, this is contrary to the results which shows that "most of the 373 respondents (85.8%) knew that cervical cancer arises from the cervix, but only 15.4% knew

that it was caused by a virus. Of the 62.5% participants who knew that HPV was a cancer-causing virus, most correctly knew that HPV was contracted by unprotected sexual intercourse (81.1%) and that there is a vaccine to protect against HPV (73.1%). However, 62.0% knew that the vaccine was available in South Africa and only 31.0% knew the vaccine was free of charge" (Mofolo et al. 2018: 1). They concluded that "there is an urgent need for provision of sexual and women's reproductive health programmes on their campus" (Mofolo et al., 2018: 4). A practical recommendation that HPV and its relationship to cervical cancer should be included in university programmes as a compulsory module for all first-year students at the university, and in Life Orientation in high school (Mofolo et al., 2018: 4).

A study titled *Cervical cancer awareness and preventive behaviour among female university students in South Africa* by Hoque (2010) explored the awareness of cervical cancer and preventative behaviour of 205 first year students at Mangosuthu University of Technology. Similar to other studies, this study found that only a third of the participants were aware of cervical cancer. Half of those who were aware were informed by community healthcare workers, and about a fifth got the information from the media. Additionally, only 31% knew what pap smear testing is, but only seven out of 205 participants had done a pap smear. Participants gave various reasons for not doing a pap smear test – e.g. fear of the procedure, cultural and religious reasons, and some stated that they were healthy so there was no need to do a pap smear. Like other researchers, Hoque (2010) concluded that the management at the university must develop a health education policy that is aimed at the prevention of the transmission of the HPV.

In 2013, Hoque conducted another study titled *Awareness of cervical cancer, Papanicolau's smear and its utilisation among female, final year undergraduates in Durban, South Africa*. Unlike the 2010 study, Hoque (2013) drew participants from the final year undergraduate student population, and the study explored awareness and detection methods of cervical cancer. The study found that 53.3% knew what cervical cancer is and how it is detected; 60% knew about HPV, and that having multiple sexual partners was a cervical cancer risk. However, 55.3% of the participants were not aware that cervical cancer can be prevented. The majority of the participants (76.7%) knew that pap smear tests are used for the detection and/or the prevention of cervical cancer. However, 79.3% of the participants had never done a pap smear because they feared the procedure, or that they were healthy, therefore did not need one. Hoque (2013) concluded that the level of awareness regarding cervical cancer and its detection

methods was low, and that the university management needed to focus on developing policies on health education to prevent transmission of the HPV.

In 2015, Hoque and Hoque conducted another study titled *Knowledge of and attitudes towards cervical cancer among female university students in South Africa*. This study explored the knowledge of the risk factors associated with, and detection methods of cervical cancer among female undergraduate students at Mangosuthu University of Technology. A total of 389 students participated in the study. The results show that 42.9% of the participants knew what cervical cancer is, of this 15.6% did not know any risk factors of cervical cancer, and 58.6% of those who knew the risk factors, but did not know that cervical cancer was preventable; 41.9% of the participants had heard of the pap smear test. However, only 38% of those students knew that pap smear tests are used for detection or prevention of cervical cancer, and only 16% of the participants had had a pap smear done. Like other studies, similar reasons for not taking a pap smear test include fear of the procedure, culture or religious beliefs, and that participants were healthy therefore no need to do a pap smear test. Hoque and Hoque (2009) make similar recommendations of other studies – university management must develop policies on health education and promotion, particularly for cervical cancer and strategies to prevent transmission of HPV.

2.11 The socio-economic impact on health in southern Africa.

Research shows that health and the general health of a population depends on whether or not people have access to health care (Ataguba *et al*., 2015; Obauka-Igwe, 2000). Health inequalities are determined by a range of social factors such as education, race, gender, ethnicity, geographical location, and income amongst others, and these factors are a component that reflect on the health system (Obauka-Igwe (2000: 97). Similarly, Ataguba *et al*. (2015:2) note how it is globally recognised that health and health outcomes are not only affected by health care or access to health services, but also result from multidimensional and complex factors linked to the social determinants of health. These include a range of social, political, economic and gender factors, which result in high mortality rates, poor health outcomes and financial loses. This is evident especially in low- and middle-income countries where life expectancy range between 26 and 63 years, compared to those in the high-income countries whose range is above 75 years (Worldmeter, 2023).

There are various ways of defining health inequalities and it is important to look at the context in which the term is defined. Gakidou (2000) and Ataguba *et al* (2011) define health inequalities as “the variations in health status across individuals in the population”. On the other hand,

Ataguba *et al*. (2015: 2) provide another definition of health inequality in terms of *disparities that are unnecessary, avoidable, unfair, and unjust*. Thus, health inequalities systematically put groups of people who are already socially disadvantaged at further disadvantage with respect to their health. Inequality in health care has been associated with poor health outcomes for the majority, disadvantaged and socially excluded groups (Obauka-Igwe, 2000: 118).

In South Africa, factors such as poverty, inequality in socio-economic status (SES), and inequality in access to basic social services between population groups, provinces are typical and exacerbate inequalities in health (Ataguba et al., 2015; Baker, 2010). The poor cannot afford to seek health care when they are ill because they face many socio-economic factors, which are the social determinants health (SDH). It is therefore important to understand the historical, social and political contexts and power relations that have shaped inequalities in South Africa (see Baker, 2010).

The poor suffer from a range of factors such as lack of access to education, quality health care, basic infrastructure, transport, are heavily indebted, have little access to productive resources, and are heavily dependent on remittances and social transfers, particularly social pensions and disability grants. These problems are to a large extent linked to South Africa's colonial and apartheid history (Ataguba & Alaba, 2012; Baker, 2010). In the past, health care sector was segregated along racial lines - one system was highly resourced and benefitted the white minority, while the other was systematically under resourced and was that was what the black majority had to deal with (Baker, 2010: 79-80; McIntyre *et al*., 2007 cited in Ataguba & Alaba, 2012). Health policy was aimed at maintaining the economic and political power and providing a better quality of life for the minority white population (Baker, 2010; Omotoso & Koch, 2018). Health services for the black majority were severely underfunded and rural areas were neglected, and "although the current systems are evolving to address the existing inequalities caused by the apartheid legacy, significant gaps still remain" (Omotoso & Koch, 2018: 2). It is evident that not much has changed in post-apartheid South Africa (Baker, 2010; Omotoso & Koch, 2018). This is the case, especially health inequalities which are strongly linked to SDH.

The inverse *care law* is "the availability of good quality health care is inversely related to the need for it in the population it serves, seems to prevail in many countries" (Ataguba *et al*., 2011: 2). This is particularly the case in South Africa as studies show that the distribution of health care usage and the benefits of using health care services is skewed in the favour of the

rich for most public facilities, especially hospitals, and across all private sector services (Ataguba *et al.*, 2011; Baker, 2010).

A study titled *Factors associated with socioeconomic inequalities in breast and cervical cancer screening among women aged 15-64 years in Botswana* by Keetile, Ndlovu, Letamo, Disang, Yaya, and Navaneetham (2021) found that women with low socio-economic status (SES) were less likely to have breast and cervical cancer screening compared to women of high socio-economic status. As stated earlier, this is because women who come from disadvantaged backgrounds are less likely to be knowledgeable about cervical cancer and breast cancer screening methods. This highlights "the notion that those who have the financial means overcome barriers to accessing care compared to those who are poor" (Keetile *et al*., 2021: 10). Furthermore, this study found that because women from low SES use public health facilities that are often congested and bookings for screening is delayed. This means that even when women require urgent cervical or breast cancer screening, access to facilities is limited. The wealthy women, however, were more likely to be screened for breast and cervical cancer due to their status (able to access quality health care) and their awareness about the importance of early screening. As Mary's story shows, this places women from low socio-economic backgrounds under the risk of late detection which might end in death (Keetile *et al*., 2021; Zigomo, 2023).

A review titled *Social determinants of health associated with cervical cancer screening among women living in developing countries: a scoping review* by Williams-Brennan, Gastaldo, Cole and Paszat (2012) found that number of factors influence access to cervical cancer screening. They identified three factors in the reviewed studies, which are structural (e.g. cultural and societal values, socioeconomic position, ethnicity); intermediary (e.g. geographical location, health seeking behaviours, psychosocial factors, nature of the health system); and cross cutting (e.g. social cohesion). They recognise that social determinants of health (SDH) are all important to inform responses to improve screening coverage and to identify research gaps. They note that categories such as gender, race, and class are social identity constructs that afford people the privilege and oppression based on political, cultural and economic contexts (Williams-Brennan *et al*., 2021).

As earlier noted, in South Africa, the socio-economic status of women plays an important role in influencing the incident of cervical cancer (Maree, Lu & Nqubezelo, 2012). Poverty increases the risk of the likelihood of HPV infection, which can lead to cervical cancer. The

ramifications of poverty such as poor nutrition and poor hygiene are linked to cervical cancer (Maree *et al*., 2012: 106). This is worse for women in rural areas and in poor urban areas who have no understanding or have limited knowledge of cervical cancer and its screening methods. As earlier pointed out, in developing countries, cervical cancer is often allocated fewer resources as compared to other illnesses (Denny & Kuhn, 2017; Williams-Brennan *et al*., 2012; Zigomo, 2023). This is due to the multiple competing social and health needs, specifically HIV, tuberculosis, malaria, poor sanitation, clean water, environmental stability, civil strife, and widespread poverty (Denny & Kuhn, 2017: 190).

2.12 Conclusion

Why should cervical cancer education matter? Why should the South African government educate its citizens about cervical cancer? It should matter because cervical cancer is the most common cause of cancer deaths among women in developing countries. This is a disease that is preventable yet remains the most common cause of cancer deaths among poor women in South Africa. Despite the fact that most clinics in South Africa offer free pap smear tests, the lack of knowledge and attitudes towards the test have decreased the number women who are willing to test (Wellensiek *et al*. 2002). Not only do people not know that such a test exists, but they believe that a pap smear can be dangerous, and that only sick women should be tested.

The review focused women's knowledge and attitudes towards cervical cancer, and a range of issues related to it. Prior research of cervical cancer knowledge, understanding, beliefs and attitudes has been useful and informative. The studies not only demonstrate the inadequate education of women about a very important health concern, that all women should be concerned about, but also to reveal the inadequate understanding of medical procedures, and sexually transmitted infections (e.g. HPV). Literature has also highlighted the importance of recognising underlying issues that contribute to the lack of education and awareness about cervical cancer amongst South African and southern African women. These issues include but are not limited to SES and levels of education. Like other reviewed studies, this current study focuses on students (both undergraduate and postgraduate students) at university because they are expected to have better knowledge about health issues than ordinary women. It is assumed that educated people are well informed about their overall wellbeing. Therefore, this study sought to understand the knowledge and attitudes of the RU participants on cervical cancer. The aim was to compare the cervical cancer education and awareness at RU to studies conducted in other South African universities.

3 Symbolic interactionism, Marxist-feminism and the Health Belief Model

This study is underpinned by symbolic interactionism because this perspective enables an understanding of how society influences individuals' meanings that they attach to cervical cancer and how this result in attitudes and behaviours towards cervical cancer screening. Symbolic interactionism rests on eight assumptions identified by Blumer (1981 cited in Denzin, 2004: 82):

1. Human beings act toward things on the basis of the meanings that the things have for them;
2. The meanings of things arise out of the process of social interaction;
3. Meanings are modified through an interpretive process which involves self-reflective individuals symbolically interacting with one another;
4. Human beings create the worlds of experience in which they live;
5. The meanings of these words come from interaction, and they are shaped by the self-reflections persons bring to their situations;
6. Such self-interaction is 'interwoven with social interaction and influences that social interaction';
7. Joint acts, their formation, dissolution, conflict and merger constitute what Blumer calls the 'social life of a human society. A society consists of the joint or social acts 'which are formed and carried out by its members'.
8. A complex interpretive process shapes the meanings things have for human beings. This process is anchored in the cultural world, in the 'circuit of culture' where meanings are defined by the mass media, including advertising, cinema and television, and identities are represented in terms of salient cultural categories.

Symbolic interactionism has been the most influential theoretical approach in the sociology of health and illness, with studies focusing on the processes involved in people arriving at the decision to seek professional help (Haralambos & Holborn, 2004: 297).

The study also draws on the Marxist-feminist perspective to understand the impact of women's SES on their cervical cancer knowledge, their ability to, or lack of, access to screening and preventative methods. Marxist-feminists argue that the origins of capitalism, patriarchy and

medicine are intertwined, and that medicine plays a vital role in enforcing conformity to social roles, and is especially targeted at women (White, 2003: 139).

Hossain, Ahmad and Siraj (2016) argue that "Marxist feminism highlights that the capitalistic mode of production is one of the reasons for women's oppression and second category status in society". They say that women face in many aspects of discrimination of their lives, therefore, they emphasise the idea that access to specific information is a human right. This argument by Hossain *et al* (2016) helps with the understanding that women who do not get access to life changing information, or even information that could save their lives, means their human rights are being violated. By this, the study highlights that woman not having the correct education and information about cervical cancer, means they have been violated.

In addition to symbolic interactionism and Marxist-feminism, the health belief model (HBM) is applied in this study to understand the attitudes that influence the women's cervical cancer screening decision-making. An application of HBM enables an understanding of the factors contributing to knowledge production about health, specifically women's reproductive health, and the healthcare system in South Africa and other Southern African countries. According to Champion and Skinner (2003), HBM contains primary concepts that predict people's health behaviours. As they explain:

> When an individual feel like they are susceptible to a condition, believe that condition would have potentially serious consequences, believe that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believe the anticipated benefits of taking action outweigh the barriers to (or cost of) action, they are likely to take action that they believe will reduce their risk (Champion & Skinner, 2003: 47).

The HBM recognises demographic characteristics such as gender, socio-economic status, ethnicity and age as factors that are associated with certain health related behavioural patterns (Abraham & Sheeran, 2015:30). The HBM contends that the "decision to take preventative action against a particular disease is influenced by the individual's perceived susceptibility to the disease, perceived severity of the disease, perceived benefits of the preventive action, and perceived barriers to taking preventive action" (McFarland, 2003:168). In addition, other factors influence preventive action, which include social class, age, gender ethnicity, education level, personality, and structural factors such as prior experience with a disease and knowledge about the disease (McFarland, 2003).

4 Data Analysis: Introduction

The study adopted a qualitative research method and used thematic analysis method to interpret and discuss the data that was obtained during the data collection process. The study objective was to explore the knowledge of and attitudes towards cervical cancer among RU female students. Twelve participants, ten RU students and two staff members took part in the study. The analysis starts with the participants knowledge of cervical cancer and its preventative methods.

4.1 Knowledge of cervical cancer.

The WHO (2023) global strategy, which aims to eliminate cervical cancer as a public health problem, the targets that have been set cannot be achieved if women lack knowledge on and access to cervical cancer and its screening methods. Therefore, it is important for women to have knowledge of cervical cancer as a disease and its preventative methods. In response to the research's first objective, a question on the knowledge of cervical cancer, the majority of the participants said that they didn't know what cervical cancer is, neither did they know the causes of cervical cancer and its preventative methods. Few participants had some ideas on what cervical cancer could be, but they could not easily articulate or explain when asked to describe what they think it is. Some of the responses to this question include:

> I have an idea of what it is. I know its cancer that targets your cervical area. Not in depth like that. I think that's just about the best way I can describe it (Scelo, Rhodes University, 2023).
>
> It's a cancer that occurs at your…what? Cervix. In your cervix (Ayanda, Rhodes University, 2023).
>
> Okay, firstly I think its most common in women, I think it has something to do with your womb or bladder or like abdominal area. And yes…that's all I know (Anele, Rhodes University, 2023).
>
> No, not really. I think its cancer that, I don't know, like it has to do with women specifically. Their cervix is like down there and stuff like that (Sisona, Rhodes University, 2023).

Although the descriptions are vague, at least the above participants had an idea of where the cancer is situated. Unfortunately, some participants had no clue, as illustrated in the following quotes:

> It is when a…what? Ingrown cells on your breasts and then you develop a lump (Mbali, Rhodes University, 2023).

> I think I know, I'm not sure. I don't have much information but I think its cancer in the females private parts (Oyama, Rhodes University, 2023).
>
> I wouldn't say I know what it is, I think I know what it's about because I've heard about it. I just know it has to do with like, isn't it cancer that affects the vaginal area? I think so, I'm not sure (Amahle, Rhodes University, 2023).

Only two students had a good understanding of what cervical cancer is. Although not biomedically correct, their description of cervical cancer were more convincing and shows some level of knowledge and awareness. This is what they said:

> Not in-depth but I know the basic concept of what cervical cancer is. It's like okay the cervix is inside your uterus I guess, and there is a lump that forms inside the cervix and it's not benign, its cancerous and that's how cancer is formed (Tanya, Rhodes University, 2023).
>
> I have an idea. So, I would say its cancer that affects your uterus and sort of damages it. That's my understanding of it (Zandi, Rhodes University, 2023).

The responses by participants, who had no or little understanding of cervical cancer, are similar to the research findings on lack of knowledge on cervical cancer among South African university students (Eche & Vermaak, 2022; Hoque, 2010 & 2013; Hoque et al., 2014; Hoque et al., 2015; Mofolo et al. 2018). This lack of knowledge prevents women from taking appropriate measures to prevent the disease or to screen for it. The rest of the themes are informed and underpinned the above discussion on the 'knowledge and lack of knowledge of cervical cancer.

4.1.1 Knowledge of the causes of cervical cancer

Evidently, from the above responses, there is limited knowledge about what cervical cancer is. When participants were asked if they knew what causes of cervical cancer, the responses were mostly guesses, which had little to do with cervical cancer. As one participant said:

> Um not necessarily but I know that when cancer can be triggered by anything and I know that well this is like in terms of cancer in general. I know that cancer, there is never usually a cause, maybe like your lifestyle or habits or whatsoever the case might be contributing factors to. Like maybe if you smoke it could be a trigger, if you drink alcohol it could be a trigger, might, maybe not. But sometimes even people who are healthy, who don't smoke, who don't drink like me might just wake up one day and be diagnosed with cancer (Scelo, Rhodes University, 2023).

Although Scelo had an idea that some lifestyle habits and choices like smoking could be potential causes of cervical cancer, she believed that cancer is not something that is necessarily caused by lifestyle choices, but it is genetic. Other vague responses were:

> Myth wise, my mother always told me be careful of the microwave because it causes cancer and all that. So the radiation from the microwave could be the cause of the type of cancer or it could also… no you can't contract cancer but yah (Nana, Rhodes University, 2023).
>
> Uh hormonal imbalances I think other chronic illnesses. Uhm diabetes and maybe psychological issues if you like really mentally distressed and you are just not well mentally and psychologically. Because that does not only affect your brain it also affects your physical health yeah so (Anele, Rhodes University, 2023).

Anele is correct about chronic diseases being one of the causes cervical cancer as women who have HIV/AIDS are at a high risk to contracting cervical cancer (see Hoque *et al*, 2014; Ngoma & Autier, 2019; Zigomo, 2023). However, Anele doesn't mention HIV/AIDS but she rather says diabetes which is incorrect. This lack of connection between HIV/AIDS and cervical cancer by Anele is concerning because cervical cancer is the most common HIV/AIDS related cancer in women (Maree *et al*., 2012). This is information that all women, especially young sexually active women, should be aware of, particularly in South Africa which has a high number of people living with HIV/AIDS. Another vague response was:

> It can be hereditary, the food you eat, putting your phone in the bra (Mbali, Rhodes University, 2023).

As mentioned in the causes of cervical cancer, certain dietary choices can lead to cervical cancer (Hoque & Hoque, 2009: 21, Maree *et al.*, 2012: 105). Therefore, Mbali is correct in saying "the food you eat" can cause cancer, however, the rest of her guess is incorrect – "…putting your phone in the bra".

Students often associate cancer with something that is beyond their control. Therefore, they tend to belief that other things, such as genes, and not their behaviours cause cervical cancer. This is confirmed by Nurse Ferreira, who works the RU Health Care Centre, who spoke about the lack knowledge and awareness of cervical cancer among student patients she comes across on a daily basis. She had this to say:

> Sometimes people are ignorant, they choose to believe that okay cancer is for older women, breast cancer, cervical cancer. 'I'm not gonna worry about those things now' But we have found so many HPV's amongst the youth. And uhm that is unfortunately what is happening. Uhm it is a sad fate that people think I'm young it's not gonna happen to me. But we diagnose all these diseases everyday amongst the youth and I must add it's really sad but true (Nurse Ferreira, Rhodes University, 2023).

Some participants had some idea that cervical cancer could be caused by certain lifestyle choices such as having unprotected sex and contracting sexually transmitted infection. However, this was limited knowledge, and as mentioned before, most participants initially did not know the causes of cervical cancer. When they were asked to guess, their responses included sexually transmitted infections/diseases and sexual behaviour:

> I would say untreated infections or maybe having unprotected sex with someone who has an infection (Ayanda, Rhodes University, 2023).

When asked to elaborate, Ayanda spoke about sexually transmitted infection:

> Uhm maybe yeast infection or STI's or yah any STI (Ayanda, Rhodes University, 2023)

Other responses were:

> Maybe unprotected sex or maybe using chemicals in the vagina. I'm not sure I'm just guessing (Oyama, Rhodes University, 2023).
>
> Probably sexual interaction, I don't know. Like, sexual infections and stuff like that and then it causes cancer after a while (Sisona, Rhodes University, 2023).
>
> I mean, everything that has to do with that part of the body it's kind of sexual I guess, so maybe some type of like STD or something I guess, yah (Amahle, Rhodes University, 2023).

Two participants who knew that the primary cause of cervical cancer is HPV, could not explain what HPV is. They said:

> I saw somewhere they said HPV, papillomavirus. I'm not sure about the other causes" (Tanya, Rhodes University, 2023).
>
> So, from what I've heard and how we grew up it's passed through sex, you know. I think it's because of this other HPV thing. Yah, that's how I know it (Zandi, Rhodes University, 2023).

The lack of knowledge about cervical cancer has an impact on the investigation of other aspects of the research. Moving forward, the answers to the first question affected all the answers that followed, and because of this, there is a very clear trend that knowledge and awareness of cervical cancer is very minimal among participants. This confirms the findings from reviewed studies on cervical cancer in South Africa (see Eche & Vermaak, 2022, Hoque, 2010, 2013; Hoque & Hoque, 2015; Hoque *et al.*, 2014; Mofolo *et al.*, 2018). These studies found that low levels of awareness of cervical cancer is a barrier to screening, and that it contributes to the low

levels of knowledge of STI's and STD's. This means that women are also unaware of the cervical cancer prevention methods. From a symbolic interactionist perspective human beings, women in this case, act towards things on the basis of the meanings that the things have for them, and that the meanings of things arise out of the process of social interaction (Blumer (1981 cited in Denzin, 2004). It can be assumed that the lack of knowledge of cervical cancer is found throughout communities as it is not included in their knowledge base and is not discussed in social interactions. This lack of discussion means that women cannot attach meanings to cervical cancer as either something they should be worried about or not. Similarly, the HBM notes that action to screen or prevent a disease is dependent on the prior experience of the disease or the knowledge about the disease (McFarland, 2003). Therefore, the lack of knowledge about cervical cancer among older South African women, especially poor black women, is one of the reasons for the low rate of cervical cancer screening. This trickles down to different generations and a cycle of the lack of awareness and knowledge continues in the country.

4.1.2 Knowledge on pap smear

Although some participants had a basic understanding of cervical cancer and where it is located in the body, the majority of them had no knowledge of the screening method of pap smear testing. The few who had an idea, did not fully understand it's importance:

> It's that uhhh it's a, it's a that thing that is done by doctors to you when checking for stuff in your vagina so… (Ayanda, Rhodes University, 2023).
>
> How do I find the words to describe without sounding weird. I know ukuthi (that) they insert something inside your… Am I allowed to use… your vagina to test, I don't know what's the name of the instrument uhm, to test if you're at risk of having cancer at a stage yeah (Anele, Rhodes University, 2023).
>
> I feel like, I think it's like when a gynaecologist like inserts their hand in your uterus and I don't know, smears some, I don't know" (Tanya, Rhodes University, 2023).

And again, because of the lack of knowledge of cervical cancer as a whole, some participants did not make any connection of a pap smear to cervical cancer. These participants assumed that a pap smear was a procedure or an examination that is performed to determine whether one has breast cancer or something related to the breasts.

> No. is it the treatment of breast cancer (Mbali, Rhodes University, 2023).

> Yah, I've heard of it. I don't know it's a test done to check if you have a breast cancer or something. I'm not sure. I've heard a little about it (Oyama, Rhodes University, 2023).
>
> "I think it has something to do with the breast. I don't even have any knowledge of that, no" (Zandi, Rhodes University, 2023).

Only one participant provided a good description of the process involved when conducting a pap smear test:

> I know they use that instrument and it. I don't know how to describe it but it goes into, can I say vagina? goes into your vagina and then they open in up and then they take this little tool it's like you see an ear bud but a longer ear bud. And the end is not really cotton but it's just a brush wise and then they scrape something off and they find out if you have cancer or any type of illness down there (Sisona, Rhodes University, 2023).

The RU manager for student wellness, who is responsible for FTF campaign, said that main reasons why RU students do not have pap smear tests is that:

> The test is uncomfortable, is the most common. The actual test is uncomfortable, they always feel like going to the HCC to take off your panties its uncomfortable but mostly it's the discomfort around the actual test. But I mean they still go; they still go so yah" (Mandisa, Rhodes University, 2023).

She noted that the RU FTF campaign can increase the numbers of students who do pap smears at the RH HCC because the issue is out of their hands:

> It's out of our control, it's out of our control. But I still feel like more students could respond to calls like this, we won't stop calling out and advertising and these media campaigns around cervical cancer as well. Like we do with others. We'll keep hoping for more and keep hoping for better (Mandisa, Rhodes University, 2023).

When the manager of the Rhodes University Health Care Centre was asked about some of the reactions that students have when the nurses at the facility recommend pap smears she had this to say:

> They will say I am not gonna do a pap smear or my friend or my aunt told me that it's a very painful procedure so I am not gonna do it. So they are very afraid of a pap smear. If that fear wasn't there then we would have so many more clients coming in for it, but because that fear exists, the fear of the unknown, the fear of something that's going to invade my deepest privacy you know. So they avoid it. I've seen older women over 30 over 40 also avoiding pap smear because of the stigma of people talking about it and the myth that it's such a painful procedure. But let me tell you, once I've done the pap smear and then the client will respond is that it, is it finished? is it over? I expected

> something so painful but the pain never came. Because when they come in we explain the procedure to them, we tell them this is what the vaginal speculum looks like this the jelly we are gonna apply on it, this is how it's gonna be inserted, this is how we gonna open it. We totally explain the procedure and by the time they get onto the bed, they're so comfortable and then they relax and we continue with the procedure. You know we try to make the client as comfortable as possible because it is an invasive procedure. You can imagine the position that you have to be in and then the instrument that has to go in so that is also, those are the things that you know... But really and truly once the procedure is done, they're amazed that it wasn't painful (Ferreira, Rhodes University, 2023).

Two participants confirm the above stated fears to explain why they have never done pap smear tests:

> My friends say it so painful, it's so uncomfortable, it's the most uncomfortable thing and even the interaction with the doctor. You have to lie down, it's so awkward. When I wanted to do it, I'm contemplating but I know it's important to do it at least once a year (Nana, Rhodes University, 2023).
>
> I have family members, female family members who have done it before and they say it's not a comfortable process and I hate discomfort with everything (Amahle, Rhodes University, 2023).

4.1.2.1 Lack of knowledge: A Marxist-feminist perspective

The Marxist-feminist perspective helps us to understand that lack of knowledge of cervical cancer screening methods is not an isolated occurrence. There are many barriers to cervical cancer screening and treatment, some of which are highlighted in the reviewed studies on the socio-economic impact on health in Southern Africa, and the barriers to cervical cancer screening in South Africa (Baker, 2010; Omotoso & Koch, 2018; see section 2.11). Marxist-feminism focus on the impact of SES on women's ability, or lack thereof, to access screening and prevention services. All of the RU participants in this study are black women, however, this does not mean that all participants come from poor backgrounds or are of low SES. However, as Denny and Kuhn (2017) in their study found that 87.7% of women diagnosed with cervical cancer in South Africa were black women, and only 9% were white, which shows a clear disparity between these demographics. From a Marxist-feminist perspective, black women account for the majority of cervical cancer infection and deaths because they do not have access to information, education and general access to screening facilities. This can be used to explain why there is a lack of knowledge among the RU participants. And as Hossain *et al*. (2016) highlight, this lack of knowledge which results from a lack of education among women, can be seen as a violation of their human right. The HBM also takes into consideration

factors such as social class, gender, ethnicity and education level as playing a role in the women's limited access to screening knowledge and screening facilities that could be a determination of life or death for women. Therefore, if RU is the first place where students learn about pap smear testing, then it is safe to assume that they are unlikely to participate in the screening process.

Of greater concern, participants who had knowledge of pap smear testing held a negative attitude towards it, as they associated it with pain and an overall uncomfortable experience. This is similar to other study findings that there is a general fear of pap smear testing, because sometimes rumours about pap smear testing are spread by family and friends (Amahle, Rhodes University, 2023; Bakheit & Harron, 2004; Julinawati *et al*., 2013; Nana, Rhodes University, 2023; Razie *et al*., 2012). As symbolic interactionism suggests that the meaning of words come from interactions, for example, when rumours are spread about pap smear testing, women attach these meaning to the practice, which reduces their chances of participation.

4.1.3 Knowledge of preventative methods

Because of the lack of knowledge of cervical cancer as a disease, there was an even bigger lack of knowledge for its preventative methods. Because of the this, the responses from the participants when asked whether or not cervical cancer is preventable were mixed. The following participants believe that cervical cancer is not preventable:

> I think when cancer happens, it happens because it's an autoimmune disease that fights your immune system. So, I don't think you can necessarily prevent it. Maybe like if you live a healthy lifestyle that could possibly be a step towards preventing it. But in all honestly cancer just happens. When it happens, it happens (Scelo. Rhodes University, 2023).

> Do I think it can be prevented? Yes and no, in that I don't necessarily think, wait if you say prevented do you mean like just completely eliminate? No, I don't think so I just think people can take necessary measures to ensure that they are not at the risk. Maybe taking better care of your health and living a healthy lifestyle, physical activity and just making sure that you're well in all aspects of your life (Anele, Rhodes University, 2023).

> I don't think it can. Okay it cannot if it's like hereditary and then again it can by exercising, eating healthy food and avoiding putting electronics on your breast (Mbali, Rhodes University, 2023).

Some participants thought that cervical cancer is preventable. However, not all of them were sure, and their lack of knowledge was again reflected in their substantiation of their answers. Although many gave convincing answers, it is important to note that during the interview, the participants were giving guesses because they were not completely sure about their answers. For example:

> I think it can. I hope it can be. Uh I would say if someone got checked for STI's and other stuff like that it can be prevented (Ayanda, Rhodes University, 2023).

> Yah, having protected sex, if it is caused by unprotected sex. And stopping using some chemicals if it is caused by chemicals. Going to the medical doctor in the early stages, but I don't know how you get to know the symptoms at times to know whether you should go to the doctor or not (Oyama, Rhodes University, 2023).

> Because it is passed on through sex, from my understanding, I think we can prevent it by introducing ways to abstain, sort of like introducing more religious things that will stop people from engaging in sex. For example, on campus just showing the negative effects of engaging in sex right? maybe we can try to show the negative part of it like sex is not just about HIV but it can lead to this and that (Zandi, Rhodes University, 2023).

> Sure. I think so (Nana, Rhodes University, 2023)

When asked to elaborate on how it can be prevented, she said:

> I don't know (Nana, Rhodes University, 2023).

Another participant said:

> I don't know. I don't think I have sufficiently researched if it can be prevented. But with the HPV I know that getting the thing to prevent HPV, I forgot what it's called. A vaccination, HPV vaccination can stop you from getting HPV which can stop you from getting cervical cancer (Tanya, Rhodes University, 2023).

However, Tanya did not know what HPV is, because she says:

> The hyper papillomavirus, I don't really know for sure what it is (Tanya, Rhodes University, 2023).

Tanya is the only participant who is aware of or mentions the vaccine in her interview. Although she is not fully aware of its function and its importance. This shows that she has been exposed to, even if it may be limited, knowledge on cervical cancer. She shows a better understanding of cervical cancer than most of the participants. To answer the question on whether cervical cancer can be prevented, she said:

> Yeah, I think you can, because of the pap smear, I always hear that. I think you can get a pap smear to see if you're still okay … and then you do it to prevent cancer (Sisona, Rhodes University, 2023).

Another participant who had a good understanding said:

> If I am right, it is sexually transmitted or not particularly sexually transmitted maybe it has to do with intimacy then I guess first and foremost abstinence. Yah, that and protection and I guess staying like, getting check-ups every once in a while to check if everything is okay down there (Amahle, Rhodes University, 2023).

Knowledge of cervical cancer was very low as the respondents mentioned that they did not know what cervical cancer is, only a few knew cervical cancer was cancer of the cervix or related to the women's reproductive system (the vagina or the womb), whilst others thought cervical cancer was a completely different cancer (breast cancer). The majority of the participants had a limited understanding of what pap smears is. However, only one participant had good knowledge about pap smears. This may be due to the fact that none of the participants have done a test or have been educated about it in a formal setting. There seems to be many myths about pap smears and the experience of having a pap smear that prevents those who know about them from going to get tested themselves. Literature has proven that some people have a fear of getting a pap smear done because of the things that are said about it in their immediate circles (Julinawati *et al*., 2013, Razaie et al, 2012). Although this seems to be the reason for the ten female students from Rhodes University, it is important to recognise that there are other barriers, that have been highlighted by literature, that reduce the number of pap smears nationally (see Kangmennang *et al.,* 2015; McFarland *et al*., 2016; Mookeng *et al*., 2010; Sibiya & Grainger, 2010; Smith & Hoffman, 2000). Another factor that the study found is that some participants distanced themselves from cervical cancer. They separate themselves from the disease in that they do not believe they can get cervical cancer at this stage or that there is nothing they can do to prevent it. This might mean that they do not take any responsibility for any of their behaviours that may result in cervical cancer. However, this distancing can be understood in terms of the participants' lack of knowledge on screening methods.

4.1.4 Pap smear testing at Rhodes University

The RU FTF campaign, with help from the government institutions, provides free pap smear testing to female students. When asked about pap smear testing, Nurse Ferreira explained:

> Yes, yes we do. When we do the FTF campaign, it happens about 3 to 4 times per annum, with the help from the Higher Education health. We are very thankful to Higher

> Education who is helping us with this service. So, when we do the FTF, what the HCC does during that week period, we do pap smears, and we do it for free. We've got an understanding with the Department of Health and the National Health Laboratory at Settlers hospital. We have a memorandum of understanding when its FTF campaign on campus then we do free pap smears for our female students and staff. So, at any other time a pap smear would cost you around R300 or you would be charged on your medical aid depending on if you want a cash deal or if you want to go on your medical aid. We also work with a private lab called Empath in town. So when we do a pap smear on medical aid or cash then the test will go to Empath lab. But when we do the free pap smear it goes to the lab at Settlers hospital, and they are not gonna charge. So, it's very lovely to do it for free for our clients because I mean our students don't have money. R300 would be little for me but will be a lot for a student. It saves them, so many of them wait for when its FTF campaign so that they can come and do the pap smear (Ferreira, Rhodes University, 2023).

The following table shows the number of pap smear tests that have been done at the RU HCC in the past three years:

Year	2020	2021	2022
Pap smear tests	36	84	162

It is important to take into count the fact that Covid-19 had a significant impact on these numbers, as the university was closed for the majority of the 2020 academic year, and for some time in the 2021 academic year. Even so, with over 8000 students at RU, and 58% female students, the number of pap smear tests should be much more than the 162 pap smear tests in 2022. When the RU FTF manager was asked about the low participation in pap smear testing at RU, she said:

> Listen, I think I stopped being proud and conceited about these things. Now I'm happy if we have a slight increase from the previous test cycle. I've realised that students are a difficult population to work with in the sense that you do all these campaigns and you see very little difference. But I think for me it doesn't matter how small the difference is, if there is a difference then that's significant enough for me. There is also this belief amongst our younger students that they are not eligible to get these kinds of cancers 'because I'm still young'. Those are some of the things that we are kind of trying to deal with in the campaigning that we do, and the talks that we have when we are doing these campaigns. So, the difference for me is significant, in the sense that if two, three, ten more come to get their pap smears then I'm happy. And I think that's the thing is you only have to do your pap smear once a year. So, if we did 30 now and then 35 then it means cumulative we've done 65 or 70 you know. So, I'm okay with this, we could

> do more and we could have more students coming but what's happening is okay. It's not silent, there is a move (Mandisa, Rhodes University, 2023).

It is important to note that for many students, RU is the only place where they get to learn about cervical cancer and other issues related to the human reproductive system. Therefore, should this education that RU provides not reach them, they may not be aware or educated about cervical cancer and its screening methods for the rest of their lives, as Mary's tragic story shows (Zigomo, 2023)

When the participants were asked about the FTF campaign, the only initiative in Makhanda that deals with cervical cancer education, and provision of free pap smear tests, some of the participants did not know it existed. As illustrated in the following responses:

> I didn't know that there was a campaign … (Anele, Rhodes University, 2023).
>
> Oh wow, for free? (Mbali, Rhodes University, 2023).
>
> No, I didn't know about that (Sisona, Rhodes University, 2023).

Fortunately, seven participants out of ten knew about the FTF campaign, but they have never participated in campaign drives:

> I do see them, but I've never gone to them and do the testing (Oyama, Rhodes University, 2023)
>
> Yes, I do know that they offer pap smear tests. It's just that when you try and go and get that test you're always met with excuses, yes (Scelo, Rhodes University, 2023).
>
> Yes, I've heard about that (Ayanda, Rhodes University, 2023).
>
> I know that when they are having the HIV testing drives on campus, they encourage female students and staff to go to the HCC to get a pap smear (Tanya. Rhodes University, 2023).
>
> I do. But I feel like I'll go, the year won't end without me going" (Nana, Rhodes University, 2023).

One of the participants noted that she does not feel like the FTF campaign advertises their involvement in cervical education well. Similarly, another participant thought that the FTF campaign is solely based on HIV/AIDS awareness:

> I just found out through Instagram, but I feel like it wasn't well advertised for me to sort of like get involved. …And then I was like oh what is this thing about, I feel like maybe they should have advertised in a different way to engage more people in coming. Like maybe show, have like some videos showing the importance of it. Because I feel

> like a poster was not enough for me. Because I was just like I don't care about this (Zandi, Rhodes University, 2023).
>
> Oh yes, yes. I've heard of them. I didn't know that they do pap smears. I genuinely didn't know, I didn't, I knew about the HIV tests I just didn't know about the pap smears (Amahle, Rhodes University, 2023).

There seems to be confusion among the students about the FTF campaign and the services it provides to the RU community. However, when asked about the FTF campaign, the manager of Wellness at Rhodes University clarified that the campaign is made for reproductive health education. She explained:

> It's a national campaign conceived by Higher Health which is an implementing agency for health in all universities and then the kind of campaigns for making sure that students screen for various health issues. Then get tested when they need to. It is responsible for the campaigning around students' health, that's what FTF is (Mandisa, Rhodes University, 2023).

When asked about the confusion that students have about FTF being an HIV/AIDS campaign, what is advertised on the RU FTF website, the manager clarified by stating that:

> It is not just HIV, that is why we do pap smears during the campaign days. Mostly sexual reproductive health but also you know everything round student health. Because as much as we concentrate on maybe on cervical cancer when it comes to pap smears, but I mean there are talks on other cancers. You know when we are having campaigns and then yah mostly sexual reproductive health but any other health issue. Like we actively campaigned around Covid-19 during that time (Mandisa, Rhodes University, 2023).

After this clarification by the manager, she was asked to about the FTF campaigning methods that are aimed at raising awareness about cervical cancer, she said:

> There are usually nurses. I don't know if you've been there, there will be nurses, they will be doing talks. Because students come in and they queue for testing then there will be people talking to students. But we also do a lot of videos which we flood all over the place around HIV campaigning. We are distributing condoms; we have res talks around sexual reproductive health issues. So yes, we are doing everything that we can to make sure that students are informed about health issues (Mandisa, Rhodes University, 2023).

To answer the question on the lack of cervical cancer awareness, she further explained what is involved in the FTF campaign's cervical cancer work on the ground:

> We give talks and then we make screening for that week free. We usually bring in an extra nurse during that week to make sure that students who want to get a pap smear don't have to queue. They kind of go in and then do it immediately. So usually a week

> before that we contact the National Health Laboratory services for them to send us test kits for cervical cancer. Then we do more pap smears during the campaign week. Pap smears can be done the whole year but there is usually campaigning that happens on that particular week to make sure that they are done (Mandisa, Rhodes University, 2023).

Another misunderstanding was between the FTF campaign and the HCC. These two organisations are supposed to be working together to cater to the educational needs of students in terms of their sexual and reproductive health. Therefore, one would assume that there is constant communication about the needs of students and the aspects which can be improved by RU management. During the interview with the manager of the HCC she noted that most students come to RU with limited understanding of their sexual and reproductive health. However, the FTF manager stated that when they run campaign drives which offer free pap smear testing, it is assumed that RU students have already been taught about their sexual and reproductive health at school. The HCC manager said that the assumption is incorrect:

> I would say most definitely. Students don't know because when I ask if they know about HPV. They just don't know. And then I ask them why the pap smear is being done. They don't know. And I wish more students would come up so that we can explain to them that they need to know more about their health, especially their sexual and reproductive health (Ferreira, Rhodes University, 2023).

As earlier noted, the FTF manager said the opposite:

> The assumption is that in South Africa a student who is at university they already know what the STIs are. Because these things are done in high school already, so by the time they get here, they should know what STIs are. But usually at the testing venue, there is usually health promoters from the Department of Health who give talks on STIs. You know, then there will be those health promoters who will do the information sessions and those sessions allow students to ask questions. If there is anything they want to know, more than what is being said, if a student really doesn't know what a STI is. But, yah the assumption is that by the time you get to RU at least know what an STI is, and sexual reproductive issues are because these are done in L.O classes in high school. So we hope to be an extension of what you have learnt in high school (Mandisa, Rhodes University, 2023).

Since the RU FTF campaign is the only awareness initiative that deals with cervical cancer education that the participants know, and assuming this finding is representative of the RU female student population, the messaging and advertising should be improved to avoid above discussed confusions.

4.1.5 Knowledge of cervical cancer awareness campaigns

As shown in the reviewed literature, there are international and national organisations that are focused on cervical cancer education (e.g. CANSA, 2023; RU FTF, 2013; WHO, 2023). For people to be knowledgeable about diseases, there is need for dedicated awareness campaigns. However, when this education is not there, there will be a lack of awareness and knowledge on the disease (Kangmennang *et al.,* 2015; McFarland *et al.* 2016; Mookeng *et al.*, 2010). In this case, for a woman to be aware and knowledgeable about cervical cancer, its causes, preventative methods and screening methods, she should be exposed to dedicated organisations that deal with cervical cancer awareness campaigns. The study found that there is a correlation between the knowledge of cervical cancer and the participants' knowledge of organisations that deals with cervical cancer education. When participants were asked if they knew cervical cancer awareness organisations, most of them said no. Only one participant knew about the RU FTF's provision of free pap smear testing during their campaign drives, but she also didn't know other organisations:

> Besides the one here at Rhodes that you just mentioned uhm no, I'm not familiar with any (Scelo, Rhodes University, 2023).

Like other studies, the current study conclude that there is a need for more cervical cancer initiatives and campaigns as most women do not have access to the important knowledge on causes, screening and preventative methods (Kangmennang *et al*., 2015; Mcfarland *et al*., 2016; Mookeng *et al*., 2010). This lack of cervical cancer knowledge is a significant factor in the low number of cervical cancer screening taking place in Africa (Zigomo, 2023). For this reason, participants, both students and staff, were asked to think of better cervical cancer education that would reach many women. Nurse Ferreira, the manager at the RU HCC was passionate about this that it is important to include her lengthy response:

> Someone told students that you can only do a pap smear when you are 35 years old. That is the rule of the government, because they don't have sufficient funds. But in private practice pap smears are done more frequently because we want to detect HPV early. And if we detect it early then proper management can be given, we don't need to lose people to cancer anymore, especially not breast cancer and cervical cancer as these are things we know how to prevent. There are steps in place, there is the screening processes, they've also started vaccinating twelve-year-olds against cervical cancer. We learn how to do our self-breast examinations. We learn that people over forty needs to do a mammogram. Those are the things that are in place. But sometimes students are ignorant, they choose to believe that breast and cervical cancer is for older women. But we have found so many HPV's amongst the youth. And its escalated, genital warts have escalated. Every week we have to manage genital warts, every week I tell you. It's just

> escalated in the last five years and we've seen that students are not using condoms anymore. So there is an increase in pregnancy, there is an increase in HPV, there is an increase in STI's, there is an increase in HIV. … I wish more students would come up so that we can explain to them more about our health, especially our sexual reproductive health. … I would say that we need a lot of education, on-going when it comes to general health and especially our sexual reproductive health, we need lots of awareness (Ferreira, Rhodes University, 2023).

When asked for her expert opinion on when this education and awareness should happen, she said:

> I always say the earlier the better. The moment a child starts to question about her body or asking specific questions. That child is ready to get educated. Whether it is general education about health or whether it's education about sex, I don't care. I believe the younger the better. We can't have students, eighteen years old, who are having unprotected sex not knowing the consequences of that action. So, if a child is eight, nine, ten, eleven, and that child is ready to be sexually educated. I believe at primary school we need to have this talk so that children can make informed choices even at that age, children need to know that this is my body, I need to protect it in a certain way, this is how I'm going to stay healthy. … So I believe that early sexual education so that we are aware, I know there was a time, maybe when I was younger, sex was taboo, we didn't talk about that. I have learnt to become a professional nurse, and I've got three daughters of my own. I also have a grandchild now, if a child ask me a question I will tell her the truth. So, I want parents, teachers, the churches and the communities to educate the children. We must become communities again who takes care of their children and who teaches their children so that children can have a knowledge and an understanding of what the world is. The world has become a wicked place so the more knowledge a child has the better the child can either report something when he's sexually assaulted or touched inappropriately. ... So, we need to teach our children so that they can know exactly what is happening and go to the appropriate responsible adult to help them in times of trouble. That's just my opinion (Ferreira, Rhodes University, 2023).

Similar to the points made by Nurse Ferreira, student participants agreed that reproductive health education should come as soon as possible:

> I think the education should happen on a regular basis because every day is a day for a person to learn. I think every day educators should maybe host campaigns or workshops or anything really to raise awareness (Scelo, Rhodes University, 2023).

> Having campaigns that are about cervical cancer. Also I think the education should start in high school because that's mostly where or when people start being sexually active and all that (Ayanda, Rhodes University, 2023).

I think having face to face classes because older women are not on social media. I know that my mom is not even on Facebook. So if you do face to face classes where you just educate people, put posters outside and let people see them. I think all social institutions, which is government schools, families, church should be involved. It shouldn't just be a specific group of society. I think at the peak of puberty, like around the ages of like thirteen and fifteen (Anele, Rhodes University, 2023).

I think the best way right now is to use social media like TikTok, Instagram. Come up more information sessions about like what cervical cancer is and how it can be prevented. … The same age that they start teaching you about STD's they should teach you about some of the effects like yes. So I know like in high school, it was in grade 8 when they started teaching us about STD's so I think that's the age they should also teach about cervical cancer (Tanya, Rhodes University, 2023).

I think creating campaigns, putting posters around campus and having an awareness day. I think primary, grade six, seven" (Mbali, Rhodes University, 2023).

Maybe go around making awareness in high schools like, in universities. Maybe having a platform where they talk about things because I don't know about the organisations. I have no knowledge but I'll be interested to know (Oyama, Rhodes University, 2023).

I think once puberty hits, that would be the first thing. I also think that they should try to include it in textbooks you know that it's just something we know just like how HIV is taught at a young age. I also think that it shouldn't only be for girls but also for boys right, in all schools. Sort of like make it part of LO, does that make sense? Yah, instead of just studying about STI's, I think they should incorporate that. The same way we learn about HIV and sex right, at a younger age like in grade 4, why can't they sort of adopt the same approach to show that okay sex also leads to this and that and sort of raise awareness through that. Not like when you're doing life orientation, then you get exposed, because it's kind of late in my opinion. I feel like I only found out this thing because I had a family member that had this thing. And they were not even fully educated. The only thing they said was don't do sex (Zandi, Rhodes University, 2023).

The earlier the better. I feel like high school from 16 onwards because that's when we start exploring with our bodies. Especially without learning that oh okay this is what is happening to me, so the earlier the better not even sixteen (Nana, Rhodes University, 2023).

The best way? I don't know, doing more campaigns? Asking people randomly if they know? Teaching them stuff or handing out pamphlets? Or fun things that people can see when walking by (Sisona, Rhodes University, 2023).

The best way? Maybe having workshops on campus talking about it and just educate cos I don't think we're aware that we can contract cervical cancer through sexual activities. It's always the others, it's always chlamydia its always other weird STI's, we

never think of cancer. When you think of sex, you think of HIV not cancer (Amahle, Rhodes University, 2023).

Studies have found that lack of awareness of cervical cancer is due to its exclusion from core curriculum, for example not included in school life orientation module. For this reason, researchers recommend that that cervical cancer be introduced into core curriculums either in the basic education sector or in higher education (Hoque, 2010, 2013; Hoque & Hoque, 2015; Hoque *et al*., 2014; Mofolo *et al*., 2018). This is similar to the current study finding as most participants suggest that cervical cancer education should be introduced in primary and high schools, and in the higher education sector. Participants also noted that there is a need for interactive education such as campaigns, social media posts, awareness drives and face to face classes that can help students better engage with cervical cancer education. Overall, there is consensus that there is a need for cervical cancer awareness in all sectors, not only to reduce the number of HPV transmissions, but to save women from a deadly disease that they may not know about until it is too late.

4.1.6 Conclusion

The aim of the study was to investigate the knowledge of and attitudes towards cervical cancer among RU students. This chapter presented and analysed the finding of the study, the analysis is linked to reviewed studies and the theoretical framework. The participants, particularly the 10 RU students showed that there is lack of knowledge of cervical cancer, and lack of awareness of the causes, preventative methods and screening methods (pap smear) of cervical cancer. The study also found that there is a connection between factors such as race, age, and SES that play a major role in knowledge production, or the lack of it. Another finding is that rumours spread about cervical cancer in communities and among close family members and friends are a barrier to cervical cancer screening. For example, some participants stated that they would not do a pap smear test due to the pain and discomfort involved. This information has been passed on by close family members and friends.

Although the RU FTF campaign, in partnership with the HCC, provide free pap smear tests is an important cervical cancer awareness initiative, the study found that there is a misunderstanding between the two departments/units. According to the HCC manager, there is lack of knowledge among students and staff, and this is why she encourages RU women to ask questions and to seek more information about cervical cancer. However, according to the FTF manager, the unit works on the assumption that students are taught about cervical cancer in high school. Both managers agreed that there is need to correct this lack of cervical cancer knowledge at RU, and they were equally concerned about the low participation rate in the services provided by the RU FTF and the HCC.

The study also found that there is a lack of visibility of cervical cancer dedicated campaigns in communities. This lack of campaigns/initiatives goes hand in hand with the lack of education in curriculum in schools and tertiary institutions in South Africa. This contributes to women's generational lack, which means that women are never exposed to cervical cancer screening and preventative methods. For this reason, all participants suggested that cervical cancer education should be included in the school and tertiary curriculum, and this should be supported by visible awareness campaign drives, advertising, especially on social media (for younger women).

5 Conclusion to the study

In conclusion, this study shows that a population, which can be considered as literate, lack knowledge of cervical cancer, its causes and preventative methods. They were also not aware of organisations dedicated to cervical cancer education in their respective communities. Another finding, like previous studies on cervical cancer knowledge, is that the lack of knowledge of cervical cancer is a key barrier to cervical cancer screening. There is a general understanding that cervical cancer education has not been a priority in the education sector, which is concerning as cervical cancer can be prevented through awareness initiatives. It is through the implementation of cervical cancer initiatives and campaigns that some of the barriers to cervical cancer screening and prevention methods can be reduced. This can also reduce or change the negative perceptions and attitudes towards cervical cancer in communities, which may lead to women not fearing pap smear tests. Thus, it is important for the Departments of Health and Education to prioritise cervical cancer as this will reduce the number of cervical cancer deaths in South Africa.

5.1 Study Limitations

The study was a qualitative study with a few (10) student participants, therefore, although it would be ideal, the findings of the study cannot be generalised to the entire RU female student population or any other higher education institution in South Africa, or in the Eastern Cape Province. The views provided by the manager at the RU HCC does not represent all healthcare professionals either at the RU HCC or any other healthcare professional in the Eastern Cape or in South Africa. Equally, the views provided by the RU FTF manager does not represent those of RU as an organisation or any of their RU FTF members or staff.

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