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PROMOTING CERVICAL SCREENING BY INVOLVING MEN AS MOTIVATORS

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A thesis submitted to the faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in fulfilment of the requirements for the degree of Doctor of Philosophy

Johannesburg, 2018

DECLARATION

I, Jeniffer Rwamugira declare that this thesis is my own work. It is being submitted for the degree of Doctor of Philosophy in the University of the Witwatersrand, Johannesburg.

It has not been submitted before for any degree or examination at this or any other University

SIGNATURE……

……**DAY OF**….....

DEDICATION

This work is dedicated to my two beloved children, Keith and Cynthia who supported me with prayers, Dr. Ben Karenzi and to the memory of Dr Charles Murego

ACKNOWLEDGEMENTS

“Success is achieved in baby steps, with setback, luck, sucking it up and perseverance.” My friend sent this message and it has been keeping me going until I completed this thesis.

I thank God for keeping me and tremendous blessings He has given me in pursuit of this degree. He has been so wonderful and magnificent for granting me his mercies each day.

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ABSTRACT

Cervical cancer is the second most common cancer and the most common cancer among Black South African women. Despite having a national cervical cancer screening programme, most women present with advanced disease. Men play a role in cervical cancer as the Human Papilloma Virus (HPV), the major cause of cervical cancer, is sexually transmitted.

The purpose of the study was to develop and pilot test an educational programme focused on men acting as motivators to encourage women to present for cervical cancer screening in resource poor community in the West Rand and to assess the programme in terms of primary and secondary outcomes. The primary outcome was presenting for screening and the secondary outcomes were knowledge and behaviour. The educational programme was also evaluated.

The study consisted of two Phases; the first phase was a survey design and convenience sampling to select 101 men older than 18 years (n=101). An intervention research design and one group posttest only was used in the second Phase of the study which focused on the development and pilot testing of the educational programme by using men as motivators. A pre-tested self-questionnaire was used to collect data from the women who presented for screening with the referral notes and the men who participated in the educational programme. Convenience sampling was used and 30 women (n=30) and 100 men (n=100) participated. Descriptive data analysis was used for both Phases. All the data were entered onto an Excel spread sheet and analysed using the SPSS version 22 computer program with the assistance of a statician. Content analysis was used to analyse the data obtained by means of the open-ended questions. Chi-Square tests were used to measure the association between the variables.

The study provided evidence that the level of knowledge about cervical cancer and cervical cancer screening was low. Despite the fact 120 men participated in the intervention and 66 women were informed by the participants, only 30 reported to the clinic to be screened. The intervention was unsuccessful and it is debatable whether it should be refined. Men who participated in the educational programme showed interest in learning more about the disease and gaining more knowledge, but unfortunately, it seems as if cultural taboos prevented from educating their sex partners and female family members about cervical screening. In addition, some of women who were informed did not come for screening. The results of the study emphasis the complexity of finding methods to improve cervical cancer screening uptake.

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 **BACKGROUND**

The significance of the study relates to the fact that South African men have never been involved in cervical cancer screening and the reason for this is unknown. Whether men have been involved in cervical cancer prevention in other developing countries is unknown, as there was no evidence of such involvement in the scientific literature. It is interesting to note that a member of the Human Ethics Committee of the University questioned the appropriateness of men participating in this study, indicating cultural barriers could prevent men from being involved in cervical cancer prevention. However, the World Health Organization (2006) is of the opinion that men can play a key role in the prevention of cervical cancer and dedicates a practice sheet on how to involve men in the prevention of this disease.

Cancer is a public health problem worldwide, causing 12.5% of all deaths. Cancer is the second leading cause of death in the developed world and amongst the three leading causes of death in adults in the developing world. Cancer results in more deaths than the total number of deaths caused by HIV and AIDS, tuberculosis and malaria (World Health Organization and International Union Against Cancer, 2005). According to the 2012 International Agency for Research on Cancer and World Health Organization (2014), 14.1 million people were newly diagnosed with cancer in 2012, whilst 8.2 million died and 32.6 million were living with cancer in the same year. More than half (56%) of newly diagnosed cancer patients live in the developing world, whilst 63% of the cancer deaths occur in the less developed regions of the world. According to the World Health Organization (2012; Denny & Anorlu, 2012), the most common types of cancer are lung, stomach, liver, colorectal, breast and cervical cancer.

Cervical cancer is the fourth most common cancer amongst women worldwide, resulting in approximately 528 000 women newly diagnosed and 266 000 deaths each year. Almost 80% to 87% of women suffering from cervical cancer reside in low-income countries (Globocan statistics; International Agency for Research on Cancer and World Health Organization, 2012; Fort *et al*, 2011).

Cervical cancer is the most common cancer in women living in sub-Saharan Africa (World Health Organization and International Union Against Cancer, 2005; Lim & Ojo, 2016). Naidu *et al*. (2015) reports cervical cancer as the second most common cancer after breast cancer, regarding their incidence and mortality rate, and is the most common cancer amongst Black South African women (Moodley *et al*, 2009; De Abreu *et al,* 2013). It remains unclear whether the HIV epidemic has affected the incidence of cervical cancer in sub-Saharan Africa as incidence rates appear to have remained unchanged in some countries and increased in others between the 1960s and the 1990s. It appears the incidence rates are unchanged in Nigeria and South Africa, although they increased in Zimbabwe and Uganda, whilst in developed countries, such as UK and USA, the incidence rate has lowered by 70% (Louie *et al*, 2009; Ndejjo *et al*, 2016; Fang *et al*, 2011; Abiodun *et al*, 2014).

Various risks have been associated with cervical cancer, including early age of first intercourse, multiple sexual partners and smoking (Al Sairafi & Mohamed, 2009). Infection with the human papillomavirus (HPV) is however, the biggest risk and infection with oncogenic types having specifically been established as the central cause of cervical cancer (Sankaranarayanan, 2002). Unfortunately, many of the factors that increase both HPV acquisition and the promotion of its oncogenic effect, such as early marriage, polygamous marriages and high parity, are widespread in Africa. Polygamy increases the risk for cervical cancer two fold, with the risk increasing with the increasing number of wives. Women of low socio-economic status, independent of the country in which they live, have a greater risk for cervical cancer and it is often referred to as a disease of poverty (Anorlu, 2008). Even women with one lifetime sex partner are at risk for cervical cancer. According to Castellsague *et al*. (2003), men with multiple sexual partners, including female prostitutes, increase the risk of their life partners developing cervical cancer; circumcised men however reduce the risk.

Cervical cancer develops slowly and invasive cervical cancer is preceded by long phases of pre-invasive disease. Cervical cancer is preventable by means of screening programmes to reduce the incidence and mortality (Ndejjo *et al*, 2016; Snyman, 2013) since it appears as if the interval for progression of cervical cancer precursors to invasive cancer takes 10 to 20 years (Sellors & Sankaranarayanan, 2003; Megevand *et al*, 2003; World Health Organization, 2006). Persistent infection with HPV can either resolve on its own or lead to low-grade lesions. Similarly, low-grade lesions can spontaneously resolve or progress to high-grade lesions, which are the precursors to cervical cancer. High-grade lesions can also develop from persistent HPV infection. The long natural history of cervical

cancer makes it relatively easy to prevent and provides the rationale for screening (World Health Organization, 2006; Alliance for Cervical Cancer Prevention, 2004).

In 2000, the National Government of South Africa developed a policy guideline for cervical cancer screening with the objective of screening at least 70% of the target population, women of 30 years and older, within the first 10 years after the implementation of this policy. The policy offers asymptomatic women three Pap smears at 10 yearly intervals until the age of 55 years (Hoque *et al*, 2008; Stevens & Bomela, 2008). Unfortunately, screening uptake is low and according to Gakidou *et al*. (2008), only 20% of the target population has been screened however, Snyman (2013) states the uptake is as low as 13%.

Various factors are related to the poor screening uptake including unavailability of screening opportunities (CANSA., 2011) and lack of knowledge and awareness of cervical cancer (CANSA, 2011; Maree *et al*, 2009; Van Schalkwyk *et al*, 2008) and the misconception that screening is diagnostic rather than preventive (Johnson *et al*, 2007).

According to Agurto *et al.* (2005), cervical screening programmes should not only focus on women but also involve men, as men can improve women's participation and compliance in screening and pre-cancerous treatment, which would decrease the burden of the disease. The role of men in the cervical screening programme however is unclear, as there is no mention in the National Guidelines (Department of Health, 2000). According to Maree and Wright (2010), men's lack of knowledge adds to the cervical cancer burden in South Africa, as their understanding does not enable them to protect their partners from HPV infection or motivate them to go for screening.

1.2 **RESEARCH PROBLEM**

The topic of the study is the utilization of cervical cancer screening and the role that men can play.

The research problem of the study was the knowledge of men about cervical cancer and the role men can play in encouraging women in cervical cancer screening. This is problematic because women usually present at the healthcare services in the later stages of cervical cancer, with its late signs and symptoms. This is mainly because cervical cancer develops over a long period however current literature does not indicate the role of men in cervical cancer prevention.

Cervical cancer screening in South Africa remains low and it has become a public health problem. As described in the overview of the study, Section 1. BACKGROUND, cervical cancer is the fourth most common cancer in women worldwide, regardless of it being preventable, and the most common cause of death in women living in sub-Saharan Africa (World Health Organization and International Union Against Cancer, 2005; Ali *et al*, 2012; Lim & Ojo, 2016).

In South Africa, cervical cancer is the second most common cancer and the most common among Black South African women (Moodley *et al*, 2009; De Abreu *et al*, 2013). Snyman (2013) stated that cervical cancer affects one in every 41 South African women and kills eight women daily. In 2008, the South African Medical Research Council (2008) reported that cervical cancer affects more Black South African women (35 per 100 000) than White women (12 per 100 000).

Moodley *et al*. (2009) wrote that the contributing factor to this prevalence among Black women could be attributed to lack of knowledge, resulting in these women not presenting for cervical cancer screening. There are contributing factors that result in barriers, such as misconceptions that cervical cancer screening is womb cleaning, poor resources such as distance to the healthcare services, lack of transport and the lack of privacy during screening (Risi *et al*, 2004). Moreover, Singh and Badaya (2012) reported that women mentioned the lack of support from men and family as a barrier to cervical cancer screening.

The lack of support to women by their partners is a problem. Men play a role in cervical cancer because the Human Papilloma virus (HPV) is the main cause of cervical cancer and is sexually transmitted; between 50% and 80% of sexually active women will be affected with HPV once in their lifespan (Alliance for Cervical Cancer Prevention, 2004). According to Everett *et al.* (2011), 99.7% of cervical cancers worldwide are linked to HPV, which is echoed by the Alliance for Cervical Cancer Prevention (2004). Cervical cancer is preventable by vaccination and screening, and curable if detected at its early stages (Anorlu, 2008).

To improve cervical cancer screening and promote prevention, the South African National Department of Health provides free cervical screening to all women from 30 years of age and older, yet regardless of this, cervical cancer screening remains low (Department of Health, 2000). Making this service free, and by screening at least 70% of all women, the aim is to reduce the mortality and incidence of cervical cancer in South Africa. These

women should have three free pap smears at ten- year intervals in their lifetime (Hoque *et al*, 2008).

Mamahlodi *et al*. (2013), who conducted a study in South Africa (Limpopo Province), indicated that screening for cervical cancer was low, as only 13.7% out of 202 251 women were screened over a period of four years. The reasons for the low cervical screening was not mentioned in the National Guidelines (Department of Health, 2000), however Maree and Wright (2010) reported that men's lack of knowledge added to the cervical cancer burden in South Africa. Therefore, research interventions are required to improve and encourage cervical cancer screening in South Africa.

During the study process, there was no research intervention indicating men had been involved in the prevention of cervical cancer. This motivated the researcher to conduct an intervention study that would assess the knowledge of men about cervical cancer and the role they can play to encourage women to present for cervical cancer screening and develop an educational programme.

The outcomes of this study will add into the scarce literature about barriers contributing to low cervical cancer screening uptake in South Africa in a poorly resourced community. Moreover, it would assist to formulate a recommendation regarding the educational programme, the importance to empower men with knowledge and to allow them to teach their sexual partners and female family members about cervical cancer and motivate them to present for screening, and determine men's involvement in prevention of cervical cancer.

1.3 **RESEARCH QUESTIONS**

Two research questions were formulated for the study:

Question 1: What do men living in Muldersdrift know about cervical cancer, the cervical cancer-screening programme and the Pap smear and how they would prefer to be taught about these health issues?

Question 2: Would an educational programme focusing on men act as a motivator to encourage women to present for cervical cancer screening in resource poor community in West Rand?

1.4 OPERATIONAL DEFINITIONS

Cervix: The lower, neck-like portion of the uterus, which extends into the upper portion of the vagina (Hartmann & Loprinzi, 2005).

Cancer: Cancer is a process where normal cells change into abnormal, deviant cells, which spread within the body. Cancer can influence any body tissue (Lemone & Burk, 2004).

Screening: Screening refers to being tested or observed to identify a disease or disease risk (Hartmann & Loprinzi, 2005).

Cervical screening: Cervical screening is a procedure done to detect the early pre-cancerous lesions on the cervix before they develop into cervical cancer (Bosch *et al*, 2002)

Taboo means forbidden, or something that cannot be said because it is viewed as harmful or embarrassing (Ismail *et al,* 2016).

1.5 THE STUDY

This two-phased study was conducted in a resource poor community in Muldersdrift, northeast of Johannesburg. Phase 1 consisted of a survey to explore what men knew about cervical cancer, the Pap smear and the cervical screening programme, and how they would prefer to be taught about these issues. The target population was all men living in the specific community and inclusion criteria was 18 years and older and willing to participate.

Although the researcher planned to use simple random sampling methods, it did not work as the men gathered between their houses during data collection. All men from 18 years and older were recruited for the study and convenience sampling selected the sample, which realised as 101 (n=101). A self-developed questionnaire was used to collect the data, the questionnaire based on literature and expert opinion, had both open and closed-ended questions consisting of five sections. Section A focused on demographic data, Section B explored men's knowledge about cervical cancer, Section C and D explored knowledge of the cervical screening programme and knowledge of the Pap smear, and Section E consisted of health education preferences. The questionnaire, which was translated into isiZulu and Setswana, was pre-tested using 10 men from a similar resource poor community. No problems were experienced with the questionnaire and no changes

were made after the pre-test. The respondents preferred the English questionnaire and none wanted to answer the questions in isiZulu or Setswana. The questionnaires were numbered sequentially and entered onto an Excel spreadsheet and analysed using the SPSS version 22. Quantitative content analyses were used to analyse the data obtained by means of the open-ended questions. Chi-Square test was used to measure the association between variables.

Phase 2 of the study used an intervention research design and one group posttest only approach. An educational programme focused on men as motivators, was pilot tested and assessed in terms of a primary outcome and secondary outcomes. The primary outcome was presenting for screening and the secondary outcomes were knowledge and behaviour. The educational programme was also evaluated.

To assess the primary outcome-screening uptake, the statistics of the Muldersdrift Primary Healthcare Clinic were used. A post-intervention approach and one group posttest only was utilised to assess the knowledge and behaviour outcomes. Telephone interviews was used to collect the data and all men who could be reached became the convenience selected sample (n=100). Structured interviews used by the researcher, with the assistance of two field workers, collected the data. Data were analysed by means of descriptive statistics .The open-ended questions were analysed by means of content analysis. The data collection occurred between October and December 2014.

Evaluation of the educational programme was by means of the post-intervention questionnaire and the data were analysed as described above.

1.6 CHAPTERS DIVISION OF THE STUDY

The division of the study's chapters is as follows:

Chapter 1: Orientation for the study

Chapter 2: Literature review

Chapter 3: Research methods Phase 1

Chapter 4: Phase 1 finding

Chapter 5: The development of educational programme and research methods Phase 2

Chapter 6: Findings of Phase 2

Chapter 7: Justification, limitations, recommendations and conclusion.

1.7 SUMMARY

Chapter 1 provided an overview of the study and the research problems, as well as the summary of the outcomes. Chapter 2 will present a review of the literature.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The introduction of the literature review consists of a traditional literature review section A followed by an integrative review section B, a traditional literature review was applied to this study to find out what problems affect interventions to improve cervical cancer screening uptake in developed and developing countries, whilst the integrative literature review focused on educational programmes and how they were implemented and section C dealt with summary of the literature review.

SECTION A

2.2 CERVICAL CANCER AS A WORLDWIDE HEALTH PROBLEM

Cervical cancer is a preventable disease, yet, according to the World Health Organization (2006), in 2005 approximately one million women worldwide had cervical cancer, most of whom had not been diagnosed. In the same year, the World Health Organization (WHO) estimated that cervical cancer mortality was 260 000 women, of which 95% lived in less developed countries. In addition, the World Health Organization (2006) indicated that cervical cancer was the most common cancer and the leading cause of death in women. However, according to the latest (2012) Globocan statistics (International Agency for Research on Cancer and World Health Organization, 2014), cervical cancer is the fourth most common cancer in women and seventh worldwide, with 528 000 newly diagnosed cases and 266 000 deaths from this disease. The Globocan statistics (International Agency for Research on Cancer and World Health Organization, 2014) also estimates that 83 000 women living in more developed regions and 92 000 living in the African region were affected with cervical cancer. According to the International Agency for Research on Cancer and World Health Organization (2014), 95% of women who suffer from cervical cancer live in less developed countries.

The exact incidence of cervical cancer in South Africa is not clear due to the fact the South African pathology based cancer registry has not been maintained (Denny, 2010). However, Snyman (2013) stated that cervical cancer affects one in every 41 South African women and kills eight women daily. According to the South African Medical Research

Council (2008), cervical cancer affects more Black South African women (35 per 100 000) than White women (12 per 100 000).

2.2.1 Aetiology and natural history of cervical cancer

Infection with the Human Papilloma virus (HPV) is the main cause of cervical cancer. According to Everett *et al.* (2011), 99.7% of cervical cancers worldwide are linked to HPV. The Alliance for Cervical Cancer Prevention (2004) agreed with this statement and indicated that more than 99% of cervical cancers are related to HPV infection. HPV is the most common viral infection that affects both males and females globally. There are more than 100 classified types of HPV viruses, of which at least 13 are a high-risk (World Health Organisation, 2013). Between 50% and 80% of sexually active women will be infected with HPV once in their lifespan (Alliance for Cervical Cancer Prevention, 2004).

The World Health Organization (2006) reported that the primary cause of cervical cancer is persistent infections caused by high-risk or oncogenic types of HPV. The oncogenic types of HPV are 16, 18, 31, 33, 45 and 58, with the two common types that cause cervical cancer being HPV-16 and HPV-18. In addition, HPV-infection persists largely in HIV positive women compared to HIV-negative women (Hoang *et al*, 2013), supporting the statement of Sahasrabuddhe *et al.* (2011) that co-infection of HIV and HPV viruses increases the cause of cervical cancer. Women infected with HIV have a high prevalence and are three times more likely to have HPV infections, are 4.5 times more likely to develop cervical dysplasia and three to five times more likely to contract cervical cancer compared to HIV-negative women. Therefore, large numbers of HIV positive women in South Africa are likely to be a contributing factor to the high rates of both HPV and cervical cancer (Vijayaraghavan *et al*, 2009).

Fortunately, not all women infected with oncogenic HPV types will develop invasive cervical cancer, as 90% HPV infections disappear spontaneously within two years (World Health Organization, 2006; Saslow *et al*, 2012). However, Saslow *et al.* (2012) reported that women with untreated HPV infection have a 30% chance of having invasive cervical cancer. In addition, low-grade lesions also have the ability to clear up on their own and most do not progress to high-grade lesions (Alliance for Cervical Cancer Prevention., 2004); approximately 60% of low-grade lesions may regress to normal. If HPV persists, cervical lesions may progress and develop into invasive cervical cancer (Patti & Gravitt, 2011; Schiffman & Castle, 2005). However, the progression to invasive cervical cancer can take a period of 10 to 20 years and evolves into large lesions, which may extend to

the vagina, pelvic walls, bladder, rectum and distant organs (World Health Organization, 2006).

Figure 1 illustrates the natural history of cervical cancer.

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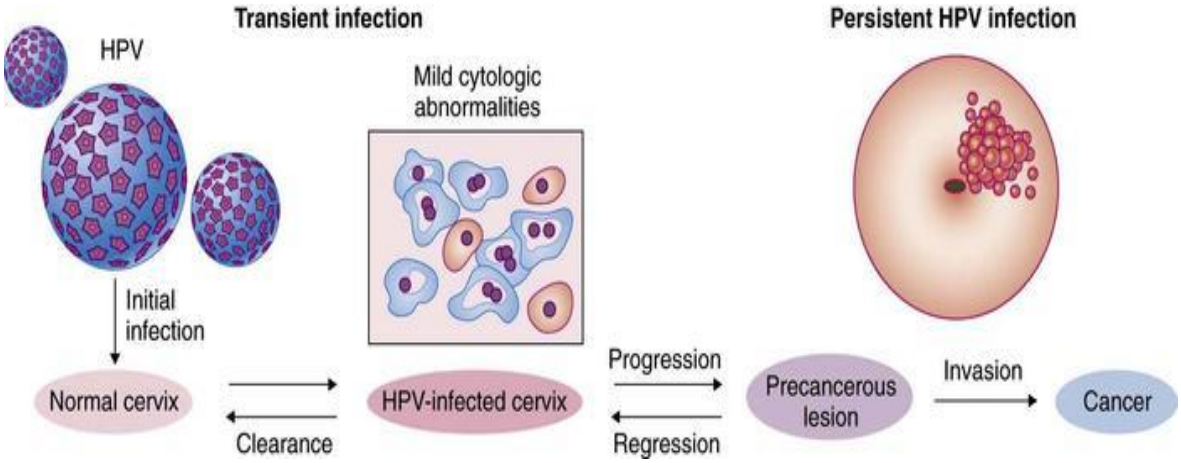

Figure 1: The natural history of cervical cancer

(Source:www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/womens-health/cervical-cancer)

In addition to the HPV, other factors are associated with cervical cancer including early onset of sexual intercourse, immunodeficiency (HPV and HIV-infected individuals), having more than five children, having many sexual partners, extended use of oral contraceptives, cigarette smoking, social economic status and sexually transmitted infections, such as Chlamydia trachomatis (World Health Organization, 2006). Sogukpinar *et al*. (2013) reported that poor genital hygiene, deficiency of vegetable and/or fruit intake in the diet and poverty also contribute to cervical cancer.

2.2.2 Clinical presentation of cervical cancer

According to the World Health Organization (2006), micro-invasive cervical cancer, the earliest form of invasive cervical cancer that invades no more than 5 mm deep and 7 mm wide into the cervical stroma, may be asymptomatic and only detected on investigation of an abnormal Pap smear. For woman not sexually active, cervical cancer may remain asymptomatic until well advanced. The early signs of invasive cervical cancer are as follows:

- postmenopausal bleeding or spotting
- vaginal discharge that is sometimes foul smelling
- irregular vaginal bleeding of any pattern in women of reproductive age
- post-coital bleeding or spotting in women of any age, even young women

The late symptoms of invasive cancer are:

- urinary frequency and urgency
- back pain
- lower abdominal pain

The following are symptoms of very late invasive cervical cancer:

- severe back pain
- weight loss
- decreased urine output caused by obstruction of the ureters or renal failure
- leakage of urine or faeces through the vesico-vaginal fistula
- oedema of the lower limbs
- dyspnoea due to anaemia or, rarely, lung metastases or pleural effusion

(World Health Organization, 2006; Colombo *et al*, 2012)

2.3 THE PREVENTION OF CERVICAL CANCER

According to Rahman *et al*. (2013), cervical cancer is one of the most preventable cancers unlike others caused by environmental, physical, genetic, lifestyle and HPV infection responsible for anal carcinoma, vulvar carcinoma, vaginal carcinoma and penile carcinoma. The Alliance for Cervical Cancer Prevention (2004) asserts that cervical cancer is preventable due to the slow progression of pre-cancer to cervical cancer, allowing a period of ten years or more to detect or treat pre-cancerous lesions and prevent its progression to invasive cancer. Furthermore, the World Health Organization (2013) explains that progression to invasive cervical cancer takes 15 to 20 years in women with normal immune systems and 5 to 10 years in women with low immune systems. There are two categories of prevention: primary and secondary. Men's involvement in female reproductive health can benefit the cervical screening uptake in both developed and developing countries.

2.3.1 Primary Prevention

According to Schiffman *et al.* (2007), primary prevention of cervical cancer focuses on health education, whilst Vanslyke *et al*. (2008) explained that primary prevention is a combination of Pap smear and HPV vaccines to prevent infection such as HPV-16 and HPV- 18 types. The World Health Organization (2006) defined primary prevention as the raising of people's knowledge by educating them about prevention of HPV infection and co-factors which increase the risks of cervical cancer.

HPV is transmitted by means of sexual intercourse and skin-to-skin contact, therefore the reduction of sexual partners and use of condoms protects against HPV infections, reduces the risk of cancer-related lesions and cervical cancer (World Health Organization, 2006; Waller *et al*, 2006). Holmes *et al.* (2004) indicated that condom use is related to higher rates of regression of cervical intraepithelial neoplasia and clearance of cervical HPV infection in women and with HPV associated penile lesions in men. Despite the fact that using condoms can prevent cervical cancer, Juckett & Hartman-Adams (2010) reported that circumcision could also reduce HPV infection, as 35% of circumcised men in South Africa are less likely to contract HPV.

2.3.2 Immunisation against cervical cancer

HPV vaccines are most effective in preventing HPV and cancer-related lesions in women who have not initiated sexual activity (Alliance for Cervical Cancer Prevention, 2004). Denny *et al.* (2012) stated that both HPV vaccines that target HPV-16 and HPV-18 prevent 70% of cervical cancer in HPV negative and positive women (Denny *et al*, 2012).

Currently there are two types of HPV vaccines available, a bivalent (Cervarix®) vaccine and a quadrivalent vaccine (Gardasil®) (Rahman *et al*, 2013). These vaccines are safe and immunogenic in preventing persistent HPV infections and cervical dysplasia (Juckett & Hartman-Adams, 2010; Rahman *et al*, 2013). Bivalent (Cervarix®) vaccine protects against HPV 16 and 18, while quadrivalent vaccine (Gardasil®) protects against HPV 16 and 18 as well as HPV 6 and 11, which are responsible for genital warts. Both vaccines should be administered in three doses intramuscularly. The minimal interval between the first and second dose is one month and six months between the first and third dose (Draper *et al*, 2013).

According to Markowitz *et al*. (2012), the first developed countries that introduced the HPV National Immunisation Programme were the United States of America, Australia, Canada and the United Kingdom. In 2011, the United States of America introduced HPV

vaccination for boys from 11 to 12 years, and 21 years for those who missed their opportunity to be immunised. In the same year, Australia and Canada introduced quadrivalent HPV vaccine for boys aged from 9 to 26 years.

Hilton *et al.* (2010) reported that vaccines in the UK were administered to schoolgirls between 12 and 18 years of age. Markowitz *et al*. (2012) also explained that Canada administered vaccines to younger girls aged 9 to 13 years, while USA administered to girls from the age of 13 to 26 years.

Limia and Pachon (2011) indicated that in Spain, the vaccines are administered to girls from the age of 11 to 14 years. The Gardasil vaccine should be given in three doses intramuscularly (Cutts *et al*, 2007; Report card on cancer in Canada, 2008; Szarewski, 2012). Two months should relapse between doses one and two, and six months between doses one and three.

Less developed countries, such as Uganda, commenced vaccination against HPV in schoolgirls in 2009, while Rwanda started administration of HPV immunisation to schoolgirls from Grade 6 in 2011. Other African countries reported to have commenced vaccination were Kenya, Cameroon, Lesotho and South Africa (Perlman *et al,* 2014).

In South Africa, HPV vaccination was introduced to schoolgirls from the age of 9 to 11 years in 2011 and 2012 (Snyman *et al*, 2015). CANSA (2014) explained that both the bivalent (Cervarix®) and a quadrivalent (Gardasil®) HPV vaccines are registered in South Africa but the Department of Health choose the bivalent (Cervarix®) vaccine to immunise schoolgirls. It was reported that in South Africa the schoolgirls are given two doses of HPV vaccine six months apart (Snyman *et al*, 2015; Botha *et al*, 2015). This is not in accordance with the guidelines of the International Atomic Energy Agency (IAEA) (2012), which stated that schoolgirls should be administered three doses of vaccine intramuscularly six months between doses zero, one and two. The IAEA (2012) explained that the pre-adolescent girls in developed countries, such as Canada and USA, are given three doses of HPV vaccines compared to South Africa which administered only two doses of HPV vaccines (CANSA, 2014) . In other words, the effectiveness of HPV vaccine can be less successful if the young girls are given less than three doses of HPV vaccine, leading to low protection of HPV infection.

2.3.3 Secondary prevention

According to Everett *et al*. (2011), secondary prevention is synonymous to screening, referring to the detection of pre-cancerous changes in the cervix. Screening is a health

intervention used to test women and give proper follow-up care and treatment for those diagnosed with abnormal results (World Health Organization, 2006). Screening can be done in a population-based manner or in an opportunistic way. The World Health Organization (2013) stated there was a 52% increase in the number of deaths from cervical cancer globally and this could be decreased by the use of a successful screening and treatment programme.

Various tests can be used to screen women for cervical cancer, including a Pap smear, HPV-DNA test and visual tests.

2.3.3.1 The Pap smear

The Pap smear, a cytopathology test, was introduced in the 1940s when cervical cancer was the number one killer of women in the world. This test has become a standard screening test for cervical cancer and has greatly reduced the incidence of this disease (Saslow *et al*, 2002). According to Sherris *et al*. (2009), a Pap smear test is used in large populations and this shows reduction of incidence and mortality rate of cervical cancer.

During a Pap smear, the cervix and os are exposed by means of a speculum examination. Sample cells are taken from the cervix using a wooden spatula or brush, smeared on a glass slide fixated and taken to a laboratory to be evaluated under microscope by a cytotechnologist (Nandini *et al*, 2012). This process can take several weeks before the client's results are available, although in well-organised cervical cancer screening programmes results can be available sooner.

The World Health Organization (2006) reported that accuracy of cytology depends on the quality of the service such as preparation and interpretation of the results from the laboratory. It is estimated that 84% of cervical cancer lesions are detected by a Pap smear in developed countries however, in poor conditions, the sensitivity Pap smear is as low as 38%. The specificity of the test is usually more than 90% however, Vaitkuviene *et al.* (2012) added that the sensitivity of the Pap smear ranges from 50% to 80%, while the specificity ranges from 70% to 90%. Sensitivity refers to a clinical test that positively identifies people with the disease, whereas the specificity refers to the proportion of people without cancer and have been diagnosed negative (Stojanovi *et al*, 2014).

There are various limitations of the Pap smear, and these are:

- low sensitivity,
- high false negative rates,
- inter-observer variability in cytologic interpretation,
- long waiting time for test results,
- systems need to ensure timely communication of the test results and follow up of women,
- laboratory assurance is required (World Health Organization, 2006; Boone *et al*, 2012; Rajaram *et al*, 2012).

Hoque *et al.* (2008) explained that Pap smear has achieved tremendous success in developed countries through public health programmes but screening programmes have failed to reach a significant proportion of women in less developed countries. For instance, in the United States of America, the incidence of cervical cancer has fallen by 75% over the last 40 years and the death rate in the UK has dropped by 40% between 1979 and 1995. Similarly, Konno *et al.* (2010) stated that the Pap smear has decreased the incidence and death rate of cervical cancer by 70% in Japan.

According to Hoque *et al.* (2008), only 5% of women in less developed countries have undergone a Pap smear due to inadequate access to prevention services. Moodley (2009) reported that in African countries there is inadequate healthcare personnel, lack of knowledge about cervical cancer and the unavailability of Pap smears to detect and prevent cervical cancer.

Mc Carey *et al*. (2011) reported the Pap smear had failed to decrease mortality rate in developing countries due to lack of material resources, absence of good quality control system, poor skills and lack of follow up and treatment facilities. Anorlu (2008) added that in many countries in sub-Saharan Africa there is insufficient healthcare, infrastructure and poor resources. Countries like Malawi lack trained healthcare providers and facilities for cervical cancer screening and treatment. In addition, the defaulters with Pap smear abnormalities reach 60 to 80% because of the ineffective follow up.

In South Africa, the Pap smear has decreased the number of deaths from cervical cancer by 67% and has proven cost-effective for the prevention of cervical cancer (CANSA, 2013).

2.3.3.2 HPV DNA test

According to the World Health Organization (2006), HPV-DNA test refers to the collection of the sample cells from the cervix by using a swab or small brush. The sample is taken to a laboratory. The processing time for the sample takes approximately seven hours and results can be returned to the service site within a day. Self-collections have adequate sensitivity and are culturally acceptable methods. The Alliance for Cervical Cancer (2004) reported that these tests determine one or more HPV infections present in a cervical specimen.

HPV-DNA test is used as a primary screening test, the sensitivity for detection of pre-cancer and cancer varies from 50% to 95% with most studies showing high sensitivity of 85% or more (World Health Organization, 2006). According to Richter (2013; Hesselink *et al,* 2014), the HPV-DNA is a test used to detect viral DNA and based on this testing, it also increases cervical cancer screening coverage in settings which do not have access to cervical cancer screening.

2.3.3.3 Visual tests

According to the Alliance for Cervical Cancer Prevention (2004), there are two types of visual methods used to identify precancerous cervical cancer lesions: Visual Inspection with Acetic Acid (VIA), also called Direct Visual Inspection (DVI) and Visual Inspection with Lugol's Iodine (VILI).

VIA involves a speculum examination and exposing the cervix and the os. VIA allows the immediate identification of precancerous lesions, as these lesions temporarily turn white when 3 to 5% acetic acid is applied to the cervix. VIA does not require laboratory infrastructure and can be performed by trained doctors, nurses and midwives (Maree *et al*, 2009).

The results of the screening should be given immediately to the woman and treatment can be provided at the same time (Alliance for Cervical Cancer Prevention., 2004; Parashari & Singh, 2013). Saleh (2013) point out that VIA is an affordable procedure, which provides immediate results, and can be used as a preliminary test for mass screening in low-resource settings, with further tests being done on women who test positive.

According to the World Health Organization (2006), VIA has a sensitivity for detection of pre-cancer and cancer of approximately 77%, and a range of 56% to 94%; the specificity ranges from 74% to 94% with an average of 86%. VIA sensitivity has proven better than

cytology (Alliance for Cervical Cancer Prevention, 2004), and is more effective for outpatient treatment for pre-cancer lesions. It also has the potential to save women's lives in developing countries (Carr & Sellors, 2004).

Lugol's Iodine (VILI) is applied to the cervix, the normal cells take up the iodine stain and appear a mahogany-brown colour and precancerous cervical lesions appear yellow. The results of the VILI screening can be given immediately and treatment can be provided at the same time (Alliance for Cervical Cancer Prevention, 2004). According to Louie *et al*. (2009), VILI gives immediate identification of cervical abnormalities and precancerous lesions after uptake of iodine in the cervical transformation zone.

According to Louie *et al*. (2009), VILI's sensitivity for the detection of women with precancerous lesions is estimated to be 90 to 97% and specificity ranges from 73 to 91%. The World Health Organization (2006) reported that the sensitivity of VILI is greater than that of VIA or cytology.

The World Health Organization (2006; Louie *et al,* 2009) indicates some of the advantages and disadvantages of VIA and VILI. The tests are relatively simple and can be taught to any healthcare provider, assessment is immediate and no transport, laboratory equipment or personnel are required, they are less costly, results are available immediately, which eliminates the need for multiple visits and reduces follow-up and can be potentially used for screening and treating women in a single visit. The disadvantages of VIA and VILI are women who test positive but do not have disease require excessive diagnosis and treatment, visual tests on postmenopausal women cannot be reliable and there are no permanent records of the test that can be reviewed later.

2.4 DIAGNOSIS AND STAGING OF CERVICAL CANCER

According to the World Health Organization (2006), the definitive diagnosis of cancer is histopathological examination of a sample taken from the lesion before therapy or extensive investigations are started. There are several types of tests used to diagnose cervical cancer, including colposcopy, biopsy, punch biopsies, loop electrosurgical excision procedure (LEEP), endocervical curettage and cold knife conisation (World Health Organization, 2006).

There are different types of staging used for the classification of cervical cancer. The World Health Organization (2006) stated that the classification of the International Federation of Gynaecology and Obstetrics (FIGO), which is based on tumour size and the

extent of spread of disease in the pelvis and distant organs, is recommended for staging invasive cervical cancer.

The stages of cervical cancer are as follows:

- Stage 0: Carcinoma in situ, cervical intraepithelial neoplasia Grade III.
- Stage I: Carcinoma confined to the cervix. Extension to the uterus is disregarded.
- Stage II: Cervical carcinoma spread beyond the cervix, but not to the lower vagina or to the pelvic wall.
- Stage III: Tumour extends to pelvic wall, involves lower third of the vagina or causes hydronephrosis or non-functioning kidney.
- Stage IVA: Carcinoma has spread to the bladder, rectum or both.
- Stage IVB: Distant metastasis (World Health Organization, 2006; Hartmann & Loprinzi, 2005).

The survival range of women with cervical cancer is determined by both the disease stage and treatment given. In countries where therapy is either unavailable or inadequate, the survival rates are significantly lower than the optimum (World Health Organization, 2006).

According to CANSA (2013), the five years survival rates of cervical cancer are as follows:

- Stage IA: 96-99%
- Stage IB: 80-90%
- Stage II: 65-69%
- Stage III: 40-43%
- Stage IV: 15-20%.

2.5 TREATMENT OF CERVICAL CANCER

The IAEA guides the treatment of women with invasive cervical cancer in resource restricted care settings. According to the IAEA (2012), the treatment of each patient should be personalised to ensure the best treatment outcomes. The goal of treatment for all patients, except those with Stage IVB cervical cancer, is cure. To guide curative treatment, patients are divided into those with early and advanced stages of cervical cancer. Early stage includes patients with Stage: IA – IB1 – IIA1 – IB2 and IIA2 ≤ 4cm cancer, whilst advanced stage consists IB2 and IIA2 ≥ 4cm – IIB – IIIA – IIIB – IVA cervical cancer.

The treatment of patients with early stage of cervical cancer is surgery or radiotherapy, which includes a modified radical hysterectomy and total abdominal hysterectomy, with or without bilateral salpingo-oophrecteomy. Intracavitary brachytherapy alone or combination of external beam radiotherapy can also be used. Patients with stage IB2 to IIA2 cervical cancer are treated by means of surgery with a modified radical hysterectomy followed by adjuvant therapy, either radiotherapy or chemoradiation. Patients with stage IIB to IVA of cervical cancer, which are not suitable for surgery, are treated by external beam radiotherapy plus brachytherapy with or without concomitant chemotherapy. Cisplatin is the chemotherapy drug most commonly used. Those patients who have stage IVB cancer with involved para-aortic lymph nodes can be treated by radiotherapy with or without chemotherapy. In addition, patients with stage IVB cervical cancer with distant metastasis receive palliative treatment and care.

2.6 CERVICAL CANCER SCREENING PROGRAMMES AND POLICIES

Cervical cancer screening is the preventative procedures done to detect early pre-cancerous lesions before they can become cervical cancer (Bosch *et al*, 2002; Aschengrau & Seage, 2013). This screening can be done in a population-based manner or an opportunistic manner. Population-based programmes are well-organized screening programmes given to the target group based on government policy and entail protocols, quality management, monitoring and evaluation by applying a screening test for a disease, which is considered important, and will produce a net benefit that is cost effective and that the community considers acceptable. In contrast, opportunistic screening is when the individual is given a test with or without symptoms of the disease when they present to a healthcare facility for reasons not related to that disease (Australian Health Ministers' Advisor Council, 2008; Denny *et al,* 2006)

Globally cervical cancer screening programmes differ from one country to another. According Todorova *et al*. (2006), in developed countries the cervical cancer rate has dropped due to an effective cervical cancer screening programme, whilst Valdespino and Valdespino (2006) explained that cervical screening programmes have reduced the incidence and death rate of cervical cancer in developed countries by 60 to 80%.

According to Dickinson *et al*. (2012), organised mass cytology in Canada, based on cervical cancer screening programmes, reduced the incidence rate of cervical cancer from 13.2% to 2.2% annually. According to Hilton *et al.* (2010; Chang *et al*, 2017) the incidence of cervical cancer has dropped over 50% due to effective cervical screening programmes in the UK and Finland. Moodley (2009) reported that the death rate of cervical cancer in

Iceland dropped by 84%, between 1965 and 1982, due well-organised screening programmes.

Leung *et al*. (2008) stated that screening uptake in Hong Kong is very low, with 50% of all eligible women in various categories not screened. The screening prevalence of Hong Kong differs with the western developed countries where the screening prevalence for Pap smears in the USA is over 90% and 80% in England and Wales. However, Konno *et al.* (2010) reported that Japan has had cervical cancer screening programme for 50 years and has decreased the incidence and death rates of cervical cancer by 70% in recent years, with cervical cancer screening coverage of 24%. The cervical cancer-screening programme has lowered the mortality in Japan by 42.1% (Chang *et al*, 2017).

In countries such as India, the incidence and death rate of cervical cancer has reduced by 90% (Singh & Badaya, 2012).

Unfortunately, the picture is not as favourable in the developing world. For instance Konno *et al*. (2010; Denny *et al*, 2006) state there are no national cervical screenings programmes in some less developed countries and it seems as if existing screening programmes have not been successful. In countries such as China, the cervical cancer-screening programme is disappointing due insufficient cytopathologists and lack of knowledge of cervical screening by healthcare workers, which leads to a 14% incidence and 12% death rate annually (Zhao *et al*, 2012). In addition, in Mexico, the national cervical screening programme failed to decrease death rates of cervical cancer, as only 5% of the target population had a Pap smear done (Hoque *et al,* 2008).

In 2000, the National Department of Health in South Africa introduced a policy guideline for cervical cancer screening, with the target population being women 30 years of age and above to have three free Pap smears at ten-year intervals in their lifetime. Women who had never had a Pap smear before and who were above 50 years of age should be offered one free Pap smear (Denny, 2010). Hoque *et al.* (2008) added that the goal of the screening programme in South Africa was to screen at least 70% of the target population nationally within the first 10 years. Although South Africa developed the cervical cancer-screening programme, compared to other less developed countries, there is still a lack of this programme in the rural communities and inadequate treatment within the country (Johnson *et al.,* 2007; Snyman & Herbst, 2013). Therefore, women in South Africa use the opportunistic basis, which leads to the low cervical cancer screening coverage of 13% (Snyman, 2013).

The South African cervical cancer-screening policy differs from those of countries in the developed world. For instance, in the UK the cervical cancer-screening policy targets women of 20 to 64 years of age. Women should have three free Pap smears at three or five yearly intervals (Anttila *et al,* 2004; Canfell *et al*, 2006). In Australia, the cervical cancer-screening policy targets sexually active women aged 18 to 69 years. Women should have one Pap smear every two years (Canfell *et al,* 2006; The Royal Australian and New Zealand College of Obstetricians and Gynaecologists, 2014). The USA policy seems to differ from the rest of the developed world as well as the South African cervical cancer-screening policy. The United States of America Preventive Services Task Force (USPSTF) introduced a policy that women aged 21 to 65 years should have a free Pap smear at three yearly intervals, and women 30 to 65 years of age who want to lengthen the screening interval, can undergo screening with a combination of cytology and HPV testing at 5 year intervals (Moyer, 2012; Rahman *et al,* 2013).

It seems as if other African countries, such as Namibia and Zambia, do not have comprehensive national policies on cervical cancer. In those countries that do have policies which address cervical cancer, the policies broadly mention the negative impact cervical cancer has on women and provide only for screening services, other issues such as the management, treatment for pre-cancerous lesions and cancer and palliative care is often not addressed (Chingore-Munazvo, 2012)**.**

2.7 THE ROLE OF MEN IN FEMALE REPRODUCTIVE HEALTH

Reproductive health is a complete physical state, mental and social well-being, and not simply the absence of disease or illness in all aspects related to the reproductive system but also its function and processes (UNFPA, 2008). This allows people to have a satisfying and safe sex life, in that they have the capability to reproduce and the freedom to decide (European Humanist Federation, 2015). Although, men's involvement in female reproductive health needs more attention, this will be discussed including their role in PMTCT in both developed and developing countries.

Davis *et al.* (2016) reported that men's roles in maternal and child health (MCH) is to specifically support their sexual partner in use of clinic services, and to empower men about the causes of communicable and non-communicable diseases. This encourages them to accept Voluntary Counselling and Testing (VCT), supporting their sexual partner to take ARV treatment and teaching others about the health services available (Davis *et al,* 2016).

According to Baker *et al*. (2014), European countries such as Australia, Brazil and Ireland still experience men's health as a burden, whereby some men are not interested in taking part in healthcare services. In many societies, men are more privileged therefore make decisions for their female partner. Charity Men's Health Forum encouraged the government of the UK and Northern Ireland to provide a chlamydia-screening programme for younger men and women. The results illustrated there was a gap in men's health which needed to be closed and the next step was to move the issue higher up the agenda of national governments and global health institutions without diminishing efforts to improve women's health; it was not just to recognise the role of men but also identify the potential benefits to women, children as well as society (Baker *et al*, 2014).

Banks and Baker (2013), who conducted a study in the UK, indicated that involvement of men in health practice and health promotion is still a problem. In 2014, bowel cancer screening was conducted in the UK for both men and women and survival rate of men was lower than that of women. Men are more involved in socio-economic areas than health programmes and therefore men's role in productive health remains a challenge (Shankleman *et al,* 2014; Banks & Bakers, 2013).

Studies conducted in the USA indicated that men's involvement in cervical screening remained low, although there was an interest in learning (Trevino *et al*, 2012; McPartland *et al*, 2005).

In developing countries, such as India, men's involvement in female reproductive health thus maternal and child programmes was greater in the mid 1990's after the launch of international conferences in Cairo and Beijing. Emphasis was placed on the importance of men being involved in female reproductive health, such as PMTCT programmes (Kura *et al*, 2013; Davis *et al,* 2016*;* Bhatt & Desai, 2017*)*. Some barriers that affect men's participation in female reproductive health were embarrassment, occupied with their work, men hold social and economic control over their sex partner, making the decisions for their female sexual partner and children to attend healthcare services and cultural barriers (Bhatt & Desai, 2017).

Men in the Philippines attended female reproductive health sessions, such as use of family planning, lectures on condom use and counselling, which was done in such a way to protect their sexual partners as well as empowering themselves (Lee, 1999). Kura *et al*. (2013), in a study conducted in the Southern Highlands province in Papua New Guinea, reported some factors that influence men's role in female reproductive health. Men indicated that they were knowledgeable about antenatal care, supervised births, family

planning and sexually transmitted infections including, HIV/AIDS, but they did not know the benefits of the services. There were also cultural norms related to men's involvement in female reproductive health - men had to give permission to their sexual partners to attend health services, men not being supportive to their women about the sexual health services, men being the decision makers regarding PMTCT, reaction of men's behaviour about HV/AIDS, as well as lack of awareness and insufficient service delivery to accommodate men in sexual and reproductive health (Kura *et al*, 2013).

In East Africa, recent studies illustrated the role of men in women's reproductive health to improve health outcome, mostly prevention of mother-to-child transmission of HIV and antenatal care. Byamugisha *et al.* (2010), in a study conducted in Uganda, reported the factors that influence PMTCT services as fear of disclosure to the partner, insufficient support from their male partner, fear of violence, language barriers, incomplete understanding of their disease, bad attitude towards the healthcare providers, abandonment and stigmatisation.

Male involvement in women's reproductive health, such as family planning methods, empowered women and men. Factors that affect men's involvement in family planning are time constraints, lack of awareness regarding the role men in reproductive health, bad attitude and beliefs regarding family planning, use female contraceptive causing lack of sex desire, adulterous sexual relations and fear of vasectomy (Kabagenyi *et al*, 2014).

In 2008, male involvement in a PMTCT programme was conducted in Northern Tanzania. Men took a part in ANC activities where women were health educated, counselled, interviewed and examined while staying with their sex partners. Women came with their partners to collect HIV results, indicating how men and women shared their status without any fear (Msuya *et al*, 2008).

In Falnes *et al*. (2011), in a study conducted in Tanzania, there is low male involvement in PMTCT activities. Tanzanian men explained ANC and PMTCT programmes as a woman's accountability, where women do not need to have permission from their partner to go attend the clinic and men do not have any role to play.

In West African countries, such as Nigeria, men's involvement in antenatal clinic programmes, such as family planning decision making, was very low due to religious beliefs, relationships in marriage, level of education and preoccupation with work (Ijadunola *et al,* 2010). In 2013, a study conducted in Cameroon on men's involvement reported some barriers which are associated with cultural beliefs, such as men believe

that PMTCT and ANC are women affairs in which men do not need to be involved, health factors such as long queues at antenatal clinics, PMTCT services not being friendly to men, lack of disclosure between partners, men not being interested in learning about their status, men's delusion that their female partner's HIV status is the same as theirs, women not willing to involve their partners in HIV testing due to fear of conflicts that may led to divorce, men's function in giving financial support for the woman's care.

In Sub-Saharan Africa, men's involvement in women's health is limited. In Malawi, being involved in female reproductive health and if men were diagnosed with HIV was too much to bear, especially when in-laws become involved, therefore men found it easier to abandon their family. The PMTCT programme was therefore referred to as a divorce programme, which led to family dispute. This indicates little knowledge of men to be involved in female reproductive health as they are not willing to learn about health issues and have busy schedules; men also have to give their permission for services to provide financial and transport support. Women are afraid of participating in screening due to fear of positive results, which may lead to domestic violence. Cultural barriers, being one of the major factors that affect health, are of a great concern (Pool *et al*, 2001; Njunga & Blystad, 2010; Reece *et al*, 2010; Montgomery *et al*, 2011; Besade *et al*, 2016).

Kululanga *et al.* (2012) reported the factors that affect men's role in female reproductive health as lack of integration of men's involvement in MCH activities Men are not allowed to accompany their sexual partner to the clinic as this is seen as a weakness due to culture, the attitude of professional workers stopping men from entering the antenatal examination room, community leaders not encouraging men to participate in antenatal care and HIV counselling and testing and not being able to discuss culture issues with those men willing to participate in women's health .

Reece *et al*. (2010) added other factors that affect men's involvement in PMTCT programmes, such as economic factors whereby there are insufficient financial resources, time limit of male participation in female health services, women not having a say in decision making about their healthcare services, and bad perception of men against female nurses that face male participation in PMTCT programmes. According to Nyondo *et al*. (2014), women in antenatal clinics are health educated, counselled and tested, and those diagnosed with HIV receive treatment. Although women are participating in the programme, men's involvement in PMTC of HIV is low, which led to some women having difficulty in making the decision about VCT and treatment without their husbands consent.

In a country like Namibia, cultural believes and social-economic barriers affect the involvement of men in female reproductive health. These barriers include men having bad attitudes towards health services, men giving permission for certain health services such as antenatal and post-natal which lead to some women not attending due to lack of support from their spouses, men feeling they are independent and strong and not liking to ask help. It also indicates that in Namibia, talking about sex is taboo (Jooste & Amukugo, 2013).

Osman *et al*. (2014) reviewed 22 papers, focused in Sub-Saharan Africa, aimed at the barriers to male involvement in the uptake of Prevention-of-Mother-to-Child-Transmission (PMTCT) of HIV, and found the barriers to be social cultural factors and stigmatisation, gender power imbalance in that woman's issues should be handled by women alone, fear of positive results, lack of male support in women's reproductive health, inadequate knowledge about the benefits of men's role in PMTCT, bad attitude towards healthcare providers and costs. Brusamento *et al*. (2012) reported there is inadequate knowledge and awareness regarding the meaning of PMTCT and its benefits, which leads to the low male involvement in PMTC in Sub-Saharan Africa.

In South Africa, men's involvement in female reproductive health and PMTCT was not always positive. Negative behavior included threats, accompanied with violence, which were caused by some HIV positive women refusing partner involvement and lack of discussion on HIV, risky sexual behaviour such as unwanted pregnancy, which led to denied paternity, responsibility and rejection by the biological father (Maman *et al,* 2011). According to the South African Institute for Race Relations (2011), 52% of Black children lacked fathers, 41% amongst Coloured people, 12% amongst Indians and 15% amongst Whites in 2009. HIV and AIDS and STI Strategic Plan for South Africa, (2007-2011) indicated that South African men are irresponsible in sexual partnership, whereby mother-to-child transmission (PMTCT) of HIV prevention is a great challenge. According to the WHO's PMTCT Strategic Vision 2010-2015, the number of pregnant women in South Africa living with HIV is over 200 000, with approximately 72% receiving antiretrovirals (ARVs) to reduce the risk of mother-to-child transmission. However, Kalembo *et al*. (2012) explained that despite encouraging men in PMTCT, pregnant women, who had had HIV screening and the results were positive, feared revealing their status to their husbands because they thought their husbands would accuse them of betrayal which could lead to divorce, fear of stigma as other women would not do the test without their husbands approval, inadequate partner support and involvement, which implies low uptake of PMTCT interventions and an increase in mother-to-child transmission of HIV.

Sprague *et al*. (2011), in a study conducted in South Africa, reported potential barriers of PMTCT programmes that included fear of positive results and stigma, healthcare provider not being well trained and staff shortage, inadequate ANC and HIV services, delay in the care continuum, lack of partner support and insufficient knowledge about the disease. In addition, another factor that affects men's involvement in PMTCT programme is poor communication between partners; this brings a gap between the awareness and prevention as well as sexual behaviour changes (Villar-Loubet *et al,* 2013).Van den Berg *et al.* (2015) reported the cultural beliefs that prevent South African men from taking part in maternal, neonatal and child health (MNCH) services are long waiting hours, cultural norms which discourage men from attending the health activities, attitude that it is women's health issues and therefore men do not have any role to play. According to Peltzer *et al*. (2011), there are various barriers affecting men's involvement in female reproductive health, such as men thinking that PMTCT and ANC are a woman's responsibility, lack of support from male partner, inadequate integration of ANC and HIV services and fear of being isolated in the community.

2.8 BARRIERS TO CERVICAL CANCER SCREENING

Both developed and developing countries face barriers, which affect cervical cancer screening. According to Todorova *et al*. (2006), the barriers affecting cervical cancer screening in developed countries are limited resources, insufficient information about cervical cancer and quality of services. For instance, in the UK, fear of the disease, false alarms, false reassurance, unnecessary biopsy, over-diagnosis and over-treatment were found to be barriers for cervical screening (Todorova *et al*, 2006).

Barriers affecting cervical cancer screening in the UK are emotional barriers, such as fear of the disease, sex outside marriage, cancer is shameful disease, bad experience about the procedure and the test not being friendly, attending the clinic more often, belief that cervical screening is unnecessary in the absence of symptoms, suspicion of health service, unsuitable appointment, deficiencies in accessing suitable appointments due to commitments, belief that cervical cancer will not affect them because they are not being sexually active and mistrust of the Pap Smear test, language problems of non-English speaking immigrants and insufficient knowledge about the objective of cervical screening (Waller *et al,* 2009 ; Marlow *et al,* 2015; Naidu *et al,* 2015). Other barriers that affect cervical cancer screening in the UK are lack of knowledge about prevention of the disease, sexual abuse due to use of drugs and alcohol, insufficient child care by the

parents, bad attitude and lack of communication with the healthcare providers (Fylan, 1998; Cadman *et al,* 2012).

The USA faces other barriers, which according to Bessler*et al.* (2007; Kim *et al*, 1999; Lee, 2000; Juon *et al,* 2003) included race, ethnicity, lower income status, lack of education, language problems, such as non-English-speaking immigrants, and insufficient health insurance. According to Fang *et al.* (2011; Schleicher, 2007), in the USA the barriers that affect the cervical cancer screening are cervical screening is not needed for women who are not sexually active, insufficient knowledge of the aim of cervical screening and early detection of the disease, emotional barriers such as embarrassment and nervousness of the test, high costs, lack of transportation, inadequate regular cervical screening, long waiting hours for consultation, only go to the doctor when they feel pain. In addition, Moshkovich *et al.* (2015) reported other barriers of cervical cancer screening as poor attitude to healthcare providers, inadequate infrastructure, record keeping and coordination with external providers, insufficient laboratories and clinical staff, lack of general training and mistrust in the healthcare services.

Lack of access to screening services seems to be the major barrier to cervical cancer screening in developing countries. Many developing countries have limited cancer diagnostic facilities, and insufficient treatment and palliative care services. Due to wars, which result in the displacement of people and disruption of healthcare services, there is a lack of infrastructure and personnel. This makes establishment of a successful screening programme difficult (Denny *et al,* 2006).

Bessler *et al*. (2007) and Winkler *et al*. (2008) reported that the barriers to cervical cancer screening in Latin America are insufficient access to screening services, non-availability of high-quality services, poor comfort and privacy during the screening procedure, discourtesy by the health providers, fear of the results and anxiety of being diagnosed with the disease, shame of being exposed during the procedure and limited education. In addition, negative attitudes about the quality of the screening service provided, poor physical conditions of health facilities and taking long to receive test results were also identified as barriers.

Alfaro *et al*. (2015) and Agurto *et al. (*2004) added there are other barriers that affect cervical cancer screening in Latin America. These include lack of awareness of the kind of healthcare services available, inability to afford healthcare, lack of family and financial support, poor transportation, women feel uncomfortable when the healthcare provider is a

male, waiting time at the clinic, inability to afford treatment for those who are diagnosed with the disease.

In India, barriers of cervical cancer screening are similar to other countries, such as limited knowledge about the disease and healthcare services, fear of positive results and inability to afford the services (Jayaraman *et al*, 2016). Akbari *et al.* (2010) reported the barriers of cervical screening in Iran as lack of understanding about the signs and symptoms of cervical cancer, bad attitude and beliefs on prevention of the disease, fear of the procedure, bad experience about the test such as pain, being busy or difficulty in accessing a healthcare provider in their free time, the procedure is costly and inability to afford insurance for the test.

In 2003, a study conducted in Mexico also reported the same barriers as other countries, such as fear of the outcome from the test, limited access to healthcare services, insufficient support from their partners after being diagnosed with the disease, absence of counselling about the procedure, lack of qualified healthcare providers and the service is costly (Bingham *et al,* 2003).

According to Diah *et al*. (2015), Baharom and Ismail (2008), Redhwan Ahmed (2012) and Al-Naggar (2012), several studies conducted in Malaysia reported the barriers to cervical cancer screening as the procedure should be done only by female doctors, misconception of the test as painful and embarrassing, the test is expensive, no need to have a test if my mother never had one, lack of privacy, you lose your virginity due to the procedure and not comfortable with any medical tests, language problem due to non-English speaking, lack of support from their partner, unnecessary exposure of women during the procedure, health provider should respect women's culture, mistrust of male doctors and feel embarrassed to expose their body to a male health provider, lack of knowledge about cervical cancer, fear of being diagnosed with the disease, lack of transportation, poor support from their sexual partner, time consuming.

According to Ansink *et al*. (2008), in African countries, barriers to cervical cancer screening are misconception of the diagnosis of cervical cancer, lack of documentation, lack of knowledge and awareness among women about cervical cancer screening and lack of knowledge among men and the negative attitude of men towards screening or treatment.

Moodley (2009) reported that in African countries, healthcare workers do not educate women about cervical cancer; they have little knowledge about the benefits of cervical

cancer screening and insufficient motivation to come back for their results. A barrier to cervical cancer screening in West African countries, such as Cameroon, is insufficient knowledge about cervical cancer in the population and among healthcare providers (McCarely *et al,* 2011). In addition, Ebu *et al*. (2015) reported the barriers that affect cervical screening in West African countries, such as Ghana, as embarrassment and bad history about the procedure, spouses not allowing their female sex partners to go for the cervical screening, false information that women who do not feel signs and symptoms of the disease should not go for cervical screening and inability to afford healthcare.

In Nigeria the barriers to cervical cancer screening are fear of positive results, bad experience and discomfort of the procedure, difficulty in getting clinic time, lack of female doctors, insufficient knowledge about cervical screening and detection of cervical cancer and treatment, insufficient health services, perception of women that cervical screening causes bad luck, lack of availability due to work, women feel they are not at risk age, fear of losing virginity, no need of screening if you do not have a history of cancer in the family, bad perception that they are not at the risk of getting cervical cancer, poor transportation to reach the clinic, costly, insufficient support financially and emotionally from their partners about cervical cancer screening (Chigbu & Aniebue, 2011; Ndikom & Ofi, 2012; Owoeye & Ibrahim, 2013; Modibbo *et al,* 2016)

Studies in East African countries, such as Uganda and Tanzania, indicate the barriers which affect cervical cancer screening are women feel they're not at risk of getting cervical cancer, insufficient knowledge about the symptoms of the disease, anxiety of the procedure and being unfriendly, fear of positive results, uninterested to know about cervical screening, believe there is no use of cervical screening without symptoms of the disease, not being able to afford transport, limited healthcare services, low income status, lack of availability due to commitment, inadequate healthcare providers, lack of male partner approval for cervical screening, feel frightened and ashamed during vaginal examinations (Mutyaba *et al,* 2006; Urasa & Dar, 2011; Lyimo & Beran, 2012; Ndejjo *et al,* 2016).

In Sub-Saharan Africa barriers to cervical cancer screening are wrong beliefs about cervical cancer, low levels of awareness and poor knowledge of cervical cancer coupled with unavailability and inaccessibility of cervical cancer screening services (Anorlu, 2008). Lim and Ojo (2016) indicated barriers that affect cervical cancer screening to be low knowledge and awareness of cervical cancer screening, lack of information regarding the screening services, embarrassment of screening and the results, costly, lack of support

from their sexual partner, time consuming, violation of privacy, stigmatisation, and bad attitudes towards the healthcare providers.

Studies conducted in Malawi, Zimbabwe, and Botswana reported that the barriers to cervical cancer screening are deficiencies and inconsistencies in the quality of services, anxiety of being diagnosed with the disease and bad experience of the procedure, inadequate knowledge and awareness about cervical cancer and cervical screening programme, poor communication with the healthcare providers, lack of accessibility to the clinic, lack of trained health providers to perform cervical screening, inadequate follow-up, takes away virginity, unaware about the consultation hours, limited female healthcare provider, insufficient staff, time consuming and busy time schedules, limited access and mistrust of the healthcare providers and bad attitude towards the health provider (McFarland, 2003; Fort *et al,* 2011*;* Mupepi *et al,* 2011; Ibekwe *et al,* 2011)

In South Africa, the screening programme is still a challenge because there is lack of political will to prevent the disease, lack of knowledge about cervical cancer screening, as well as lack of funds to support the screening programme, failure to maintain the pathology based cancer registry and low budget allocation for screening purposes (Moodley, 2009).

Learmonth *et al.* (2015) added that the barriers which affect cervical cancer screening in South Africa are inadequate staff levels, long waiting hours, unable to afford health insurance, prefer old female health providers to perform the procedure, language problem, lack of respect and empathy, unfriendly test and painful, trust of what the traditional healers advise such as putting onions in the vagina, misconception that cervical cancer means you are being bewitched, lack of support from male sex partner about cervical screening, male partner will support his sex partner to go to the traditional healer rather than consulting the clinic, stigmatisation of being suspected that you are immune compromised when you attend the clinic, fear for being accused of having multiple partners mostly when a female complains of pain and difficult to discuss the results with the male sex partner.

Other barriers that affect cervical screening uptake in South Africa are emotional fear of the disease, fear of pelvic examination, embarrassment and cultural barriers, misconceptions that a Pap smear is cleaning of the uterus, little knowledge about cervical cancer, limited services, poor transport to access services, lack of privacy and mistrust of western services (Risi *et al,* 2004). Maree (2010) states various barriers of cervical cancer screening, such as insufficient knowledge about the disease, fear of the results, cultural

barriers whereby women are not allowed to suggest safe sexual practices, such a condom use. Furthermore, Snyman (2013) explains that in South Africa, women need adequate information about abnormal results and follow up to ensure there is a functional screening programme, as the majority of South African women cannot be reached by postal services to receive the test results. This means that effective implementation of formal population screening in South Africa is a long way off.

Men's cultural beliefs and attitudes have been seen as an influence in cervical cancer screening in developed and developing countries.

2.9 CULTURAL BELIEFS AND ATTITUDES ON MEN'S WILLINGNESS TO BE INVOLVED IN CERVICAL SCREENING

Culture has been referred to as knowledge, beliefs, norms and values that are shared by specific groups of people (Mofolo, 2010; Gill, 2013). Cultural characteristics differ from continent to continent, for instance, in developed countries. Thomas *et al*. (2005), in a study conducted in the UK, illustrated the cultural beliefs about the uptake of cervical screening. The Black minority ethnic groups in the United Kingdom believe that cervical cancer is being caused by promiscuity; to them this is taboo and a curse from God. Due to these beliefs, women do not want to talk about this disease. In addition, in this study, cultural/ religious Muslim women can only be seen naked by their partner; they also prefer female health providers for cervical screening. It was also stated that Pakistani Muslim women do not feel comfortable to consult or to be screened with a doctor from the same cultural background. These cultural genders and behaviours of women may affect the uptake of cervical screening (Thomas *et al*, 2005).

In the USA, there are several cultural beliefs that affect cervical screening uptake. A study conducted on English speaking Chinese American women found they consider cervical cancer as being caused by promiscuity, therefore it is taboo, and having cervical screening is inappropriate and considered untimely sexual interest. Asian American women also indicate that to be healthy is a blessing, and to them it unnecessary to have cervical screening for women who are not sexually active. In addition, in Asian culture, sex cannot be openly discussed in public; it is considered a private issue and taboo (Bair *et al,* 2014). Lee-Lin *et al*. (2007) also added that Asian women shy from cervical cancer screening, as they think it is unnecessary to have the test without experiencing any signs and symptoms of the disease, therefore sex education seems to be an inappropriate topic.

According to Cheung *et al.* (2005), Chinese culture focuses on respect and dignity; when any one is diagnosed with a health condition it is a disgrace to the family. Additionally, Latin-Americans are scared of positive results; they state that cervical cancer is caused by unhygienic engagement in sex during menstruation and a curse from God (Schleicher, 2007).

A study conducted in Somali to explore the cultural beliefs that affect cervical cancer screening uptake found that Somali and Islamic women believe to suffer from cervical cancer is 'God's will.' The same study indicated that Latino women consider cervical cancer as God's punishment for improper or immoral behaviour.' It was also shameful and embarrassing to discuss and expose private body parts during examination, mostly if the healthcare provider was a male; women preferred a female doctor to perform the procedure (Abdullahi *et al*, 2009).

Malaysian women believe that if someone is not sick, she is not at risk of developing cervical cancer, their male partner is not supportive, they do not trust male doctors to conduct the cervical screening, and that women could lose their womb due to cervical screening, which may lead to infertility and rejection of their sex partner (Baharom & Ismail, 2008).

Malawian women believe that to be diagnosed with the disease is an embarrassment to the family and in the work place (Fort *et al*, 2011). A study conducted in Uganda also mentioned the role of cultural beliefs about cervical cancer screening; this included the inability to leave household chores, pre-occupation with family problems and lack of support from their husband, belief in consulting traditional healers before the hospital, feel embarrassed to discuss private issues with their sex partners, fear of being abandoned by their sex partners after being diagnosed with cervical cancer (Mutyaba *et al*, 2007).

In South Africa, the Xhosa cultural women believe that the womb indicates the health of the woman in general, and healthy wombs are associated with virginity, pride and motherhood; the uterus needs hygiene rather than seeking healthcare especially in old age. Xhosa women who undergo treatment for pre-cancerous lesions are advised to have four weeks sexual abstinence after treatment and phone calls and letters explaining the reason for abstinence are sent to their partners, which is another possible reason affecting the uptake of cervical screening (Engender Health, 2002).

In conclusion, culture plays a huge role in cervical cancer screening.

2.10 ADULT EDUCATION AND HEALTH PROMOTION

Adult education, which can be termed as formal, non-formal and informal, is given to people 18 years and older who took a break from primary education. This training is provided in order to achieve new knowledge and skills (Council of Ministers of Education, Canada, 2012; Nafukho *et al*, 2011). Coady (2014) reported that adult education provides tools to people, communities and societies on how to improve their health. Therefore, health promotion assists people to make suitable choices to improve their health and includes environment, physical, emotional, social, spiritual and intellectual health (Coady, 2014). In addition, health promotion consists of a lifestyle based on nutritional values, personal expression in social environments, being responsible on someone's health, supportive to one another, exercising and stress management (Nacar *et al,* 2014).

Diehl (2011) indicated the importance of health promotion and adult education, thus people are being empowered with health knowledge and are capable of applying it to others on daily basis. The consultation with literacy experts allows medical professionals to increase their level of understanding about health, and how this knowledge can be applied in their clinical settings. Therefore, adult learning empowers the learners on how to access and use health resources in order to solve health-related problems at the personal and community level (Diehl, 2011).There are several characteristics of adult learning emphasised in developed countries.

In the UK, lifelong education has been implemented, whereby agencies are responsible for promoting post-literacy activities, which include basic skills and adult learning, from the National Institution of Adult Education in England and Wales, and the Scottish Unit of Basic Education for Adults. The National Advisory Council for Adult and Lifelong Education, which enables post-literacy work methods in the field of lifelong education, is presented by the National Library Services. In recent years, the UK government introduced and supported the adult right to lifelong education, which includes free education for adults older than 25 who are interested in lifelong education; this has helped people to be more empowered and become self-employed (Gholami *et al*, 2013). McCaffery *et al*. (2016) reported that in the UK, health education are is given in adult education in order to help the disadvantaged adult learners to be knowledgeable about health conditions. Individuals with limited educational levels are at high risk of developing health problems, such as effects of smoking during pregnancy, obesity and others (Arnold *et al*, 2001).

In addition, Gholami *et al. (*2013) reported that the international organization has supported the implementation of lifelong education and adult learning in order to access a high-quality labour force and, due to economic development and increased growth and development of capabilities of each of the people, one's feeling of satisfaction and individual development.

Cercone (2008), in a study conducted in the USA, indicated that adult education has become professional practice whereby the majority of adults prefer to have online learning due their busy schedules and the format's convenience. Allen and Seaman (2006) reported a 35% increase of online registered students between 2004 and 2005 in the USA. Adults always wants to implement what they have learnt Fidishun (2000). Cercone (2008) added that adult learners are well orientated to their school tasks in that they always want to achieve their goals.

According to Smith (2014), adult learning is defined as a formal lecture which consists of basic training skills, apprenticeships, work-related courses, personal interest courses, English as a second language (ESL) classes and part-time college or university degree programmes, education and training are very important to economic growth in USA and enables productivity, such as incomes to those who are studying by providing individuals with useful skills. There are five strategies to implement adult learning in USA, formed standard adult learning in the areas of literacy and numeracy, provision of certifications to increase the transparency and portability of skills and knowledge, development of financial incentives to encourage those with limited-skills to register in education, encouraging employer involvement and workplace connections and development of quality assurance measures providers (Smith, 2014). Hill *et al.* (2008) explained that low literacy in adults leads to poverty and unemployment.

In 2009, a US National Report on the Development and State of the Art of Adult Learning and Education, stated there was a need for actions to assist and empower adults in organising their civil society as well as engaging in their own problem-solving skills for social interaction, empowering adults to implement policy making, to identify problems and find a solutions.

In Turkey, education consists of learning but learning does not involve education. Education is the process of being empowered with knowledge or skills, while adult learning is continuous or lifelong learning, which may include professional, public, private sectors, universities, personal development, research and development. In other words, adult learning can be outlined as an adult education field rather than considering it as a

separate discipline (Gul *et al,* 2013). Merriam and Caffarella (1999) stated that new adult learning styles should allow for the knowledge and experience of the learners including their ability to recognise their own skills as lifelong learners. In this regard, the participants will share their own reflection about the experience rather than lecturing, as this method of learning is considered more effective than that of others in adult education.

Adult education, according to a study conducted in Sub-Saharan Africa by Aitchison and Alidou, 2009; Aitchison (2012), is explained as basic education in terms of developing skills. The programme, which focuses on people who dropped out of school from the age 15 to 45, consists of reading, writing and numeracy skills in a home language or the dominant language of the workplace, conversational skills, health issues, and how to generate income. Aitchison (2012) added that countries such as Angola, Mozambique Swaziland and Namibia are relatively poor due the low education level of majority their citizens. The importance of recognising adult education policies shows an achievement of social, cultural and economic development in the country.

The purpose of adult basic education is to give foundation towards lifelong learning and development, which includes knowledge, skills and attitudes that are needed for social, economic and political participation. In countries such as Senegal, adult learning has increased the level of health promotion and living conditions in women (Aitchison & Alidou, 2009). However, it has been reported that on national levels there is insufficient recording, monitoring capacity for collecting and analysing data on youth and adult learning (Atchison, 2012).

In South Africa, there is non-formal adult basic education by non-governmental organisation (Baatjes, 2002). Non-formal learning is an education that consists of training with systematic instruction (Longworth, 2003). The informal education process helps adults study on their own and with others; however, this indicates that informal education is continuous throughout adult life (O'Hearn, 2002). The purpose of adult basic education is develop better understanding of day-to-day problems and social changes and the ability to play an active role in the progress of society, with a view to achieving social justice(Baatjes, 2002).

A number of policy developments and contributions in adult basic education have been established in South Africa, as writing policy became justifiable due to the partly dysfunctional system for adult basic education training within the nine provincial programmes. This system was established through campaign, projects and pressure from civil society, however non-governmental organisations state adult basic education as a

political project has been declined due to financial problems (Baatjes, 2003). Public adult basic learning continues to be poor leading to the low quality of the programme. It has been indicated that there is inadequate knowledge and skills among South Africans, whereby they cannot access jobs, and the hope of being retrained for a new job in the elite knowledge sector is painfully out reach for the majority. Adult basic learning is a basic human right and the state needs to fulfill the constitutional obligation toward people with limited education (Baatjes *et al,* 2002). Finally, this study focused on men to motivate their partners to go for cervical cancer screening.

2.11 INTERVENTIONS TO IMPROVE CERVICAL SCREENING UPTAKE

Various interventions focusing on improving cervical screening uptake have been tested, mostly in the developed world where cervical cancer is not a common cancer, which once again emphasises the importance of prevention.

Everett *et al*. (2011) reviewed 38 papers, most from developed countries, aimed at increasing cervical screening uptake and found that various invitational and educational interventions have been tested during randomised controlled trials to improve cervical cancer screening uptake.

According to Everett *et al*. (2011), various invitations were sent to women to attend cervical cancer screening programmes; this included letters of invitation, telephone calls, letters with fix appointment dates, as well as follow-up letters. Reminders were also sent to follow-up women who did not respond to the first appointment and to those who were behind schedule on cervical screening by sending letters, telephone calls, verbal recommendations, prompts and follow-up letters. It was interesting to note that telephone interviews increased cervical cancer screening uptake.

Education intervention involves women listening to audio tapes, group discussions, one-to-one teaching and home visits, while message framing (verbal or written) was used to increase knowledge about the screening programme. The outcome of the educational intervention was not successful in increasing the uptake (Everett *et al*, 2011).

In the USA, 20 articles were reviewed on interventions aimed at increasing cervical cancer screening uptake. It was indicated that most studies focused in developed countries. In this study, they used only the reminder. Reminder/recall was sent to women who did not report for cervical screening on their due date. The outcome indicates that reminder increased cervical cancer screening uptake (Baron *et al*, 2010).

In 2012, 18 articles met the inclusion criteria for the review, with the objective of increasing cervical screening uptake in Asian women. A combination of various interventions was used - community-based or workplace-based discussion, letter reminders and telephonic follow-up. The evidence of the results identified that community-based or work-based group discussion interventions can increase cervical screening uptake with additional support such as scheduling screening or use of mobile services (Lu *et al*, 2012).

Black *et al.* (2002) reviewed 42 articles in Canada aimed at increasing cervical screening uptake. The majority of intervention studies were from developed countries using combined mass media campaigns, information pamphlets, invitation letters, and invitation to reminders services, personal address letters, one-to-one education and film/exhibits of lectures about cervical cancer. The outcome reported that combined mass media campaigns with direct education to women and/or healthcare workers increased cervical cancer screening uptake.

Sheeran and Orbell (2000) conducted an intervention study in the UK aimed at reducing the prevalence of cervical cancer by 70% to 95%, requested amongst women living in rural areas in England. Women were requested to be registered at a medical practice to complete measures of the theory of planned behaviour variables before manipulation that induced one half of the sample to form implementation intentions specifying when, where, and how they would make the appointments, and subsequent attendance medical records were used to determine the findings. The outcome of the intervention was effective between previous delay behaviour and subsequent attendance (Sheeran &Orbell, 2000).

Forbes *et al.* (2009) reviewed 35 papers, which included 27 Randomised Control Trials (RCTs), including seven cluster RCTs on intervention study, which were conducted in the UK and aimed at increasing cervical cancer screening uptake. The following were used: invitations, reminders and education.

Educational interventions have been tested to increase cervical screening uptake and these included invitation letters that were sent to women, fixed or open appointments made, telephone calls, verbal recommendations and follow-up letters. Reminders were also sent to women who were overdue for cervical screening and women who had not responded to the first round of screening. Notably, the use of invitation letters has increased the uptake of cervical screening (Forbes *et al,* 2009).

An interventions study was conducted, in Sweden, by Albrow *et al*. (2014) to increase cervical cancer screening uptake. Invitation letters, reminder letters and telephonic reminders were used. Interesting to note, telephonic reminder were more effective than reminder letters in increasing the cervical screening uptake.

An intervention study was conducted in US aimed at increasing cervical cancer screening uptake. Invitation letters were sent to women as well as face-to-face and group education. The outcome of the intervention noted that invitation letters increased cervical screening uptake (Hitzeman & Xavier, 2012).

Stone *et al*. (2002) conducted an intervention study aimed at increasing cervical cancer screening uptake. Various invitations were used, such as patient letter reminders, financial incentives, education and feedback, and mass media campaigns. It was noted that patient letter reminders and financial incentives increased cervical screening uptake, while the education and provider feedback were less effective.

An intervention study was conducted in Canada aimed at increasing cervical cancer screening uptake. The following interventions used were patient letter reminders, incentives, mass media campaigns, radio, group discussions, one-on–one teaching, reducing structure barriers, reducing out of pocket costs, provider audit feedback and provider incentives. Remarkably, patient reminders, radio and audit feedback increased the cervical screening uptake (Brouwers *et al,* 2011).

According to Soares and da Silva (2016), a study conducted in Brazil reported 38 papers in developed countries, focused on randomised controlled trials to increase cervical cancer screening uptake, showed that several invitation letters, education, telephonic calls and media outreach have been used to improve cervical screening uptake. The study indicated that various invitations, such as telephonic calls, reminders for a period of three years, flyers, media outreach, community health agents and partnerships, were distributed to women to come for cervical cancer screening. Telephonic invitations increased cervical screening uptake.

In Malaysia, an intervention study was conducted aimed at increasing cervical cancer screening uptake and have been tested during randomised controlled trials. Invitation letters were personally given to schoolgirls though the principal, as well as information pamphlets and telephonic follow up (Abdullah *et al,* 2013). Interesting to note was that telephonic reminders were effective in increasing the cervical screening uptake.

A review study was conducted in Malaysia by Zaridah and UKM (2014) to increase cervical cancer screening uptake. Newspapers, magazine, books, invitations, posters and flyers were disturbed to women as well as announcements made on radio and television. Although, radio and television raised awareness on cervical cancer screening, 96% of the participants reported not knowing the recommended Pap smear screening intervals.

An intervention study was conducted in Korea by Fang *et al.* (2007) to increase cervical cancer screening uptake. Flyers were disturbed to women and announcements were posted. The cervical screening programme was announced and published in local newspapers. The study was not conclusive, as it seems there was no difference in the intervention.

It seems as only four intervention studies were conducted in Africa. Abiodun *et al*. (2014), in an intervention study conducted in a rural community in Nigeria, aimed to increase cervical cancer screening uptake. The intervention consisted of didactic lectures and educational movies on cervical cancer; the evidence indicates that both interventions increased the cervical screening uptake.

In South Africa, three intervention studies were conducted. Maree *et al.* (2011a) conducted an intervention study to determine whether cervical screening uptake could be improved when breast and cervical screening are combined. Several procedures were used like, for example, educational materials such as posters with female reproductive organs were placed on the walls of clinics, as well as on shop walls, and invitations, such as flyers, were circulated to the women and each participant received an information pamphlet. The study found there was insufficient knowledge of cervical cancer and the screening thereof. Combining cervical cancer screening and breast screening lead to an increase in cervical cancer screening uptake. However, Risi *et al.* (2004) explained that despite using radio-drama and comics to increase cervical cancer screening uptake, there was no increase in cervical cancer screening uptake over the past 6 months, nor was there an increase in the follow up. According to Tum *et al.* (2012), an intervention study was conducted to increase cervical cancer screening uptake. Women were recruited and education group teaching, including discussions, and assignments were given to the community Health Workers to improve uptake of cervical screening. The study reported that cervical screening was disappointing and the level of awareness remained low.

SECTION B

2.12 INTEGRATIVE LITERATURE REVIEW

An integrative literature review is a research method that gives an overview and summary of various studies from the previous research (Soares & da Silva, 2016). De Souza *et al*. (2010) indicated that an integrative literature review is a methodological approach, which allows the researcher to find a comprehensive research problem, analyse and synthesise mature or new titles of representative literature. The aim of an integrative literature review is to study the theories and research methods of other studies done in nursing (Soares *et al*, 2014). The objective of the current review was developed to supplement traditional literature reviews and to determine educational programme implementation to increase cervical cancer screening uptake by use of summarising and combining the results from other previously conducted studies done of the same title. The methods used are listed below.

2.12.1 Methods

The review question was:

Which educational programmes were implemented to improve cervical cancer screening in developed and developing countries between 1 January 2008 and 31 December 2012?

After the key words, educational programme, screening and cervical cancer, were identified the researcher searched the following databases: PubMed, Scopus, Web of Science, CINAHL and Sabinet. Studies had to report the finding published between 1 Jan 2008 and 31 December 2012, in English.

After identification of 331 articles from the search engines, lists of articles found from the databases were first reviewed to exclude conference abstracts, case reports, dissertation papers, clinical report and literature reviews.

Duplicates were highlighted and removed as well as the studies that did not meet the inclusion criteria.

Every article title and abstract was reviewed to determine inclusion criteria; in cases where the title and abstract were unclear, the entire article was reviewed for further details.

2.12.2 Data collection

The researcher developed a data extraction sheet to analyse articles that met the inclusion criteria.

The extraction sheet captured the year of publication, country where the data were collected, the setting, research method and design used in each study, sample size, the focus of the study, population, objectives, procedures used, implementations, outcomes and the level of evidence, using The Joanna Briggs Institute (2013), and conclusion of the study. The supervisor reviewed the studies to ensure they met the inclusion criteria.

2.12.3 Results

The search identified 331 articles from the electronic databases, of which six were included in the review, as most of the studies did not meet the inclusion criteria.

Figure 2.1 shows the identified articles through databases and the numbers of studies were excluded after selection by title and abstract.

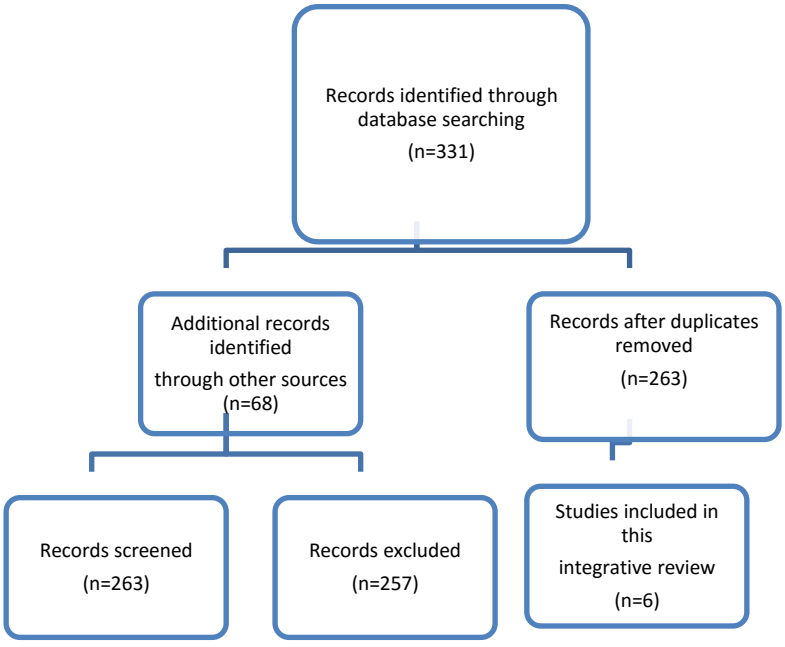

Figure 2.1: Diagram indicates the search and selection process for the included studies (n=331) (Moher *et al*. 2009)

All the studies that met the inclusion requirements were published from 2011 to 2012. Four of the six studies were conducted in developed countries, whilst other two studies were conducted in developing countries; none was conducted in Africa. Four of the works were located in the United States, three were conducted in rural areas and one in an urban area; the other two studies were conducted in urban areas in Iran and India.

The studies used different research designs. Two studies used randomised control trials, two studies used pre-test and post-test, one study was a quasi-experimental and one an intervention design, but it was not well defined as to how it was measured. It was noted that, pre-test and post-test design results were better than the studies that used the randomised control trial, and the study with quasi-experimental was more effective on cervical cancer screening than the one that used the intervention design.

The sample sizes varied from 56 (n=56) to 946 (n=946) participants, but one work did not mention the sample sizes. Three (n=3) of the studies used combined screenings, which is combined breast and cervical cancer and three (n=3) focused on cervical cancer screening. In two of the studies that focused on cervical cancer screening, the results were better than for those of combined breast and cervical cancer. Most women were 40 years and older and others aged from 16 and older were the target population, whilst one study not indicate the age. All the studies described objectives to increase cervical cancer screening uptake.

Only one study did not mention the educational materials used and five of the six studies used different educational materials, such as shower cards and calendars, lectures using slides and pamphlets distributed among women willing to participate, DVD, brochures, flipcharts, video plus a promotora, and reminders distributed in the communities, such as public libraries, nursing homes, hospitals and schools.

In Study 1, conducted by Nuno *et al.* (2011), the implementation of the programme included a trained promotora(is a community member who receive training to offer basic health education in the community without health professional), who offered educational programmes in small groups of three to 12 participants in their homes. Each woman was asked to invite family members, neighbours and friends from an existing network to participate in the educational programme. Those who were randomised were offered refresher classes a year later, with participation including ice-breakers, games and activities relating to cervical cancer screening, and reminders, such as emails and telephone calls, were used for the scheduling of cervical cancer screening. In this study the outcome indicated that primary analysis of women in an intervention group were 1.5

times more likely to report having a Pap smear within the last year compared with the usual care group; this was not statistically significant (95%). In secondary analysis, the intervention was more effective in those that had not had a Pap smear within the past year. In conclusion, a promotora-based educational programme can be used to increase cervical cancer screening in Hispanic women.

In Study 2, conducted by Shojaeizadeh *et al*. (2011), volunteers were divided into 10 groups and each group had two 2-hour seasons. The training methods consisted of lectures, questions, answers and discussion groups and after two months, a follow-up training season was held for all the participants to assess the effect of the training intervention based on HBM. The outcome in this study reported that the education programme based on the health belief model was effective and could increase participant's knowledge significantly.

This training programme was increased from zero to 81.4% and it was noted that there was an increase in knowledge, which resulted from the health belief model constructs and relationship. A significant relationship between knowledge, age and level of education was identified in this study, and the conclusion was that there was an increase of women's knowledge about cervical cancer and their health belief, which improved their behaviour regarding screening programmes.

Watson- Johnson *et al*. (2012) conducted Study 3 in two phases. In Phase1, the training took six hours over two days to develop a social cognitive theory with the use of a Hispanic promotora; post-training focused on a group discussion and follow-up of telephonic interviews. In Phase 2, flipcharts were written in Spanish and the session took one hour, and included step-by-step purpose of the lesson and expectations. The audience was asked to develop questions and presenters responded to those questions. Despite the outcome reporting there was increased knowledge in Hispanic women by using a promotora, the conclusion indicated that interventions were still needed to address the barriers that Hispanic women face to seek basic healthcare, such as preventative screenings particularly in rural areas. A plan is needed to develop additional programmes, such as videos to improve the appeal of a multimedia intervention toolkit and to test the effectiveness of the toolkit in increasing cervical cancer screening among Hispanic women in rural areas.

In Study 4, two educational programmes were offered in a local church as a part of a health fair, with two other groups offered through a health promotion initiative (Kessler, 2012). The outcome of the study shows that the Pap smear screening rate was increased

to 84% 15 months later and concluded that the educational programme based on self-efficacy helped to increase knowledge of cervical cancer screening rates.

Duggan *et al*. (2012), in Study 5, used three arms: 1) Control arm (usual care), all participants who did not receive any educational material on the benefits of regular cervical cancer and risk reduction were provided regular screening by staff at the community clinics. 2) Low intensity information programme, which consisted of a 13-minute video, in Spanish, to educate women about the benefits of cervical cancer screening. 3) High intensity intervention, over 3 days, involving a video plus a promotora, or lay community educator-led educational sessions conducted in homes, which consisted of culturally-appropriate video of low intensity. The study used primary and secondary outcomes. In the primary outcome, a follow up of cervical cancer screening was done in 7 months using a medical record review, and the secondary outcome endpoint was cost effectiveness for the two different intensity intervention programmes. The conclusion of this study is not clear.

In the final study, Study 6, by Ochoa-Frongia *et al*. (2012), the educational sessions were held in different local churches and coordinated by Witness Project of Harlem (WPH) staff, and each participant completed a questionnaire. The Witness Project Model (WPM's) also educated women at local churches and community gathering places, where they used cervical cancer survivors as witness role models to share their personal experiences about cancer. The outcome of this study reported there were no significant differences found between cancer screening and health beliefs. The conclusion was a need to increase access to quality healthcare services and cervical cancer screening in underserved communities and the major barriers to healthcare should be addressed and discussed during future Witness Project of Harlem (WPH) interventions in order to improve screening rates and healthcare-seeking behaviour.

When determining levels of evidence, two studies were found in level 1 and 3, and in level 2, one study would not determine the level of evidence due to lack of information. Table: 2.2 present six studies which met the inclusion criteria in the United States, Iran and India.

2.12.4 Discussion

This chapter provides an overview of several studies, which were conducted mainly on the barriers and intervention to cervical cancer screening in developed and developing countries. It appears the main barriers were lack of knowledge and awareness of cervical cancer and cervical cancer screening, fear of the Pap smear and positive results and attitudes that screening is unnecessary when you are healthy, cultural beliefs and religion, and demographic factors such age, marital status. Healthcare providers were mentioned for not providing good services to the clients, including health education about cervical cancer, women reported not being encouraged to go for cervical cancer screening, lack of friendly services as well as lack of support from husband were also barriers. Studies conducted in South Africa indicated that screening programmes are still a challenge due to lack of knowledge and awareness about cervical cancer screening (Synman & Herbst, 2013; Maree, 2010). Various interventions have been done, such as use of radio-drama and comics, invitation leaflets such as pamphlets and flyers, discussions, group assignments to improve knowledge and awareness as well as the quality of care and services, yet still the level of awareness remains low.

SECTION C

2.13 SUMMARY OF THE LITERATURE REVIEW

The summary of the literature reflects on what is, and is not, known and identifies the knowledge gap. The conclusion will be made based on the outline found in the literature.

Cervical cancer is a serious health problem in South Africa and worldwide. Cervical cancer, which affects Black South African women more than White women, develops slowly and may take 10 to 20 years to be diagnosed.

Cervical cancer is preventable, by vaccination and screening, and curable if detected at early stages, but it is not easy because of various risk factors, such as the Human Papillomavirus (HPV) that affects both males and females worldwide, having multiple partners, earlier onset of sexual activity, immunosuppression, long-term use of oral contraceptives, cigarette smoking, family history of cervical cancer, social economic status, poor genital hygiene, high parity, sexually transmitted infection such as Chlamydia trachomatis and a diet lacking in vegetables or fruit.

It has been noted that cervical cancer screening is available free of charge in South Africa to all women from thirty years of age and older, who should have three Pap smears at ten-

year intervals in their lifetime. For women who have never had Pap smear before and who are above fifty years of age one free Pap smear should be offered. However, cervical cancer screening uptake has been low due to different barriers.

The studies show that the most prevalent barriers to cervical cancer screening uptake in developed and developing countries was lack of knowledge about cervical cancer and screening, followed by fear of positive results, insufficient insurance, bad experience about the procedures, not being well informed about the screening services, not being supported by their male sexual partners, not having enough time to go to the clinic, lack of qualified healthcare providers, bad attitude to the healthcare providers, not being free with male doctors, limited access to healthcare services due to lack of transport, language barrier, lack of privacy, prefer female doctors for screening, bad perception about the risk factors, time consuming, perception that the screening causes bad luck, false information that women without signs and symptoms of the disease should not go for screening, it is unnecessary exposure of women during the procedure, costly, no reason to have the screening, cervical cancer screening takes away the virginity, difficulty to discuss the results with male partner and lack of follow ups after the screening. It would also appear that cultural beliefs about men's involvement have been a barrier in cervical cancer screening uptake.

Cultural beliefs and attitudes about cervical cancer screening are influenced by components such as values and practices. Most studies reported that women prefer female doctors to perform the cervical cancer screening. Multicultural and multi-religion play an important role in cervical cancer screening uptake, and is a great challenge and should not be undermined.

Most factors affecting low involvement of men in female reproductive health programmes are lack of awareness about PMTCT, MTCT and HIV, socio-economic status. Women's attendance at health services is influenced by the attitudes of men. Several studies reported that it is not easy to involve men in programmes that are designed for and provided by women, as they feel uncomfortable. This is influenced by some cultural norms and roles, for example, female health programmes are reported to be unfriendly to men and it might not appear important to men to attend the important matter regarding cervical cancer screening.

It was noted that the studies included in the integrative literature review, conducted in developed and developing countries, all focused on women; this was not successful as only one study increased screening uptake. In addition, it was found that most studies

focused on immigrant women. The World Health Organization (2006) mentioned that men must be involved in the prevention of cervical cancer. Out of six studies, four conducted educational programmes in groups.

Some articles were not clear about what was involved and did not allow for repetition of the same study that motivated the researcher into developing an educational programme. It was noted that some studies did not have procedures used to implement the educational programme and others did not specify if the educational materials used were successful or not. Some of the studies did not mention the sample size used, in some the conclusions were not made and two studies were not well written.

The aim of this study was to develop and pilot test an educational programme based on the knowledge men have regarding cervical cancer, the cervical cancer-screening programme and the Pap smear, and how they would prefer to be taught about these health issues. Two objectives were developed for the study:

Objective 1 was to describe the knowledge of men about cervical cancer, the cervical cancer-screening programme and the Pap smear, and how they would prefer to be taught about these health issues.

Objective 2 was to develop and pilot test an educational programme focused on men acting as motivators to encourage women to present for cervical cancer screening in resource poor community in the West Rand and to assess the programme in terms of primary and secondary outcomes. The primary outcome was presenting for screening and the secondary outcomes were knowledge and behaviour. The educational programme was also evaluated.

CHAPTER 3

RESEARCH METHODS PHASE 1

3.1 INTRODUCTION

Chapter 2 presented an overview of the literature, addressing the key concepts of the study. Chapter 3 will describe the research methods used in Phase 1 of the study, which explored men's knowledge about cervical cancer, the cervical cancer-screening programme and the Pap smear, and how they would prefer to be taught about these issues.

3.2 RESEARCH DESIGN

A cross-sectional survey design was used for Phase 1 of the study. The survey design is the collecting of data at a single point in time (Rindfleisch *et al*, 2015). Surveys are non-experimental and used to collect data through direct questioning (Polit & Beck, 2012). A survey design also supports use of questionnaires, the gathering of self-report data and allows the establishment of correlations and relationships (Watson *et al,* 2008). The researcher chose a survey design as it gives accurate information and data can be gathered from a large population in an economical manner (LoBiondo-Wood & Haber, 2010). Polit and Beck (2010) add that survey information tends to be relatively superficial and is better suited to extensive rather than intensive analysis.

3.3 RESEARCH SETTING

Polit and Beck (2012) describe a setting as an environment where the data is collected for the study. The setting of the study was Muldersdrift, situated northeast of Johannesburg. Muldersdrift is part of two economically significant metropolitan municipalities, the City of Johannesburg and the City of Tshwane. The population living in this area is approximately 19 959 and the different languages include IsiZulu, Setswana, Sepedi and Xitsonga, however the main two are IsiZulu and Setswana. The majority of the population is aged between 20 and 34 years of age with some secondary education (Draft Precinct Plan for the Muldersdrift Development Zone, 2009).

The study was conducted in Ward 23, an established informal settlement with 214 newly erected Reconstruction and Development Programme (RDP) houses adjacent to informal dwellings. The exact number of informal dwellings was not known, as buildings were constantly being erected, but it was estimated the informal settlement consisted of 980

dwellings. It was also unclear how many people lived in the specific area, as it was possible that more than one family occupied one house. There was no direct running tap water available in the yards of the informal houses and inhabitants used communal taps. Pit latrines were available, but it is unclear how many homes shared one. There was no electricity in the informal dwellings, however it was reported that many of the newly erected RDP houses have prepaid electricity.

The Muldersdrift Primary Healthcare Clinic, which is managed under Mogale City, provides primary healthcare to the community. This nurse-led clinic is managed by a joint committee in which the community has equal representation.This clinic serves approximately 4000 people per month living in the specific area, thus Muldersdrift, Honeydew, Lionpark, Diepsloot and Lanseria. Various healthcare services provided to the community by Muldersdrift Primary Healthcare Clinic includes ante-natal and post-natal care, a well-baby clinic, family planning, Pap smears, management of common ailments, treatment of communicable and non-communicable diseases, health promotion, emergency services, HIV/AIDS treatment and counselling.

3.3.1 Population and sampling

The population, also referred to as the target population, is all the elements that meet specific criteria to be included in a study (Burns & Grove, 2011). Nieswiadomy (2008) adds that a population is a complete set of persons or objects which that share specific characteristics of interest to the researcher and can consist of objects, people, or places, such as schools, from which the sample is taken (Gerrish & Lacey, 2006). The target population for this study was all men living in Ward 23, and the inclusion criteria were 18 years and older willing to participate.

Polit and Beck (2012) define sampling as a process used to select a small group of people who represent the entire population for the study.

The researcher initially planned to use simple random sampling, which is a basic probability sampling method where sample members are selected from a sampling frame through completely random procedures (Polit & Beck, 2008), to select the sample. Gerrish and Lacey (2006) define simple random sampling as a sample that gives equal chance of being included for the sample in the study.

Simple random sampling was selected for the study because it gives each person an equal opportunity to be selected. The researcher selected the first house in the settlement randomly, nearest to the clinic, thereafter every second house was included.

Due to the fact the population of men 18 years and older living in the study setting was not known, the researcher used the guidelines of Cohen (1992) to determine the sample size. According to Cohen (1992), the sample size for a medium population is 100 (n=100), which was deemed suitable for this population. Cohen (1992) bases the sample size on power to explain significance criterion and hypothesised population effect size (ES).

However, when gathering the data, the researcher found the men were not in the houses but socialising in groups outside, which made it difficult to determine who was living in which randomly selected house. The fieldworkers advised the researcher not to select specific men as they might not understand why some were allowed to participate in the study and others not. The researcher therefore invited all men older than 18 years to participate in the study thus using a convenience sampling method. This method is when the researcher selects people who are readily available for the study (Polit & Beck, 2012). The sample size realised at 101 (n=101).

3.3.2 Data gathering

Data gathering is described as the precise, systematic gathering of information relevant to research purposes, or the specific objectives and questions of a study using the inclusion criteria of the study. In addition, data may be collected from the participants by observing, testing, measuring, questioning or recording, or a combination of all these methods (Burns & Grove, 2011).

Self-report data were gathered using structured interviews. According to Polit and Beck (2012), self-report is a method of gathering data that involves a direct report of information by the person being interviewed. Brink (2003) explains that self-report methods are very effective when the purpose of the study is to obtain information about attitudes, knowledge, feelings and other information, which cannot be easily observed or measured physiologically. As the study focused on knowledge, a self-report approach was suitable.

Structured interviews were used to gather the data. Structured interviews include strategies, which give the researcher greater control over the content of the interview and allow for rephrasing of the question asked so that the respondent can better understood (Burns & Grove, 2011).

There is high response rate in face-to-face interviews. Respondents are more likely to talk to the interviewer, whereas it is easy to ignore the questionnaire. Structured interviews were guided by the low rate of literacy, which can lead to bias in men living in Muldersdrift (Burn & Grove, 2009).

Polit and Beck (2008) add that interviews allow respondents to feel comfortable and express their opinions honestly and accurate.

Polit and Beck (2010) explain that using a structured interview has the advantage of not excluding the elderly, or people who are unable to express themselves.

The questionnaire, which was based on literature and expert opinion, contained five sections and open- and closed-ended questions. Section A focused on the demographic data of the participants, Section B explored men's knowledge about cervical cancer, Sections C and D explored knowledge of the cervical screening programme and knowledge of the Pap smear and Section E consisted of health education preferences.

3.3.3 Data gathering instrument

The data- gathering instrument was a self-developed questionnaire, guided by literature and expert opinion The researcher also used studies about women's knowledge to increase cervical cancer screening uptake(Maree *et al,* 2011a; Tum *et al,* 2012; Mamahlodi *et al*, 2013; Lyimo and Beran, 2012; Maree and Moitse, 2014). The supervisor explained the use of expert opinion because she has done various questionnaires to determine knowledge on cancer screening.

An expert is a knowledgeable, experienced person who is recognised by the peer (Ayyub, 2001). Burgman *et al*. (2011) add that expert consists of unqualified people who possess direct, practical experience whereby they have the ability to contribute new knowledge or teach interactional expertise. Therefore, an expert should be able to organizse and interpret the information; for example, we included only experts with experience in cancer/oncology are nursing and primary healthcare nursing.

3.3.4 Pretesting the questionnaire and data gathering

After the questionnaire was developed, a professional language editor translated it into isiZulu and Setswana to provide the respondents the opportunity to answer the questions in their mother tongue. The questionnaire was pre-tested (Polit & Beck, 2012) to determine the acceptability and understanding of questions, how long it took to complete and whether there was a flow in the order of the questions. Due to the sensitive nature of the study topic, five male fieldworkers were recruited and trained to gather the pre-test data under the supervision of the researcher. The questionnaire was pre-tested by 10 men living in a similar resource poor community. There were no problems experienced with the questionnaire and no changes were made after pre-testing. The respondents

preferred the English questionnaire and nobody completed those translated into isiZulu or Setswana.

The data gathering were conducted as follows:

- One week after the study was approved by the Wits Human Research Ethics Committee (HREC) with the ethics reference number: M121008 (Addendum L).
- The researcher presented the study to the stakeholders of the Muldersdrift Primary Healthcare Clinic during a stakeholders meeting to obtain their cooperation.
- The meeting was attended by the management and staff of the clinic, representatives of the district health authority and the community leaders.
- After obtaining the support of the Muldersdrift Clinic stakeholders, the study was presented to the ward counsellor, the community leader and two community representatives and their support was obtained.
- The two community representatives representing the community at the stakeholders meeting assisted the researcher with the recruitment of the fieldworkers.
- The five male fieldworkers, not from the same community where the study was conducted, were given basic training on cervical cancer, signs and symptoms, causes and the importance of early detection of the disease, and how to complete and document the questionnaire
- After the fieldworkers were trained, they and the community representative determined suitable dates for the gathering of the data.
- The fieldworkers assisted the researcher in language issues during the data collection.
- During the days of the data gathering, the researcher approached the men who were socialising in groups and explained the study to them. The researcher had planned to use a simple random sampling method, but this was found unsuitable.
- The fieldworkers were trained to complete and document the questionnaire.
- The researcher and fieldworkers did not determine numbers of men to participate in the study, as men were found socialising in groups outside their houses.

- The researcher invited all men, 18 years and older, to participant in the survey.
- Men were all assembled together between their houses and the questionnaires were distributed to them to be completed.
- There were no measures taken by the researcher and fieldworkers to prevent participants from talking to each other.
- The researcher explained to the men that the questionnaires were available in English, isiZulu and Setswana and that the questions could be answered in their preferred language.
- None of the men wanted to complete a questionnaire in isiZulu or Setswana.
- The researcher explained to the men that participation in the study was voluntary and that participation could be withdrawn during the completion of the questionnaires, but not after the questionnaires were placed in the box as no names would appear on them. The men who were not willing to participate in the study left before the questionnaires were handed in.
- The researcher and fieldworker did not count the number of men who refused to take part in the study.
- The men preferred to complete the questionnaire on their own with support from the field-workers and researcher. For those who could not read or write, the researcher and fieldworkers read the questions to them and completed the questionnaire on their behalf.
- It was not possible to take specific precautions for privacy.
- After completing the questionnaires, the respondents placed them and the informed consent forms into two sealed boxes, each labelled for its intent.
- Participants were independent from each other during the completion of the questionnaires and no particulars were written down anywhere.
- The data were gathered from 14th June to 16th July 2013.

3.3.5 Data management and analysis

After data gathering was done, all the questionnaires were checked for quality before being entered onto an Excel spreadsheet. Descriptive statistics, which is the organisation of data in ways that provide meaning and facilitate insight (Burns & Grove, 2011), were used to analyse the data. Data analysis is the way that decreases, organises and gives meaning to data. As a convenience sample was used, descriptive statistics described and synthesised the data (Polit & Beck, 2010).

The results were analysed using SPSS version 22. Open coding, a process of breaking down and separating the similarities and differences of the data (Polit & Beck, 2010), was used to analyse the data obtained by means of the open-ended questions. Chi-square is a statistical test used to compare the observed data and the expected data in all categories (Burns & Grove, 2011) and was used to determine significant between the variables

The researcher analysed the content analysis using open-ended questions by breaking down the data through coding and counting the frequency of the specific words used with the participants. The researcher used coding to find patterns in the data and to context the codes, which gives the opportunity to interpret the context associated with the use of the words and to make decisions in content analysis. This was done to give systemic and objective valid inferences from words, oral or written data, in order to define interpretation of the result (Bengtsson, 2016).

3.4 VALIDITY AND RELIABILITY

Validity is a quality criterion referring to the degree to which the conclusions of a study are accurate and well found. Validity also refers to the degree to which an instrument measures what it is intended to measure (Brink, 2003; Nieswiadomy, 2008; Polit & Beck, 2012) and is increased by the degree of the truth of the respondent's responses (Cottrell & Mckenzie, 2005). Validity is the appropriateness, meaningfulness and usefulness of the specific data made during the examination of the results.

Face and construct validity are also applicable to measures such as questionnaires. Face validity refers to the transparency of the instrument, which gives the appearance of testing the desired content of the study (Burns & Grove, 2009). Picardi and Masick (2014) explain that construct validity is also related to the degree to which the variables in an experiment represent the constructs they are intended to measure. According to Nieswiadomy (2008), construct validity is the ability of an instrument to measure the construct it claims to measure.

Reliability refers to the degree of consistency or dependability with which an instrument measures a specific trait (Brink, 2003; Polit & Beck, 2012). Babbie (2008) describes reliability as consistency of the data obtained from the same measure.

The following steps were taken to enhance the validity and reliability of the findings:

- The researcher obtained support and co-operation of the ward counsellor, the community leader and two community representatives of the resource poor community who ensured access to the community.
- Data were gathered using a questionnaire. The questionnaire, which was based on literature and expert opinion, was specifically developed to assess the secondary outcomes of the study and was pre-tested. The researcher was not sure whether the answers given by the participants would reflect their inherent knowledge as the expert opinion was on supervisor explanation and the structure of the questionnaire was based on the previous work the researcher had done.
- The questionnaire was pretested before the data gathering commenced to assess the acceptability and understanding of questions.
- Telephonic interviews were used only in the post intervention
- The language used in the questionnaire was English. However, the questionnaires were also available in Setswana and isiZulu.
- Fieldworkers conversant in both English and the local languages were trained and supervised by the researcher. The fieldworkers were identified and approached by one of the community leaders and employed by the researcher. This prevented language problems and maintained a positive relationship between the researcher and the community.
- Structural coherence was maintained through the interviews, as the pre-tested questionnaire was the basis of the interview.
- Participants were independent from each other and only one datum was recorded for each participant.
- A statistician assisted the researcher in the data analyses.

3.5 ETHICAL CONSIDERATIONS

The following ethical principles were considered for Phase1 of the study, as outlined by Polit and Beck (2012):

- The proposal was submitted to the Wits Human Research Ethics Committee (HREC) for approval, with ethics reference number: M121008 (Addendum M).
- Informed consent forms were obtained from each person before participating in the survey (Addendum A).

- The survey questionnaire was numbered sequentially and the names of respondents did not appear on the questionnaires.
- The right to fair treatment was maintained as participants were selected according to the inclusion criteria of the study and all were treated with respect throughout the survey.
- Confidentiality was ensured by numbering the questionnaires sequentially and respondent's information was not discussed with other people.
- The right to self-determination was upheld, as participation was voluntary and respondents were free to withdraw from the study without being harmed in any way.
- The principle of non-maleficence applied, as respondents were not forced to disclose any information.

3.6 CONCLUSION

It is important to note that participant recruitment occurred at the healthcare facility, amongst patients who may already have a positive attitude towards seeking healthcare. Therefore, the sample population may not be representative of the female population that should be targeted since this education awareness programme was targeting "the ones already converted."

Chapter 3 described the research methods used for Phase 1 of the study. Described first was the research design, followed by research setting, population, sampling, data gathering, data instrument, pre-testing of the questionnaire, data analysis, validity, reliability and the ethical considerations applicable to Phase 1 of the study. Chapter 4 will present the findings and discussion of Phase 1 of the study.

CHAPTER 4

PHASE 1 FINDINGS, DISCUSSION AND CONCLUSION

4.1 INTRODUCTION

Chapter 3 described the research methods used in Phase 1 of the study. In Chapter 4, the general characteristics of the sample (n=101) and findings of Phase 1 of the study will be described and discussed.

4.2 GENERAL CHARACTERISTICS OF THE SAMPLE

There were 101 respondents (n=101) who participated in the study. The age range of the respondents was from 18 to 92 years, with an average age of 39.2, whilst median age was 36 years. Most of the respondents were from the Zulu cultural group and the majority were unemployed and unmarried. Table 4.1 presents the general characteristics of the sample.

TABLE 4.1: The general characteristics of the sample (n=101)

Age groups	n (%)
18-29	38 (37.6%)
30-39	18 (17.8%)
40-49	21 (20.8%)
50-59	17 (16.8%)
60+	7 (6.9%)
Total	101

Socio-cultural group	
Setswana	19 18.8%)
Southern/Northern Sotho	14 (13.9%)
Tsonga/Shangani	7 (6.9%)
Zulu	26 (25.7%)
Venda	10 (9.9%)
Ndebele	8 (7.9%)
Xhosa	4 (4.0%)
Sepedi	7 (6.9%)
Swati/Swazi	6 (5.9%)
Total	101
Level of education	
Never went to school	11 (10.9%)
Up to grade 7	35 (34.7%)
Grade 8 to10	23 (22.8%)

Grade 11 to 12	28 (27.7%)
University or college	4 (4.0%)
Total	101
Marital status	
Single	60 (59.4%)
Married traditionally	26 (25.7%)
Married customary	9 (8.9%)
Window	4 (4.0%)
Divorced	1 (1.0%)
Separated	1 (1.0%)
Total	101
Employment status	
Unemployed	40 (39.6%)
Full time employment	36 (35.6%)
Part time employment	10 (9.9%)
Temporary jobs	15

	(14.9%)
Total	101
Source of income	
Employment	48 (47.5%)
Social grant	20 (19.8%)
Family support	17 (16.8%)
Other	16 (15.8%)
Total	101
Monthly personal income	
No income	38 (37.6%)
Less than R1000	23 (22.8%)
R1000 to R 1300	12 (11.9%)
R1310 to R 1600	9 (8.9%)
R 1610 to R 3000	12 (11.9%)
R3000+	7 (6.9%)
Total	101

Number of dependents	
1 to 5	49 (48.5%)
6 to 9	10 (9.9%)
No answer	42 (41.6%)
Total	101

When respondents were asked whether they had a female sexual partner, the majority (75.2%; n=76) responded positively. Slightly more than half (53.5%; n=54) of the respondents who confirmed having a sex partner indicated they knew which clinic their partner visited. Table 4.2 presents the respondent's female sex partners and the clinics their partners visit.

TABLE 4.2: Information of sex partners (n=101)

Variables	n (%)
Have female sex partner	
Yes	76 (75.2%)
No	25 (24.8%)
Total	101
Know the names of the clinics their partners visited	
Yes	54 (53.5%)

No	47 (46.5%)
Total	101
Names of the clinic their partners visit	
Muldersdrift clinic	33 (32.7%)
Nelspruit clinic	2 (1.9%)
Kagiso clinic	3 (2.9%)
Bovane clinic	3 (2.9%)
Krugersdorp clinic	6 (5.9%)
Makwerera clinic	1 (0.9%)
Dr. Kaka clinic	2 (1.9%)
Atriguale clinic	1 (0.9%)
Honeydew clinic	1 (0.9%)
Driefontein clinic	1 (0.9%)

Johannesburg clinic	1 (0.9%)
Total	54 (52.7%)

4.2.1 Knowledge of cervical cancer

When the respondents were asked whether they had ever heard of cervical cancer, the majority (66.3%; n=67) reported they never had, while 30.7% (n=31) had heard about it and 3.0% (n=3) were unsure. The greatest percentage of respondents (24.8%: n=25) who said they had never heard of cervical cancer were younger than 30 years, followed by the group between 40 and 49 years (14.9%; n=15); only 0.9 %(n=1) aged 60 years and older reported having heard of cervical cancer.

Table 4.3 presents the cross tabulation between age and the respondents who reported having heard of cervical cancer.

TABLE 4.3: Age and had heard of cervical cancer (n=101)

Age range	Heard of cervical cancer		
	Yes (%)	No (%)	Unsure (%)
	n %	n %	n %
18-29	12 (11.9%)	25 (24.8%)	1 (0.9%)
30- 39	6 (5.9%)	12 (11.9%)	0 (0%)
40- 49	6 (5.9%)	15 (14.9%)	0 (0%)
50- 59	6 (5.9%)	10 (9.9%)	1 (0.9%)

60+	1 (0.9%)	5 (4.9%)	1 (0.9%)
Total	31 (30.5%)	67 (66.4%)	3 (2.7%)

When using the Chi-Square test for comparison it was found there was no difference between the age groups and ever heard of cervical cancer (Chi-Square Test, p=0.708).

Being married did not equate to being informed about cervical cancer, as more single respondents indicated having heard of cervical cancer than those who were married (15.8%; n=16 vs 7.9%; n=8). Table 4.4 indicates a cross-tabulation between marital status and the number of respondents who had heard of cervical cancer.

TABLE 4.4: Marital status and ever heard of cervical cancer (n=101)

Marital status	Heard of cervical cancer		
	Yes	No	Unsure
	n (%)	n (%)	n (%)
Single	16 (15.8%)	43 (42.6%)	1 (0.9%)
Married traditionally	8 (7.9%)	17 (16.8%)	1 (0.9%)
Married customary	4 (3.9%)	4 (3.9%)	1 (0.9%)

Widowed	3 (2.9%)	1 (0.9%)	0 (0.0%)
Divorced	0 (0.0%)	1 (0.9%)	0 (0.0%)
Separated	0 (0.0%)	1 (0.9%)	0 (0.0%)
Total	31 (30.5%)	67 (66%)	3 (2.7%)

When using the Chi-Square Test of comparison it was found that there was no difference among marital status and having ever heard of cervical cancer (Chi-Square Test, p=0.382)

When cross tabulating the education level and the number of respondents who had ever heard of cervical cancer, it was found that 24.8% (n=25) who had never heard of cervical cancer had at least seven years of schooling, whilst only 0.9% (n=1) with university or college education reported having heard of cervical cancer. Table 4.5 provides a cross tabulation between the education level and having heard of cervical cancer.

TABLE 4.5: Education and heard of cervical cancer (n=101)

	Heard of cervical cancer		
Educational level	Yes	No	Unsure
	n (%)	n (%)	n (%)
Never went to school	4 (3.9%)	7 (6.9%)	0 (0.0%)
Up to grade 7	8 (7.9%)	25 (24.8%)	2 (1.9%)
Grade 8-10	6 (5.9%)	17 (16.8%)	0 (0.0%)

Grade 11-12	12 (11.9%)	15 (14.8%)	1 (0.9%)
University or college	1 (0.9%)	3 (2.9%)	1 (0.9%)
Total	31 (30.5%)	67 (66.2%)	4 (3.7%)

The difference in having ever heard of cervical cancer among the different education levels was found not significant, at 5% significance level (Chi-Square Test, p=0.693).

When the respondents, who indicated they had heard of cervical cancer, were asked to explain what they understood about cervical cancer, several answers were given and these are provided in Table 4.6.

TABLE 4.6: Understanding of cervical cancer by the respondents indicating they had heard of cervical cancer (n=31) *

Knowledge	n (%)
Growth in the under part of the woman	2 (6.5%)
Causes irregular bleeding	2 (6.5%)
Is a disease that grows in the body in silence	1 (3.2%)
Dangerous disease	3 (9.7%)
Attacks the womb	4 (12.9%)
Cervical cancer affects only women	5

	(16.1%)
Cervical cancer is a malignant neoplasm from the cervix	1 (3.2%)
Is a virus	1 (3.2%)
Total	19 (61.3%)

*Respondents gave more than one answer therefore the percentage was less than 100.

When the respondents, who indicated they had never heard of cervical cancer, were asked what they thought cervical cancer could be, various answers were provided (Table 4.7).

TABLE 4.7: Perception of cervical cancer of the respondents indicating they have never heard of cervical cancer (n=67)*

Perception	n (%)
Is cancer for only women	3 (4.5%)
Is cancer of the womb	3 (4.5%)
Is when the woman has irregular bleeding for a long time	1 (1.5%)
Is a disease of women with history of cancer in the family	2 (2.9%)
Is a virus	2 (2.9%)
Cervical cancer is harmful	1 (1.5%)

Is a disease caused by infection	1 (1.5%)
Total	13 (19.3%)

*Respondents gave more than one statement therefore the percentage was less than 100.

4.2.2 Prevention of cervical cancer

The majority of the respondents (74.3%; n=75) reported that cervical cancer can be prevented, 15.8% (n=16) were not sure, whilst 9.9% (n=10) indicated that cervical cancer cannot be prevented at all. The greatest percentage of respondents (26.7%; n=27) who responded that cervical cancer can be prevented were younger than 30 years, followed by the group between 40 and 49 years (15.8%; n=16); only a small percentage (2.9 %; n=3) aged 50 to 59 years were unsure whether cervical cancer could be prevented. Table 4.8 provides the cross-tabulation between age and opinion about the prevention of cervical cancer.

TABLE 4.8: Age and opinion on whether cervical cancer can be prevented (n=101)

Age range	Cervical cancer can be prevented		
	Yes	No	Unsure
	n (%)	n (%)	n (%)
18-29	27 (26.7%)	5 (4.9%)	6 (5.9%)
30-39	12 (11.9%)	3 (2.9%)	3 (2.9%)
40-49	16 (15.8%)	1 (0.9%)	4 (3.9%)
50-59	13 (12.9%)	1 (0.9%)	3 (2.9%)

60+	7 (6.9%)	0 (0.0%)	0 (0.0%)
Total	75 (74.2%)	10 (9.6%)	16 (15.6%)

When using the Chi-Square Test of comparison it was found there was no difference between the age group and opinion that cervical cancer could be prevented (Chi-Square Test, p=0.791). Table 4.9 provides a cross-tabulation between the education level and opinion on the prevention of cervical cancer.

TABLE 4.9: Education level and opinion regarding the prevention of cervical cancer (n=101)

Educational level	Cervical cancer can be prevented		
	Yes	No	Unsure
	n (%)	n (%)	n (%)
Never went to school	8 (7.9%)	1 (0.9%)	2 (1.9%)
Up to grade 7	28 (27.7%)	2 (1.9%)	5 (4.9%)
Grade 8-10	20 (19.8%)	3 (2.9%)	0 (0.0%)
Grade 11-12	17 (16.8%)	4 (3.9%)	7 (6.9%)
University or college	2 (1.9%)	0 (0.0%)	2 (1.9%)
Total	75 (74.1%)	10 (9.6%)	16 (15.6%)

The Chi-Square Test of comparison found there was no difference between education level and opinion regarding prevention of cervical cancer (Chi- Square Test, p=0.166).

Respondents were asked what they thought could be done to prevent their sexual partners from getting cervical cancer. Respondents were requested to use different possibilities - agree, disagree and not sure. The majority (81.2%; n=82) agreed that motivating your partner to have a Pap smear could prevent cervical cancer and only a small percentage (5%; n=5) were not sure whether being faithful to one partner was a prevention. The perceptions of what the respondents thought could be done to prevent of cervical cancer are presented in Table 4.10.

Table 4.10: Perceptions of what can be done to prevent cervical cancer (n=101)

Possibilities to prevent cervical cancer	Perceptions on prevention of cervical cancer		
	Agree	Disagree	Not sure
	n (%)	n (%)	n (%)
Being faithful to one sex partner	80 (79.2%)	16 (15.8%)	5 (5.0%)
By using condom when having sex	71 (70.3%)	20 (19.8%)	10 (9.9%)
By motivating your partner not to smoke	68 (67.3%)	21 (20.8%)	12 (11.9%)
By motivating your partner to have	82 (81.2%)	10 (9.9%)	9 (8.9%)

check up at the clinic			

Respondents were asked what changes would make them suspect their female sex partner had cervical cancer, by using the following possibilities - agree, disagree and not sure. The majority of the respondents 74.3% (n=75) agreed that a bad smelling vaginal discharge is a sign of cervical cancer, followed by 69.3 %(n=70) associating abdominal pain with cervical cancer. Only 36.6% (n=37) of the respondents were unsure whether there would be any changes if the cancer was still in its early stages. Table 4.11 presents the knowledge about the signs and symptoms of cervical cancer.

Table 4.11: Knowledge about signs and symptoms of cervical cancer (n=101)

Signs and symptoms	Knowledge about signs and symptoms of cervical cancer		
	Agree	Disagree	Not sure
	n (%)	n (%)	n (%)
Irregular bleeding from the vagina	69 (68.3%)	6 (5.9%)	26 (25.7%)
Back pain	68 (67.3%)	15 (14.9%)	18 (17.8%)
Bleeding after having sex	69 (68.3%)	9 (8.9%)	23 (22.8%)
Bleeding after menstruation	62 (61.4%)	13 (12.9%)	26 (25.7%)

Bad smelling vaginal discharge	75 (74.3%)	10 (9.9%)	16 (15.8%)
Pain in the lower back	70 (69.3%)	12 (11.9%)	19 (18.8%)
Frequent urination	60 (59.4%)	8 (7.9%)	33 (32.7%)
Weight loss	55 (54.5%)	21 (20.8%)	25 (24.8%)
Swollen feet	48 (47.5%)	18 (17.8%)	35 (34.7%)
Breathing problems	46 (45.5%)	22 (21.8%)	33 (32.7%)
There'll be no changes if the cancer is still in its early stages	47 (46.5%)	17 (16.8%)	37 (36.6%)

On asking respondents which factors caused cervical cancer, the majority (60.4%; n=61) indicated that HPV is the most common cause of cervical cancer, whilst 44.6% (n=45) did not agree that having more than five children could cause cervical cancer. Table 4.12 presents the knowledge about the causes of cervical cancer.

TABLE 4.12: Knowledge about the causes of cervical cancer (n=101)

Causes of cervical cancer	Knowledge about the causes of cervical cancer		
	Agree	Disagree	Not sure
	n (%)	n (%)	n (%)
HPV or human papillomavirus	61 (60.4%)	8 (7.9%)	32 (31.7%)
Being sexually active before 15 years	37 (36.6%)	39 (38.6%)	25 (24.8%)
Having more than 5 children	28 (27.7%)	45 (44.6%)	28 (27.7%)
Having many sexual partners	49 (48.5%)	28 (27.7%)	24 (23.8%)
Having a sexual partner who has many sexual partners	52 (51.5%)	29 (28.7%)	20 (19.8%)
Smoking	56 (55.4%)	30 (29.7%)	15 (14.9%)
Practicing unprotected sex	52 (51.5%)	31 (30.7%)	18 (17.8%)
Having HIV/AIDS	45 (44.6%)	31 (30.7%)	25 (24.8%)

4.3 PERCEPTION OF THE SCREENING PROGRAMME

When the respondents were asked if they knew about the cervical screening programme, the majority (60.4%; n=61) answered they had never heard of this programme, whilst 31.7% (n=32) reported having heard about it and 7.9% (n=8) were not sure whether they had ever heard of it

When comparing age and having ever heard of the screening programme, most of the men (9.9%; n=10) who indicated having heard of it were between the ages of 18 and 29. A comparison between age and heard of the screening programme are provided in Table 4.13.

Table 4.13: Age compared to having ever heard of the screening programme (n=101)

	Having ever heard of the screening programme		
Age range	Yes	No	Unsure
	n (%)	n (%)	n (%)
18-29	10 (9.9%)	23 (22.8%)	5 (4.9%)
30-39	5 (4.9%)	12 (11.9%)	1 (0.9%)
40-49	9 (8.9%)	11 (10.9%)	1 (0.9%)
50-59	7 (6.9%)	9 (8.9%)	1 (0.9%)
60+	1 (0.9%)	6 (5.9%)	0 (0.0%)
Total	32 (31.5%)	61 (60.4%)	8 (7.6%)

When using the Chi- Square Test of comparison, it was found there was no difference among the age group and having ever heard of the screening programme (Chi-Square Test, p=0.665).

When comparing the marital status and having ever heard of the screening programme, it was primarily married men who indicated to having heard of the screening programme (15.8%; n=16). A cross tabulation between marital status and having heard of the screening programme is presented in Table 4.14.

Table 4.14: Marital status and having ever heard of the screening programme (n=101)

Marital status	Having ever heard of the screening programme		
	Yes	No	Unsure
	n (%)	n (%)	n (%)
Single	14 (13.9%)	39 (38.6%)	7 (6.9%)
Married traditionally	10 (9.9%)	15 (14.9%)	1 (0.9%)
Married customary	6 (5.9%)	3 (2.9%)	0 (0.0%)
Widowed	2 (1.9%)	2 (1.9%)	0 (0.0%)
Divorced	0 (0.0%)	1 (0.9%)	0 (0.0%)

Separated	0 (0.0%)	1 (0.9%)	0 (0.0%)
Total	32 (31.6%)	61 (60.1%)	8 (7.8%)

When using the Chi- Square Test of comparison, it was found there was no difference between the marital status and having ever heard of the screening programme (Chi-Square Test, p=0.321).

Knowledge of the screening programme was assessed by asking various questions using agree, disagree and not sure answers (Table 4.15). Only 52.5% (n=53) of the respondents knew only women can be screened for cervical cancer, whilst 66.3% (n=67) knew a Pap smear was used for screening.

TABLE 4.15: Knowledge of the cervical cancer screening programme (n=101)

	Knowledge of the screening programme		
Elements of the screening programme	Agree	Disagree	Not sure
	n (%)	n (%)	n (%)
Only women can be checked for cervical cancer	53 (52.5%)	28 (27.7%)	20 (19.0%)
Women aged 30 years and above must be checked	64 (63.4%)	23 (22.8%)	14 (13.9%)

Screening must be done every 10 years until the age of 55 years	55 (54.5%)	27 (26.7%)	19 (18.8%)
Checking can be done at the local clinic	85 (84.2%)	5 (5.0%)	11 (10.9%)
Checking is free of charge	78 (77.2%)	6 (5.9%)	17 (16.8%)
Pap smear is used for checking and testing	67 (66.3%)	5 (5.0%)	29 (28.7%)
Women must go to the clinic to get their checking results	86 (85.1%)	3 (3.0%)	12 (11.9%)
Women with an abnormal test result will be referred to the hospital for their cervixes to be checked and tested	81 (80.2%)	8 (7.9%)	12 (11.9%)

4.3.1 Knowledge of the Pap smear

The majority of respondents (67.3%; n=68) reported they had never heard of the Pap smear, 27.7% (n=28) indicated they had heard of it and 5% (n=5) were not sure whether they had ever heard about it. It was primarily single men (42.6%; n=43) who indicated having never heard of Pap smear. Table 4.16 presents the cross-tabulation between marital status and having ever heard of the Pap smear.

TABLE 4.16: Marital status and having ever heard about the Pap smear (n=101)

Marital status	Having ever heard of the Pap smear		
	Yes	No	Unsure
	n (%)	n (%)	n (%)
Single	13 (12.9%)	43 (42.6%)	4 (3.9%)
Married traditionally	8 (7.9%)	17 (16.8%)	1 (0.9%)
Married customary	3 (2.9%)	6 (5.9%)	0 (0.0%)
Widowed	2 (1.9%)	2 (1.9%)	0 (0.0%)
Divorced	1 (0.9%)	0 (0.0%)	0 (0.0%)
Separated	1 (0.9%)	0 (0.0%)	0 (0.0%)
Total	28 (27.4%)	68 (67.2%)	5 (4.8%)

When using the Chi- Square Test of comparison it was found there was no difference between marital status and having ever heard of the Pap smear (Chi-Square Test, p=0.481).

When cross tabulating the education level and having ever heard of the Pap smear, it was noted that 25.7% (n=26) of the respondents who indicated they had never heard of the Pap smear had studied up to Grade 7, whilst a very small percentage (1.9%; n=2) with

university or college education reported having ever heard of a Pap smear. Table 4.17 presents the cross-tabulation between education level and having ever heard of the Pap smear.

TABLE 4.17: Educational level and having ever heard about the Pap smear (n=101)

Educational Level	Having ever heard of the Pap smear		
	Yes	No	Unsure
	n (%)	n (%)	n (%)
Never went to school	2 (1.9%)	9 (8.9%)	0 (0.0%)
Up to grade 7	7 (6.9%)	26 (25.7%)	2 (1.9%)
Grade 8-10	5 (4.9%)	16 (15.8%)	2 (1.9%)
Grade 11-12	12 (11.9%)	15 (14.9%)	1 (0.9%)
University or college	2 (1.9%)	2 (1.9%)	0 (0.0%)
Total	28 (27.5%)	68 (67.2%)	5 (4.7%)

When using the Chi-Square Test of comparison it was found there was no difference between education level and having ever heard of a Pap smear (Chi- Square Test, p=0.486).

The greatest percentage of respondents (27.7%: n=28) who reported they had never heard of a Pap smear were younger than 30 years, whilst some in the age group 30 to 49 years 5.9% (n=6) said they had heard of a Pap smear. Table 4.18 presents the cross tabulation between age and having ever heard of a Pap smear.

TABLE 4.18: Age and having ever heard about the Pap smear (n=101)

Age range	Having ever heard about the Pap smear		
	Yes	No	Unsure
	n (%)	n (%)	n (%)
18-29	8 (7.9%)	28 (27.7%)	2 (1.9%)
30-39	6 (5.9%)	11 (10.9%)	1 (0.9%)
40-49	6 (5.9%)	14 (13.9%)	1 (0.9%)
50-59	7 (6.9%)	9 (8.9%)	1 (0.9%)
60+	1 (0.9%)	6 (5.9%)	0 (0.0%)
Total	28 (27.5%)	68 (67.3%)	5 (4.6%)

When using the Chi- Square Test of comparison, it was found there was no difference between age group and having ever heard about the Pap smear (Chi-Square Test, p=0.885).

The respondents who indicated they had heard of the Pap smear (27.7%; n=28) were asked to explain what it was, and various answers were provided. More than 20% (25%; n=7) of the respondents who confirmed they had heard of a Pap smear reported it was a method used to screen for cervical cancer, whilst 10.7% (n=3) indicated a Pap smear was a test done only on women. Table 4.19 provides the respondent's explanations about the Pap smear.

TABLE 4.19: Respondents understanding of a Pap smear (n=28)

Understanding of the Pap smear	n (%)
Is the method used to screen (check) cervical cancer	7 (25%)
Is only used for women	3 (10.7%)
Is when they check if the womb is clean or not	2 (7.1%)
Total	12 (42.8%)

The respondents who indicated not to have heard of the Pap smear (67.3%; n=68) were asked what they thought a Pap smear could be and several answers were provided (Table 4.20). Twenty-five percent (n=17) reported that cervical cancer is some kind of dangerous disease.

TABLE 4.20: Perceptions of the Pap smear among respondents indicating they had never heard about it (n=68)*

Perceptions	n (%)
Is some kind of a dangerous disease similar to cancer that affects men and women	17 (25%)
Is the disease that affects men who have many sex partners	7 (10.3%)
Is a medicine for cancer	6 (8.8%)

It can prevent any vagina disease	4 (5.9%)
Is used to test cancer in the body (womb) can help	6 (8.8%)
Is something done at the clinic	5 (7.4%)
Pap smear is good for women older than 30 years	5 (7.4%)
Is the scrubbing of the vagina	6 (8.8%)
Is cleaning of vagina and womb	2 (2.9%)
Is used to test people	5 (7.4%)
Is painful	1 (1.5%)
I do not know	5 (7.4%)
Total	69 (101.6%)

* More than one statement was considered therefore, the percentage was more than 100.

When the respondents were asked to indicate how they would like to be taught about cervical cancer, the majority (57.4%: n=58) preferred to be taught in a group. Table 4.21 provides preferences about health education.

TABLE 4.21: Preferences about health education (n=101)

Preferences of education	Preferences of health education			
	Yes	No	Unsure	Did not answer the question
	n (%)	n (%)	n (%)	n (%)
Educated in a group	58 (57.4%)	0 (0.0%)	0 (0.0%)	43 (42.6%)
Educated one-on-one	14 (13.9%)	0 (0.0%)	0 (0.0%)	87 (86.1%)
Would like a poster	8 (7.9%)	0 (0.0%)	0 (0.0%)	93 (92.1%)
Would like to use slides	13 (12.9%)	0 (0.0%)	0 (0.0%)	88 (87.1%)
Would like a pamphlet	5 (5.0%)	0 (0.0%)	0 (0.0%)	96 (95.0%)
Would like a drama	6 (5.9%)	0 (0.0%)	0 (0.0%)	95 (94.1%)

4.4 DISCUSSION OF FINDINGS

Literature investigating the prevention of cervical cancer focuses primarily on women and studies focusing on men are sparse, complicating comparisons. However, the study provided evidence that the majority of men had not heard of cervical cancer, whilst those who indicated they had heard had limited knowledge. Findings of this study differ from other studies conducted in Africa. The findings of a Kenyan study, conducted by Rosser *et al.* (2014), found that more than 90% of the men had heard of cervical cancer and a similar study conducted in northern Uganda by Mwaka *et al*. (2015), found more than 99% of the men in their study had heard of cervical cancer. In contrast, Maree *et al.* (2011b; Williams & Amoateng, 2012), who investigated men's knowledge regarding cervical cancer in South Africa and Ghana, found a similar low level of knowledge.

Williams and Amoateng (2012) stated that amongst cultural Ghanaian men, it is taboo to talk about a person's health problems. However, Maree (2010) states that South African men play an important role in the decision making about their women, condom use is a sensitive issue to talk about culturally, communication about health issues is a need between men and women to prevent problems, and this will increase men's knowledge regarding of cervical cancer.

Being unaware of cervical cancer does not seem unique to men as the female population had the same trend. Hoque and Hoque (2009), in a study conducted in South Africa, found only 42.9% of the 389 women who participated in their study had heard of cervical cancer. In Lagos, Nigeria, Wright *et al*. (2014) found only 37.2% of the 317 women in their study had ever heard of cervical cancer.

It might be unreasonable to expect men to be aware of cervical cancer if they are not even aware of prostate cancer, the most common cancer of men globally. For instance, Mofolo *et al.* (2015) found 54.4% of the 346 men in their study, conducted in South Africa, had never heard of prostate cancer, and Nakandi *et al*. (2013), who conducted a study in Uganda, found 45.9% of men had never heard of it. However, it does not necessarily mean that men who do not know about prostate cancer do not know of cervical cancer. This shows there is limited knowledge about cancer in general and further investigation is required before conclusions can be made.

Knowledge of the risk factors of cervical cancer varied and it was interesting that the most well known risk factor was HPV. More than 60% of the men in the current study identified HPV as a risk factor compared to others studies, but this also raises questions. For

instance, Pitts *et al.* (2009), in a study conducted in Singapore, reported only 16% of their sample of men had ever heard of the HPV, while a study conducted in USA by McPartland *et al*. (2005), found more than half of their participants had not heard of the HPV prior to recruitment. The Kenyan study of Rosser *et al. (*2014), reported that 48% of their participants had heard of the HPV, whilst a Ghanaian study conducted by Williams and Amoateng (2012) showed that only one of the 29 men identified HPV as a cause of cervical cancer. The findings presented the overall knowledge men in the current study had about cervical cancer and the high profile of HIV in South Africa. It is possible the low level of knowledge in men in the current study, pertaining to HPV as cause of cervical cancer, is because some men had never heard of this virus but they related it to HIV, as this is well known. However, concluding that the men in the current study had never heard of HPV would not be accurate, as this is a mere possibility and requires further investigation prior to conclusion.

The current study does not provide evidence that it was indeed the case, but such a link could be positive when educating men about HPV.

The study provided evidence that half of the men were aware that unprotected sex, not using a condom, might cause cervical cancer. Comparing the findings of the South African study of Maree *et al.* (2011b) and the UK study of Waller *et al.* (2004), where less than 5% and 5.3%, respectively, of the men in their studies knew that not using condoms during sexual intercourse can cause cervical cancer, the findings in the current study reported that less than 50% of the men knew that having multiple sex partners can lead cause cervical cancer. The South African study of Hoque and Hoque (2009) and a study conducted in Portugal by Medeiros and Ramada (2011), found more than 30% of participants and male non-medical students knew that having multiple sexual partners can be a cause of cervical cancer. A Kenyan study conducted by Sudenga *et al*. (2013) found 30% of the 388 female participants knew about the risk factor, which compared negatively to the sample of Uganda men, as 88.3% knew that having multiple sex partners can cause cervical cancer (Mwaka *et al*, 2015). In contrast, a study conducted in Britain by Waller *et al.* (2004) found 19.5% of the men who participated knew that having many sexual partners could cause cervical cancer.

When comparing this study's evidence and the Kenyan study by Rosser *et al.* (2014), 44.6% and 48.2% of the men knew that HIV is a cause of cervical cancer. In addition, Waller *et al.* (2004), who had only nine men in their study, knew that HIV/AIDS could be a cause of cervical cancer.

Findings of this study highlighted that more than 30% of men were aware that women being sexually active before 15 years could be a cause of cervical cancer. The current study differs from the findings of a Ugandan study conducted by Mwaka *et al*. (2015), who found that more than 70% of men in their study knew early onset of sexual activity is a risk factor of cervical cancer, whilst in a Portugese study, conducted by Medeiros and Ramada (2011), it appears more that 40% of 155 male medical students and less than 15% of 46 non-medical male students were aware that the early onset of sexual activity can cause cervical cancer.

More than half of the men in the study knew smoking was one of the causes of cervical cancer.

When comparing these findings to those of a Ugandan study conducted by Mwaka *et al*. (2015) and a Portugese study by Medeiros and Ramada (2011), 48.6% and 43.7%, respectively, of the men reported smoking can cause cervical cancer, showing medical students have limited knowledge about smoking as a cause of cervical cancer, whilst a study conducted in the UK by Waller *et al*. (2004) found only 12.6% of 107 participants knew of the link. Compared to other mentioned studies, not knowing that smoking can cause cervical cancer is not only limited to men. Hoque and Hoque (2009) found only 18% of the women who participated in their study were aware smoking can cause cervical cancer, Sudenga *et al*. (2013), in a study conducted in Kenya, reported 10% of 388 women knew of the link and Maree and Moitse (2014) found that of the 25 women included in their study, only 7.9% were aware.

There was low level of knowledge of men in this study regarding women having more than five children can be at risk of cervical cancer, as less than 30% knew of this. This study differs from the findings of the Ugandan study conducted by Mwaka *et al*. (2015), who found more than 48.6% of the men in their study knew that having more than five children can cause cervical cancer and Maree *et al*. (2011b), in a study conducted in South Africa, also reported 44% of 980 men knew of the link. Women were not aware that having many children could cause cervical cancer. Waller *et a*l. (2004), in a study conducted in the UK and Assoumou *et al*. (2015) in a similar study conducted in Gabon, investigated the knowledge in women and found a similar low level.

When investigating the sample's knowledge about the signs and symptoms of cervical cancer, more than 60% of men in this study knew that irregular bleeding from the vagina was a sign of cervical cancer. The finding differs from a the Kenyan study conducted by Rosser *et al*. (2014), who reported a negative outcome, as 57.3% of the men in their study

were aware that abnormal vaginal bleeding is a sign of cervical cancer, whilst Mwaka *et al*. (2015), in a similar study conducted in Uganda, reported a better result, as 84.5% of the men in their study knew of the link. It would appear abnormal vaginal bleeding is not well known as sign of cervical cancer, as women also did not know about it. For example, a study conducted in Kenya by Sudenga *et al*. (2013) found only 15% of the 388 women who participated in their study were aware that vaginal bleeding could be a sign of cervical cancer.

It was positive to find that 74.5% of men in this study knew that an offensive vaginal discharge was a sign of cervical cancer. Mwaka *et al*. (2015) reported a better result, as 83% were aware of this symptom and Rosser *et al*. (2014), in a study conducted in Kenya, found 57.3% of the men who participated in their study knew that discharge or pain was sign of cervical cancer.

It was also positive to find 74.3% of men knew cervical cancer was preventable. This finding compares positively to the Ugandan study, which found 74.1% of men in their study knew that cervical cancer can be prevented (Mwaka *et al*, 2015). Conversely, Rosser *et al*. (2014) reported that 82.7% of the men who participated in their study were unaware cervical cancer was preventable.

Perceptions on the prevention of cervical cancer were also determined. It was positive to find 81.2% of the men in this study knew that motivating their sex partner to have regular Pap smears could prevent cervical cancer. This compares positively with McPartland *et al*. (2005), who found 59.1% of men reported they would motivate their sex partners to go for regular Pap smear tests to prevent cervical cancer; Maree *et al.* (2011b) found only 4.7% of the men reported they would do so.

The study provided evidence that men had low level of knowledge of the Pap smear. Only a small number (27.7%, n=28) had ever heard of Pap smear and only seven out of the 101 men knew what was the test used for, whilst 81.2% answered they would motivate their sex partner to have regular Pap smear tests.

In a similar report only two of 908 men (0.6%) and two of 29 (6.9%) indicated they had heard of the Pap smear (Maree *et al*, 2011b; Williams & Amoateng, 2012). Rosser *et al*. (2014) reported a similar low level of knowledge in Kenya, as only 5.5% of the men had ever heard of a Pap smear. Pitts *et al.* (2009), in a study conducted in Singapore found 46.2% of men had heard of the Pap smear - this was considered a positive finding compared to the current study.

Similar to the low level of knowledge of the Pap smear, the men in this study also had limited knowledge of the South African screening policy, as only 31.7% indicated they had ever heard of the programme. It was interesting to note only 27.7% of the sample in the current study reported they had ever heard of the Pap smear, but when answering the questions about the screening programme, 67% said the Pap smear was for checking and testing for cervical cancer. It would appear the answer was guessed, rather than supported by pre–existing knowledge. However, Rosser *et al.* (2014) reported better results, as 89.1% of the Kenyan men included in their study had heard of their country's screening programme.

The study provided evidence that 57.7% of men preferred to be educated about cervical cancer in a group, which is a cost effective way of educating men living in this community.

Despite men's involvement in cervical cancer being unknown and understudied. This study found that men require more knowledge about the disease, as well as the benefits of the screening programme, as this will improve the cervical cancer-screening uptake in South Africa.

4.5 SUMMARY

Chapter 4 outlined the main findings of Phase 1 of the study, including general characteristics and facilitating factors to cervical cancer screening uptake and presented the discussion. From the findings of the study, there is a need to develop an educational programme, which will be outlined in the next chapter on recommendations. In Chapter 5, the development of an educational programme will be elaborated upon in detail and the conclusion will be made.

CHAPTER 5

THE DEVELOPMENT, IMPLEMENTATION AND ASSESSMENT OF THE EDUCATIONAL PROGRAMME

5.1 INTRODUCTION

Chapter 4 gave the findings of Phase 1 of the study. Chapter 5 will focus on development, implementation and assessment of the educational programme.

5.2 PLANNING AND IMPLEMETATION OF THE EDUCATIONAL PROGRAMME

Once the data of the first phase of the study were analysed, the researcher prepared a PowerPoint presentation highlighting the major findings and the proposed contents of the educational programme, which included the:

- Definition of cancer
- Incidence of cancer
- Incidence of cervical cancer
- Definition of cervical cancer
- Anatomical position of the cervix
- Signs and symptoms of cervical cancer
- Prevention of cervical cancer
- Screening and diagnoses of cervical cancer
- Risk factors of cervical cancer
- Role of men in prevention of cervical cancer

After preparation, a group of experts received the PowerPoint presentation for validation. According to Lesson Transcript (n.d.), content validity is often measured using people who are knowledgeable about the construct being measured. For this study, a group of experts, consisting of six Faculty of the Department of Nursing Education, three male community members and four Master's students, were used to assess the face and content validity of the educational programme and practicality of the mode of delivery. Face validity refers to a subjective superficial assessment of an instrument, in the case of this study an educational programme, to determine whether this programme would be effective to fulfil its purpose (Web centre for social research methods (n.d.)). Content validity refers to the accuracy of instruments, in this instance, the educational programme, to ascertain whether it represents the universal content for the study (Polit & Beck, 2010).

After the presentation, the researcher wrote field notes and discussed them with the supervisor to ensure the capturing of all the comments of the expert panel. When analysing the field notes, it was found the main concerns revolved around the terminology used, as the expert group was of the opinion that some of the words would not be easy for the community to understand. Members of the expert panel advised changing the terminology to lay language or to include simple explanations. In addition, community members advised the researcher to design the educational material in English only, as some of the terminology was not translatable into their local language. The community members commented that they initially felt uncomfortable with the subject, cervical cancer, which became less so with continuous involvement. The community leader informed the researcher that the community did not have a suitable venue, with electricity, for the educational programme, therefore it was agreed, for practical purposes, a poster and pamphlets would be developed as educational material.

After validation of the educational programme, a poster was designed and printed (Addendum H), in conjunction with a pamphlet (Addendum I) containing the same information. The learning materials were developed from the literature review and expert opinion based on the findings of Phase 1 of the study. The poster and pamphlets were submitted to the Ethics Committee for approval; permission to use the educational material was granted (Addendum N). After obtaining ethical approval the researcher held a meeting with the management and staff of the Muldersdrift Primary Health Clinic, one community leader and two community representatives, and discussed the implementation of the educational programme and presented the learning material and the ethical approval. It was agreed referral notes would be given to the men attending the educational programme to give to the women they educated (Addendum K) to bring to the clinic. Not to inconvenience the staff and clients of the Muldersdrift Primary Health Clinic and because of the availability of a consultation room, it was also agreed the researcher would conduct the Pap smears of women presenting such referral notes on Wednesdays and Thursdays for the next three months, while the registered nurses would continue conducting Pap smears as usual. It was also agreed that the researcher would convey the information regarding the times she would be available to conduct the Pap smears on the educational pamphlet.

One of the community representatives assisted the researcher with the recruitment of three field workers who did not reside in the area of the study. The field workers were tasked to assist the researcher with the language issues and explanations during the educational programme and to mobilise all men 18 years and older to come and take part. The field workers received training about the study and the educational programme. The

community representative and field workers recommended the researcher meet the ward counsellor and discuss the educational programme with him. The ward counsellor suggested the educational programme should be offered during the general community meetings and he provided the researcher with the dates and venue of the meetings.

Once the community meeting commenced the ward counsellor introduced the researcher to the attendees, who consisted of men and women, and encouraged the men to stay behind and participate in the educational programme. Four education sessions were offered and each occurred after the general community meeting, where after the researcher was given time to introduce the educational programme to the men. Before starting the educational programme, the men who did not want to participate were able to leave and those participating wrote their names, address and contact details in a register. The researcher explained that two months after attending the educational programme they would receive an invitation to take part in a telephone interview. In addition, the men received an informed consent form (Addendum F) to participate in the educational programme and telephonic interview. Following all this, the poster was posted on the wall to assist the researcher with the teaching. Once all the topics were addressed, information leaflets (Addendum I) and referral notes were handed to the participants.

Participants were to use the information leaflets to teach their female sex partners and female family members about cervical cancer and encourage them to be screened. Participants were also encouraged to give their sex partner and female family members referral notes to present at the Muldersdrift Primary Health Clinic to enable the researcher to identify women sent by the men who had participated in the educational programme. Different groups of men attended the educational programme, as there was no restriction in terms of the attendance. It was unlikely that some men could have repeated the educational programme as every participant had written his name in a register and no name appeared twice after the researcher had checked. Sixty men (n=60) took part in the first session of the educational programme, 30(n=30) in the second session, and 15 (n=15) in the third and the last session. The educational programme was presented on four occasions between 14 July to 20 September 2014 and 120 (n=120) men took part.

Ten days after presenting the first educational programme, the researcher commenced with the Pap smears.

The women with referral notes were taken into the examination room where the researcher introduced herself and explained the Pap smear procedure, how long it would take and the benefits of the screening. Thereafter the researcher explained the study to

the woman and obtained informed consent (Addendum E) to participate; only then was the Pap smear done. Women who were diagnosed with pelvic inflammatory diseases, warts and sexual transmitted infections (STI's) received the standard treatment. The names, addresses and contact details of all women screened were recorded in the clinic's Pap smear statistics book. Screening continued until 25 September 2014.

On the last day of the scheduled screening, the researcher found that only 30 women presented for Pap smears. Therefore, the researcher added two questions to the post-intervention questionnaire targeting the men who attended the educational programme, to find out what barriers could relate to the low screening uptake. The revised post-intervention questionnaire was submitted to the Ethics Committee for approval (Addendum M). Once approved, telephonic interviews, guided by the post-intervention questionnaire (Addendum C), commenced. Data were gathered from 10th October to 20th December 2014 and 100 (n=100) males who took part in the educational programme participated in the survey. Figure 5.1 shows the reasons for loss to follow up

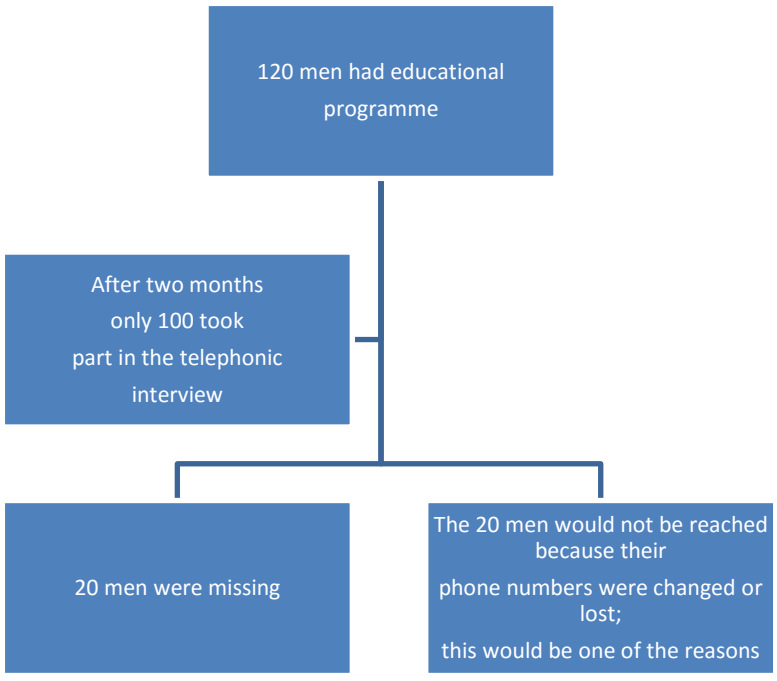

Figure 5.1: Diagram indicates flow why 100(n=100) took participated in a telephonic interview (Moher *et al*, 2009)

5.3 ASSESSING THE OUTCOMES OF THE EDUCATIONAL PROGRAMME: RESEACH DESIGN AND METHODS

5.3.1 Research design

An intervention research design and one group posttest only was used for Phase 2 of the study (Burns & Grove, 2011). Burns and Grove (2009) describe intervention research as "a revolutionary new methodology that holds great promise as a more effective way of testing interventions" [p. 317]. Nursing interventions are deliberate, cognitive, physical or verbal activities implemented to achieve specific objectives relating to the well-being of individuals. The activities can be performed for, or on behalf of, individuals and their families (Burns & Grove, 2011). Polit and Beck (2012) describe intervention research as testing innovations in care, shaped by nursing's values and objectives, guided by theoretical terms. This involves in-depth understanding of the problem and participants for whom the intervention is being developed. An intervention research design and one group posttest only was used for Phase 2 of the study was applicable to the study as the researcher wished to assess the educational programme to improve cervical cancer screening.

5.3.2 Procedures

The educational programme focused on men as motivators was assessed in terms of the primary outcome and secondary outcomes.

5.3.3 Assessing the primary outcome: screening uptake

The assessment of the screening uptake was in terms of the number of women presenting with referral notes during the three months of screening. The researcher counted the total number of referral notes and compared it to the clinic's Pap smear record. In addition, the researcher conducted structured interviews with the women presenting for screening to ascertain what motivated them to come for screening. The researcher did not compare the attendances of women screened by the registered nurses at the clinic in the previous three months.

5.3.4 Research design

An intervention research design and one group posttest only, as described previously in 5.3.1.

5.3.5 Target population and sampling

The target population included all the women, 30 years and older, who presented for screening with referral notes. The sample size was not determined, the researcher expected a minimum of 80 women from 120 (n=120) men who took part in the educational programme, but only 30 women reported with referral notes from their sexual partners. Convenient sampling became the method of choice, as the researcher used women who were available for the study (Polit & Beck, 2012); the sample size was 30 (n=30). All women reporting at the clinic with referral notes were included in the study.

5.3.6 Research Setting

Polit and Beck (2012) describe a setting as an environment where data is collected for a study. The setting of the study was Muldersdrift, situated northeast of Johannesburg. Muldersdrift is part of two economically significant metropolitan municipalities, the City of Johannesburg and the City of Tshwane. The total population living in of this area was approximately 19 959 and people speak different languages, including IsiZulu, Setswana, Sepedi and Xitsonga, but the main languages are IsiZulu and Setswana. The majority of residents were between 20 and 34 years of age, and had obtained some secondary education (Draft Precinct Plan for the Muldersdrift Development Zone, 2009).

The study was conducted in Ward 23, an established informal settlement with 214 newly erected Reconstruction and Development Programme (RDP) houses adjacent to informal dwellings. The exact number of informal dwellings was unknown due to constant erection of buildings, but the estimation was the informal settlement consisted of 980 dwellings. It was also unclear how many people lived in the specific area, as it was possible that more than one family occupied one house. There was no direct running tap water available in the yards of the informal houses and inhabitants used communal taps. Pit latrines were available, but it was unclear how many homes shared one. There no electricity in the informal dwellings, however it was reported that many of the newly erected RDP houses have prepaid electricity.

The Muldersdrift Primary Healthcare Clinic, managed under Mogale City, provides primary healthcare to the community. This nurse-led clinic, managed by a joint committee in

which the community has equal representation, serves approximately 4000 people per month living in the specific areas, thus Muldersdrift, Honeydew, Lionpark, Diepsloot and Lanseria. The various healthcare services provided to the community by Muldersdrift Primary Healthcare Clinic include ante-natal and post-natal care, a well-baby clinic, family planning, Pap smears, management of common ailments, treatment of communicable and non-communicable diseases, health promotion, emergency services, HIV/AIDS treatment and counseling.

5.3.7 Data gathering and data gathering instrument

Structured interviews gathered the data. Using a structured interview approach allowed the researcher to rephrase any question asked so that the respondent could better understand. Same instrument was used in phase 2 of the study to assess the educational programme to improve cervical cancer screening. The researcher conducted the interviews and completed the questionnaires. A sealed box was positioned in the consultation room for the placing of the completed questionnaires.

The questionnaire contained eleven questions and collected demographic data and data pertaining to screening practices of cervical cancer and what motivated the participants to come for cervical cancer screening. Data gathering took place on Wednesdays and Thursdays, from 23rd July to 25th September 2014.

5.3.8 Data analysis

After data gathering, all the questionnaires received a sequential number. The data were entered onto an Excel spreadsheet and analysed using the SPSS version 22 programme with the assistance of a statistician. Content analysis analysed the data obtained by means of the open-ended questions. Chi-Square test was used for data analysis.

5.4 ASSESSING THE SECONDARY OUTCOMES: MEN'S KNOWLEDGE OF CERVICAL CANCER, KNOWLEDGE OF THE CERVICAL SCREENING PROGRAMME AND KNOWLEDGE OF THE PAP SMEAR

5.4.1 Research approach

A post-intervention approach assessed the knowledge outcomes. A post-intervention approach is one in which data are gathered from research subjects after an intervention has been implemented (Polit & Beck, 2012). A post-intervention approach was applicable to the study as the researcher wanted to know the level of knowledge and behaviour of

men, in terms of teaching women about cervical cancer, who attended the educational programme.

5.4.2 Research Setting

As described in 5.3.6

5.4.3 Population and sampling

The population consisted of all men, 18 years and older, who took part in the educational programme. A convenience sampling method was used for the participants (Polit & Beck, 2012). Convenience sampling was applicable as the researcher wished to involve all the men who took part in the educational programme; the total sample was 100 (n=100).

5.4.4 Data gathering and instrument

Structured telephone interviews conducted by the researcher, with the assistance of two field workers, gathered the data. The researcher chose telephone interviews for its convenience and the fact it is less costly (Polit & Beck, 2008). Data gathering was from October 2014 to December 2014. The post intervention questionnaire asked the same questions as the survey questionnaire except for the addition of one question in the demographic section as Question 9. This was an open-ended question asking how many women 30 years and older lived in the same house as the respondent.

5.5 EVALUATION OF THE EDUCATIONAL PROGRAMME

The post-intervention questionnaire evaluated the educational programme. Section E was added to assess the leaning programme. The dependent variables added to the post intervention questionnaire are provided in tabular form (Table 5.3).

TABLE 5.2: Dependent variables contained in the questionnaire.

Question	Focus	Dependent variables	Characteristics
Section E: 1 to 5.4	Opinions and practices relating to the educational programme		
Question	Variables		Details
1	Was the language used in the educational programme easy to understand?		Yes, No, Unsure
2	Did the educational programme help you to understand cervical cancer?		Yes, No, Unsure
3	Did the educational programme help you to understand how cervical cancer can be prevented?		Yes, No, Unsure
4	Did the pamphlet assist you to educate your partner and other women?		Yes, No, Unsure
5	Did you inform anybody about cervical cancer?		Yes, No, Unsure
5.1	If yes, whom?		Sex partner, mother, sister, grandmother, cousin, friends and others
5.2	If no, what prevented you from not informing women about cervical cancer?		
5.3	Do you know whether the female sexual partner and other women you informed about cervical cancer went for cervical screening?		Yes, No, Unsure
5.4	If yes, please tell me the names of the clinics your female sex partner and other women attended after you had		

	informed them about cervical.	

The data gathering planning was as follows:

- Two months after the educational programme, the researcher contacted one of the community leaders to assist with the recruitment of two field workers who did not reside in the area where the study was conducted.
- The field workers received basic training on cervical cancer and the study and tasked to assist the researcher with language issues and explanations during the telephone interviews, should it be necessary.
- Telephonic interviews were conducted after two months as the researcher wanted to evaluate men's knowledge regarding cervical cancer, the cervical cancer screening and the educational programme to increase screening uptake
- The day before the telephone interviews commenced, the researcher called each of the participants, asking them for a convenient time to take part and making a note of the availability.
- The researcher and two fieldworkers conducted telephone interviews for the next two months, primarily on Fridays and Saturdays between October and December 2014.
- The researcher and two fieldworkers recorded all the telephonic answers for the participants on the questionnaire.

5.5.1 Data analysis

After completion of data gathering, all questionnaires were numbered sequentially. The data were entered onto an Excel spreadsheet and analysed using the SPSS version 22 programme with the assistance of a statistician. Content analysis analysed the data obtained by means of the open-ended questions. Chi-square is a statistical test used to compare the observed data and the expected data in all categories (Burns & Grove, 2011) and was used to determine significant between the variables. Chi-Square test was used for data analysis.

5.6 VALIDITY AND RELIABILITY

The following measures ensured the validity and reliability of Phase 2 study:

- The researcher obtained support and cooperation of the community leader of the resource poor community, which ensured access to the community.
- The fieldworkers received training to complete and document the questionnaire.
- The researcher and fieldworkers telephonically interviewed the respondents. The field workers assisted with the language issues and explanations during the telephonic interviews
- For the illiterate participants, the researcher allowed the field workers who were familiar with the language to interview them telephonically. The questionnaire, serving as the data-gathering instrument, was similar to the one used in Phase 1 and Phase 2 of the study in order to assess the knowledge outcomes and evaluate the educational programme, except that there was one additional question in the demographic section and a section added to assess the leaning programme.
- Only one datum was recorded for each respondent.
- SPSS version 22 analysed the data. Descriptive statistical analyses analysed the numerical data with the assistance of a statistician.

5.7 ETHICAL CONSIDERATIONS

The following ethical principles received consideration during the planning, implementation and assessment of the educational programme:

- Phase 2 of the study obtained ethical clearance from the Wits Human Research Ethics Committee (HREC), with ethics reference number: M140314 (Addendum N).
- The researcher obtained permission from the Director of the West Rand Health District to conduct the study at the Muldersdrift Primary Health Clinic (Addendum G and J).
- The right to autonomy and confidentiality was upheld for the participants who took part in the telephone interview. The respondents had the right to refuse to participate during the telephonic interview and no names were written on the post intervention questionnaire; all the questionnaires were numbered sequentially.

- After the completion of the post intervention questionnaire, the researcher deleted names and telephone numbers entered in the register.
- The researcher added two questions to the post-intervention questionnaire (Addendum C) to find out what the barriers were which could have resulted in the low number of women who presented for cervical cancer screening. The revised post-intervention questionnaire was approved by the Human Research Ethics committee on 9th October 2014, with ethics reference number: Re: Protocol: M140314 (Addendum M).
- The participants (woman) were screened in a private room, with only the patient and researcher present, to ensure privacy.

5.8 CONCLUSION

The chapter highlights the implementation of the educational programme and the learning materials and procedures used in terms of assessing the primary outcome, which was presenting for screening uptake and the secondary outcomes, which were knowledge and behaviour. The chapter also provided the methods, validity, reliability and ethical consideration used in Phase 2 of study. Chapter 6 will present the findings in terms of primary and secondary outcomes of Phase 2 and discussion of the study.

CHAPTER 6

RESULTS OF PHASE 2 OF THE STUDY, DISCUSSION AND CONCLUSION

6.1 INTRODUCTION

Chapter 5 described the development, implementation and research methods used to assess the outcome of the educational programme. Chapter 6 will present the findings in terms of primary outcome and the secondary outcomes of Phase 2 of the study.

6.2 THE RESULTS OF THE PRIMARY OUTCOME: SCREENING UPTAKE

Thirty women, with referral notes from partners who participated in the educational programme, came to the Primary Health Clinic in Muldersdrift for screening. During September 2014, there was a campaign at the clinic and an additional 183 women received screening from professional nurses in the clinic.

Table 6.1 presents the number of women screened by the researcher and the number screened by professional nurses in the clinic during the three months period.

TABLE 6.1: Women screened by the researcher (n=30) and women screened by professional nurses (n=183)

Months	Number of women screened by the researcher (n=30) (%)	Number of women screened by registered nurses in the clinic (n=183) (%)
July	10 (33.3%)	61 (33.3%)
August	15 (50.0%)	81 (44.3%)
September	5 (16.7%)	41 (22.4%)
Total	30 (100.0%)	183 (100.0%)

When analysing the data from the structured interviews conducted with the women presenting a with an invitation letter, which was designed by the researcher for the men to pass on to the women (referral note), it was found the sample (n=30) were primarily from the Zulu cultural group (30%; n=9), unmarried (60%; n=18) and less than 40 years of age (56.7%; n=17). Table 6.2 presents the demographic information of the sample.

TABLE 6.2: Demographic information of the women screened (n=30)

Age groups	n (%)
30-39	17 (56.7%)
40-49	7 (23.3%)
50-59	5 (16.7%)
60+	1 (3.3%)
Total	30 (100.0%)
Cultural group	
Setswana	7 (23.3%)
Southern /Northern Sotho	6 (20.0%)
Tsonga/ Shangani	3 (10.0%)
Zulu	9 (30.0%)

Venda	1 (3.3%)
Sepedi	4 (13.3%)
Total	30 (100.0%)
Level of education	
Never went to school	2 (6.7%)
Up to grade 7	7 (23.3%)
Grade 8 to10	8 (26.7%)
Grade 11 to 12	13 (43.3%)
Total	30 (100.0%)
Marital status	
Single	18 (60.0%)
Married traditionally	4 (13.3%)
Married customary	4 (13.3%)
Widowed	3 (10.0%)
Separated	1

	(3.3%)
Total	30 (100.0%)
Employment status	
Unemployed	4 (13.3%)
Full time employment	16 (53.3%)
Part time employment	9 (30.0%)
Do piece jobs	1 (3.3%)
Total	30 (100.0%)
Source of income	
Employment	24 (80.0%)
Government grant	1 (3.3%)
Family support	5 (16.7%)
Total	30 (100.0%)
Monthly income	
No personal income	5 (16.7%)

Less than R1000	7 (23.3%)
R 1000 to R 2000	6 (20.0%)
R 2000 to R 3000	7 (23.3%)
R 3000 to R 5000	3 (10.0%)
R 5000 to R 8000	2 (6.7%)
Total	30 (100.0%)
Number of Dependents	
1 to 5	23 (76.7%)
6 to 9	2 (6.7%)
No answer	5 (16.6%)
Total	30 (100.0%)

When the respondents were asked to indicate the type of work they did, it was found almost half (43.3%; n=13) worked as cleaners, 13.3% (n=4) were domestic workers, 13.3% (n=4) were housewives and 6.7% and (n=2) worked as security officers, the rest (23.3%; n=7) did various other jobs.

When the respondents were asked whether they had ever been screened for cervical cancer, the majority (56.7%; n=17) reported never having been screened, while 43.3% (n=13) had previously undergone cervical cancer screening. When those who had been

screened (n=13) were asked which services they used, most were screened at a Primary Health Clinic (76.9%; n=10), 15.4% (n=2) were screened by a general medical practitioner and one (7.7%) was screened by a gynaecologist.

When the respondents who indicated they had never been screened were asked to explain the reasons, the majority (52.9%; n=9) indicated they had never heard of a Pap smear, whilst 23.5% (n=4) reported they were scared. Table 6.3 presents the reasons why the respondents had never undergone cervical cancer screening.

TABLE 6.3: Reasons for not having had cervical screening before (n=17)

Reasons	n (%)
Scared of cervical cancer screening	4 (23.5%)
Regarded screening to be painful	1 (5.9%)
Not interested to have cervical cancer screening	1 (5.9%)
Do not qualify for screening due to being childless	1 (5.9%)
Have never heard of a Pap smear	9 (52.9%)
Inappropriate answer	1 (5.9%)
Total	17 (100.0%)

When asked what motivated them to come for cervical cancer screening, the majority of respondents (60%; n=18) reported they were sent by their husbands, 13.3% (n=4) were sent by their sons, whilst 10% (n=3) were sent by their grandsons and 13.3% (n=4) by their boyfriends; only one respondent (3.3%; n=1) was sent by her brother.

6.3 RESULTS THE SECONDARY OUTCOMES: KNOWLEDGE OF CERVICAL CANCER, KNOWLEDGE OF THE CERVICAL SCREENING PROGRAMME AND KNOWLEDGE OF THE PAP SMEAR

There were 100 respondents (n=100) who participated in the post intervention questionnaire. Most of the respondents were younger than 40 years of age (58%; n=58), from the Zulu cultural group (33%; n=33), unmarried (44%; n=44) and literate (91%; n=91). Table 6.4 presents the general information of the sample.

TABLE 6.4: The general information of the sample (n=100)

	n (%)
Age groups	
18-29	27 (27.0%)
30-39	31 (31.0%)
40-49	18 (18.0%)
50-59	14 (14.0%)
60+	10 (10.0%)
Total	100 (100.0%)
Socio cultural group	
Setswana	20 (20.0%)
Southern /Northern Sotho	13 (13.0%)

Tsonga/ Shangani	9 (9.0%)
Zulu	33 (33.0%)
Venda	16 (16.0%)
Ndebele	2 (2.0%)
Xhosa	4 (4.0%)
Sepedi	2 (2.0%)
Swati / Swazi	1 (1.0%)
Total	100 (100.0%)
Level of education	
Never went to school	2 (2.0%)
Up to grade 7	7 (7.0%)
Grade 8 to10	39 (39.0%)
Grade 11 to 12	38 (38.0%)

University or college	14 (14.0%)
Total	100 (100.0%)
Marital status	
Single	44 (44.0%)
Married traditionally	36 (36.0%)
Married customary	8 (8.0%)
Widowed	4 (4.0%)
Divorced	3 (3.0%)
Separated	5 (5.0%)
Total	100 (100.0%)
Employment status	
Unemployed	25 (25.0%)
Full time employment	52 (52.0%)
Part time employment	20 (20.0%)

Temporary jobs	3 (3.0%)
Total	100 (100.0%)
Source of income	
Employment	77 (77.0%)
Social grant	9 (9.0%)
Family support	11 (11.0%)
Other	3 (3.0%)
Total	100 (100.0%)
Monthly personal income	
No personal income	13 (13.0%)
Less than R1000	11 (11.0%)
R1000 to R 2000	58 (58.0%)
R2000 to R 3000	12 (12.0%)
R 3000 to R 5000	3 (3.0%)

R5000 to R8000	3 (3.0%)
Total	100 (100.0%)
Number of dependents	
1 to 5	78 (78.0%)
6 to 9	14 (14.0%)
No answer	8 (8.0%)
Total	100 (100.0%)

When the respondents were asked how many women, 30 years and older, lived in the same house as them, the majority (80%; n=80) indicated between one and two women. Only a small percentage (3%; n=3) shared the house with three to four, whilst 17% (n=17) did not respond to the question.

The respondents were also asked whether they had a female sexual partner; the majority (78%; n=78) responded positively, while 22% (n=22) answered they do not have sex partners.

6.3.1 Knowledge of cervical cancer

When the respondents were asked whether they had ever heard of cervical cancer, the majority reported they had (98%; n=98), with only 2% (n=2) never having heard of cervical cancer. The greatest percentage (58%; n=58) of the respondents who reported having heard of cervical cancer were younger than 40 years. Both men who said they had never heard of cervical cancer were older than 50 years. Table 6.5 presents the cross tabulation between age and having heard of cervical cancer.

TABLE 6.5: A comparison between age and having heard of cervical cancer (n=98)

Age range	Heard of cervical cancer		
	Yes (n=98)	No (n=2)	Total
	n (%)	n (%)	n (%)
18-29	27 (27.5%)	0 (0.0%)	27 (27.5%)
30- 39	31 (31.6%)	0 (0.0%)	31 (31.6%)
40- 49	18 (18.4%)	0 (0.0%)	18 (18.4%)
50- 59	13 (13.3%)	1 (50.0%)	14 (14.3%)
60+	9 (9.2%)	1 (50.0%)	10 (10.2%)

When using the Chi-Square Test of comparison it was found there was no difference between age and having heard of cervical cancer (Chi- Square Test, p= 0.118).

When cross-tabulating marital status and having heard of cervical cancer, slightly more single respondents indicated having heard of cervical cancer than those who were married (44.9%; n=44 vs 42.9%; n=42). Table 6.6 indicates a cross-tabulation between marital status and having heard of cervical cancer.

TABLE 6.6: Marital status and having heard of cervical cancer (n=98)

Marital status	Heard of cervical cancer		
	Yes (n=98)	No (n=2)	Total
	n (%)	n (%)	n (%)
Single	44 (44.9%)	0 (0.0%)	44 (44.9%)
Married traditionally	34 (34.6%)	2 (100.0%)	36 (36.6%)
Married customary	8 (8.2%)	0 (0.0%)	8 (8.2%)
Widowed	4 (4.1%)	0 (0.0%)	4 (4.1%)
Divorced	3 (3.1%)	0 (0.0%)	3 (3.1%)
Separated	5 (5.1%)	0 (0.0%)	5 (5.2%)

When using the Chi- Square Test of comparison it was found there was no difference between marital status and having heard of cervical cancer (Chi-Square Test, p= 0.604).

When cross tabulating the education level and the number of respondents who had heard of cervical cancer, it was noted that 91.8% (n=90) of the respondents who indicated to have heard of cervical cancer were literate and 8.1% (n=8), who had never heard of cervical cancer, were functionally illiterate. Table 6.7 provides a cross tabulation between the education level and having heard of cervical cancer.

TABLE 6.7: Education and heard of cervical cancer (n=98)

Education	Heard of cervical cancer		
	Yes (n=98)	No (n=2)	Total
	n (%)	n (%)	n (%)
Never went to school	2 (2.0%)	0 (0.0%)	2 (2.0%)
Up to grade 7	6 (6.1%)	1 (50.0%)	7 (7.1%)
Grade 8-10	39 (39.8%)	0 (0.0%)	39 (39.8%)
Grade 11-12	37 (37.8%)	1 (50.0%)	38 (38.8%)
University or college	14 (14.3%)	0 (0.0%)	14 (14.3%)

When using the Chi-Square Test of comparison it was found there was no difference between education level and having ever heard of cervical cancer (Chi-Square Test, p=0.159).

On asking the respondents, who indicated they had heard of cervical cancer, to explain their understanding of cervical cancer, various answers were provided (Table 6.8).

TABLE 6.8: Understanding of cervical cancer by the respondents indicating they had heard of cervical cancer (n=98) *

Understanding	n (%)
Cells that are formed in the uterus which cause cancer	17 (17.3%)
Cells which are spread to other parts of the body and stay in the uterus that cause cervical cancer	11 (11.2%)
Abnormal cells in the body which grow without control that spread into cervical cancer	19 (19.4%)
Is cancer for only women	19 (19.4%)
Is when the uterus is affected by cancer	2 (2.0%)
Is a disease that develops in the cervix and can be spread throughout the body	2 (2.0%)
Is cancer that is found in women's uterus	6 (6.1%)
Is a disease that cause death to women	1 (1.0%)
Cervical cancer is a silent disease until you go for cervical screening	1 (1.0%)
Cervical cancer affect women who had more than 5 children	1 (1.0%)

Cervical cancer affect girls who became sexually active before the age of 15 years	1 (1.0%)
Cervical cancer affects people with many sex partners	2 (2.0%)
Total	82 (83.4%)

*Respondents gave more than one answer therefore the percentage was less than 100.

The respondents, who indicated they had never heard of cervical cancer, were asked what they thought cervical cancer could be (n=2); one respondent said cancer is only for men, while the other answered cervical cancer is a disease that affects any human being.

6.3.2 Prevention of cervical cancer

The greatest percentage of the respondents (99%; n=99) reported that cervical cancer can be prevented and only 1% (n=1) indicated it cannot be prevented at all; this respondent was between the ages 40 and 49 and had completed Grade 11 to 12. There was no statistically significant difference found between age group and opinion that cervical cancer was preventable, and education level and opinion regarding prevention of cervical cancer.

When asked what they thought could be done to prevent their sexual partners from getting cervical cancer, more than 90% of respondents agreed cervical cancer can be prevented by being faithful to one sex partner, by using condoms when having sex and motivating your partner to be screened. However, only 65% (n=65) knew that not smoking can prevent cervical cancer. The perceptions of what the respondents thought could be done to prevent of cervical cancer are presented in Table 6.9.

Table 6.9: Perceptions of what can be done to prevent cervical cancer (=99)

Possibilities to prevent cervical cancer	Perceptions on prevention of cervical cancer		
	Agree	Disagree	Not sure
	n (%)	n (%)	n (%)
Being faithful to one sex partner	96 (96.0%)	4 (4.0%)	0 (0.0%)
By using condom when having sex	96 (96.0%)	4 (4.0%)	0 (0.0%)
By motivating your partner not to smoke	65 (65.0%)	22 (22.0%)	13 (13.0%)
By motivating your Partner to have check up at the clinic	98 (98.0%)	2 (2.0%)	0 (0.0%)
When cancer is still small nobody will know it is there	97 (97.0%)	3 (3.0)	0 (0.0%)

Respondents were asked what changes would make them suspect their female sex partner had cervical cancer. More than 80% were able to identify the signs and symptoms (Table 6.10).

Table 6.10: Knowledge about signs and symptoms of cervical cancer (n=100)

Signs and symptoms	Knowledge about signs and symptoms of cervical cancer		
	Agree	Disagree	Not sure
	n (%)	n (%)	n (%)
Irregular bleeding from the vagina	96 (96.0%)	2 (2.0%)	2 (2.0%)
Back pain	95 (95.0%)	4 (4.0%)	1 (1.0%)
Bleeding after having sex	96 (96.0%)	4 (4.0%)	0 (0.0%)
Bleeding after menstruation	94 (94.0%)	3 (3.0%)	3 (3.0%)
Bad smelling vaginal discharge	91 (91.0%)	7 (7.0%)	2 (2.0%)
Pain in the lower back	84 (84.0%)	12 (12.0%)	4 (4.0%)

Frequent urination	81 (81.0%)	13 (13.0%)	6 (6.0%)
Weight loss	86 (86.0%)	10 (10.0%)	4 (4.0%)
Swollen feet	85 (85.0%)	8 (8.0%)	7 (7.0%)
Breathing problems	85 (85.0%)	10 (10.0%)	5 (5.0%)
There'll be no changes if the cancer is still in its early stages	86 (86.0%)	10 (10.0%)	4 (4.0%)

When asked which factors caused cervical cancer, HPV (98%; n=98) was the most known factor, while being sexually active before 15 years of age (54%; n=54) and having more than five children (27%; n=27) were the least risks known. Table 6.11 provides knowledge about the causes of cervical cancer.

TABLE 6.11: Knowledge about the causes of cervical cancer (n=100)

Cause	Agree	Disagree	Not sure
	n (%)	n (%)	n (%)
HPV or human papillomavirus	98 (98.0%)	1 (1.0%)	1 (1.0%)
Being sexually active before 15 years	54 (54.0%)	33 (33.0%)	13 (13.0%)
Having more than 5 children	27 (27.0%)	43 (43.0%)	30 (30.0%)
Having many sexual partners	92 (92.0%)	8 (8.0%)	0 (0.0%)
Having a sexual partner who has many sexual partners	89 (89.0%)	9 (9.0%)	2 2.0%)
Smoking	86 (86.0%)	12 (12.0%)	2 (2.0%)

Practicing unprotected sex	84 (84.0%)	14 (14.0%)	2 (2.0%)
Having HIV/AIDS	88 (88.0%)	7 (7.0%)	5 (5.0%)

6.4 AWARENESS OF THE SCREENING PROGRAMME

The majority (99%; n=99) of the respondents indicated they had heard of the screening programme and only 1% (n=1) reported never having heard about it. This respondent was between the ages 40 to 49 and married traditionally. There was no statistically significant difference between age group and having heard of cervical cancer and marital status and having heard of the screening programme.

More than 90% of the respondents identified the correct answers when asked what they know about the screening programme (Table 6.12).

TABLE 6.12: Knowledge of the cervical cancer screening programme (n=100)

	Agree	Disagree	Not sure
Criteria	n (%)	n (%)	n (%)
Only women can be checked for cervical cancer	98 (98.0%)	2 (2.0%)	0 (0.0%)
Women aged 30 years and above must be checked	98 (98.0%)	2 (2.0%)	0 (0.0%)

Screening must be done every 10 years until the age of 55 years	95 (95.0%)	5 (5.0%)	0 (0.0%)
Checking can be done at the local clinic	91 (91.0%)	9 (9.0%)	0 (0.0%)
Checking is free of charge	92 (92.0%)	7 (7.0%)	1 (1.0%)
Pap smear is used for checking and testing	93 (93.0%)	7 (7.0%)	0 (0.0%)
Women must go to the clinic to get their checking results	96 (96.0%)	4 (4.0%)	0 (0.0%)
Women with an abnormal test results will be referred to the hospital for their cervixes to be checked and tested	95 (95.0%)	3 (3.0%)	2 (2.0%)

6.4.1 Knowledge of the Pap smear

The majority of the respondents (97%; n=97) indicated they had heard of the Pap smear and only 3% (n=3) reported they had never heard of it before. Two (n=2) of these respondents were older than 50, whilst one was younger than 30; one was single, two were married traditionally and all three had some secondary education. There was no statistically significant difference between having heard of a Pap smear and educational level, age and marital status.

When the respondents who indicated they had heard of the Pap smear (n=97) were asked to explain what they understood about the Pap smear, various answers were given (Table 6.13).

TABLE 6.13: Understanding of a Pap smear (n=97)

Understanding of the Pap smear	n (%)
Pap smear is the method used to screen cervical cancer	40 (41.2%)
Pap smear is a process used to screen cervical cancer in the uterus	3 (3.1%)
Is a test done in the uterus to see cancer in the stomach	16 (16.5%)
Is a screening used to take cells from uterus	23 (23.7%)
Total	83 (84.5%)

The respondents who indicated they had never heard of the Pap smear (n=3) were asked what they thought a Pap smear could be. One respondent said a Pap smear prevents the uterus from getting cervical cancer, another stated a Pap smear was the cleaning of the uterus, whilst a third answered it was the treatment given to women.

The evaluation of the educational programme for the study was investigated (Table 6.14). The majority (99%; n=99) of the respondents indicated the language used in the educational programme was easy to understand. Only half of the sample (51%; n=51) indicated they had informed their sex partners about cervical cancer.

TABLE 6.14: Opinion pertaining to the educational programme (n=100)

Opinions	n (%)
Was the language used in the educational programme easy to understand?	
Yes	99 (99.0%)
No	1 (1.0%)
Unsure	0 (0.0%)
Did the educational programme help you to understand cervical cancer?	
Yes	98 (98.0%)
No	1 (1.0%)
Unsure	1 (1.0%)
Did the educational programme help you to understand how cervical cancer can be prevented?	
Yes	98 (98.0%)

No	2 (2.0%)
Unsure	0 (0.0%)
Did the pamphlet assist you to educate your partner and other women?	
Yes	80 (80.0%)
No	19 (19.0%)
Unsure	1 (1.0%)

The respondents were asked whether they informed anybody about cervical cancer and 66% (n=66) answered positively. Table 6.15 presents the practices resulting from the educational programme.

TABLE 6.15: Practices resulting from the educational programme (n=100)

Practices	n (%)
Did you inform anybody about cervical cancer?	
Yes	66 (66.0%)
No	34 (34.0%)
Total	100 (100.0%)
If **yes**, whom?	n=66 (%)

Sex partner	51 (77.3%)
Mother	5 (7.6%)
Sister	5 (7.6%)
Grandmother	1 (1.5%)
Cousin	1 (1.5%)
Friends	3 (4.5%)
Total	66 (100.0%)

Respondents who indicated they had not informed any women about cervical cancer provided several reasons preventing them from doing so (Table 6.16).

TABLE 6.16: Reasons for not informing women about cervical cancer screening (n=34)*

Reasons	n (%)
Culturally sex is a taboo	10 (29.4%)
It is embarrassing to teach women about cervical cancer	3 (8.8%)
Men were not interested in teaching their sex partners about cervical cancer as it is not easy in their culture	6 (17.6%)

Culturally it is not easy to talk about cancer	1 (2.9%)
I was busy	13 (38.2%)
I found not necessary to educate men about cervical cancer as it affect only women	2 (5.9%)
Every one seem to have heard of cervical cancer before and no one cared to listen to me when I was teaching	3 (8.8%)
My girlfriend was not interested to be taught about cervical cancer, therefore, I thought telling others they will react the same	1 (2.9%)
Cancer is for whites not black people	3 (8.8%)
Total	42 (123.3%)

*Respondents gave more than one answer therefore the percentage was more than 100.

More respondents (38%; n=38) knew where their female sexual partners, and those women they had informed about cervical cancer, went for cervical screening than those who were unsure (28 %: n=28) or did not answer the question (34%: n=34). Table 6.17 provides the names of the clinics attended by the women they informed.

TABLE 6.17: Names of the clinic visited by the women respondents informed about cervical cancer (n=38)

Name of clinic	n (%)
Muldersdrift	28 (73.6%)
Bovane	2 (5.3%)
Ivory Park	1 (2.6%)
Kagiso	2 (5.3%)
Nelspruit	2 (5.3%)
Honeydew	2 (5.3%)
Krugersdorp	1 (2.6%)
Total	38 (100.0%)

6.5 DISCUSSION

Chapter 6 presented the findings in terms of primary outcome and the secondary outcomes of Phase 2 of the study. This chapter consists of two phases: the first phase was a survey, which showed the low level of knowledge of men living in the research study setting, whilst the second phase focused on the development and pilot testing of the educational programme.

Phase 2 of this study highlights there was an increase of knowledge about cervical cancer, its screening and the screening programme after the educational programme compared to the previous results of the survey, which was conducted in the same setting, and informed the current study. The results of the study suggested the intervention was unsuccessful as only 30 women reporting for screening, despite 120 men participating in the intervention and 66 women being informed by the participants. The mere fact that less women were informed about cervical cancer than the number of men who participated in the intervention is disappointing. It might have been possible that more women could have been educated if we had been able to contact all the men attending the educational programme. It could also be possible that these men were not available because they did not educate a female family member or their sex partner and did not want to admit to it.

It was disappointing to find less than 50% of the informed women came for the screening. The reason for this is unclear, although various studies have investigated this phenomenon. De Abreu *et al. (*2013), in a study conducted in Cape Town, South Africa, found that lack of knowledge, language barriers, cultural beliefs, healthcare provider gender, fear, anxiety, service accessibility and cost influenced low cervical screening uptake. In the current study, lack of knowledge and language barriers were not valid reasons for the women not going for cervical screening since they had been educated by their sex partners and information pamphlets had been handed to them.

The study provided evidence that the main reason for intervention failure appeared to be cultural taboo, as the respondents reported that talking about sex issues was taboo and how embarrassing it was to teach women about sexual health issues. The fact talking about sexual issues is taboo in African culture, the current study compared the findings to the South African studies conducted by Lebese *et al*. (2013) and Tjale and de Villiers (2004), explain that culturally, talking about sex in the African culture is unthinkable and that cultural barriers, which can be the intercommunication between different cultures with

the aim of influencing how others behave, are common problems when discussing sexual and reproductive health issues.

Although the study of Lebese *et al*. (2013) talks about young people, the current study provided evidence that these barriers exist across generations. It was interesting to find that cultural barriers could be so embedded that men were unable to talk about sexual issues, even if it led to a life threatening illness. The reasons for this are unclear but it may be possible that men feared punishment for violating cultural rules.

According to Tjale and de Villiers (2004), non-specialised people violate a relationship between cultural rules and misfortune. This misfortune consists of punishment in the form of sickness, such as psychological conditions, which can lead to unconsciousness and physical disorders known as somatisation; medical personnel cannot diagnose these conditions even when they persist, reoccur or become chronic. This, however, is mere speculation and should be investigated before conclusions are made.

Not being able to talk about sex due to cultural taboo is not limited to Africa. It was noted in Tehran, Iran, in a study conducted by Mohammad (2006), that talking about sexuality is generally reflected as taboo in some cultures. The same cultural taboos apply in Ghana, Burkina Faso, Nigeria, Kenya and Uganda (Bastien *et al,* 2011). Considering some of the clinics where these eight women were screened, it seems unlikely it was the case due to the distance between the clinics and the study setting.

Additionally, gender of the health provider, accessibility and costs is not applicable in this study as the service was free of charge, the clinic was close to their homes and female healthcare providers screened the women. It is doubtful whether cultural beliefs and fears of the procedure would prohibit women from attending cervical screening.

Fort *et al*. (2011), in a qualitative study conducted in Malawi, found that stigmatisation about cervical cancer, barriers towards open communication with the healthcare provider, fear of being diagnosed with the disease and education level of the participant could affect cervical screening uptake. Despite the women in the current study being educated by their sex partners, it may be possible they had the same feelings as mentioned in the above study. The same barriers also apply in developed countries such as the UK, USA and Latin America (Bessler *et al,* 2007).

It was positive to find that men who attended the educational programme were more knowledgeable about cervical cancer and its screening compared to those who responded to the survey questionnaire. For instance, after the educational programme, 98% of the

men were aware the HPV is a cause of cervical cancer compared to 60.4% in the survey. In addition, 81% could identify all symptoms of cervical cancer posed to them and 91% answered the questions on the cervical cancer-screening programme correctly compared to the 45.5% and 53% in the survey group respectively.

The current study compared positively with other studies conducted in African countries by Williams and Amoateng (2012) and Rosser *et al* (2014) reported the knowledge men had after the education programme. In the studies provided after the educational programme, 84% of men were aware that having sex with a person with multiple sex partners and having sex without a condom could cause cervical cancer. However, would men would change their behavior based on this knowledge. Maree and Wright (2010), in a study conducted in South Africa exploring whether women can protect themselves against cervical cancer by insisting on a condom, found women were not inclined to have concurrent sexual partners and that condom use was a sensitive issue as not all men were prepared to use them. This indicates that women have no influence in discussions and it is necessary to find out whether the men participating in the educational programme changed their conduct. This would assist with the decision of the value of the educational programme and if it was repeatable.

Most cervical cancer educational programmes focus on women and studies directed at men do not exist. In 2012, Lu *et al*. (2012) conducted a study in Asia reportedly using audiovisual materials, home education visits and media campaigns to improve cervical screening uptake, unfortunately, none of these were used in the current study. Abiodun *et al*. (2014) reported improved results in a study in Nigeria, where videos were used as educational material, which duly increased cervical screening uptake. In this study, no movies were used.

In Africa, it would appear only four intervention studies have been conducted in contrast to the developed world, where studies focus on women and appear more successful.

Abiodun *et al.* (2014) conducted an intervention study in a rural community in Nigeria with the aim of increasing cervical screening uptake. The intervention consisted of didactic lectures and educational movies on cervical cancer and the evidence indicates that both interventions increased cervical screening uptake. None of the above-mentioned interventions was used in the current study; although educational movies increased cervical screening uptake in Nigeria, it seems they do not work in South Africa.

Despite the fact most of the studies conducted in South Africa focused on women, the current study was conducted with men but was similar in that posters with female reproductive organs and pamphlets were used to increase cervical screening uptake. Unfortunately, it did not change men's behaviour.

When critically analysing the research methods used in this study, the survey questionnaire worked well except the researcher could not use simple random sampling and had to convert to a convenience sampling method. The survey questionnaire was translated from English into isiZulu and Setswana so that the questions could be answered in men's first language however, they all preferred to use the English questionnaire.

The survey questionnaire asked the men how they would like to be taught in the educational programme; they all preferred to be taught in a group using posters and, as slides would not be used, the researcher gave each participant an information pamphlet. On reflection, the researcher realised it was a long process to negotiate with management and staff at the clinic, representatives of the district health authority and the community leaders to obtain their cooperation.

6.6 CONCLUSION

Chapter 6 gave the findings in terms of primary and secondary outcomes of Phase 2, the discussion and conclusion of the study. In Chapter 7, the study will be Justified and concluded.

CHAPTER 7

JUSTIFICATION, LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

7.1 INTRODUCTION

This chapter will provide the conclusion of the study in terms of justification, limitations and recommendations with regard to the purpose and aims of the study. The intention is to evaluate the study in terms of its positive contribution to the body of scientific knowledge.

7.2 JUSTIFICATION OF THE STUDY

The study will be justified in terms of the aims and its objectives. The aim for this study was to develop and pilot test an educational programme based on the knowledge men have regarding cervical cancer, the cervical cancer-screening programme and the Pap smear, and their preference for being taught about these health issues. In order to assess aims and the objectives of the study the following objectives were developed:

Objective 1 was to describe the knowledge of men about cervical cancer, the cervical cancer-screening programme and the Pap smear and how they would prefer to be taught about these health issues.

Objective 2 was to develop and pilot test an educational programme focused on men acting as motivators to encourage women to present for cervical cancer screening in a resource poor community in the West Rand, and to assess the programme in terms of primary and secondary outcomes. The primary outcome was presenting for screening and the secondary outcomes were knowledge and behaviour. The educational programme was also evaluated.

Chapter 3 described the research methods used in Phase 1 in detail and Chapter 4 presented the findings of Phase 1 and the discussion of the study. Chapter 5 presented the development, implementation and assessment of the educational programme. Chapter 6 described the results of Phase 2 and the discussion of the study in terms of primary outcome and the secondary outcomes. Therefore, the study was justified based on the fact the objectives meant to answer the aims and the objectives of the study, were achieved**.**

7.3 SUMMARY OF THE KEY FINDINGS OF THE STUDY

The first objective of the study indicated the level of knowledge regarding cervical cancer and cervical cancer screening was low. The study discovered the majority of the men perceived HPV (60.4%; n=61) to be a risk factor of cervical cancer and more than half (51.5%; n=52) knew that unprotected sex was a risk factor. The study also noted that men had limited knowledge of the Pap smear and cervical cancer-screening programme. Men preferred to be educated in a group.

The study developed and pilot tested an educational programme focused on men to assess knowledge outcomes and evaluate the educational programme. The findings provided an increase in knowledge of men who attended the educational programme, as they were more knowledgeable about cervical cancer and its screening compared to those who responded to the survey questionnaire. For instance, after the educational programme, 98% of the men were aware that the HPV was a cause of cervical cancer. The findings of a small number of women (n=66) who were taught about cervical cancer by the 120 men attending the educational programme and the small number of women who presented for screening (n=30), questions the success of the intervention. It might be possible that more women could have been educated if all the men who had attended the educational programme had been contactable. The findings also noted that cultural taboos affect men in that they are not to be able to educate their female sex partners and family members about cervical cancer screening, and some men reported they were not available to teach their female sex partners to come for cervical cancer screening. Chapters 4 and 6 presented, discussed and concluded the findings of the study.

7.4 LIMITATIONS OF THE STUDY

The study was conducted in a specific resource poor community and the results might not be applicable to men living in communities that are more affluent and those who do not belong to African cultural groups. In addition, the data gathered was self-reported, which could have led to recall bias.

As already mentioned, it is possible the structuring of the questionnaire was a limitation and not properly designed, because when comparing the open- and closed-ended questions it was noted there was a big gap between them. Perhaps open-ended questions would have worked better than closed-ended, being socially acceptable for agreement. However, survey data provided enough data to guide the development of an educational programme for men living in the study area. Men who participated in the survey also

participated in the educational programme, which could have led to recall bias when completing the post-intervention questionnaire. Culture, especially the Zulu men seems not to be interested in teaching their sex partners and female family members about cervical cancer screening.

In addition, although the participants preferred to complete the post-intervention questionnaire in English, it is not their first language, which could have made it difficult for some to express themselves clearly, therefore subject to recall bias. Language did not seem to be a limitation. One-group post-test only design could not allow for the measure of changes. Due to the conducting of structured interviews, there was no opportunity to cross-examine respondents to obtain responses reflecting a deeper understanding; the outcomes were limited to the questions posed. This study gave sufficient evidence to draw conclusions.

7.5 RECOMMENDATIONS

Based on the findings of the study, the following are recommendations for improving men's involvement in cervical cancer and cervical cancer screening.

It is not feasible to repeat the current intervention and to recommend ways to refine the intervention is also debatable, however, exploring cultural barriers in the specific setting and making provision for such may be able to motivate women for cervical cancer screening. Multi-media interventions, such as short films on cervical cancer and its prevention and telephone reminders can also be built into a refined intervention. It is recommended that questionnaire should be restructured and validated before implementation. Using a male educator could have led to a better outcome and should be considered. In addition, women, who were informed but did not report for screening, could be interviewed and the barriers resulting in their non-adherence explored and addressed.

7.6 CONCLUSION

The findings of the study revealed that the intervention was unsuccessful and it is debatable whether it should be refined. Men's knowledge about cervical cancer, the Pap smear, the cervical cancer-screening programme and preferences of health education were major facilitating factors to cervical screening. The findings of Phase 1 of the study provided evidence that the level of men's knowledge about cervical cancer and cervical cancer screening were low.

Age and educational level did not influence having heard of these health issues. In addition, even those who reported that they had ever heard of cervical cancer, as well as the Pap smear, could not correctly explain what it was. HPV was the most known risk factor, but this raised questions as to whether the percentage of respondents who identified this risk actually knew, or whether they associated it with HIV, a well-known disease in South Africa. Although, Men who participated in the educational programme showed interest in learning more about the disease and gaining more knowledge, it has been seen that the number of men who educated their female sex partners and family members, as well as the number of women who reported for cervical cancer screening was disappointing. It seems cultural taboos prevent them from educating their sex partners and female family members about cervical cancer screening. In addition, some of the women who were informed did not come for screening.

The study noted that the majority of the men preferred to be educated in a group. This survey contributes to the development of an intervention to improve cervical cancer screening uptake.

This study provided mixed results. Men who attended the educational programme were more knowledgeable about cervical cancer, its screening and the screening programme compared to those who responded to the survey questionnaire conducted in the same area. Despite the fact that a small number of women (n=66) who were taught about cervical cancer by the 120 men attending the educational programme and the small number of women who presented for screening (n=30), questions the success of the intervention. However, it might have been possible that more women could have been educated as we were unable to contact all the men attending the educational programme. The results of the study emphasis the complexity of finding methods to improve cervical cancer screening uptake.

7.7 REFLECTION OF THE STUDY

Reflecting on the experience of writing this thesis, I truly enjoyed the process. I am person who is passionate about learning and writing research, mostly in the oncology field.

This study has been helpful in gaining a learning experience and understanding the research process and thinking beyond boundaries.

I have learnt how to put things into categories and explain them in detail so that the examiners would know what I had done, but also to provide them with key ideas.

Though it was difficult at times to motivate myself to do the work, I enjoyed the research and writing and found the work was much more manageable than I thought it would be. It was very difficult to match my ideas with what I wanted to write about with a relevant topic and information that actually existed. Doing a PhD can be boring and frustrating sometimes however after realising what is required it can also be greatly exciting. After completion of my PhD, I feel more prepared and excited to write thesis and articles in the upcoming years.

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ADDENDUM A

SURVEY QUESTIONAIRE

Date: ..... Respondent #.....

SECTION A: PERSONAL INFORMATION			For office use
1. How old are you?			QA1=
2. To which cultural group do you belong?			QA2=
3. Your highest qualifications	Have not attended school	1	QA3=
	Up to Grade7	2	
	Grade 8-10	3	
	Grade 11-12	4	
	University or college	5	
4. Marital status	Single	1	QA4=
	Traditional marriage	2	
	Civil marriage	3	
	Widowed	4	
	Divorced	5	
	Separated	6	
5. Employment	Currently unemployed	1	QA5=
	Full time employed	2	
	Part time employed	3	
	I do temporary jobs	4	
6. Monthly income.	Employment	1	QA6=
	Social grant	2	
	Supported by family	3	

	Others.....	4	
7. How much is your income?	No income	1	QA7=
	Monthly income R.....	2	
8. How many dependants do you have?			QA8=
9. Do you presently have a sexual partner?	Yes =1	No=2	QA9=
9.1 If the answer is yes, do you know the clinic she visits?	Yes=1	No=2	
9.1.1 If the answer is yes, give us the name of the clinic she visits.	.....		
SECTION B:AWARENESS ABOUT CERVICAL CANCER			

a) Have you ever heard about *cervical cancer*?	Yes=1	No=2	I am not sure=3	QB1=
1.1 If the answer is **yes**, please tell me what you know about cervical cancer.				

1.2 If **you are not sure** or the answer is **no**, please tell me what **you think** cervical cancer is.				
2. Do you think cervical cancer can be prevented?	Yes=1	No=2	I am not sure=3	QB2=
2.1 If the answer is **yes**, tell me what you think can be done to prevent your sexual partner from getting cervical cancer? I'll read some possibilities and you say whether at this moment you agree, disagree or are not sure.				
a. Being faithful to one sexual partner.	I agree=1	I disagree=2	I am not sure =3	
b. Using condom when having sex.	I agree=1	I disagree=2	I am not sure =3	

c. Discouraging your sexual partner from smoking.	I agree=1	I disagree=2	I am not sure =3	
d. Encouraging your sexual partner to test for cervical cancer.	I agree=1	I disagree=2	I am not sure =3	
3. Which changes will make you suspect that your sexual partner has got cervical cancer? I'll read the possibilities and you say at this moment whether you agree, disagree or are not sure.				QB 3=
a. Irregular bleeding from the vagina.	I agree=1	I disagree=2	I am not sure =3	
b. Back pain.	I agree=1	I disagree=2	I am not sure =3	
c. Bleeding after having sex.	I agree=1	I disagree=2	I am not sure =3	
d. Bleeding after menstruation.	I agree=1	I disagree=2	I am not sure =3	
e. Bad smelling vaginal discharge.	I agree=1	I disagree=2	I am not sure =3	
f. Pain in the lower back.	I agree=1	I disagree=2	I am not sure =3	
g. Frequent urination.	I agree=1	I disagree=2	I am not sure =3	
h. Weight loss.	I agree=1	I disagree=2	I am not sure =3	
i. Swollen feet.	I agree=1	I disagree=2	I am not sure =3	
j. Breathing problems.	I agree=1	I disagree=2	I am not sure =3	
k. There'll be no changes if the cancer is still in its early stages.	I agree=1	I disagree=2	I am not sure =3	
4. What do you think causes cervical cancer? I'll read the possibilities and you say whether at this moment you agree, disagree or are not sure.				QB 4=
a. A virus called HPV or *human papillomavirus*.	I agree=1	I disagree=2	I am not sure =3	

b. Being sexually active before the age of fifteen (15).	I agree=1	I disagree=2	I am not sure =3	
c. Having more than five (5) kids.	I agree=1	I disagree=2	I am not sure =3	
d. Having many sexual partners.	I agree=1	I disagree=2	I am not sure =3	
e. Having a sexual partner who has many sexual partners.	I agree=1	I disagree=2	I am not sure =3	
f. Smoking.	I agree=1	I disagree=2	I am not sure =3	
g. Practising unprotected sex.	I agree=1	I disagree=2	I am not sure =3	
h. Having HIV/AIDS.	I agree=1	I disagree=2	I am not sure =3	
SECTION C: AWARENESS ABOUT THE CHECKING PROGRAMME				
1. Have you ever heard about the cervical cancer-checking programme?	Yes =1	No=2	I am not sure=3	QC 1=
1.1 If the answer is **yes**, tell me what you know about the checking programme. I'll read the possibilities and you say whether at this moment you agree, disagree or are not sure.				
a. Only women can be checked for cervical cancer.	I agree=1	I disagree=2	I am not sure =3	
b. Women aged 30 and above must be checked.	I agree=1	I disagree=2	I am not sure =3	
c. Checking must be done every 10 years until you are 55.	I agree=1	I disagree=2	I am not sure =3	
d. Checking can be done at the local clinic.	I agree=1	I disagree=2	I am not sure =3	

e. Checking is free of charge.	I agree=1	I disagree=2	I am not sure =3	
f. *Pap smear* is used for checking and testing.	I agree=1	I disagree=2	I am not sure =3	
Women must go back to the clinic to get their checking results.	I agree=1	I disagree=2	I am not sure=3	
g. Women with unusual test results will be referred to the hospital for their cervixes to be checked and tested.	I agree=1	I disagree=2	I am not sure =3	
SECTION D: AWARENESS ABOUT*PAP SMEAR*				
1. Have you ever heard about the *Pap smear*?	Yes =1	No=2	I am not sure=3	QD 1=
1.1 If the answer is **yes**, please tell me what the *Pap smear is.*				
1.1.1 If the answer is **no,** tell me what you think the *Pap smear is*?				

SECTION E: WHAT YOU WOULD PREFER ABOUT HEALTH EDUCATION				
1. Please tell me how you would like to be taught about cervical cancer, the checking of this disease together with the *Pap smear*. I'll read the possibilities and you say whether at the moment you agree, disagree or are not sure.				QE 1=
a. I want to be part of a group of men when I am told about matters that concern health.	Yes=1	No=2	I am not sure=3	
b. I want to be alone when I am told about health matters.	Yes=1	No=2	I am not sure=3	
c. I prefer that the person giving us information uses posters so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
d. I prefer that the person giving us information uses slides so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
e. I prefer the person giving us information provides me with a pamphlet to read at home.	Yes=1	No=2	I am not sure=3	
f. I like learning through dramatisation, concerts or a games.	Yes=1	No=2	I am not sure=3	
g. I prefer the person giving us information uses posters so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
h. I prefer the person giving us information uses slides so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
i. I prefer the person giving us information provides me	Yes=1	No=2	I am not sure=3	

with a pamphlet to read at home.				
j. I like learning through dramatisation, concerts or a games.	Yes=1	No=2	I am not sure=3	

k. I prefer the person giving us information uses posters so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
l. I prefer the person giving us information uses slides so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
m. I prefer the person giving us information provides me with a pamphlet to read at home.	Yes=1	No=2	I am not sure=3	
n. I like learning through dramatisation, concert or a game.	Yes=1	No=2	I am not sure=3	
o. I prefer the person giving us information uses posters so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
p. I prefer the person giving us information uses slides so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
q. I prefer the person giving us information provides me with a pamphlet to read at home.	Yes=1	No=2	I am not sure=3	
r. I like learning through dramatisation, concerts or a games.	Yes=1	No=2	I am not sure=3	
s. I prefer that the person giving us information uses posters so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
t. I prefer that the person giving us information uses slides so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
u. I prefer the person giving us information provides me with a pamphlet to read at home.	Yes=1	No=2	I am not sure=3	
v. I like learning through dramatisation, concert or a game.	Yes=1	No=2	I am not sure=3	

w. I prefer the person giving us information uses posters so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
x. I prefer the person giving us information uses slides so that I am able to follow what it is all about.	Yes=1	No=2	I am not sure=3	
y. I prefer the person giving us information provides me with a pamphlet to read at home.	Yes=1	No=2	I am not sure=3	
z. I like learning through dramatisation, concert or a game.	Yes=1	No=2	I am not sure=3	

ADDENDUM B

18 March 2013

Dear respondent,

Re: Invitation to participate in a research study

Good day, I am Jeniffer Rwamugira, a doctoral student from the Department of Nursing Education at University of the Witwatersrand. I would like to invite you to take part in a study, which is about getting more women to have a check-up for cancer of the mouth of the womb by involving men as motivators, in a resource poor community in the West Rand. A door-to-door survey will be done and about 30 minutes of your time will be needed to answer some questions. You can choose if you want to take part in the study and you may leave at any time you wish to do so. If you decide not to participate or leave the study, there will be no harm or prejudice towards you. The researcher will collect the data with the assistance of five trained Community Health Workers working in the specific area. No names will be written anywhere on the questionnaire. Field workers, who were not involved in the educational programme and the gathering of the pre-intervention data, will collect the post-intervention data. Completed questionnaires will be stored in a secure place and not shared with any other person, however, the results will be presented to the Department of Nursing Education University of the Witwatersrand and may be used in cancer nursing articles or presentations.

Your participation in this study will be highly appreciated, if you have given me consent please sign below

Thank you for your co-operation

Participant's signature: _____ Date: _____

Researcher's signature: _____ Date: _____

ADDENDUM C

POST-INTERVENTION QUESTIONNAIRE

Date: .....Respondent #.....

SECTION A: DEMOGRAPHIC DATA		
1. How old are you?		
2. To which socio-cultural group do you belong?		
3. What is your highest level of education?	Never went to school	1
	Up to grade7	2
	Grade 8-10	3
	Grade 11-12	4
	University or college	5
4. What is your marital status?	Single	1
	Married traditionally	2
	Married customary	3
	Widowed	4
	Divorced	5
	Separated	6
5. Please tell me about your	Unemployed at this stage	1

employment status	Full time employed	2
	Part time employed	3
	Do piece jobs	4
6. Please tell me about the source of your monthly income	Employment	1
	Government grant	2
	Family support	3
	Other.....	4
7. Please tell me what your **personal** monthly income is	No income	1
	Less than R1000	2
	Between R1000 and R2000	3
	Between R2000 and R3000	4
	Between R3000 and R5000	5
	Between R 5000 and R8000	6
	More than R8000	7
8. How many people depend on your income?		
9. How many women 30 years and older live in the same house than you?		
10. Do you have female sex partner at this stage?	Yes =1	No=2
SECTION B: KNOWLEDGE OF CERVICAL CANCER		
1. Have you ever heard of cancer of the mouth of the womb?	Yes=1	No=2	Unsure=3
1.1If **yes**, please tell me what you know about cancer of the mouth of the womb		

1.2 If **unsure** or **no**, please tell me what you **think** cancer of the mouth of the womb is?

2 Do you think cancer of the mouth of the womb can be prevented?	Yes=1	No=2	Unsure=3
3 Please tell me how you think you can prevent your sex partner getting cancer of the mouth of the womb? I will read some possibilities, please say if you agree, do not agree or are unsure at this stage.			
a. By being faithful to one sex partner	Agree=1	Do not agree=2	Unsure =3
b. By using condoms when having sex	Agree=1	Do not agree=2	Unsure =3
c. By motivating your partner not to smoke	Agree=1	Do not agree=2	Unsure =3
d. By motivating your partner to have a mouth of the womb check-up at the clinic	Agree=1	Do not agree=2	Unsure =3
e. When the cancer is still small nobody will know it is there	Agree=1	Do not agree=2	Unsure =3
4. Which changes will make you think that your partner might have cancer of the mouth of the womb? I will read some possibilities and you must please say if you agree, do not agree or are unsure at this stage.			

a. Irregular bleeding from the vagina	Agree=1	Do not agree=2	Unsure =3
b. Back pain	Agree=1	Do not agree=2	Unsure =3
c. Bleeding after sex	Agree=1	Do not agree=2	Unsure =3
d. Bleeding after menstruation has stopped	Agree=1	Do not agree=2	Unsure =3
e. Bad smelling vaginal discharge	Agree=1	Do not agree=2	Unsure =3
aa. Lower abdominal pain	Agree=1	Do not agree=2	Unsure =3
bb. Passing urine frequently	Agree=1	Do not agree=2	Unsure =3
cc. Weight loss	Agree=1	Do not agree=2	Unsure =3
dd. Swelling of legs	Agree=1	Do not agree=2	Unsure =3
ee. Difficulty to breathe	Agree=1	Do not agree=2	Unsure =3
ff. There would be no change when the cancer is still small	Agree=1	Do not agree=2	Unsure =3
5. What do you think is the cause of cancer of the mouth of the womb? I will once again read some possibilities and you must please say if you agree, not agree or unsure at this stage.			
a. A virus called the HPV or human papillomavirus	Agree=1	Do not agree=2	Unsure =3
b. Started having sex before the age of fifteen (15)	Agree=1	Do not agree=2	Unsure =3
c. Having more than five (5) children	Agree=1	Do not agree=2	Unsure =3
d. Having many sex partners	Agree=1	Do not agree=2	Unsure =3
e. Having a sex partner who has many other sex partners	Agree=1	Do not agree=2	Unsure =3

f. Smoking	Agree=1	Do not agree=2	Unsure =3
g. Having sex without a condom	Agree=1	Do not agree=2	Unsure =3
h. Having HIV/AIDS	Agree=1	Do not agree=2	Unsure =3
SECTION C: KNOWLEDGE OF THESCREENING PROGRAMME			
1. Have you ever heard about of the screening programme the programme for check-up for cancer of the mouth of the womb?	Yes =1	No=2	Unsure=3
1.2 If **yes**, please tell me what you know about the screening programme? I will read some possibilities and you must say if you agree, not agree of are not sure right now.			
a. Only women can have this screening or check-up.	Agree=1	Do not agree=2	Unsure =3
b. Women as from the age of 30 years should have the screening or check-up.	Agree=1	Do not agree=2	Unsure =3
c. Screening or check-up should be done every 10 years until the age of 55 years	Agree=1	Do not agree=2	Unsure =3
d. Screening or check-up can be done at your primary health clinic	Agree=1	Do not agree=2	Unsure =3
e. The screening or check-up is free of cost	Agree=1	Do not agree=2	Unsure =3
f. Pap smear is used as screening or check-up test	Agree=1	Do not agree=2	Unsure =3
g. Women have to go back to the clinic to get the result of their screening or check-up	Agree=1	Do not agree=2	Unsure =3
h. Women with an abnormal test will be referred to the hospital for more tests	Agree=1	Do not agree=2	Unsure =3

to find out if the mouth of their wombs are sick			
SECTION D: KNOWLEDGE OF PAP SMEAR			
1. Have you ever heard of the Pap smear?	Yes =1	No=2	Unsure=3
1.1 If **yes**, please tell me what the Pap smear is?			
1.2 If **no**, please tell me what you think the Pap smear is?			
SECTION E: EVALUATION OF THE EDUCATIONAL PROGRAMME			
1. Was the language used in the educational programme easy to understand?	Yes=1	No=2	Unsure=3
2. Did the educational programme help you to understand cancer of the mouth of the womb?	Yes=1	No=2	Unsure=3
3. Did the educational programme help you to understand how cancer of the mouth of the womb can be prevented?	Yes=1	No=2	Unsure=3
4. Did the pamphlet assist you to educate your partner and others women?	Yes =1	No=2	Unsure=3
5. Did you inform anybody about cancer of the mouth of the womb?	Yes=1	No=2	

5.1 If **yes,** whom?	Sex partner	1=
	Mother	2=
	Sister	3=
	Grandmother	4=
	Cousin	5=
	Friends	6=
	Others----------	7=
5.2 If **no,** can you please tell me what prevented you from doing it?		
5.3 Do you know whether any of the women you informed went for a check-up or screening of cancer of the mouth of the womb?	Yes=1	No=2	Unsure= 3
5.4 If **yes**, please tell me which healthcare centre they went to?		

ADDENDUM D

INTERVIEW SCHEDULE

Date_____ Respondent #.....

SECTION A: DEMOGRAPHIC INFORMATION			Official use
10. How old are you?			QA1=
11. To which socio-cultural group do you belong?			QA2=
12. What is your highest level of education?	Never went to school	1	QA3=
	Up to grade7	2	
	Grade 8-10	3	
	Grade 11-12	4	
	University or college	5	
13. What is your marital status?	Single	1	QA4=
	Married traditionally	2	
	Married customary	3	
	Widowed	4	
	Divorced	5	
	Separated	6	
14. Please tell me about your employment status	Unemployed at this stage	1	QA5=
	Full time employed	2	
	Part time employment	3	
	Do piece jobs/ casual employment	4	

15. Please tell me what work you do every day			QA6=
16. Please tell me about the source of your monthly income	Employment	1	QA7=
	Government grant	2	
	Family support	3	
	Other.....	4	
17. Please tell me what your **personal** monthly income is	No income	1	QA8=
	Less than R1000	2	
	Between R1000 and R2000	3	
	Between R2000 and R3000	4	
	Between R3000 and R5000	5	
	Between R 5000 and R8000	6	
	More than R8000	7	
18. How many people depend on your income?			QA9=

10. Have you ever been checked for cancer of the mouth of the womb?	Yes=1	No=2	Unsure=3	QA10=

10.1If **yes**, where did you go for the check-up?	PHC	1	QA10.1 =
	Gynaecologist	2	
	Doctor	3	
	Others	4	
10.2 if yes, when was the last time you went for check-up of the mouth of the womb?			QA10.2 =
10.3 If **no**, is there a reason why you never had such a check-up?			QA10.3 =

11. Why did you come for a check-up today?	QA11=

ADDENDUM E

22 Feb 2014

Dear Madam,

STUDY TITLE: PROMOTING CERVICAL SCREENING UPTAKE BY INVOLVING MEN AS MOTIVATORS

Hello, my name is Jeniffer Rwamugira, a doctoral student from the Department of Nursing Education at University of the Witwatersrand. I would like to invite you to participate in a research project about getting more women to have a check-up for cancer of the mouth of the womb by involving men as motivators.

Should you be prepared to take part in this study, I will ask you some questions about yourself and having a check-up (Pap smear) for cancer of the mouth of the womb. This interview will take about 20 minutes of your time. You can choose if you want to take part in the study and you may leave at any time you wish to do so. If you decide not to participate or leave the study, no harm will come to you and it will not influence the treatment and care you receive at the primary health clinic.

The forms completed during the interview will not bear your name, and will be kept in a safe place and not shared with any other person. Once I have completed my study, I will write a research report (thesis) and papers for scientific magazines, or present the results at conferences focusing on cancer.

If you have any questions, or need further information about the study, do not hesitate to contact me, my cell phone number is 0616256900.

Should you have any question about your rights as a study participant, or questions concerning any aspect of this study, please call Prof Peter Cleaton-Jones, the chair of the Ethics Committee of the university, on 011 717 1234 during office hours.

Thank you for your consideration.

Kind regards

……..

Jeniffer Rwamugir

CONSENT FORM

I have received the information sheet on the research, title: Promoting cervical screening uptake by involving men as motivators. I have read and understood the information sheet. If I agree to participate in the study, I will be interviewed for approximately 20 minutes. I will be asked about myself and screening (Pap smear) for cancer of the mouth of the womb.

I understand it is my choice whether or not to participate in the interview and that there will be no penalty or loss of benefits if I decide not to participate or if I withdraw from the study.

I understand the researcher involved in this study will make every effort to ensure confidentiality and my name will not be used in the study reports; no identifying information will be included when the interview is transcribed. I have been given the contact details that I may call if I have any questions or concerns about the research.

This study has been explained to me, I have read and understood this consent form, and I agree to voluntarily participate in the interview for this study.

…… ….....

Signature of participant Date

ADDENDUM F

Promoting cervical screening uptake by involving men as motivators

Information sheet and invitation to participate (Educational Programme)

Dear Sir,

Invitation to participate in an educational programme

Good day, I am Jeniffer Rwamugira, a student from the Department of Nursing Education at the University of the Witwatersrand. You are invited to take part in an educational programme forming part of my study. This study is about getting more women to have a check-up for cancer of the mouth of the womb by involving men to teach and motivate their partners to have a check-up (Pap smear).

During the educational programme, I will teach you about cancer of the mouth of the womb and about preventing and screening (the check-up) for this disease. I will also ask you to teach your partner and other women in your family about this cancer and motivate them to have a check-up. You will receive a pamphlet to assist you with your teaching. Please note that the educational programme will take 60 minutes of your time.

If you would like to attend the educational programme, your name and contact number will be written on a form so we know you attended. Two months after attending the educational programme, we will phone you and invite you to take part in the telephone interview. You may refuse to take part in the interview once we phone you or withdraw from the study during the interview without fearing harm or prejudice. If you would like to take part in the telephone interview, you would not have to give consent again as we would take your willingness to participate as permission.

The person phoning you will ask you questions about cancer of the mouth of the womb; this would take about 30 minutes of your time. Although your answers will be written on a questionnaire, your name will not appear and nobody will know the answers are yours.

If you have any questions, or need further information about the study, do not hesitate to contact me, my cell phone number is 0616256900.

Should you have any question about your rights as a study participant, or questions and concerns about any aspect of this study, please call Prof Peter Cleaton-Jones, the chair of the Ethics Committee of the university on 011 717 1234 during office hours.

Thank you for considering participation in the educational programme and the telephone interview.

Kind regards

……..

Jeniffer Rwamugira

ADDENDUM G

17 February 2014

THE DIRECTOR: WEST RAND HEALTH DISTRICT

Dear Ms P. Muso

REQUEST TO CONDUCT A STUDY AT THE MULDERSDRIFT PRIMARY HEALTH CARE CLINIC, MOGALE CITY

TITLE OF THE STUDY: PROMOTING CERVICAL SCREENING UPTAKE BY INVOLVING MEN AS MOTIVATORS

I am Jeniffer Rwamugira, a PhD student at the Department of Nursing Education, University of the Witwatersrand and my supervisor is Prof J E Maree (telephone number 011 488 4196).

I am hereby requesting permission to conduct a part of Phase 2 of the above-mentioned study at the Muldersdrift Primary Health Clinic. Women presenting at the clinic for a Pap smear would be interviewed to determine what motivated them to come for screening.

A copy of the proposal and ethical clearance is attached for your perusal.

Your positive response will be highly appreciated.

Yours faithfully,

Jeniffer Rwamugira

Cell: 0618872736.

Email: lissakeza05@gmail.com

POSTER

HOW CAN MEN PREVENT THEIR SEX PARTNER FROM GETTING CANCER OF THE MOUTH OF THE WOMB?

- Being faithful to your partner
- Use condoms every time you have sex
- Help your partner to stop smoking
- Encourage your sexual partner 30 years and older to go for a check-up (Pap smear).

Remember:

The title of talk is to promote cervical screening uptake by involving you as men to motivate your partners. So, please teach your partner and other female family members about cancer of the mouth of the womb and remind them to be checked.

Place: Muldersdrift Primary Health Care Clinic every Wednesday and Thursday.
Time: 9am to 3pm. We will be there from 05 July to 30 September 2014.

PROMOTING CERVICAL SCREENING UPTAKE BY INVOLVING MEN AS MOTIVATORS

WHAT IS CANCER?

Cancer is an illness where the cells of the body become sick and grow without control and spread to nearby parts and other parts of the body.

IS CANCER A BIG HEALTH PROBLEM?

Yes, cancer is a big health problem around the world causing 12.5% of all deaths. Cancer is the second biggest cause of death in developed countries and among the three leading causes of death in adults in developing countries. There are around 12.7 million people found to be suffering from cancer every year. In 2008 7.6 million people died from cancer.

Cancer of the mouth of the womb (cervical cancer) is the second most common cancer in South African women killing about 3700 women each year.

WHAT IS CANCER OF THE MOUTH OF THE WOMB?

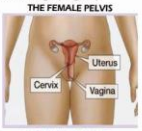
Cancer of the mouth of the womb is when the cells become sick and grow without control in the womb's mouth.

WHERE IS THE MOUTH OF THE WOMB LOCATED IN A WOMAN'S BODY?

The mouth of the womb is located in the lower part of the belly (abdomen) between the hips (pelvis); it connects the upper part of the womb (uterus) and opening between the legs (vagina).

During pregnancy the mouth of the womb is closed tightly to help keep the baby inside the womb, and during childbirth the mouth of the womb opens to allow the baby to pass through the opening between the legs (vagina).

THE FEMALE PELVIS



WHAT ARE THE CAUSES OF CANCER OF THE MOUTH OF THE WOMB?

- A virus (Human Papillomavirus) (HPV) carried from one person to another by close skin to skin contact and sex
- Having more than 5 kids
- Having sex with many partners
- If a woman smokes
- Long use of family planning
- HIV/AIDS
- Family history of cancer of the mouth of the womb

WHO GETS CANCER OF THE MOUTH OF THE WOMB?

All women who are sexually active because they might have been infected with the virus (HPV).

Remember:

Cancer of the MOUTH OF THE WOMB takes 10 to 20 years to develop after the first contact with the virus (HPV).

WHAT CHANGES WILL MAKE YOU THINK THAT YOUR SEX PARTNER HAS GOT CANCER OF THE MOUTH OF THE WOMB?

- When the cancer is small, we cannot see any changes
- When the cancer becomes bigger women can have
- A bad smelling discharge thought the vagina (opening between the legs)
- Abnormal bleeding through vagina
- Bleeding after having sex
- Bleeding after a woman's period (change or menstruation) has stopped.
- Frequent passing of urine
- Pain in the lower back
- Pain in the lower belly (abdomen).

WHEN THE CANCER IS BIG WOMEN CAN HAVE:

- Have bad back pain
- Loss of weight
- Leakage of urine or stool through the opening between the legs (vagina)
- Swollen legs and feet
- Difficulty in breathing.

WHEN SHOULD A WOMAN HAVE HER MOUTH OF THE WOMB CHECK UP?

- Women 30 years and older should be checked for cancer of the mouth of the womb
- If the results are negative woman should go back for the check up (Pap Smear) after10 years and if the results are negative, again after 10 years
- If the first check up is at 55 years and older a women can only have one check up
- Check ups are done at your local Primary Health Care Clinic.

HOW IS CANCER OF THE MOUTH OF THE WOMB FOUND?

During the check-up (Pap smear) cells are taken from the mouth of the womb to



MOUTH OF THE WOMB FROM BELOW

PAMPHLET

HOW CAN MEN PREVENT THEIR SEX PARTNER FROM GETTING CANCER OF THE MOUTH OF THE WOMB?

- Being faithful to your partner
- Use condoms every time you have sex
- Help your partner to stop smoking
- Encourage your sexual partner 30 years and older to go for a check-up (Pap smear).

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PROMOTING CERVICAL SCREENING UPTAKE BY INVOLVING MEN AS MOTIVATORS

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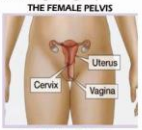
The mouth of the womb is located in the lower part of the belly (abdomen) between the hips (pelvis); it connects the upper part of the womb (uterus) and opening between the legs (vagina).

During pregnancy the mouth of the womb is closed tightly to help keep the baby inside the womb, and during childbirth the mouth of the womb opens to allow the baby to pass through the opening between the legs (vagina).

THE FEMALE PELVIS



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MOUTH OF THE WOMB FROM BELOW

ADDENDUM J

APPROVAL FROM MOGALE CITY

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

Enquiries: Dr Shaikh G K
Tel: 0828571925
Fax: 0866004183

Ms Jennifer Rwamugira
Department of Nursing Education
University of Witwatersrand

RE: PERMISSION TO CONDUCT RESEARCH IN WEST RAND DISTRICT.

Your correspondence on the above matter refers.
Thank you for your request to conduct research at Muldersdrift clinic in West Rand District. Permission is hereby granted to you to conduct research in West Rand District. I am anticpating that you will conduct your research with the knowledge of all relevant Managers. You are expected to share the findings and recommendations with the district in order to improve the service delivery to people of west rand.
I hope you find the above in order.

Yours faithfully,

MS PULENG MUSO
DIRECTOR
WRDCA
DATE: 2/7/2014

ADDENDUM K



14 July 2014

REFERRAL NOTE

Dear Sir/ Madam

I have sent this person to see Jeniffer Rwamugira.

Thank you

ADDENDUM L

APPROVAL OF THE STUDY

M140314

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M140314

NAME: (Principal Investigator)	Mrs Jennifer Rwamugira
DEPARTMENT:	Nursing Education Muldersdrift Community and Primary Health Care Clinic
PROJECT TITLE:	Promoting cervical screening uptake by involving men as motivators
DATE CONSIDERED:	28/03/2014
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Prof JE Maree
APPROVED BY:	Professor PE Cleaton-Jones, Chairperson, HREC (Medical)

DATE OF APPROVAL: 04/06/2014

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate H
University.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned res
and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, fro
research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to sub
yearly progress report**.

Principal Investigator Signature M140314Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPROVAL OF POST-INTERVENTION QUESTIONNAIRE (AFTER THE EDUCATIONAL PROGRAMME)

Human Research Ethics Committee (Medical)

Research Office Secretariat: Senate House Room SH 10005, 10th floor. Tel +27 (0)11-717-1252
Medical School Secretariat: PV Tobias Building Room 306, 3rd Floor. Tel +27 (0)11-717-2700
Private Bag 3, Wits 2050, www.wits.ac.za. Fax +27 (0)11-717-1265

09 October 2014

Mrs Jennifer Rwamugira
Department of Nursing Education

Sent by email to: lissakeza05@gmail.com

Dear Mrs Rwamugira

Re: **Protocol: M140314**
Study Title: A promotional Cervical Screening uptake by involving men as motivators
Principal Investigator: Mrs J Rwamugira
Post Intervention Questionnaire Amendments

This letter serves to confirm that the Chairman of the Human Research Ethics Committee (Medical) has approved the amendments on the above mentioned protocol, as detailed in your letter dated 30 September 2014.

Thank you for keeping us informed and updated.

Yours Sincerely,

UNIVERSITY OF THE WITWATERSRAND
OFFICE OF THE DEPUTY VICE CHANCELLOR RESEARCH
09 OCT 2014
RESEARCH OFFICE
JOHANNESBURG

Ms Zanele Ndlovu
Administrative Officer
Human Research Ethics Committee (Medical)

ADDENDUM N

APPROVAL OF PHASE 2 OF THE STUDY

M140314

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M140314

NAME: (Principal Investigator)	Mrs Jennifer Rwamugira
DEPARTMENT:	Nursing Education Muldersdrift Community and Primary Health Care Clinic
PROJECT TITLE:	Promoting cervical screening uptake by involving men as motivators
DATE CONSIDERED:	28/03/2014
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Prof JE Maree
APPROVED BY:	Professor PE Cleaton-Jones, Chairperson, HREC (Medical)

DATE OF APPROVAL: 04/06/2014

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report**

Principal Investigator Signature M140314Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

ADDENDUM O

CERTIFICATE OF INTERPRETATION

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TRANSLATION CERTIFICATE TO:
Prof. JE Maree, Dept of Nursing Education, University of the Witwatersrand, Johannesburg
This is to certify that we translated the following document,
"SURVEY QUESTIONNIARE" re men's knowledge about cervical cancer,
From English to Zulu, from Afrikaans to English, from English to Tswana and from Tswana to English
on 4 June 2013 by :
Dr Victor Ndlovu (freelance Zulu/English translator),
Khanyisile Zungu (freelance Zulu/English translator),
Mmatsie Mphshane (freelance Tswana/English translator),
Vera Motsilanyane (freelance Tswana/English translator).
The translations were completed to the best of the ability of our translators and are, to our knowledge, true to the meaning and wording of the original document presented to us in English. The translators and the back translators worked completely independently. We took all reasonable precautionary measures to ensure that the back translators did not have access to the original English document.
The back translations were verified against the original English document by Prof. Alet Kruger and all discrepancies between the original English document and the back translations were resolved.
Prof Alet Kruger
NAME

r--V, ~
~E
4 June 2013
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Director/Project Manager
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