Factors influencing cervical cancer screening uptake among women attending Mahalapye District Hospital in Botswana-Use of the Health Belief Model.

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FACTORS INFLUENCING CERVICAL CANCER SCREENING UPTAKE AMONG WOMEN ATTENDING MAHALAPYE DISTRICT HOSPITAL IN BOTSWANA-USE OF THE HEALTH BELIEF MODEL

by

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Declaration

I declare that the work presented on this dissertation and hereby submitted to the University of Limpopo, MEDUNSA campus for partial fulfilment of the degree of Masters in Public Health has not been previously submitted for any other degree at this or any other University; that it is my work in design and execution, and that all resources contained herein has been duly acknowledged by means of complete referencing.

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C. M. Ibekwe **Date**

Student number; 200813297

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Abstract

Introduction; Cervical cancer is the second highest form of cancer among women in Botswana, with breast cancer being the commonest (Ferlay et al, 2002), and is currently the highest cause of cancer deaths in Botswana (Ferlay et al, 2002). Cervical cancer screening using Pap smear provides an appropriate way for early detection and prevention of cervical cancer if appropriately implemented. Cervical cancer screening was introduced in Botswana in 2003 free of charge to all women of age greater than 18 years attending government hospitals. Despite this step by the government to decrease the mortality and morbidity rates resulting from cervical cancer, the uptake of cervical cancer has remained low among women in Botswana (Botswana central statistic report, 2009).

Aim of the study; The study was aimed at identifying and describing factors influencing cervical cancer screening uptake among women greater than 18 years attending Mahalapye District Hospital in Botswana using the Health Belief Model.

Methodology; This study was a cross sectional survey in which a questionnaire was used to interview 300 participants in order to assess their perceived susceptibility to cervical cancer, their perceived severity of cervical cancer, their perceived benefits of doing cervical cancer screening and their perceived barriers of seeking cervical cancer screening. Descriptive statistics was used to identify and describe factors influencing cervical cancer screening uptake among women attending Mahalapye District Hospital, Botswana using the Health Belief Model construct. Each question in the questionnaire was scored using a 5-point Likert scale ranged from strongly agree (5) to disagree (1). Negatively worded questions had their scales reversed and scores for each construct of the Health Belief Model was added to get an average. Analysis compared women who had ever had ‘cervical cancer screening’ with women who had never had ‘cervical cancer screening’. Chi-square statistic was used to test for association of selected variables and binary logistic regression was used to measure the associations for the aggregate score of health belief model constructs.

Results; Cervical cancer screening rates was 39%. Participants were aware of the perceived severity of cervical cancer (average response 2.58-3.60), perceived benefits of cervical cancer

screening (average response 3.10-4.33) and perceived barriers to seeking cervical cancer screening (average response 2.0-3.44) but these were not significantly associated with screening. The highest predictor of cervical cancer screening was perceived susceptibility and those with high perceived susceptibility were 3.2 times more likely to do cervical cancer screening than those with low perceived susceptibility. Main socio-demographic characteristics significantly associated with perceived susceptibility were employment, monthly income and residential area while perceived severity was significantly associated with monthly income and residential area.

Conclusions; Perceived susceptibility to cervical cancer was significantly associated with cervical cancer screening. Educational programs geared towards increasing perceived susceptibility to cervical cancer can significantly improve the uptake of cervical cancer screening in Botswana as well as address issues of barriers and misconceptions associated with low uptake of cervical cancer screening.

Description of acronyms

Pap smear test	Papanicolau Smear Test
HIV	Human Immuno-deficiency Virus
HBM	Health Belief model
IARC	International Agency for Research on cancer
SEER	Surveillance, Epidemiology, and End Results
IDCC	Infectious Disease Control Centre
MCREC	Medunsa Campus Research and Ethics Committee
HRU	Health Research Unit
CaCX	Cervical cancer
SA	Strongly agree
A	Agree
NS	Not sure
sd	Strongly disagree
D	Disagree
SD	Standard deviation

Operational definition of terms

Perceived susceptibility; Refers to the views of the participants regarding their risk of having cervical cancer

Perceived severity; Refers to a subjective assessment of how serious cervical cancer is viewed by these women.

Perceived benefits; Viewed as the gain that doing cervical cancer screening will result to like early detection of cervical cancer, delay progression of cervical cancer and subsequently leading to decrease mortality due to cervical cancer.

Perceived barriers; Refers to obstacles that prevent those eligible for cervical cancer screening from participating in the available cervical cancer screening programs.

Uptake; This refers to the action of making use of something

Cervical cancer screening; Steps taken to identify people with any form of cervical changes and those without any form of cervical changes.

Cervical smear; A thinly spread sample on a microscopic slide obtained from the cervix for examination of the consistency of tissues from the cervix.

Low risk; Those whose aggregate score from the likert scale were less than 75%.

High risk; Those whose aggregate score from the likert scale were greater than or equal to 75%.

T-test; It is a statistical test used to examine the mean difference between groups under observation

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CHAPTER 1
INTRODUCTION AND BACKGROUND

1.1 Introduction

Cervical cancer is a malignant neoplasm of the cervix uteri or cervical area of the uterus in which the cells of the cervix becomes abnormal and begin to grow uncontrollably, forming tumours (Kumar, Abbas Abul, Fausto, & Mitchell, 2007). It may present with vaginal bleeding, but symptoms may be absent until the cancer is at an advanced stage. Treatment consists of surgery namely; local excision in early stages and hysterectomy. In advanced stages, chemotherapy and radiotherapy are the treatments of choice (Kumar et al., 2007). When advanced, it is often associated with high mortality and morbidity as the prognosis is very poor. Therefore, early detection and treatment of the precancerous stage is the key to success in achieving a reduction in mortality and morbidity that result from cervical cancer.

Cervical cancer is the third most common form of cancer among women globally (Parkin, Pisani and Ferlay, 1999) while at the same time; it is also potentially one of the most preventable (Pontin, Halket and Pascoe, 1995). In Botswana, the crude incidence rate of cervical cancer per 100,000 women is 19.8 and the annual number of new cervical cancer cases is 156 per 100,000 women (Ferlay et al., 2002). This crude incidence rate of 19.8 per 100,000 women is the second highest rate of cancer in Botswana with breast cancer being the highest occurring type of cancers with a crude incidence rate of 21.4 per 100,000 women (Ferlay et al., 2002). Despite being the second highest occurring type of cancer in Botswana, the crude mortality rate from cervical cancer remains the highest when compared to other types of cancers with a crude mortality rate of 15.9 per 100,000 women, followed by the crude mortality rate from breast cancer of 15.7 per 100,000 women (Ferlay et al., 2002).

Ever since the concept of cervical smears was first described by Papanicolaou and Traut in 1941, screening for cervical cancer has been one of the few tests which have been shown to be able to directly reduce mortality and morbidity resulting from cervical cancer (Bergstrom, Sparen and Adami, 1999). Cervical cancer screening using a Pap smear has been used for early detection of cervical cancer in women, thus preventing development of cervical cancer and as a result saving a lot of women from unnecessary mortality and morbidity resulting from cervical cancers.

Studies in developed countries have revealed that regular cervical cancer screening with a follow up of abnormalities can significantly reduce the incidence of cervical cancer and therefore the mortality and morbidity associated with it (Bergstrom et al., 1999 and Saslow, Boetes and Burke, 2008). According to the American cancer society, it is currently recommended that, every woman who is sexually active, or 21 years of age or more, should have a cervical cancer screening done annually for the first 3 consecutive years. After 3 years of normal pap smear, she can now test less frequently for example once every 3 years if she is classified as being at low risk for cervical cancer and should continue yearly pap smear if she is classified as being at high risk (Saslow, Boetes and Burke, 2008). The first screening for cervical cancer should be done 3 years after the first sexual intercourse or at the age of 21 years whichever comes first. Those classified as being at high risk for cervical cancer include those who are HIV positive, those with associated Human papilloma virus, those with multiple sexually partners, those whose sexual partners are uncircumcised, those with history of other cancers and those with family history of cervical cancer (Saslow, Boetes and Burke, 2008).

However, 50% of women diagnosed with cervical cancers have never had a cervical cancer screening before and even those who had a cervical cancer screening done at some stage, had it done more than 5years ago (Minnesota Department of Health, 2000). Therefore, cervical cancer screening is very important and should be done regularly as most cervical cancers take up to 10-12 years to develop (Minnesota Department of Health, 2000). The incidence of cervical cancer and the resultant mortality and morbidity resulting from it, has decreased significantly especially in the developed countries since the institution of routine cervical cancer screening using Pap smear (Saslow, Boetes and Burke, 2008).

Factors influencing the frequency of having cervical cancer screening and follow up screening depends on family and medical history of cervical cancer, occurrence of other types of cancers as well as findings of previous cervical cancer screening results. Boonpongmanee, 2007, revealed that the uptake of cervical cancer screening among women significantly depends on their perceptions regarding susceptibility to cervical cancer, their perceptions of the severity of cervical cancers, their perceptions regarding benefits of having a cervical cancer screening, and addressing their perceived barriers to seeking cervical cancer screening.

Since appropriately implemented cervical cancer screening as is done in most developed countries has proven to reduce the incidence of cervical cancer significantly, it was based on this premise that cervical cancer screening was introduced as a routine screening test for eligible women in all government hospitals in Botswana in 2003 free of charge by the Ministry of Health, with the aim of reducing mortality and morbidity resulting from cervical cancer.

According to the Botswana policy document passed by parliament in 2003 on cervical cancer, all women should have their first cervical cancer screening done 3 years after first

sexual intercourse or at age 18years whichever comes first and then annually for 3 consecutive years. If they have normal Pap smear results, they can continue with cervical cancer screening every 3 years while those with abnormal Pap smear result do repeat screening more frequently approximately yearly or every 6 months depending on the doctor's recommendation. Women, who are below 30years of age, should have annual Pap smear yearly for 3 consecutive years, and if normal continue with routine Pap smear every 3 years or more frequently if abnormal. Women, who are above 30years, should do cervical cancer screening annually and if 3 consecutive screening tests are negative, rescreening should be done not sooner than every 3 years unless they are high risk in which case it should be done more frequently (Ministry of Health, 2003).

Despite this step by the government to improve the quality of life among women at risk of cervical cancer by early detection and treatment of this common cancer which still accounts for a high number of morbidity and mortality among women in developing countries, the uptake of cervical cancer screening among Batswana women is still very low as a significant proportion of women fail to utilize this preventive and screening program. For example, despite effective preventive and screening programs that are available in Botswana's health care system free of charge for cervical cancer screening, the annual number of deaths from cervical cancer in Botswana has remain high at 126 per 100,000 women (Ferlay et al., 2002). With the high incidence of HIV infections in Botswana, the occurrence of cervical cancers amongst women is bound to increase due to the association of cervical cancer with human papilloma virus and HIV infections. Therefore, appropriately implemented cervical cancer screening and preventive measures to reduce the incidence of cervical cancer and the resultant mortality and morbidity resulting from it, is crucial to achieve ' vision 2016' goal in Botswana.

Since the availability of effective cervical screening and preventive programs will only be useful if utilized by the target population, the goal of the government in introducing this program is far from been achieved as relatively very few women have actually done cervical cancer screening. In Mahalapye District Hospital, cervical cancer screening is offered routinely at out-patient departments, infectious disease control centre, and maternal and child health departments etc. Of the numbers attending the hospital annually, less than 25% of eligible women have actually done Pap smear (Mahalapye District Hospital Annual Report, 2007).

Since the uptake of cervical cancer screening has remained very low in Botswana while the mortality and morbidity associated with cervical cancer has remain high (Ferlay et al., 2002), the reason for the poor uptake of cervical cancer screening among these women with regard to their perceived susceptibility to cervical cancer, their perceived severity of cervical cancer, perceived benefits of having cervical cancer screening as well as their perceived barriers from seeking cervical cancer screening needs to be explored with the aim of findings ways of improving participation to cervical cancer screening thereby decreasing mortality and morbidity resulting from cervical cancer in Botswana.

Although several studies have been done in other less developed countries on factors influencing the uptake of cervical cancer screening among women, this study will focus on factors influencing cervical cancer screening uptake among women attending Mahalapye District Hospital in Botswana with the use of the Health Belief Model.

1.2 Theoretical Framework

The Health Belief model was used as a theoretical frame work to guide the study as it addresses issues regarding perceived susceptibility to the disease, perceived severity of the disease, perceived benefits of seeking preventive actions as well as perceived barriers to seeking the preventive actions. The model proposes that perceptions of the susceptibility to illness and the perceived severity of the illness affect whether a person denies having the illness, engages in primary prevention, or seeks early treatment. Factors that will be looked at will include women's perceived susceptibility to cervical cancer, perceived severity of cervical cancer, perceived benefits of doing cervical cancer screening and perceived barriers to seeking cervical cancer screening.

1.3 Problem statement

The incidence of cervical cancer reported amongst women in Botswana is very high with a crude incidence rate 21.4 per 100,000 women (Ferlay et al., 2002). This can be attributed mainly due to low participation of the target group in effective prevention and screening programs implemented in the country's government hospitals free of charge evidenced by the low cervical cancer screening participation rate reported by Mahalapye District Hospital of less than 25%. To address this problem, the Ministry of Health in Botswana issued a directive to include cervical cancer screening as a routine test to be offered to all women above the age of 18 years attending government hospitals free of charge in a bid to reduce mortality and morbidity amongst this population and therefore achieve the vision 2016 goal of 'Health for all by 2016'.

Despite this step by the government, the number of women in the country that have actually had cervical cancer screening is still very low, for example in Mahalapye District Hospital, less than 25% of eligible women attending the hospital have actually done cervical cancer screening (Mahalapye district Hospital Annual Report, 2007).This has become a threat to the achievement of vision 2016, as more women keep presenting with cervical cancer at a later stage and eventually dies from it despite effective preventive screening programs that are widely available in the country's health establishments at no cost.

1.4 Significance of the study

Provision of effective cervical cancer screening program in Botswana's health care system at no charge, did not achieve its purpose which is to decrease the incidence of cervical cancer among women through early identification of the disease at the pre-cancerous stage and

therefore offer effective treatment. The major setback in achieving this goal is the low uptake of the eligible women (those above 18 years of age or those that are sexually active before age 18 years) in participating in the cervical cancer screening program already in place in government healthcare facilities at no charge.

It is hoped that the findings of this study will lead to recommendations that will enable the Ministry of Health to re-engineer cervical cancer screening program in Botswana with the aim of increasing uptake of the eligible age group. This will lead to early identification of those at risk of developing cervical cancer and early interventions taken, thereby reducing the occurrence of the disease as well as decreasing mortality and morbidity resulting from it. This will go a long way in enabling the Ministry of Health and the Botswana government in achieving its vision 2016 goal of 'Health for all by 2016'.

1.5 Aim of the study

The aim of the study was to identify and describe factors influencing cervical cancer screening uptake among women attending Mahalapye District Hospital, Botswana using the Health Belief Model.

1.6 Research Objectives

The research objectives of this study were the following;

1. To determine the cervical cancer screening status of women attending Mahalapye District Hospital.
2. To describe the women's perceived susceptibility to cervical cancer.
3. To determine the women's perceived severity of cervical cancer.
4. To describe the women's perceived benefits of doing cervical cancer screening.
5. To identify the women's perceived barriers to seeking cervical cancer screening.
6. To describe the association between socio-demographic characteristics and perceived susceptibility to cervical cancer, socio-demographic characteristics and perceived severity of cervical cancer, socio-demographic characteristics and perceived benefits of cervical cancer screening and socio-demographic characteristics and perceived barriers to seeking cervical cancer screening.

1.7 Research Questions

The research questions for this study were the following;

1. What is the cervical cancer screening status of women attending Mahalapye District Hospital, Botswana?
2. What are the women's perceived susceptibility to cervical cancer?
3. What are the women's perceived severity of cervical cancer?
4. What are the women's perceived benefits of doing cervical cancer screening?
5. What are the perceived barriers of these women from seeking cervical cancer screening?

6. What is the association between socio-demographic characteristics and perceived susceptibility to cervical cancer, perceived severity of cervical cancer, perceived benefits of doing cervical cancer screening and perceived barriers to seeking cervical cancer screening?

1.8 The Health Belief Model

Rosenstock 1974, describes the Health Belief Model (HBM) as a psychological model that attempts to explain and predict health behaviors. This is spelt out in terms of four construct representing the perceived threats; perceived susceptibility, perceived severity, perceived benefits and perceived barriers (Rosenstock, 1974). Fulton et al., 1991 describes the Health Belief Model as a model that can be used to extensively organize theoretical predictors of preventive health actions, including how individual's see the disease, how individual see the preventive actions and modifying factors such as socio-demographic factors.

The Health Belief Model can be used to study factors influencing cervical cancer screening uptake among women attending Mahalapye District Hospital, Botswana. The analytical diagram for this model is shown in Figure 1.1.

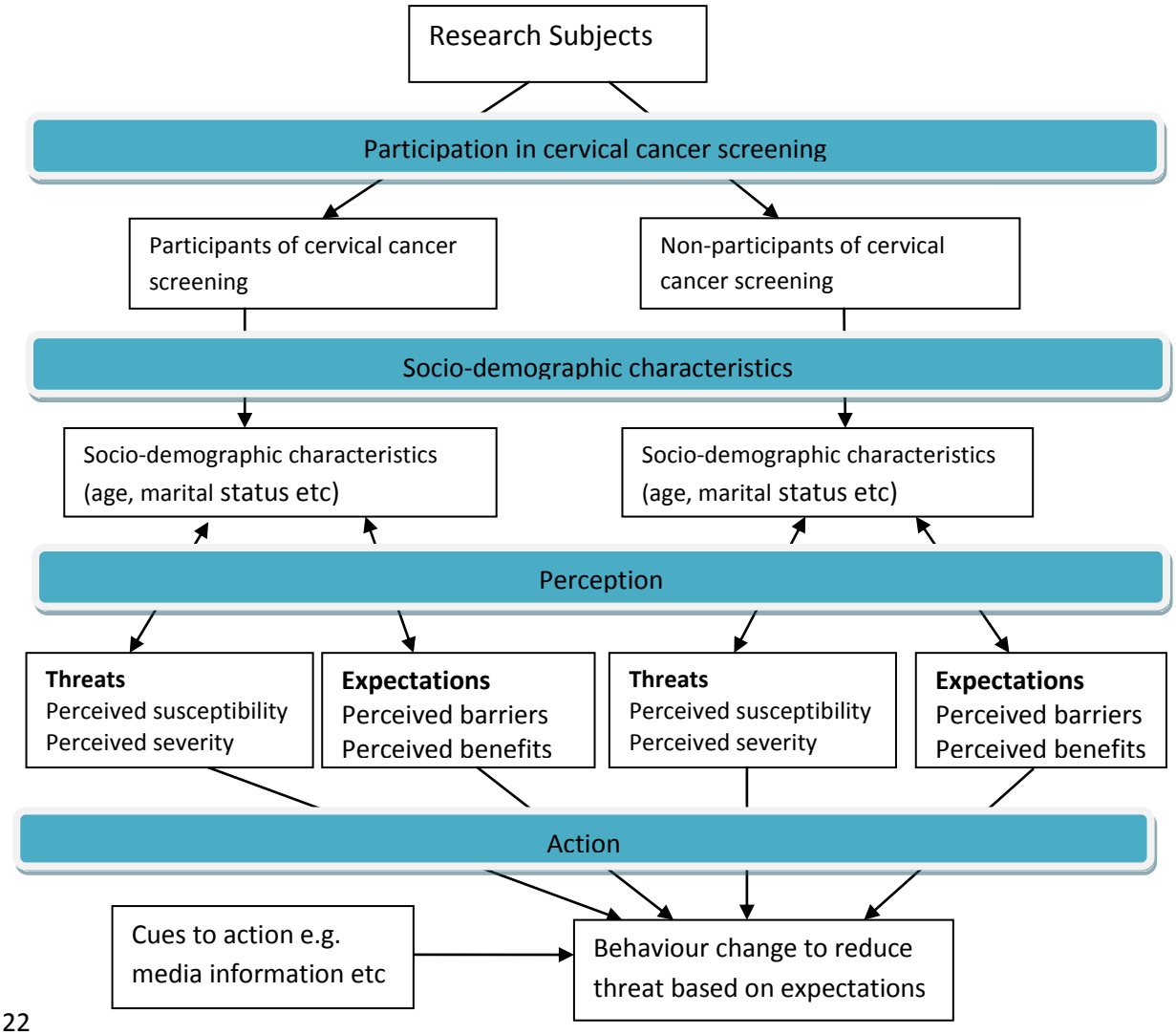


Figure 1.1; Analytical Diagram of the Health Belief Model applied for cervical cancer screening (Adopted and derived from Becker, M.H., editor: "The Health Belief Model and Personal Health Behaviors." Charls B. Slack, Inc., Thorofare, NJ, 1974, p. 7.)

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

This literature review focuses on women's perceived susceptibility to cervical cancer, their perceived severity of cervical cancer, perceived benefits of doing cervical cancer screening, perceived barriers to seeking cervical cancer screening and the association between socio-demographic characteristics of participants and non-participants of cervical cancer screening programs with their perceived susceptibility to cervical cancer, perceived severity of cervical cancer, perceived benefits of doing cervical cancer screening and perceived barriers to seeking cervical cancer screening. The findings in the literature are presented according to the construct of the Health Belief Model. However, it is preceded with an overview of cervical cancer screening and its usefulness in identifying and reducing the incidence of cervical cancer.

2.2 Overview of cervical cancer screening

Cervical cancer is a major cause of mortality and morbidity worldwide. Approximately 493,000 new cases and 274,000 deaths occur every year from cervical cancer (Ferlay et al., 2002). The majority of this cervical cancer incidence and death occur in developing countries. This is because with well implemented cervical cancer screening programs in developed countries like the United States, with follow up of abnormalities, the incidence and mortality resulting from cervical cancer is fairly under control as opposed to developing countries (Lewis, 2004). Approximately 83% of the world's new cases and 85% of all cervical cancer deaths occur in developing countries (Ferlay et al., 2002).

2.3 Incidence of cervical cancer screening

Although cervical cancer is a major cause of mortality and morbidity among women worldwide, it was found to be one of the most preventable human cancers, because of its slow progression, cytological identifiable precursors, and effective treatments (Lee, Seow and Ling, 2002). Therefore, Papanicolaou (Pap) cervical cytology screening has helped to reduce cervical cancer rates dramatically through early detection of premalignant lesions (Nygard et al., 2002, Devesa et al., 1987*).* Worldwide, the high incidences of cervical cancer is associated with lack of cervical cancer screening or lack of regular cervical cancer screening and follow up of abnormalities. This is particularly evident when rates in developed countries are compared with that of developing countries. For example, the incidence of cervical cancer is more than 4 times greater in developing countries like Jamaica than in the United States (Lewis, 2004). Moreover, the cervical cancer mortality rate in Jamaica is almost 6 times greater than the mortality rate in the United States (Lewis, 2004). This trend will likely continue unless effective cervical cancer screening programs and preventive measures are implemented.

As a result, population-based cervical screening has been promoted widely and enthusiastically as a preventive measure for cervical cancer since the development of the Papanicolaou smear test in the 1940s (Shingleton et al., 1995). Reports from United States National Cancer Institute revealed that from 1975 to 2000, the surveillance, epidemiology, and end results (SEER)-based age-adjusted incidence rate of invasive cervical cancer in the United States decreased from 14.8 to 7.6 per 100 000 women/year (Ries et al., 2003). However, the incidence of cervical cancer in most less developed countries including Botswana is still very high due to low uptake of women in the screening programs (Ferlay et al., 2002).

Several studies have attributed low uptake of cervical cancer screening to non-participation of high risk women in established screening programs available for cervical cancer prevention and or lack of health care access, as the most common implicated universally attributable factor in the development of invasive cervical cancer (Janerich et al., 1995, Hogenmiller et al., 1995, Nasca et al., 1991, Kenter et al., 1996, and Carmichael et al., 1984). Among those who had access to health care, non-participation in established cervical cancer preventive programs available in the health care system was the most common attributable factor in the development of cervical cancer (Sung et al., 2000, and Stuart et al., 2000).

Review of a population-based Canadian study reported that 46% of women who were diagnosed with cervical cancer had not had a Pap smear test within 3 years prior to the diagnosis of cervical cancer (Stuart et al., 2000); while a study of a large U.S. prepaid, comprehensive health plan reported that 53% of women who were diagnosed with cervical cancer had not had a Pap test within 3 years prior to the diagnosis (Stuart et al., 2000). Therefore, regular cervical cancer screening is crucial if cervical cancer incidence and its associated mortality and morbidity are to be reduced to a reasonable level in developing countries as the case in developed countries.

Factors associated with reducing participation or uptake of women in cervical cancer screening programs are poor awareness of the indications and benefits of the pap smear test, lack of knowledge of cervical cancer and its risk factors, fear of been embarrassment by health care workers, fear of pain and fear of finding a positive result (Fylan, 1998). Lack of female screeners in health facilities, convenient clinic times, anxiety caused by receiving an abnormal cervical smear result, poor understanding of the cervical cancer screening procedures and a need for additional information are other barriers for uptake in cervical cancer screening programs (Fylan, 1998).

While studies in the developed countries (McKee, 1997 and Marcus et al., 1992) have reported a high percentage of participation in cervical cancer screening of about 86% and a follow up rate of 76% within 3 years after initial screening, studies in less developed countries (Carey et al., 1993 and Lerman et al., 1993) reported low participation rates of 23% and follow up rates of 46% within 3 years after initial screening. The reasons for non-participation among these women in less developed countries according to a study carried out in Southern Brazil (Cesar et al., 2002) in which 1,302 women were interviewed and 57% had never had a Pap smear, reported the factors most closely associated with non-participation in cervical cancer screening programs were black or brown skin colour, young age, low family income, low schooling, living alone, and first childbirth after 25 years of age.

A study of socio-demographic factors associated with non-participation amongst Taiwanese women by Wangi and Lin (2003) in which 40% of women sampled had never had a Pap smear and 86% did not have one in the past year, reported age as the strongest factor affecting cervical cancer screening, particularly for women below the age 30 and above 65 year olds. The study also found that, women with lower levels of education, who were unemployed, never-married and those who live outside the city tend to underuse Pap smear screening services (Wangi and Lin, 2003).

Significant determinants of lack of cervical cancer screening among Taiwanese women living in Taiwan by Wangi and Lin (2003) and Hayward and Swan (2002) include living in the southern part of the urban area, lower level of education, unemployment status, and an unmarried status. Socio-demographic characteristics (age, marital status, educational qualification, employment status, residential area etc) varied between women who had never had a Pap smear and women who had not had one in the past year (Wangi and Lin, 2003 and Hayward and Swan, 2002).

Regarding age, women aged 65 years and older were 13 times more likely not to have had a Pap smear in the past year, while women aged less than 30 years are more likely to have had a Pap smear test in the past 3years (Wangi and Lin, 2003). Hayward and Swan (2002) reported that age was the most important factor in determining Pap smear use with higher rates of participation among the middle aged group (40-60years). Wangi and Lin (2003), reported that higher level of education was related negatively to never having had a Pap smear and unemployment was more strongly related to the lack of a recent Pap smear. According to Hayward and Swan (2002), illiterate woman had the greatest risk of never

having cervical cancer screening in the multivariate model. Nathoo (1998) reported that typical estimates of the percentage of women who fail to utilize Pap smear screening services range from 30% to 44% and have been reported to be observed among younger women, those lacking health insurance, those with less than a high school education, and those that are unmarried women.

A study conducted by the National Cancer Institute, Cancer Screening Consortium for Underserved Women in 1995 also reported that women in poor and minority communities have been identified as being less likely to utilize screening by Pap smears and they are less likely to follow up after an abnormal Pap smear. The reasons for the poor uptake among these women are grouped into 3 broad categories namely demographic, psychosocial, and organizational. The demographic category includes such factors as age, income level, education level, and marital status. The psychosocial category includes beliefs about susceptibility to and the severity of cervical cancer, general knowledge about cervical cancer and cervical cancer screening, and barriers to screening including fear of pain and embarrassment. The organizational category includes barriers such as limited access to testing facilities and limitations in services.

In Botswana, Mc Farland (2003) reported that lack of cervical cancer screening or infrequent use of cervical cancer is noted for different reasons like lack of knowledge, lack of access to health care, financial constraints, and attitudes of health care workers etc. Perceived susceptibility to cervical cancer, perceived severity to cervical cancer, perceived benefits to doing cervical cancer screening and perceived barriers to seeking cervical cancer screening are the major factors that determines a woman's likely hood to do cervical cancer screening although attitudes of health providers, availability and cost are other important determinants (Burak et al., 1997).

Therefore, the assumption is that if these screening services are available and accessible at no cost like the case in Botswana, the uptake of cervical cancer screening will depend largely on the perceived susceptibility of women to cervical cancer, perceived severity of cervical cancer, perceived benefits of doing cervical cancer screening and perceived barriers to seeking cervical cancer screening. If the uptake is to be increased to achieve the desired goals, these issues must be recognised and taken into account when planning and implementing effective cervical cancer screening programs in order to reduce the mortality and morbidity resulting from cervical cancer. Therefore, determining ways of overcoming these problems is a pre-requisite for improving female uptake in cervical cancer screening program.

2.4 Perceived susceptibility to cervical cancer

While in developed countries, people who perceive susceptibility to an illness take preventive actions early, the case is entirely different in most developing countries where preventive actions are usually viewed as an unnecessary practice (Vellozzi, 1996). Most people in developing countries do not view preventive health actions such as cancer prevention as a

priority but rather believe in curative health actions instead of preventive health practices. As a result, majority of women in less develop countries believe that screening for cervical cancer is not necessary. Skaer et al., (1997) reported that majority of women perceived cervical cancer screening as an unnecessary diagnostic procedure rather than a preventive health measure.

A National Health interview survey conducted in 1991 revealed that most women understood that cervical cancer screening successfully detects cervical cancer early, but they do not see themselves as been at risk of developing cervical cancer especially if they do not have any symptoms or have any family history of cervical cancer (Harlan et al., 1991). Barron et al., (2001) conducted a study on Ethnic influences on body awareness, trait anxiety, perceived risk, and breast and gynaecologic cancer screening practices among women in Finland and found that majority of women below the age of 40 years (about 73%) believed that older women are at greater risk of having cervical cancer than themselves, 57% disagreed or strongly disagreed that every woman of child bearing age is at risk of cervical cancer and 62.5% thinks that cervical cancer is a disease of the elderly and as a result, their susceptibility to developing cervical cancer increases with age usually above the age of 50years. Similarly, Suwatcharachaitiwong, (2004) in a study among Muslim Women in Songkla concerning their health belief regarding cervical cancer screening reported that majority of women either disagreed or strongly disagreed that the risk of cervical cancer increases with parity (68.8%) but agreed or strongly agreed that cervical cancer is more common to women who are HIV positive (81.6%) and since there is an association between multiple sexual partners and HIV positive, the risk is also higher (79.8%) among women with multiple sexual partners.
Therefore, the studies above suggest that, while most women are aware that cervical cancer screening detects cervical cancer at an early stage, they did not perceive themselves as vulnerable if they do not have symptoms or family history of cervical cancer. A significant proportion believed that susceptibility to cervical cancer is higher among older women, those with multiple sexual partners and those who are HIV positive. Majority did not think that the risk to developing cervical cancer increases with parity or that every woman of child bearing age is at risk.

Knowledge of these risk factors determines the way each individual woman perceive susceptibility to cervical cancer but whether this influences uptake in participating in cervical cancer screening programs especially in developing countries like Botswana needs to be explored.

2.5 Perceived severity of cervical cancer

Most women know that cervical cancer is a serious disease and studies on the perceived severity of cervical cancer have not been carried out in many developing countries (La Toya et al., 2002). A survey on the perceived severity of cervical cancer among adult females in Quebec found that 57% of women were afraid of developing cervical cancer sometime in their life, and 93% thought developing cervical cancer has serious consequences (Sauvageau et al., 2007). Cervical cancer related anxiety and perceived seriousness did not vary by age

group or level of education (Sauvageau et al., 2007). Studies conducted among college women reported that, 98% of college women felt that cervical cancer is a very serious condition and half of them think that it is not a treatable disease (Burak and Meyer, 1997). Similarly, Price et al., (1996), found that 92% of women believed that cervical cancer is the second most serious type cancer a woman can have (first being breast cancer) and most women who develop cervical cancer certainly die from it.

Studies that compared participants of cervical cancer screening and non-participants of cervical cancer screening programs found that these women equally agreed that cervical cancer is a serious disease but twice the proportion in the participants group believed that cervical cancer is easily cured if identified early as opposed to the non-participant group who believed that cervical cancer is not treatable irrespective of time of identification (Leyva et al., 2006).

If most women are aware that cervical cancer is a serious disease, the reasons why they do not expedite preventive measures like cervical cancer screening to prevent such a serious disease especially in less developed countries like Botswana needs to be explored especially as the service is provided at no cost.

2.6 Perceived benefits of doing cervical cancer screening

One of the decisive factors in adopting proactive health behaviours, according to the health belief model, is obtaining benefits from the said behaviour. The primary reason given by forty-one percent (41%) of women who failed to participate in cervical cancer screening programs was that they believe they did not need it (Bessler et al., 2007). The same women who indicated they did not need cervical cancer screening frequently reported lack of symptoms as their justification (Bessler et al., 2007). A study on knowledge of and attitude towards cervical cancer among female university students in South Africa reported a low knowledge about the benefits of cervical cancer screening and only thirty-eight percent (38%) knew that it is used for detection or prevention of cervical cancer (Hoque et al., 2008).

Studies carried out in Peru and El Salvador specifically sought to inquire about perceived benefits obtained by women who had done a Pap smear. The response include peace of mind in ninety- seven percent (97%) of cases particularly if found to be negative for cervical cancer, increased responsibility to self care since cervical cancer screening can find changes in the cervix before they become cancer in sixty-seven percent (67%) of responses and increased chances of early detection and therefore cure of cervical cancer in eighty-three percent (83%) of cases (Agurto et al., 2004).

According to a study by Bessler et al., (2007) on factors affecting uptake of cervical cancer screening among clinic attendees in Trelawny, Jamaica; 18% of women who never had Pap smear reported that Pap smear was not necessary as it will only increase a woman's anxiety if found to be suggestive of cervical cancer. Among those who had Pap smear test, 60% reported that cervical cancer was sometimes cured by early diagnosis from doing a Pap smear

and as a result can be used to address problems associated with infertility but 42% of those who never had a Pap smear does not think cervical cancer is treatable (Bessler et al., 2007).

It is a well established fact that knowledge does not always translate into behaviour but improved knowledge has been found to increase uptake of cervical cancer screening in most research settings (Corral et al., 1996). Successful cervical cancer screening programs depend on the participation of informed target population through programs that build knowledge and address misconceptions of the screening programs and therefore increase acceptability and thus improve uptake in cervical cancer screening programs. Is lack of information, knowledge and awareness an issue in the case of Botswana, where available services at no cost are not utilized? The reasons while at risk groups fail to utilize preventive cervical cancer screening services available at no cost might be due to the fact that they do not see the benefits of the program. This needs to be explored with the aim of addressing them in order to improve uptake of cervical cancer screening.

2.7 Perceived barriers to cervical cancer screening

Many studies have identified fear of a positive result of having cervical cancer, embarrassment, pain, financial constraints, and attitudes of health workers, lack of convenient clinic times and lack of female screeners etc as the major barriers to cervical cancer screening. A study on Factors Affecting Uptake of Cervical Cancer Screening Among Clinic Attendees in Trelawny, Jamaica by Bessler et al., (2007), found that about 42% of the study population feared that their health provider would find cervical cancer if they do Pap smear test, 46% reported that their major concern was pain associated with the procedure and 24% reported that that not receiving the result back was the main reason why they are not interested in doing cervical cancer screening.

Leyva et al., (2006) compared women who had a Pap smear and those who never had a Pap smear test done. Their findings showed that 82.4% of those who had a Pap smear test felt very sure or completely sure that they could discuss with their healthcare provider, issues regarding Pap smear test and therefore provider's attitude was not a barrier. However, 78% of those who never had cervical cancer screening felt they could get a Pap test done even if they were worried that it will be painful (74% vs. 57%), and that they could get a Pap test done even if they were worried that it would be embarrassing (49.6% vs. 22%). Therefore, fear as a result of pain and non-participation due to embarrassment was not a problem among the non-participant subgroup. The study also found that those who had never had a Pap test were more likely than those who had to say they felt sure or completely sure that they could make an appointment to have a Pap test (87% vs. 84%) and that they would be able to reschedule, if an appointment was missed (95.5% vs. 90%). This study therefore suggests that provider's attitude, pain of the procedure, embarrassment and convenient clinic time was not a contributory factor among the non-participant groups.

A study on Cervical cancer and Pap smear screening in Botswana; Knowledge and perceptions by Mpotokwane and Mcfarland (2003) found that only 40.0% of study participants had ever had Pap smear tests and the major barriers to obtaining Pap smear tests included inadequate knowledge about benefits of Pap smear screening, insufficient information about the Pap smear screening procedure, provider's attitudes, and limited access to physicians. Reasons for limited knowledge included cultural norms of secrecy, providers not informing the public, and policy makers' limited attention to cervical cancer. Providers' major barriers to providing Pap smear tests was found to include clients' inadequate knowledge of Pap smear screening, providers' inability to see the importance of Pap smear tests, workload and staff shortages (Mpotokwane and Mcfarland, 2003).

Thus, if these barriers to doing cervical cancer screening are addressed, the uptake of cervical cancer screening can improve given that the barriers deter most women from doing cervical cancer screenings especially misconceptions and cultural beliefs.

2.8 Association of socio-demographic characteristics with the constructs of health belief model

The higher the perceived susceptibility to cervical cancer, the more likely an individual will take steps to initiate preventive actions as predicted by the health belief model. Studies that looked at the relationship between perceived susceptibility and socio-demographic characteristics reported positive association with high monthly income, high educational level, marital status and residential area, thus suggesting that these groups are more likely to participate in cervical cancer screening that their counterparts (Yi, 1994 and Cesar et al., 2002). Boonpongmanee (2007) looked at the association between socio-demographic characteristics and perceived susceptibility to cervical cancer screening and reported an association between perceived susceptibility with marital status ($P<0.001$), undergraduate degree or higher ($P<0.001$), and higher income ($P<0.001$). The study also report that women 35 years and older were more likely to perceived themselves to be more susceptible to cervical cancer than younger women ($P<0.001$).

Most people irrespective of their socio-demographic characteristics were aware that cervical cancer is a serious disease yet they do not take preventive actions by participating in cervical cancer screening programs. Studies have reported significant association between perceived severity and age, educational qualification, monthly income, marital status, employment, residential area (Sauvageau et al., 2007, Price et al., 1996 and Burak and Meyer, 1997). But they role this plays in uptake of cervical cancer screening participation is not clear.

Leyva et al., (2006) and Bessler et al., (2007) concluded in their study that majority of women irrespective of their socio-demographic characteristics were aware of the benefits of doing cervical cancer screening. Leyva et al., (2006) reported that when perceived benefit of cervical cancer screening was cross tabulated with socio-demographic characteristics, there was no significant association between perceived benefits and socio-demographic characteristics ($p>0.05$). A study conducted by Schulmeister (1999) and Suwaratchai

(1997) concluded that Asian women in particular Thai women believe that it was beneficial to do Pap smear if one is married compared to the unmarried. The study reported a significant association between perceived benefit to cervical cancer screening with marital status ($P<0.04$) but all other socio-demographic characteristics was not significant (Schulmeister, 1999 and Suwaratchai, 1997). This could be explained by the fact that, Thai women and other Asian women were concerned that Pap smear will take away their virginity. Because premarital sex is unacceptable for respectable women in Thai society, majority of unmarried women are not sexually experienced, and unmarried women consider themselves at low risk of cervical cancer because they are not sexually active.

Financial constraints was significantly associated to never doing a Pap smear as was with cost of transportation among poor women who had to travel some distance to do Pap smear test (Agurto et al., 2004). Leyva et al., (2006) and Bessler et al., (2007) reported significant association between perceived barriers to cervical cancer screening with employment due to lack of convenient clinic time. Educational qualification, income, marital status and age were negatively associated with perceived barriers to cervical cancer screening as those who are educated, have high family income, above the age of 35 years and are married were more likely to have done cervical cancer screening that their counterparts (Neilson and Jones, 1998).

Therefore, socio-demographic characteristics can play a role in uptake of cervical cancer screening programs as education, income, marital status, age etc are known to affect the perceived susceptibility, perceived severity, perceived benefits and perceived barriers to cervical cancer screening of different groups of at risk women.

2.9 Conclusion

Cervical cancer screening using Pap smear is an important screening test for adult women at risk of developing cervical cancer. Depending on usage which actually depends on the women's perceived susceptibility to cervical cancer, perceived severity of cervical cancer, perceived benefits of doing cervical cancer screening, and perceived barriers to seeking cervical cancer screening etc, cervical cancer screening can reduce mortality and morbidity among women due to cervical cancer. This is because with effective utilisation, early identification and treatment with cured can be initiated thereby improving the quality of life of the women at risk.

This study by using the Health Belief Model therefore seeks to elucidate the perceived susceptibility to cervical cancer, perceived severity of cervical cancer, perceived benefits of doing cervical cancer screening and perceived barriers to seeking cervical cancer screening among adult women attending Mahalapye District Hospital in order to recommended ways of improving uptake in cervical cancer screening among the risk group in Mahalapye sub-district by addressing issues identified.

CHAPTER 3 METHODS

3.1 Introduction

This chapter presents the methodology of the study. It describes the study design, the settings and the site selection. It also describes the target population, the sample size as well as the sampling procedure. The inclusion and exclusion criteria were explained with a brief description of the data collection process. This chapter also discusses data analysis, ethical consideration and validation of the instrument as well as exclusion of bias.

3.2 Study design

The study was a cross-sectional descriptive survey conducted among women attending Mahalapye district hospital, in Botswana. A cross-sectional descriptive survey was used to enable the researcher gather information on the women attending Mahalapye district hospital at a single point in time.

3.3 Study setting and site selection

The study was conducted at Mahalapye District Hospital which a 250 bedded hospital is rendering outpatients and inpatients services to the Mahalapye sub-district community. It is one of the 6 district hospitals managed by the Ministry of Health in Botswana. It serves as a referral facility to 44 health facilities in the sub-district comprising of one primary hospital, 15 clinics, 28 health post and mobile clinics (District Health Team Report, 2005). Mahalapye sub-district has a total population of 112 607 people, comprising of 54724 males and 57883 females (Botswana central statistic report, 2009). The hospital is located in the central part of Botswana about 200km from Gaborone (the capital city of Botswana), along the A1 road that runs across the country from North to South. Mahalapye is also the national railway headquarters of Botswana.

On average, approximately 180 to 240 patients are seen in out-patient department daily, with approximately 80 patients in the Infectious Disease Control Centre (IDCC). Mahalapye district hospital has an average bed occupancy rate of 102 patients for in-patients cases (Mahalapye District Hospital Annual Report, 2007). Mahalapye district hospital has MEDITECH information management system that enables the capturing and retrieval of relevant information with some degree of accuracy and reliability.

3.4 Target population

The target population for this study comprised of all women served by Mahalapye district hospital who are 18 years and above since this is the age for eligibility for cervical cancer screening as recommended by Botswana government policy. From the census report, Mahalapye sub-district has a total population of 112 607 people, comprising of 54724 males and 57883 females (Botswana central statistic report, 2009). Two thirds of the female population of 57883 (approximately 38587 adult females) comprises the target population of the study.

3.5 Sample size

A minimum sample size was calculated using a standard formula for known population size for a cross sectional study. The formula is given below (Reid et al, 1991),

$$n = \frac{N}{[(1+N(e)^2]}$$

Where n= sample size of adjusted population, N= population size and e= accepted level of error taking alpha as 0.05.

The average number of women seen in Mahalapye district hospital monthly according monthly hospital records was 800. This was retrieve from the hospital MEDITECH information management system. Substituting this figure into the formula below, a sample size of 267 was obtained.

$$n = \frac{N}{[(1 + N(e)^2]}$$

$$n = \frac{800}{[(1 + 800(0.05)^2]}$$

n= 267.

However, since convenience sampling was used to interview the participants, the sample size was increased to 300 participants.

3.6 Sampling procedure

Women aged 21 years and older who presented for consultation at the hospital out-patient department during the month of sample collection were approached. The purpose of the research and procedure was explained to them and those who consented to participate were interviewed by the researcher and the assistant. The interviewers ensured that no woman was interviewed more than once by asking if they had previously been interviewed.

3.7 Inclusion criteria

Women attending Mahalapye district hospital who are age 21 years and above and consented to participate in the study were included in the study.

3.8 Exclusion criteria

All women aged below 21years attending Mahalapye district hospital were excluded from the study, since according to Botswana law they cannot give consent to participate in such study without consent from their guardian. Women above 21 years attending Mahalapye district hospital who refused to consent to participate in the study were also excluded.

3.9 Instrument and data collection

Data was collected using an interviewer administered structured questionnaire (see appendix 3). This instrument was adapted from a study on cervical cancer screening beliefs among young Hispanic women (Byrd et al., 2003). The questionnaire comprised of six sections that looked at the socio-demographic characteristics, participation in cervical cancer screening programs, perceived susceptibility of cervical cancer, perceived severity of cervical cancer, perceived benefits of having cervical cancer screening and perceived barriers to seeking cervical cancer screening of respondents.

The questionnaire was also translated to Setswana for those who do not understand English. Each question was scored using a 5 point Likert scale ranging from strongly agree (5) to strongly disagree (1). The scale was reversed for negatively worded questions. Perceived

susceptibility which is defined as the views of the women regarding their risk of having cervical cancer had a total of 6 items with a range of possible subscale from 6 to 30. Perceived severity of cervical cancer which is a subjective assessment of how serious cervical cancer is viewed by these women had a total score ranging from 6 to 30 from 6 items. Perceived benefit which is viewed as the perception that cervical cancer screening will result to early detection of cervical cancer, delay progression of cervical cancer and subsequently lead to decrease mortality due to cervical cancer had total score ranging from 5 to 25 from 5 items. The total scores for perceived barrier subscale had a possible range from 12 to 60. The categorical dependent variable rated yes or no was whether a woman had ever had cervical cancer screening. If the answer was yes, the woman was asked if the cervical cancer screening was done within the past 3 years.

The assistant was trained by the researcher on how to conduct the interviews and complete the questionnaires correctly through role-playing and going through the process to be followed while completing the questionnaires for the respondents.

Respondents were interviewed in the screening rooms in out-patients department while waiting to be consulted. Each interview lasted an average of 15-20mins. Participation was voluntary and no incentives were given to respondents. Those interviewed were those who are still far from being consulted since consultation was based on first come first serve.

3.10 Validity of the study

The questionnaire was translated to the local Setswana language (See appendix 4) for respondents that could not speak English and checked to ensure content of the questions by translating back to English. It was pilot tested using 30 patients in a similar health facility outside Mahalapye by the researcher to identify gaps and the questions were modified appropriately to ensure that respondents clearly understood what they are been asked. Data was also double entered by the researcher and the assistant to reduce errors.

3.11 Bias

Volunteer bias was an important limitation of this study, since only those that agreed to participate were interviewed. Non-response bias was minimized for those who cannot understand English by translating the questionnaire to the local Setswana language, so that those who could not speak English were still able to participate in the study.

3.12 Ethical considerations

Ethical standards for conducting the study were maintained through the following measures;

- Ethical clearance was requested and obtained from Medunsa Campus Research and Ethics Committee (MCREC) and the School of Public Health Research Committee prior to conducting the study.

- Permission to conduct the study was requested and obtained from the National Health Research Unit (HRU) of the Ministry of Health, Botswana, and the Management of Mahalapye District Hospital before commencement of the study.
- Written informed consent of respondents was obtained.
- Anonymity of participants was maintained at all times by not using any identifiers or personal information in the questionnaires.
- Participation was voluntary and participants were informed that they can withdraw from the study at any stage of the interview if they so desire without any penalty.

3. 13 Data analysis

Data was coded and entered into excel spreadsheet and exported into SPSS version 13 for analysis. Absolute and relative frequencies (N and %) were obtained for the distributions of selected variables. All analysis compared women who had ever had 'cervical cancer screening' with women who had never had 'cervical cancer screening'. The general association Chi-square statistic was used to test for association of selected variables. Proportions were compared using the Z-test for comparison of proportions. Odds ratios and confidence intervals were generated from binary logistic regression as measures of associations for the aggregate score of health belief model constructs.

The Health Belief Model constructs: susceptibility, severity, benefits, and barriers scale has 29 items contained in 4 subscales: perceptions of susceptibility (6 items), severity (6 items), benefits (5 items), and barriers to cervical cancer screening (12 items). Each item was scored using a 5-point Likert-type scale ranging from strongly agree (5) to disagree (1). Negatively worded questions had their scales reversed (see appendix 6).

In order to analyse associations, the total scores, average and percent were generated for each construct. A high score was considered 75% and higher and a low score was considered as less than 75%.

CHAPTER 4

RESULTS

4.1 Introduction

This chapter present the results of the study in descriptive and inferential form. The results are grouped into major categories in the application of Health Belief model in understanding

the cervical cancer screening behaviour of the study population. They include descriptive statistics of the study population, analysis of cervical cancer screening by selected demographics, analysis of cervical cancer screening using the Health Belief Model construct and finally an exploration of the relationships throughout the categories. All analysis compared women 'who had ever had cervical cancer screening' with women 'who had never had cervical cancer screening'.

4.2 Results

4.2.1 Socio-demographic characteristics of respondents

Table 4.1 summarizes selected socio-demographic characteristics of the study participants. A total of 300 participants were recruited and used for the study, with age range from 21 to 59 years and a mean of 36.9 years (SD = 11.04). The 25th, 50th and 75th age percentiles were 27, 50 and 46 respectively. One hundred and eighty six (62%) of the respondents were between the ages of 21 and 39 years. Most of them were single 212 (71%). Only 23 (8%) indicated that they did not receive any formal education and 208 (68%) had attained at least a secondary education of education. Almost all participants 295 (98%) were of back ethnicity with the remaining 5 (2%) been coloured. The residential status was almost equally distributed with rural 156(52%) and urban plus peri urban 144 (48%).

Table 4.1: Socio-demographic characteristics of respondents (N=300)

Variables		Frequency(n)	Percentage(%)
Age (years)	21-29	108	36
	31-39	78	26
	41-49	62	20.7
	51-59	52	17.3
	Total	**300**	**100**
Marital Status	Single	212	70.7
	Married	62	20.7
	Divorced	7	2.3
	Widowed	10	3.3
	Cohabiting	9	3.0
	Total	**300**	**100**
Educational level	None	23	7.7
	Primary	69	23.0
	Secondary	121	40.3

	Tertiary	87	29.0
	Total	**300**	**100**
Employment Status	Unemployed	132	44.0
	Employed	168	56.0
	Total	**300**	**100**
Monthly Income	>P5000	46	16.0
	P3000-P4999	30	10.0
	P1000-P2999	51	17.0
	<P999	38	12.7
	No income	133	44.3
	Total	**300**	**100**
Residential area	Urban	54	18.0
	Peri-urban	91	30.3
	Rural	155	51.7
	Total	**300**	**100**

4.2.2 Cervical cancer screening status of respondents

Figure 4.1 shows the distribution of cervical cancer screening status of women attending Mahalapye District Hospital, Botswana.

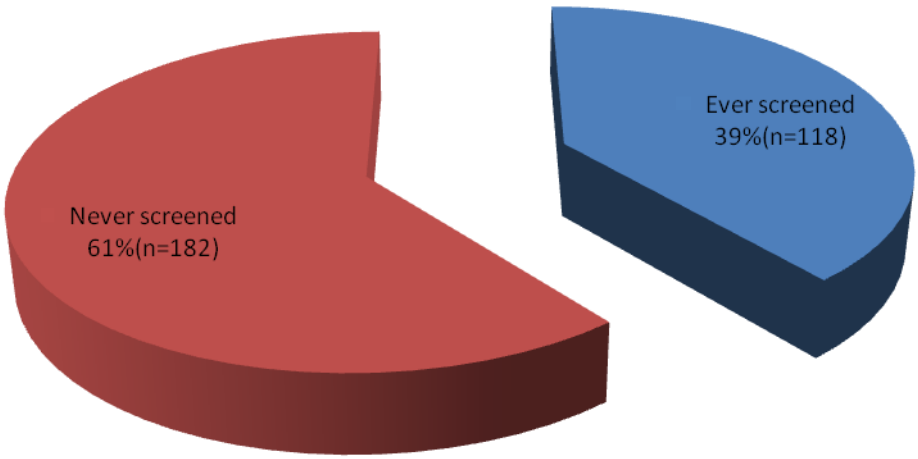


Figure 4.1: Percentage distribution of cervical cancer screening status of respondents (N=300)

Of the 118 respondents that had ever screened for cervical cancer, 76 (64%) actually did the screening within the past 3 years. Eighty-five (72%) of the ever screened had attained at least secondary school education.

As shown in figure 4.2, the highest screening rates were among the age group 50 – 59 (86%) and the younger age group 20 – 29 (71%).

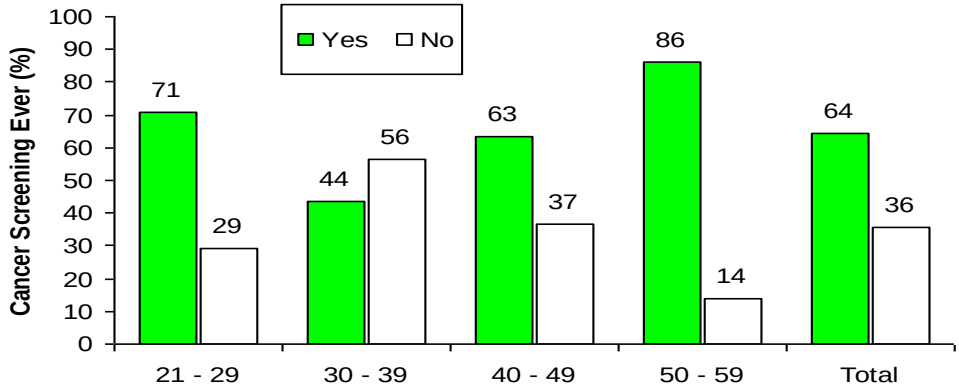


Figure 4.2: Frequency distribution of cervical cancer screening by age of respondents (N=300)

Table 4.2 provides information on comparison between ever screened and never screened with respect to their socio-demographic characteristics. Screening rates were found to be higher amongst peri-urban dwellers 50(42.6%) and rural dwellers 46 (39%) when compared to urban dwellers amongst whom only 22 (18.6%) has ever screened. Amongst the ever screened, 41(35%) reported no monthly income while 29 (24.6%) are those with monthly income of greater than P5000. Nineteen (16.1%) of the ever screened earn between P1000 and P2999 per month but the lowest screening rates of only 12 (10.2%) was amongst those with monthly income of less than P1000.

Table 4.2: The cervical cancer screening status of respondents and socio-demographic characteristics (N=300)

	cervical cancer screen ever				**cervical cancer screen in past 3 years**				**Group Total**	
	yes		**No**		**yes**		**no**		**N**	**%**
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**		

Group Total	118	39.3	182	60.7	76	64.4	42	35.6	300	100.0
Age (years)										
21 - 29	34	28.8	74	40.7	24	31.6	10	23.8	108	36.0
30 - 39	32	27.1	46	25.3	14	18.4	18	42.9	78	26.0
40 - 49	30	25.4	32	17.6	19	25.0	11	26.2	62	20.7
50 – 59	22	18.6	30	16.5	19	25.0	3	7.1	52	17.3
Total	**118**	**99.9**	**182**	**100.1**	**76**	**100**	**42**	**100**	**300**	**100**
Marital status										
Single	81	68.6	131	72.0	51	67.1	30	71.4	212	70.7
married	25	21.2	37	20.3	17	22.4	8	19.0	62	20.7
divorced	3	2.5	4	2.2	3	3.9	-	-	7	2.3
widowed	6	5.1	4	2.2	3	3.9	3	7.1	10	3.3
Cohabiting	3	2.5	6	3.3	2	2.6	1	2.4	9	3.0
Total	**118**	**99.9**	**182**	**100**	**76**	**99.9**	**42**	**99.9**	**300**	**100**
Educational level										
No education	11	9.3	12	6.6	8	10.5	3	7.1	23	7.7
primary	22	18.6	47	25.8	12	15.8	10	23.8	69	23.0
secondary	47	39.8	74	40.7	25	32.9	22	52.4	121	40.3
Tertiary	38	32.2	49	26.9	31	40.8	7	16.7	87	29.0
Total	**118**	**99.9**	**182**	**100**	**76**	**100**	**42**	**100**	**300**	**100**
Employment										
unemployed	61	51.7	71	39.0	45	59.2	16	38.1	132	44.0
Employed	57	48.3	111	61.0	31	40.8	26	61.9	168	56.0
Total	**118**	**100**	**182**	**100**	**76**	**100**	**42**	**100**	**300**	**100**
Monthly income										
> 5000	29	24.6	20	11.0	24	31.6	5	11.9	49	16.3
3000 - 4999	17	14.4	13	7.1	13	17.1	4	9.5	30	10.0
1000 - 2999	19	16.1	32	17.6	12	15.8	7	16.7	51	17.0
< 1000	12	10.2	25	13.7	7	9.2	5	11.9	37	12.3
No income	41	34.7	92	50.5	20	26.3	21	50.0	133	44.3
Total	**118**	**100**	**182**	**99.9**	**76**	**100**	**42**	**100**	**300**	**99.9**
Residence										
Urban	22	18.6	32	17.6	13	17.1	9	21.4	54	18.0
peri-urban	50	42.4	41	22.5	37	48.7	13	31.0	91	30.3
Rural	46	39.0	109	59.9	26	34.2	20	47.6	155	51.7
Total	**118**	**100**	**182**	**100**	**76**	**100**	**42**	**100**	**300**	**100**

As can be seen in table 4.3, when cervical cancer screening status (ever and never) was cross tabulated with socio-demographic characteristics, there result shows that there was a significant (positive) association between ever screening for cervical cancer with employment status ($\chi^2 = 4.67$; $p = 0.031$), ever screening for cervical cancer with monthly income ($\chi^2 =$

16.73; p = 0.002) and ever screening for cervical cancer and residential area (χ^2 = 15.4; p < 0.001).

Table 4.3: Association between cervical cancer screening status of respondents and socio-demographic characteristics (N=300).

Socio-demographic characteristics	cervical cancer screen ever				Group Total		Statistic	
	yes		No		N	%		
	n	%	n	%				
Group Total	118	39.3	182	60.7	300	100		
Age (years)							χ^2=5.21	p=0.15
21 - 29	34	28.8	74	40.7	108	36.0		
30 - 39	32	27.1	46	25.3	78	26.0		
40 - 49	30	25.4	32	17.6	62	20.7		
50 – 59	22	18.6	30	16.5	52	17.3		
Total	**118**	**99.9**	**182**	**100.1**	**300**	**100**		
Marital status							χ^2=2.11	p=0.72
Single	81	68.6	131	72.0	212	70.7		
married	25	21.2	37	20.3	62	20.7		
divorced	3	2.5	4	2.2	7	2.3		
widowed	6	5.1	4	2.2	10	3.3		
Cohabiting	3	2.5	6	3.3	9	3.0		
Total	**118**	**99.9**	**182**	**100**	**300**	**100**		
Educational level							χ^2=3.01	p=0.39
No education	11	9.3	12	6.6	23	7.7		
primary	22	18.6	47	25.8	69	23.0		
secondary	47	39.8	74	40.7	121	40.3		
Tertiary	38	32.2	49	26.9	87	29.0		
Total	**118**	**99.9**	**182**	**100**	**300**	**100**		
Employment							**χ^2=4.67**	**p=0.031**
unemployed	61	51.7	71	39.0	132	44.0		
Employed	57	48.3	111	61.0	168	56.0		
Total	**118**	**100**	**182**	**100**	**300**	**100**		
Monthly income							**χ^2=16.73**	**p=0.002**
> 5000	29	24.6	20	11.0	49	16.3		
3000 - 4999	17	14.4	13	7.1	30	10.0		
1000 - 2999	19	16.1	32	17.6	51	17.0		
< 1000	12	10.2	25	13.7	37	12.3		
No income	41	34.7	92	50.5	133	44.3		
Total	**118**	**100**	**182**	**99.9**	**300**	**99.9**		
Residence							**χ^2=15.41**	**p=0.001**
Urban	22	18.6	32	17.6	54	18.0		
peri-urban	50	42.4	41	22.5	91	30.3		

Rural	46	39.0	109	59.9	155	51.7
Total	**118**	**100**	**182**	**100**	**300**	**100**

4.2.3 Perceived susceptibility to cervical cancer of respondents

As can be seen in table 4.4, most of the participants were aware of their perceived susceptibility to cervical cancer (the average response to perceived susceptibility questions was greater than 3) as shown in table 4.4. Many of the participants perceived susceptibility to cervical cancer to be associated with older age (mean = 3.14; St Dev = 1.0) with 75% either agree or strongly agree. However comparing individual items in the susceptibility section, there was a low mean score (3.14) for "occurrence of cervical cancer to only women above 60 years"

Table 4.4: Response to statements of perceived susceptibility to cervical cancer of respondents (N=300)

Perceived Susceptibility	Rating (%) N = 300					Average Score	SD
	sd	D	NS	A	SA		
Higher risk of CaCx in older women	6.8	24.6	12.7	33.9	22.0	3.40	1.3
Risk in every women of child bearing age	2.0	6.7	21.0	49.7	20.7	3.96	1.0
More prone in women with multiple sexual partners	2.0	6.3	19.0	39.0	33.7	4.06	1.1
Commoner in HIV positive women	3.0	7.7	28.4	31.4	29.4	4.11	1.0
Susceptibility increases with parity	2.7	16.0	33.7	35.7	12.0	3.62	1.0
Occurs only to women above 60 years	21.3	50.7	17.0	9.3	1.7	3.14	1.0

Table 4.5 provides information on the relationship between cervical cancer screening status and perceived susceptibility. Of the 182 (60.7%) of the respondents that had never screened for cervical cancer, 146 (69%) perceive their susceptibility to cervical cancer to be low. Also, of the 118 (39.3%) of respondents that screened for cervical cancer, 52 (59%) perceive their susceptibility to cervical cancer to be high. One participant did not respond to all the questions on perceived susceptibility and so the score for perceived susceptibility questions for that participant was not rated.

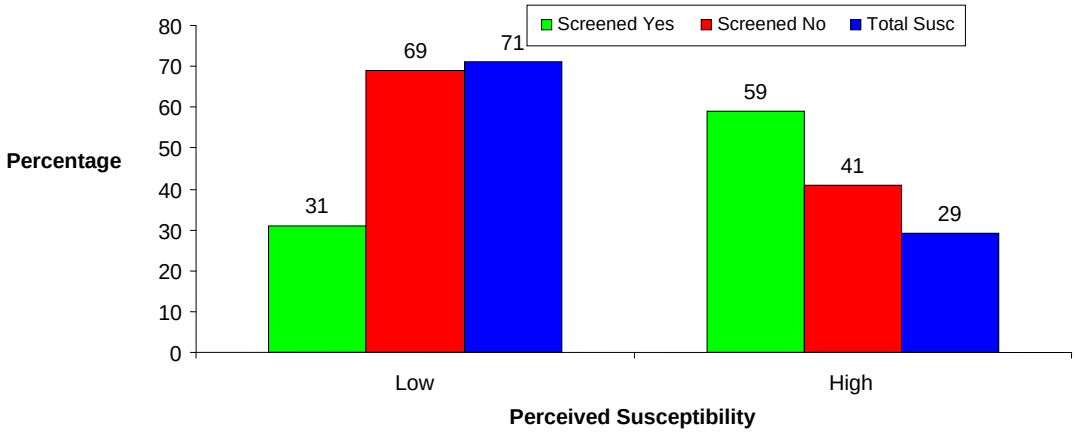
Table 4.5: Perceived susceptibility to cervical cancer and cervical cancer screening status of respondents (N=300)

		Perceived susceptibility		
		High**	Low*	Total
Cervical Cancer Screen	**yes**	52	65	117
	No	36	146	182
	Unrated	-	-	1
	Total	**88**	**211**	**300**
Odd Ratio=3.24 (95%CI:1.937-5.434) (χ^2 = 20.86; p < 0.001)				

* Low perceived susceptibility<75% of total score, **High perceived susceptibility =75% of total score

As shown in table 4.5, there was a significant association between perceived susceptibility and screening for cervical cancer (χ^2 = 20.86; p < 0.001). Therefore, those with high perceived susceptibility were 3.2 times more likely to screen for cervical cancer (OR = 3.24; 95% CI: 1.937 – 5.43) than those with low perceived susceptibility.

Perceived susceptibility responses were also compared across both groups ("ever screening" versus "never screening"). In overall, those who had screened for cervical cancer before had high susceptibility scores (Figure 4.3) than those who had never screened. Among those with low perceived susceptibility to cervical cancer, 31% had screened for cervical cancer as compared to 59% screening rates among those with high perceived susceptibility to cervical cancer (Figure 4.3).



*****Low perceived susceptibility<75% of total score, **High perceived susceptibility =75% of total score

Figure 4.3: Cervical cancer screening status and perceived susceptibility to cervical cancer of respondents (N=300)

Table 4.6a and 4.6b shows comparison of perceived susceptibility questions with ever screened and never screened for cervical cancer. Of the 118 (39.3%) of the ever screened, 89 (75.4%) strongly agree or agree that the risk of cervical cancer is more amongst women of child bearing age compared to 122 (67%) of the never screened. Both the ever screened and the never screened similarly agreed that the risk of cervical cancer is greater amongst women with multiple sexual partners 90 (76.3%) for screened and 128 (70.3%) for never screened. On whether cervical cancer occurs only above the age of 50 years, 89 (75.4%) of the screened and 127 (69.8%) of the never screened either disagree or strongly disagree that cervical cancer does not occur only above the age of 50 years. On whether the risk of cervical cancer is greater in older women than younger women, 56 (55.9%) of the ever screened either strongly or agree whereas majority of the never screened responded not sure 68 (37.4%). On whether there is greater risk in HIV positive women, majority of the ever screened 91 (76%) either agree or strongly agree while 69 (38%) of the never screened were not sure. Regarding increased susceptibility with parity, majority of the ever screened 70 (60%) either agree or strongly agree that susceptibility increases with parity compared to 70 (39%) of the never screened that responded not sure as revealed in Table 4.6a and 4.6b.

Table 4.6a: Screening status and response to statements of perceived susceptibility of respondents (N=300)

Perceived Susceptibility	cervical cancer screen ever					
	yes		no		Total	
	n	%	n	%	N	%
Risk in older women>than younger						
strongly disagree	8	6.8	8	4.4	16	5.3
Disagree	29	24.6	53	29.1	82	27.3
Not sure	15	12.7	68	37.4	83	27.7
Agree	40	33.9	41	22.5	81	27.0
strongly agree	26	22.0	12	6.6	38	12.7
Total	**118**	**100**	**182**	**100**	**300**	**100**
Risk in all women of child bearing age						
strongly disagree	2	1.7	4	2.2	6	2.0
Disagree	10	8.5	10	5.5	20	6.7
Not sure	17	14.4	46	25.3	63	21.0
Agree	51	43.2	98	53.8	149	49.7
strongly agree	38	32.2	24	13.2	62	20.6
Total	**118**	**100**	**182**	**100**	**300**	**100**
Greater risk in women with multiple sexual partner						
strongly disagree	3	2.5	3	1.6	6	2.0
Disagree	11	9.3	8	4.4	19	6.3
Not sure	14	11.9	43	23.7	57	19.0
Agree	38	32.2	79	43.4	117	39.0
strongly agree	52	44.1	49	26.9	101	33.7
Total	**118**	**100**	**182**	**100**	**300**	**100**
Greater risk in HIV positive women						
strongly disagree	1	0.9	8	4.4	9	3.0
Disagree	9	7.7	14	7.7	23	7.7
Not sure	16	13.7	69	37.9	85	28.3
Agree	41	35.0	53	29.1	94	31.3
strongly agree	50	42.7	38	20.9	88	29.4
Total	**118**	**100**	**182**	**100**	**300**	**100**

Table 4.6b: Screening status and response to statements of perceived susceptibility of respondents (N=300)

Perceived Susceptibility	cervical cancer screen ever					
	yes		no		Total	
	n	%	n	%	N	%
Increased susceptibility with parity						
strongly disagree	1.0	0.8	7	3.8	8	2.7
Disagree	16.0	13.6	32	17.6	48	16.0
Not sure	31	26.3	70	38.5	101	33.7
Agree	49	41.5	58	31.9	107	35.7
strongly agree	21	17.8	15	8.2	36	12.0
Total	**118**	**100**	**182**	**100**	**300**	**100**
Occurs only above the age of 50 years						
strongly disagree	30	25.4	34	18.7	64	21.3
Disagree	59	50.0	93	51.1	152	50.7
Not sure	13	11.0	38	20.9	51	17.0
Agree	15	12.7	13	7.1	28	9.3
strongly agree	1	0.8	4	2.2	5	1.7
Total	**118**	**100**	**182**	**100**	**300**	**100**

4.2.4 Perceived severity of cervical cancer of respondents

Table 4.7 gives a summary of the perceived severity to cervical cancer of women attending Mahalapye District Hospital. In general most of the women were sure about the severity of cancer as they responded mostly agree or strongly agree to statements about severity of cervical cancer, with range of average responses being 2.58 to 3.56.

Table 4.7: Response to statements of perceived severity to cancer of respondents (N=300)

Perceived Severity	Rating (%)					Average Response	SD
	sd	D	NS	A	SA		
Effective treatment for cancer	2.7	19.3	31.7	39.7	6.7	3.28	0.94
Cervical cancer makes woman's life difficult	3.7	16.3	12.7	54.7	12.7	3.56	1.02
Cervical cancer not serious as other cancers	24.0	26.3	23.3	20.3	6.0	2.58	1.22
Cervical cancer is easily cured	6.3	22.7	37.3	25.7	8.0	3.06	1.03
Cervical cancer can result in infertility	3.3	9.4	27.4	43.5	16.4	3.60	0.98
Death from cervical cancer is rare	9.7	19.1	33.6	27.9	9.7	3.09	1.12

When the ever screened and the never screened for cervical cancer was compared as revealed in table 4.8, it was observed that both groups equally believed that there is effective treatments for cervical cancer, and that cervical cancer makes a woman's life difficult. Both the screened and the never screened believed that cervical cancer is as serious as other cancers; that it causes infertility and that death from cervical cancer is not rare.

Table 4.8: Screening status and response to statements of perceived severity of cervical cancer of respondents (N=300)

Perceived Severity	cervical cancer screen ever					
	no		yes		Total	
	n	%	n	%	N	%
Effective treatment for cancer						
strongly disagree	4	2.2	4	3.4	8	2.7
Disagree	24	13.2	34	28.8	58	19.2
Not sure	69	37.9	26	22.0	95	31.7
Agree	75	41.2	44	37.3	119	39.7
strongly agree	10	5.5	10	8.5	20	6.7
Total	**182**	**100**	**118**	**100**	**300**	**100**
Cervical cancer makes woman's life difficult						
strongly disagree	8	4.4	3	2.5	11	3.6
Disagree	30	16.5	19	16.1	49	16.3
Not sure	19	10.4	19	16.1	38	12.7
Agree	102	56.0	62	52.6	164	54.7
strongly agree	23	12.6	15	12.7	38	12.7
Total	**182**	**99.9**	**118**	**100**	**300**	**100**
Cervical cancer not serious as other cancers						
strongly disagree	34	18.7	38	32.2	72	24.0
Disagree	49	26.9	30	25.4	79	26.3
Not sure	57	31.3	13	11.0	70	23.3
Agree	34	18.7	27	22.9	61	20.4
strongly agree	8	4.4	10	8.5	18	6.0
Total	**182**	**100**	**118**	**100**	**300**	**100**
Cervical cancer is easily cured						
strongly disagree	10	5.5	9	7.6	19	6.3
Disagree	30	16.4	38	32.2	68	22.7
Not sure	80	44.0	32	27.1	112	37.3
Agree	46	25.3	31	26.3	77	25.7
strongly agree	16	8.8	8	6.8	24	8.0
Total	**182**	**100**	**118**	**100**	**300**	**100**
Cervical cancer can result in infertility						
strongly disagree	3	1.6	7	6.0	10	3.4
Disagree	19	10.4	9	7.6	28	9.3
Not sure	58	31.9	24	20.3	82	27.3
Agree	70	38.6	60	50.8	130	43.4
strongly agree	32	17.5	17	14.5	49	16.3
No response	-	-	1	0.8	1	0.3
Total	**182**	**100**	**118**	**100**	**300**	**100**
Death from cervical cancer is rare						
strongly disagree	13	7.1	16	13.6	29	9.7
Disagree	28	15.4	29	24.6	57	19.0
Not sure	68	37.4	32	27.1	100	33.3
Agree	53	29.1	30	25.4	83	27.7
strongly agree	19	10.4	10	8.5	29	9.7
No response	1	0.6	1	0.8	2	0.6
Total	**182**	**100**	**118**	**100**	**300**	**100**

When the 'ever screened' group and never screened group were grouped into high and low based on scores of perceived severity (Table 4.9), overall, 60% of the never screened had low perceived severity while 33% of the screened had high perceived severity to cervical cancer. Three of the respondents did not answer all the questions on perceived severity and were not rated. As can be seen in table 4.9, there was no significant association between perceived severity and screening for cervical cancer ($\chi 2 = 1.0795$; $p = 0.2988$).

Table 4.9: Perceived severity to cervical cancer and cervical cancer screening status of respondents (N=300)

		Perceived severity		
		High**	Low*	Total
Cervical Cancer Screen	**yes**	13	103	117
	No	28	153	182
	Unrated	-	-	3
	Total	**41**	**256**	**300**
Odd Ratio = 0.69 (95% CI: 0.34 – 1.39) ($\chi^2 = 1.0795$; $p = 0.2988$)				

***** Low perceived severity<75% of total score, **High perceived severity =75% of total score

4.2.5 Perceived benefits to doing cervical cancer screening of respondents

Table 4.10 provides information on the rating of the perceived benefits to cervical cancer screening. Overall, the majority of the participants responded positively to statements about perceived benefits of cervical cancer screening listed in Table 4.9 with average responses in the range between 3.10 and 4.33.

Table 4.10 Response to statements of perceived benefits to cervical cancer screening of respondents (N=300)

Perceived Benefits	**Ratings (%)**					**Response Average**	**SD**
	sd	**D**	**NS**	**A**	**SA**		
screening important to be done	0.7	6.0	5.4	35.9	52.0	4.33	0.88
screening can find changes before they become cancer	1.0	3.0	21.0	45.7	29.3	3.99	0.85
easily curable when found early	0.7	1.7	13.0	53.2	31.4	4.13	0.75
CaCx screening improves	6.7	20.9	34.0	32.0	6.4	3.10	1.02

chances of pregnancy in infertile							
CaCx screening decreases chances of abortion	8.4	17.1	38.6	27.5	8.4	3.10	1.05

Overall, 261 (87%) either agreed or strongly agreed that 'screening is important to be done', 225 (75%) believed screening could find changes in the cervix before full cancer sets on; 252 (84%) believed when found early cervical cancer can be easily cured. On the other hand, very few 114 (38%), and 105 (35%) believed cervical cancer screening improves chances of pregnancy and decreases abortion, respectively.

Table 4.11 presents comparison of high and low perceived benefits. Ninety (63%) of the never screened had low perceived benefits and 66 (43%) of the ever screened had high perceived benefits (chi square statistic = 1.38; p= 0.2409). Five of the respondents did not answer all the questions on perceived benefits and were not rated. There was no significant (positive) association between perceived benefit and cervical cancer screening.

Table 4.11: Perceived benefit of cervical cancer screening and cervical cancer screening status of respondents (N=300)

		Perceived benefits		
		High**	Low*	Total
Cervical Cancer Screen	**yes**	66	51	117
	No	88	90	178
	Unrated	-	-	5
	Total	**154**	**141**	**300**
Odd Ratio = 1.324 (95% CI: 0.828 – 2.115) (χ^2 = 1.38; p = 0.2409)				

***** Low perceived severity<75% of total score, **High perceived severity =75% of total score

Table 4 .12 reveals comparison of response of the ever screened and the never screened on statements on perceived benefits of having cervical cancer screening. Both the ever screened and the never screened agree or strongly agree that screening is important to be done (88.8% versus 87.3%), screening can find changes before they become cancer (83% versus 69.8%) and cervical cancer is easily curable when detected early (92.4% versus 79.5%). Both the ever screened (42.4%) and never screened (36.1%) responded not sure to whether cervical cancer decreases chances of an abortion but the ever screened (43.1%) thinks screening improves the chances of an infertile woman become pregnant as opposed to the never screened among whom 37.4% responded not sure .

Table 4.12a: Screening status and response to statements of perceived benefits of having cervical cancer screening of respondents (N=300)

Perceived benefits	cervical cancer screen ever					
	No		yes		Total	
	n	%	n	%	N	%
Screening important to be done						
strongly disagree	-	-	2	1.7	2	0.7
disagree	12	6.6	6	5.1	18	6.0
Not sure	11	6.0	5	4.2	16	5.3
agree	66	36.3	41	34.8	107	35.6
strongly agree	92	50.6	63	53.4	155	51.7
No response	1	0.5	1	0.8	2	0.7
Total	**182**	**100**	**118**	**100**	**300**	**100**
Screening can find changes before they become cancer						
strongly disagree	2	1.1	1	0.9	3	1.0
disagree	6	3.3	3	2.5	9	3.0
Not sure	47	25.8	16	13.6	63	21.0
agree	84	46.2	53	44.9	137	45.7
strongly agree	43	23.6	45	38.1	88	29.3
Total	**182**	**100**	**118**	**100**	**300**	**100**
Easily curable when found early						
strongly disagree	1	0.5	1	0.8	2	0.7
disagree	3	1.7	2	1.7	5	1.7
Not sure	33	18.1	6	5.1	39	13.0
agree	92	50.6	67	56.8	159	53.0
strongly agree	52	28.6	42	35.6	94	31.3
No response	1	0.5	-	-	1	0.3
Total	**182**	**100**	**118**	**100**	**300**	**100**

Table 4.12b: Screening status and response to statements of perceived benefits of having cervical cancer screening of respondents (N=300)

Perceived benefits	cervical cancer screen ever					
	No		yes		Total	
	n	%	n	%	N	%
CaCx screening improves chances of pregnancy in infertile						
strongly disagree	10	5.5	10	8.5	20	6.7
disagree	39	21.4	23	19.5	62	20.7

Not sure	67	36.8	34	28.8	101	33.7
agree	51	28.0	44	37.3	95	31.6
strongly agree	12	6.6	7	5.9	19	6.3
No response	3	1.7	-	-	3	1
Total	**182**	**100**	**118**	**100**	**300**	**100**
CaCx screening decreases chances of abortion						
strongly disagree	19	10.4	6	5.1	25	8.3
disagree	30	16.5	21	17.8	51	17
Not sure	65	35.7	50	42.4	115	38.3
agree	53	29.1	29	24.6	82	27.3
strongly agree	13	7.1	12	10.2	25	8.3
No response	2	1.2	-	-	2	0.8
Total	**182**	**100**	**118**	**100.2**	**300**	**100**

4.2.6 Perceived barriers to seeking cervical cancer screening of respondents

Table 4.13 gives a summary of the responses to perceived barriers to cervical cancer screening. In general most of the ratings were below 3.0. That is, most participants disagreed or strongly disagree about the statements on perceived barriers listed in table 4.13. This means for instance, that most participants believe that: doing cervical cancer screening is not embarrassing (69%) and doing cervical cancer screening does not suggest someone is having sex (48%) as presented in table 4.13.

Table 4.13: Response to statements of perceived barriers to cervical cancer screening of respondents (N=300)

	Rating (%)					**Response average**	
Perceived barriers	**sd**	**D**	**NS**	**A**	**SA**		**SD**
Embarrassing	25	43.9	8.1	14.9	8.1	2.37	1.23
CaCx is painful	15.1	33.1	26.8	15.1	10	2.72	1.19
Screening suggest one is having sex	14.3	46	12.3	22.7	4.7	2.57	1.13
Screening makes one worry	16	44.3	10.3	26.3	3	2.56	1.13
Screening takes away virginity	16	30	29.3	17.3	7.3	2.70	1.15
Not knowing where screening is done	7.7	37.7	10.3	32.3	12	3.03	1.22
Only mothers needs do screening	25.3	54.2	7.7	10.8	2	2.10	0.97
Partner resisting CaCx screening	26.8	56	8.7	7	1.3	2.0	0.87
Lack of female screeners in health	17.1	40.6	6.4	27.2	8.7	2.70	1.28

facilities							
Attitudes of health workers	11	46.2	7.4	22.7	12.7	2.8	1.27
Lack of convenient clinic time is a barrier to routine CaCx	7.4	29.8	8	39.5	15.4	3.26	1.24
Lack of information is also a barrier to CaCx screening	6.7	28.4	4.3	35.5	25.1	3.44	1.31

When the ever screened and never screened were compared as shown in table 4.14, 44.4% of the ever screened had high perceived barriers and 60% of the never screened has low perceived barriers. They was no significant association between perceived barriers for cervical cancer screening and screening for cervical cancer ($\chi^2 = 0.153$; $p = 0.696$).

Table 4.14: Perceived barriers to cervical cancer screening and cervical cancer screening status of respondents (N=300)

		Perceived benefits		
		High**	Low*	Total
Cervical Cancer Screen	**yes**	8	107	115
	No	10	172	172
	Unrated	-	-	3
	Total	**18**	**269**	**300**
Odd Ratio = 1.211 (95% CI: 0.463 – 3.167) ($\chi^2 = 0.153$; $p = 0.696$)				

***** Low perceived severity<75% of total score, **High perceived severity =75% of total score

When the screened respondents were compared with the never screened (table 4.15a and 4.15b), 87 (74%) either strongly disagree or disagree that doing cervical cancer screening suggest a person is having sex as opposed to 76 (42%) of the never screened who responded not sure. Of the 182 of the never screened 101 (55.5%) either strongly disagree or disagree that cervical cancer screening is painful while 80 (67.8%) of those that have screened either strongly disagree or disagree that cervical cancer is painful. Both the screened and the never screened either strongly disagree or disagree that only women who had babies should do cervical cancer screening (88% for the screened versus 74% for the never screened) and that their partners will resist them doing cervical cancer screening (85.4% for the screened versus 81.2% for the never screened). The never screened either strongly agree or agree that lack of information was a barrier to cervical cancer screening (66.3%) as opposed to 51.7% of those that had screened.

Table 4.15a: Screening status and response to statements of perceived barriers to seeking cervical cancer screening of respondents (N=300)

Perceived Barriers	cervical cancer screen ever					
	no		yes		Total	
	n	%	n	%	N	%
Doing CaCx suggest the person is having sex						
strongly disagree	14	7.7	31	26.3	45	15.0
disagree	43	23.6	56	47.4	99	33.0
Not sure	76	41.8	4	3.4	80	26.7
agree	26	14.3	19	16.1	45	15.0
strongly agree	22	12.1	8	6.8	30	10.0
No response	1	0.6	-	-	1	0.3
Total	**182**	**100.1**	**118**	**100**	**300**	**100**
CaCx is painful						
strongly disagree	29	15.9	14	11.9	43	14.3
disagree	72	39.6	66	55.9	138	46.0
Not sure	28	15.4	9	7.6	37	12.3
agree	46	25.3	22	18.7	68	22.7
strongly agree	7	3.8	7	5.9	14	4.7
Total	**182**	**100**	**118**	**100**	**300**	**100**
doing CaCx screening makes one worry						
strongly disagree	31	17.0	17	14.4	48	16.0
disagree	76	41.8	57	48.3	133	44.3
Not sure	22	12.1	9	7.6	31	10.3
agree	48	26.4	31	26.3	79	26.4
strongly agree	5	2.7	4	3.4	9	3.0
Total	**182**	**100**	**118**	**100**	**300**	**100**
CaCx screening takes away virginity in virgins						
strongly disagree	30	16.5	18	15.3	48	16.0
disagree	47	25.8	43	36.4	90	30.0
Not sure	59	32.4	29	24.6	88	29.3
agree	33	18.1	19	16.1	52	17.3
strongly agree	13	7.2	9	7.6	22	7.4
Total	**182**	**100**	**118**	**100**	**300**	**100**

Table 4.15b: Screening status and response to statements of perceived barriers to seeking cervical cancer screening of respondents (N=300)

Perceived Barriers	cervical cancer screen ever					
	no		yes		Total	
	n	%	n	%	N	%
Partner resisting CaCx screening						
strongly disagree	52	28.5	28	23.7	80	26.7
disagree	95	52.2	72	61.0	167	55.7
Not sure	18	9.9	8	6.8	26	8.6
agree	14	7.7	7	5.9	21	7.0
strongly agree	2	1.1	2	1.7	4	1.3
No response	1	0.6	1	0.9	2	0.7
Total	**182**	**100**	**118**	**100**	**300**	**100**
Lack of female screeners in health facilities contributes for not doing CaCx						
strongly disagree	31	17.0	20	17.0	51	17.0
disagree	58	31.9	63	53.3	121	40.3
Not sure	16	8.8	3	2.5	19	6.3
agree	61	33.4	20	17.0	81	27.0
strongly agree	15	8.3	11	9.3	26	8.7
No response	1	0.6	1	0.9	2	0.7
Total	**182**	**100**	**118**	**100**	**300**	**100**
Attitudes of health workers discourages CaCx screening						
strongly disagree	22	12.1	11	9.3	33	11
disagree	69	37.9	69	58.5	138	46
Not sure	18	9.9	4	3.4	22	7.3
agree	47	25.8	21	17.8	68	22.7
strongly agree	26	14.3	12	10.1	38	12.7
No response	-	-	1	0.9	1	0.3
Total	**182**	**100**	**118**	**100**	**300**	**100**
Lack of convinient clinic time is a barrier to routine CaCx						
strongly disagree	15	8.2	7	5.9	22	7.4
disagree	45	24.7	44	37.3	89	29.8
Not sure	19	10.4	5	4.2	24	8.0
agree	71	39.0	47	39.8	118	39.3
strongly agree	32	17.7	14	11.9	46	15.2
No response	-	-	1	0.9	1	0.3
Total	**182**	**100**	**118**	**100**	**300**	**100**

Table 4.15c: Screening status and response to statements of perceived barriers to seeking cervical cancer screening of respondents (N=300)

Perceived Barriers	cervical cancer screen ever					
	no		yes		Total	
	n	%	n	%	N	%
Not knowing where to go is the reason for not screening						
strongly disagree	13	7.1	10	8.5	23	7.7
disagree	56	30.8	57	48.3	113	37.7
Not sure	22	12.1	9	7.6	31	10.3
agree	67	36.8	30	25.4	97	32.3
strongly agree	24	13.2	12	10.2	36	12.0
Total	**182**	**100**	**118**	**100**	**300**	**100**
Only those with babies need to do CaCx screening						
strongly disagree	43	23.6	32	27.1	75	25.0
disagree	90	49.5	71	60.2	161	53.7
Not sure	18	9.9	5	4.2	23	7.6
agree	23	12.6	9	7.6	32	10.7
strongly agree	6	3.3	-	-	6	2.0
No response	2	1.1	1	0.9	3	1.0
Total	**182**	**100**	**118**	**100**	**300**	**100**
Lack of information is also a barrier to CaCx screening						
strongly disagree	11	6.o	9	7.6	20	6.7
disagree	39	21.4	46	39.0	85	28.3
Not sure	11	6.0	2	1.7	13	4.4
agree	68	37.4	38	32.2	106	35.3
strongly agree	52	28.6	23	19.5	75	25.0
No response	1	0.6	-	-	1	0.3
Total	**182**	**100**	**118**	**100**	**300**	**100**

4.3 Association between socio-demographic characteristics and the constructs of the health belief model of respondents

4.3.1 Association between socio-demographic characteristics and perceived susceptibility to cervical cancer

The association between socio-demographic characteristics and perceived susceptibility to cervical cancer is presented in table 4.16. One of the respondents did not answer one of the questions on perceived susceptibility and therefore was not rated. When comparing perceived

susceptibility scores (low, high) by socio-demographic variables (Table 4.15), there was a significant association with marital status (χ^2 = 9.44; p = 0.051), employment status (χ^2 = 13.077; p < 0.001), monthly income (χ^2 = 15.457; p < 0.004) and residential place (χ2 = 14.280; p = 0.001). Education and age were however nearly significantly association with perceived susceptibility scores; χ^2=1.528; p=0.676 and χ^2=1.516; p=0.678 respectively.

Table 4.16: Association between socio-demographic characteristics and perceived susceptibility to cervical cancer (N=299)[x]

Socio-demographic variables	Perceived Susceptibility						Statistic P value
	Low		High		Grand Total		
	n	%	n	%	N	%	
Grand total	**211**	**70.6**	**88**	**29.4**	**299**	**100**	[1]Z = 5.798;P<0.001
Age (years)							χ^2=1.516; p=0.678
21 - 29	79	37.4	28	31.8	107	35.8	
30 - 39	56	26.6	22	25.0	78	26.1	
40 - 49	42	19.9	20	22.7	62	20.7	
50 – 59	34	16.1	18	20.5	52	17.4	
Total	**211**	**100**	**88**	**100**	**299**	**100**	
Marital status							χ^2=9.44; p=0.051
single	159	75.4	52	59.1	211	70.6	
married	37	17.5	25	28.4	62	20.7	
divorced	4	1.9	3	3.4	7	2.2	
widowed	7	3.3	3	3.4	10	3.3	
Cohabiting	4	1.9	5	5.7	9	3.0	
Total	**211**	**100**	**88**	**100**	**299**	**100**	
Educational level							χ^2=1.528;p=0.676
none	17	8.1	6	6.8	23	7.7	
primary	50	23.7	19	21.6	69	23.1	
secondary	87	41.2	33	37.5	120	40.1	
Tertiary	57	27.0	30	34.1	87	29.1	
Total	**211**	**100**	**88**	**100**	**299**	**100**	
Employment status							**χ^2=13.077;p<0.001**
unemployed	79	37.4	53	60.2	132	44.1	
Employed	132	62.6	35	39.8	167	55.9	
Total	**211**	**100**	**88**	**100**	**299**	**100**	
Monthly income							**χ^2=15.457;p=0.004**
> 5000	27	12.8	22	25.0	49	16.4	
3000 - 4999	17	8.1	13	14.8	30	10.0	
1000 - 2999	33	15.6	18	20.5	51	17.1	
< 1000	29	13.7	8	9.1	37	12.4	

No income	105	49.8	27	30.6	132	44.1	
Total	**211**	**`100**	**88**	**100**	**299**	**100**	
Residential area							**χ^2=14.280;p=0.001**
urban	40	19.0	14	15.9	54	18.1	
peri-urban	50	23.7	40	45.5	90	30.1	
Rural	121	57.3	34	38.6	155	51.8	
Total	**211**	**100**	**88**	**100**	**299**	**100**	

[1]Z- statistic for comparison of proportions

[x]N=299 as one of the respondents did not answer all the questions on perceived susceptibility and was therefore not rated. * Low perceived susceptibility<75% of total score, **High perceived susceptibility ≥75% of total score. Significant findings are highlighted in bold**.**

4.3.2 Association between socio-demographic characteristics and perceived severity of cervical cancer

Table 4.17 presents the association between socio-demographic characteristics and perceived severity to cervical cancer. Three (3) respondents did not answer all the questions on perceive severity and therefore were not rated. As shown in the table, monthly income (χ^2=13.077; p<0001) and residential area (χ^2=15.457; p=0.004) were significantly associated with perceived severity. Marital status (χ^2=9.435; p=0.051) and educational level (χ^2=9.44; p=0.051) were nearly statistical significant with p-value slightly greater than 0.05. All other socio-demographic variables were not significantly associated with perceived severity of cervical cancer.

Table 4.17: Association between socio-demographic characteristics and perceived severity of cervical cancer (N=297)[x]

Socio-demographic variables	Perceived Severity						Statistic P value
	Low		High		Grand Total		
	n	%	n	%	N	%	
Grand total	**256**	**86.2**	**41**	**13.8**	**297**	**100**	[1]Z = 5.798;P<0.001
Age (years)							χ^2=2.012; p=0.570
21 - 29	94	36.7	13	31.7	107	36.0	
30 - 39	66	25.8	12	29.3	78	26.3	
40 - 49	50	19.5	11	26.8	61	20.5	
50 – 59	46	18.0	5	12.2	51	17.2	
Total	**256**	**100**	**41**	**100**	**297**	**100**	
Marital status							χ^2=9.435; p=0.051
single	179	69.9	31	75.6	210	70.7	
married	55	21.5	6	14.6	61	20.5	
divorced	6	2.3	1	2.4	7	2.4	
widowed	8	3.1	2	4.9	10	3.4	
Cohabiting	8	3.1	1	2.4	9	3.0	

Total	**256**	**100**	**41**	**100**	**297**	**100**	
Educational level							χ^2=9.44;p=0.051
none	19	7.4	4	9.8	23	7.7	
primary	55	21.5	13	31.7	68	22.9	
secondary	111	43.4	9	22.0	120	40.4	
Tertiary	71	27.7	15	36.6	86	29.0	
Total	**256**	**100**	**41**	**100**	**297**	**100**	
Employment status							χ^2=4.001;p<0.977
unemployed	113	44.1	18	43.9	131	44.1	
Employed	143	55.9	23	56.1	166	55.9	
Total	**256**	**100**	**41**	**100**	**297**	**100**	
Monthly income							**χ^2=13.077;p=0.001**
> 5000	44	17.2	5	12.2	49	16.5	
3000 - 4999	29	11.3	-	-	29	9.8	
1000 - 2999	41	16.0	10	24.4	51	17.2	
< 1000	32	12.5	5	12.2	37	12.5	
No income	110	43.0	21	51.2	131	44.1	
Total	**256**	**100**	**41**	**100**	**297**	**100**	
Residential area							**χ^2=15.457;p=0.004**
urban	49	19.1	5	12.2	54	18.2	
peri-urban	81	31.6	9	22.0	90	30.3	
Rural	126	49.2	27	65.9	153	51.5	
Total	**256**	**100**	**41**	**100**	**297**	**100**	

[1]Z- statistic for comparison of proportions

[x]N=297 as three of the respondents did not answer all the questions on perceived severity and were therefore not rated. *Low perceived susceptibility<75% of total score, **High perceived susceptibility ≥75% of total score. Significant findings are highlighted in bold**.**

4.3.3 Association between socio-demographic characteristics and perceived benefits of having cervical cancer screening

Information presented on table 4.18 reveals that there were no significant associations observed between perceived benefits of having cervical cancer screening and any of the socio-demographic variables. However, five (5) of the respondents did not answer all the questions on perceive benefits of cervical cancer screening and therefore were not rated.

Table 4.18: Association between socio-demographic characteristics and perceived benefits of having cervical cancer screening (N=295)[x]

Socio-demographic	Perceived benefits						Statistic P value
	Low		High		Total		
	n	%	N	%	N	%	
Grand Total	**141**	**47.0**	**154**	**51.3**	**295**	**100**	**[1]Z= 2.91;p=0.03**
Age (years)							χ^2=1.449;p=0.694

21 - 29	49	34.8	56	36.4	105	35.6	
30 - 39	41	29.1	37	24.0	78	26.4	
40 - 49	26	18.4	35	22.7	61	20.7	
50 – 59	25	17.7	26	16.9	51	17.3	
Total	**141**	**100**	**154**	**100**	**295**	**100**	
Marital status							χ^2=1.394;p=0.845
single	103	73.0	106	68.8	209	70.8	
married	25	17.7	35	22.7	60	20.3	
divorced	4	2.8	3	1.9	7	2.4	
widowed	5	3.5	5	3.2	10	3.4	
Cohabiting	4	2.8	5	3.2	9	3.1	
Total	**141**	**100**	**154**	**100**	**295**	**100**	
Educational level							χ^2=2.421;p=0.490
none	14	9.9	9	5.8	23	7.8	
primary	30	21.3	38	24.7	68	23.1	
secondary	59	41.8	60	39.0	119	40.3	
Tertiary	38	27.0	47	30.5	85	28.8	
Total	**141**	**100**	**154**	**100**	**295**	**100**	
Employment status							χ^2=0.024;p=0.877
unemployed	61	43.3	68	44.2	129	43.7	
Employed	80	56.7	86	55.8	166	56.3	
Total	**141**	**100**	**154**	**100**	**295**	**100**	
Monthly income							χ^2=7.752;p=0.101
> 5000	17	12.1	32	20.8	49	16.6	
3000 - 4999	11	7.8	19	12.3	30	10.2	
1000 - 2999	28	19.9	20	13.0	48	16.3	
< 1000	20	14.2	17	11.0	37	12.5	
No income	65	46.1	66	42.9	131	44.4	
Total	**141**	**100**	**154**	**100**	**295**	**100**	
Residential area							χ^2=3.23 p=0.199
urban	28	19.9	25	16.2	53	18.0	
peri-urban	36	25.5	54	35.1	90	30.5	
Rural	77	54.6	75	48.7	152	51.5	
Total	**141**	**100**	**154**	**100**	**295**	**100**	

[1]Z- statistic for comparison of proportions

[x]N=295 as five of the respondents did not answer all the questions on perceived benefits and were therefore not rated * Low perceived susceptibility<75% of total score, **High perceived susceptibility =75% of total score. Significant findings are highlighted in bold**.**

4.3.4 Association between socio-demographic characteristics and perceived barriers to seeking cervical cancer screening

Table 4.19 shows that there is no significant association between socio-demographic and perceived barriers to seeking cervical cancer screening (all p-values are greater than 0.05).

Thirteen of the respondents did not answer all the questions on perceived barriers and therefore were not rated.

Table 4.19: Association between socio-demographic characteristics of respondents and perceived barriers to seeking cervical cancer screening (N=287)[x]

Socio-demographic	Perceived barriers						Statistic P value
	*Low		**High		Total		
	n	%	N	%	N	%	
Grand Total	**269**	**93.7**	**18**	**6.3**	**287**	**100**	
Age (years)							χ^2=7.22;p=0.65
21 - 29	101	37.5	3	16.7	104	36.2	
30 - 39	73	27.1	3	16.7	76	26.5	
40 - 49	50	18.6	6	33.3	56	19.5	
50 – 59	45	16.7	6	33.3	51	17.8	
Total	**269**	**100**	**18**	**100**	**287**	**100**	
Marital status							χ^2=3.129;p=0.536
single	190	70.6	12	66.7	202	70.4	
married	54	20.1	6	33.3	60	20.9	
divorced	7	2.6	-	-	7	2.4	
widowed	10	3.7	-	-	10	3.5	
Cohabiting	8	3.0	-	-	8	2.8	
Total	**269**	**100**	**18**	**100**	**287**	**100**	
Educational level							χ^2=11.804;p=0.08
none	18	6.7	5	27.8	23	8.0	
primary	61	22.7	5	27.8	66	23.0	
secondary	111	41.3	6	33.3	117	40.8	
Tertiary	79	29.4	2	11.1	81	28.2	
Total	**269**	**100**	**18**	**100**	**287**	**100**	
Employment status							χ^2=0.024;p=0.877
unemployed	119	44.2	7	38.9	126	43.9	
Employed	150	55.8	11	61.1	161	56.1	
Total	**269**	**100**	**18**	**100**	**287**	**100**	
Monthly income							χ^2=0.024;p=0.877
> 5000	46	17.1	1	5.6	47	16.4	
3000 - 4999	23	8.6	6	33.3	29	10.1	
1000 - 2999	47	17.5	1	5.6	48	16.7	
< 1000	34	12.6	2	11.1	36	12.5	
No income	119	44.2	8	44.4	127	44.3	
Total	**269**	**100**	**18**	**100**	**287**	**100**	
Residential area							χ^2=7.752;p=0.101
urban	45	16.7	6	33.3	51	17.8	
peri-urban	86	32.0	1	5.6	87	30.3	
Rural	138	51.3	11	61.1	149	51.9	
Total	**269**	**100**	**18**	**100**	**287**	**100**	

[1]Z- statistic for comparison of proportions

[x]N=287 as thirteen of the respondents did not answer all the questions on perceived benefits and were therefore not rated * Low perceived susceptibility<75% of total score, **High perceived susceptibility =75% of total score. Significant findings are highlighted in bold**.**

4.4 Comparison of HBM constructs of ever screened and never screened for cervical cancer of respondents

Independent-sample t-test was used to examine the difference in perceived susceptibility, perceived severity, perceived benefits, and perceived barriers between women who had ever screened for cervical cancer and women who never screened (Table 4.20). There was significant differences between the 2 groups in mean scores of perceived susceptibility ($t = 4.1$; $P < 0.001$). Women who had never screened for cervical cancer had significantly higher perceived severity ($t = -2.0$; $P = 0.045$) and higher perceived barriers ($t = -3.3$; $P = 0.001$), but lower perceived benefits ($t = 2.1$; $P = 0.040$).

Table 4.20: Independent sample t – test for comparison of ever screened and never screened of respondents

	Screened		Never Screened			
Predictor Variable	**Mean**	**SD**	**Mean**	**SD**	**t statistic**	**P value**
Perceived Susceptibility	21.3	4.0	19.6	3.1	4.1	0.001
Perceived Severity	18.7	3.6	19.5	3.3	-2.0	0.045
Perceived Benefits	19.1	2.9	18.4	2.8	2.1	0.040
Perceived Barriers	30.6	7.5	33.4	6.6	-3.3	0.001

Bivariate logistic regression was used to examine if perceived susceptibility, perceived severity, perceived barriers and perceived benefits predicted screening for cervical cancer (see Table 4.21). Perceived susceptibility was the greatest predictor for cervical cancer screening ($P < 0.05$).Woman with perceived susceptibility were more likely to screen for cervical cancer (OR = 3.36; 95% CI: 1.9 - 5.8).

Table 4.21: Logistic regression on selected variables on cervical cancer screening of respondents

Predictor Variable	**β**	**Wald χ^2**	**P value**	**Odds Ratio**	**95% CI**

					Odds Ratio
Perceived Susceptibility	1.21	18.65	0.00002	3.359	1.9 - 5.822
Perceived Severity	-0.67	3.00	0.08303	0.511	0.2 - 1.092
Perceived Benefits	0.26	0.97	0.32533	1.291	0.8 - 2.146
Perceived Barriers	0.19	0.13	0.71658	1.212	0.4 - 3.424
Constant	-0.86	17.64	0.00003	0.422	1.9 - 5.822

Figure 4.4 indicates the mean score of the construct of the health belief model (HBM). Perceived barrier has the highest mean score of 33.4 for the never screened for cervical cancer and 30.6 for those that had ever screened for cervical cancer.

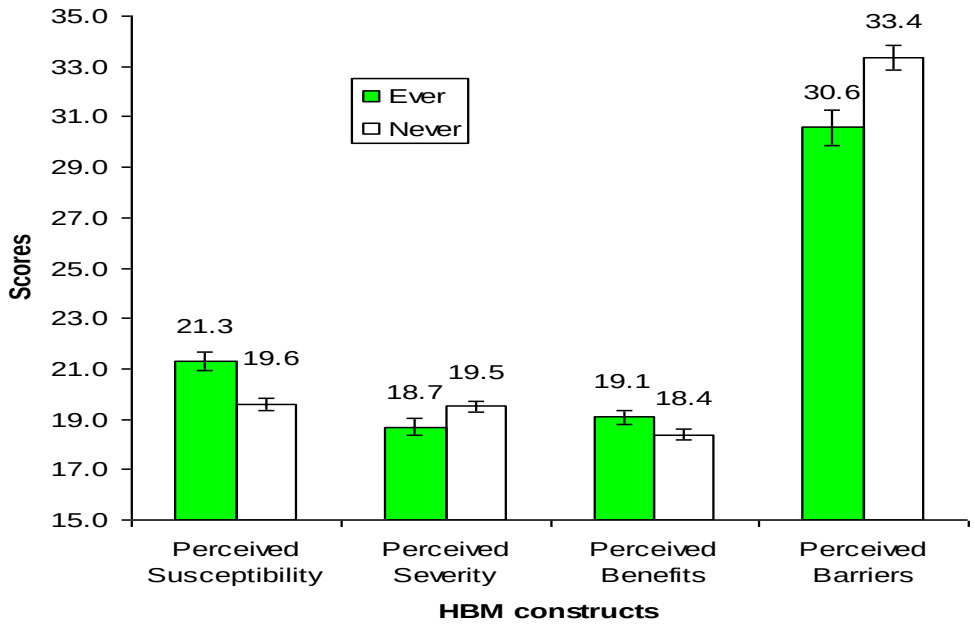


Figure 4.4: **Mean scores for perceived susceptibility, perceived severity, perceived benefits and perceived barriers to cancer screening of respondents**

The result of logistic regression analysis for cervical cancer screening of respondents is shown in table 4.22. According to the results, 86% of the respondents were predicted to have screened for cervical cancer while 39% of respondents were predicted to have never screened for cervical cancer. The overall percentage prediction for cervical cancer screening was 67%.

Table 4.22: Results of logistic regression analysis of ever screening for cervical cancer of respondents (N=300)

Observed		Predicted cervical cancer screen ever		Percentage Correct
		no	yes	
Ever screened for cervical cancer	no	146	24	86
	yes	68	44	39
Overall Percentage				67
The cut value is .500				

CHAPTER 5: DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion

5.1.1 Introduction

This chapter provides a summary discussion on cervical cancer screening participation. It is organized into sections that are aimed at addressing the specific research questions; comprising of sections that discusses the cervical cancer screening status of participants; the perceived susceptibility to cervical cancer of respondents; perceived severity of cervical cancer of respondents; perceived benefits of having cervical cancer screening and perceived barriers of seeking cervical cancer screening. Finally, the last section discusses the association between socio-demographic characteristics of the respondents with perceived susceptibility of cervical cancer, association of socio-demographic characteristics of the respondents with perceived severity of cervical cancer, association of socio-demographic characteristics of the respondents with perceived benefits of having cervical cancer screening and association of socio-demographic characteristics of the respondents with perceived barriers to seeking cervical cancer screening.

5.1.2 Cervical cancer screening status of respondents

Disappointedly, the study revealed that only 39% of the respondents have actually done cervical cancer screening. This cervical cancer screening rate is far too small and does not reach the Ministry of Health goal of screening at least 75% or more of eligible women for

cervical cancer. A similar study on cervical cancer and Pap smear screening conducted in Botswana on knowledge and perceptions by Mpotokwane and Mcfarland found that only 40.0% of study participants had ever had Pap smear tests (Mpotokwane and Mcfarland, 2003). This finding of low uptake of cervical cancer screening is consistent with most other studies done in less developed countries which reported a participation rate of 23% and follow up rates of 46% within 3 years (Carey et al., 1993 and Lerman et al., 1993). Among others, the reason for low participation include at risk women not perceiving themselves as been susceptible to cervical cancer provided they have no symptoms of cervical cancer, lack of information about the benefits of cervical cancer screening and misconceptions like thinking it is painful, takes away virginity etc. Although most respondents perceived cervical cancer as serious, the thought of believing that there was no treatment of cervical cancer, makes them uninterested in doing cervical cancer screening.

The finding that 64% of those who have actually done cervical cancer did so within the past 3 years reveals recent increase uptake in cervical cancer screening programs following the introduction of routine cervical cancer screening free of charge in government hospitals in Botswana. This awareness program if sustained might greatly improve cervical cancer screening uptake in Botswana in the coming years.

5.1.3 Perceived susceptibility to cervical cancer

Overall, respondents who had previously screened for cervical cancer have a higher perceived susceptibility to cervical cancer than those who had never screened for cervical cancer. When perceived susceptibility to cervical cancer was compared with cervical cancer screening status, 71% of the respondents perceived themselves as having a low susceptibility to cervical cancer and as a result think cervical cancer screening was not necessary. This is in keeping with the National Health interview survey conducted in 1991 which revealed that most women understood that cervical cancer screening successfully detects cervical cancer early, but they do not see themselves as been at risk of developing cervical cancer especially if they do not have any symptoms or have no family history of cervical cancer (Harlan et al., 1991).

Majority of the study respondents think that cervical cancer is more common in older women and therefore screening was mainly essential in the older age group. This is consistent with findings of a study conducted by Barron et al that reported that majority of the respondents believed that older women are at greater risk of having cervical cancer (Barron et al., 2001). Findings of this study revealed that majority of the respondents either disagreed or strongly disagreed that the risk of cervical cancer increases with parity. This is consistent with findings by Agurto et al., (2004) and Suwatcharachaitiwong, (2004) that found that both the screened for cervical cancer and never screened for cervical cancer either disagreed or

strongly disagreed that the risk of cervical cancer increases with parity. This suggests that misconception that there is an association between parity and cervical cancer might be a contributing factor for the low uptake of cervical cancer screening.

The study found that respondents were aware that cervical cancer is commoner in HIV positive women and those with multiple sexual partners. This finding was in keeping with studies conducted by Agurto et al., (2004) and Suwatcharachaitiwong, (2004) that revealed that respondents were aware that cervical cancer is more common to women who are HIV positive and since there is an association between multiple sexual partners and HIV positive, the risk is also higher among women with multiple sexual partners. From this, recommendation can be made that increasing routine HIV testing as well as education on the association of multiple sexual partners with HIV positive status and cervical cancer can increase cervical cancer uptake.

Susceptibility to cervical cancer was significantly associated ($P<0.001$) with cervical cancer screening. This is consistent with the Health Belief Model which hypothesizes that actors feel more susceptible than non-actors (Glanz et al., 2002). It was observed that those with high susceptibility were 3.2 times (OR=3.24) more likely to have screened than those with low susceptibility. This finding was consistent with a study conducted by Skaer et al., (1997), that revealed that the more susceptible women perceive themselves, the more likely they take preventive actions.

Thus, only respondents who perceive themselves as susceptibility to cervical cancer were more likely to take preventive actions compared to those who perceive themselves as not susceptible.

5.1.4 Perceived severity of cervical cancer

Most women knew that cervical cancer is a serious type of cancer as majority of study respondents responded correctly to questions about severity of cervical cancer with a mean average response ranging from 2.58-3.56. This is consistent with a survey on the severity of cervical cancer among adult females in Quebec which reported that 57% of women were afraid of developing cervical cancer sometime in their life, and 93% thought cervical cancer has serious consequences (Sauvageau et al., 2007). The response to severity questions of this study also agrees strongly with study by Burak and Meyer, (1997) that reported that 98% of college women felt that cervical cancer is a very serious condition and half of them think that it is not a treatable disease. Price et al, 1996, reported that 92% of women believed that cervical cancer is the second most serious type cancer a woman can have (first being breast cancer) and most women who develop cervical cancer certainly die from it. This result clearly indicates that those that have ever screened for cervical cancer and those that have never screened for cervical cancer are aware that cervical can is a serious disease.

Both the ever screened for cervical cancer and the never screened for cervical cancer either strongly agree or agree that there is no effective treatment for cervical cancer, it makes a

woman's life difficult, it causes infertility and most respondents think death from cervical cancer is not rare. Similarly, Leyva et al., (2006) found that both the ever screened for cervical cancer and the never screened for cervical cancer equally agreed that cervical cancer is a serious disease. However, unlike studies by Leyva et al., (2006) that reported that the ever screened for cervical cancer believed that cervical cancer is easily cured if identified early, the never screened for cervical cancer believed that cervical cancer is not treatable. This study however found that both the ever screened and never screened believe there is no effective treatment for cervical cancer. This implies that misconception about the lack of effective treatment of cervical cancer if identified early could be a contributory factor for low uptake of cervical cancer screening among the study group.

When perceived severity to cervical cancer screening was compared between the ever screened for cervical cancer and the never screened for cervical cancer, there was no significant association between perceived severity of cervical cancer and cervical cancer screening. This differs with the hypothesis of the Health Belief Model that predicts that perceived seriousness of a disease necessitate people to engage in preventive actions.

Therefore, majority of the respondents are quiet aware that cervical cancer is a serious disease but the reasons why they fail to engage in preventive actions as predicted by the Health Belief Model needs to be further explored.

5.1.5 Perceived benefits of doing cervical cancer screening

It was good to know that the respondents whether screened or never screened overwhelmingly agree or strongly agree that it is important to do cervical cancer screening (87%). Therefore, knowledge about the benefits of doing cervical cancer screening was not a significant barrier. This is consistent with studies in which the majority of subjects agreed that regular pap smear screening will give them peace of mind, find a problem before they become cancer and very necessary even if there is no family history of cancer (Leyva et al., 2006). It was also good to know that both the ever screened for cervical cancer and never screened for cervical cancers in this study believed that it was important to do cervical cancer screening include it could find changes in the cervix before they become cancer (75%) and it could easily be cured when found early (84%). These reasons are consistent with findings of other studies (Burak and Meyer, 1997, Agurto et al., 2004 and Bessler et al., 2007).

Disappointedly, when the ever screened for cervical cancer and the never screened for cervical cancer were compared, it found that there was no significant association between perceived benefits of doing cervical cancer screening and uptake of cervical cancer screening ((χ^2 = 1.38; p = 0.2409), and this was consistent with previous studies (Leyva et al., 2006, Bessler et al., 2007 and Agurto et al., 2004). This however contradicts the prediction of the Health Belief model which predicts that those with perceived benefits are more likely to take

preventive actions, than those with no perceived benefits or low perceived benefits. Therefore, it is most likely that the low uptake of cervical cancer screening among women attending Mahalapye Hospital, Botswana could be attributed to other factors other than lack of perceived benefits.

5.1.6 Perceived barriers to seeking cervical cancer screening

Most respondents did not have perceived barriers to cervical cancer screening as the average response to barrier questions had a mean of less than 3. This finding completely contradicts previous studies that reported many barriers among the ever screened for cervical cancer and the never screened for cervical cancer like pain, lack of convenient clinic times, lack of information, not knowing where to go for cervical cancer screening, too embarrassing to do cervical cancer screening, partner resisting them from doing cervical cancer screening, lack of female screeners etc as barriers to cervical cancer screening ((Burak and Meyer, 1997, Agurto et al., 2004, Leyva et al., 2006 and Bessler et al., 2007).

When comparing responses of those that had ever screened for cervical cancer and those that had never screened for cervical cancer, 74% of the ever screened group either strongly disagree or disagree that seeking to do cervical cancer screening suggest a woman is having sex versus 27% of the never screened group who either strongly agree or agree that seeking to do cervical cancer screening suggest a woman is having sex. This study revealed that both the ever screened for cervical cancer and never screened for cervical cancer equally disagreed or strongly disagreed to the barrier questions in the questionnaire. The findings of no significant association between perceived barriers to cervical cancer screening and cervical cancer screening status suggest that most barriers to cervical cancer screening has been addressed and therefore contrast other studies that found significant barriers among the never screeners when compared to the screeners (Leyva et al., 2006, Bessler et al., 2007 and Agurto et al., 2004).

5.1.7 Association between socio-demographic characteristics and the construct of the Health belief model

5.1.7.1 Association between socio-demographic characteristics and perceived susceptibility to cervical cancer

Perceived susceptibility was statistically significant with employment, monthly income, residential area, marital status and nearly with age and educational level. The fact that perceived susceptibility is statistically significant with employment, yet there is no proportionate increase in cervical cancer screening uptake among the employed suggest that it might be due to lack of convenient clinic time to go for cervical cancer screening. The relationship between perceived susceptibility and high monthly income, high educational level, marital status and residential area suggest that these groups are more likely to participate in cervical cancer screening and this is consistent with previous studies that

reported that those with high monthly income, the educated and the married have a higher perceived susceptibility to cervical cancer (Yi, 1994 and Cesar et al., 2002).

5.1.7.2 Association between socio-demographic characteristics and perceived severity of cervical cancer

Nearly all the socio-demographic characteristics were significant with perceived severity of cervical cancer (age, marital status, educational level, employment, monthly income and residential area). This suggests that most people irrespective of their socio-demographic characteristics are aware of the severity of cervical cancer. This is consistent with previous studies that found that most people are aware of the severity of cervical cancer but still do not take preventive actions by participating in cervical cancer screening programs (Sauvageau et al., 2007, Price et al., 1996 and Burak and Meyer, 1997). Therefore, despite awareness of the perceived severity of cervical cancer, the reasons while at risk women fail to participate in cervical cancer screening needs to be adequately explored.

5.1.7.3 Association between socio-demographic characteristics and perceived benefits of doing cervical cancer screening

The study did not find any significant association between socio-demographic characteristics and perceived benefits of doing cervical cancer screening as both the ever screened for cervical cancer and the never screened for cervical cancer irrespective of their socio-demographic characteristics overwhelmingly agree or strongly agree that it was important to do cervical cancer screening. This finding is consistent with findings of Leyva et al., (2006) and Bessler et al., (2007) in which respondents across all socio-demographic characteristics generally were aware of the benefits of cervical cancer screening.

5.1.7.4 Association between socio-demographic characteristics and perceived barriers to seeking cervical cancer screening

It was good to note that this study did not find any significant association between socio-demographic characteristics and perceived barriers to doing cervical cancer screening. All the various socio-demographic characteristic groups had equal perceived barriers to cervical cancer screening. This contrast previous studies that reported various barriers to cervical cancer screening among the poor, the less educated, the single and the married etc (Leyva et al., 2006, Bessler et al., 2007 and Agurto et al., 2004). The lack of significant association between socio-demographic characteristics and perceived barriers to cervical cancer screening in this study might suggest that most barriers to cervical cancer screening has been addressed as a result of the Ministry of Health's commitment to improve uptake of cervical

cancer screening through provision of education that create awareness and provision of infrastructure to improve access.

5.1.8 Comparison of HBM construct between ever screened and never screened

All the constructs of the HBM (perceived susceptibility, perceived severity, perceived benefits and perceived barriers) when compared for ever screened for cervical cancer and never screened for cervical cancer, all show statistical significance with perceived susceptibility being the one with the highest statistical significance. Thus perceived susceptibility was the greatest predictor of cervical cancer screening as those who perceived themselves to be susceptible were more likely to screen. From this, assumption can be made that by increasing perceived susceptibility to cervical cancer through awareness campaigns, cervical cancer screening uptake can be significantly improve amongst the eligible women attending Mahalapye District Hospital. Perceived barriers, perceived benefits and perceived severity are other important predictors of cervical cancer screening as revealed in this study. This is consistent with the constructs of the health belief model in which perceived susceptibility, perceived severity, perceived benefit and perceived barriers are significant predictors of preventive action (Glanz et al., 2002).

Disappointedly, this finding differ from other studies that found that perceive susceptibility was not a predictor of cervical cancer screening and although perceived benefits was high, it does not predict cervical cancer screening (Boonpongmanee, 2007).

5.2 Limitation of the study

Although this study was limited by its cross-sectional design, use of self-report and convenience sampling, other important limitations include;

- Information bias due to self reporting as some of the respondents might have felt sensitive to report negative results.

- The result of this study represents the views of women attending Mahalapye district hospital. The factors influencing cervical cancer screening uptake in other hospital could not be explored.

5.3 Summary of findings of the study

The important findings of the study include;

- Cervical cancer screening rates is still below the set target of at least 75% of eligible women.

- Majority of the respondents are aware of their susceptibility to cervical cancer with average response to perceived susceptibility questions of greater than 3. Perceived susceptibility was most significantly associated with screening for cervical cancer (P-

value of 0.001). Those with high perceived susceptibility were 3.2 times more likely to screen for cervical cancer than those with low perceived susceptibility.

- Majority of respondents in this study are aware of the severity of cervical cancer with mean average response to perceived severity question in the range between 2.58 to 3.56. There was no significant association between perceived severity and cervical cancer screening.

- Majority of respondents in this study are aware of the perceived benefits of seeking cervical cancer screening with average response in the range between 3.10 and 4.33. However, the perceived benefits of seeking cervical cancer screening were not significantly associated with screening for cervical cancer.

- Majority of the respondents strongly disagree or disagree with statement about perceived barriers to cervical cancer screening with average ratings of less than 3. There was no significant association between perceived barriers and cervical cancer screening.

- There was a significant association between perceived susceptibility to cervical cancer and employment status (P-value<0.001), monthly income (p=0.004) and residential area (p=0.001). All other socio-demographic characteristics were not significant.

- Perceived susceptibility was the greatest predictor of cervical cancer screening (p<0.001).

5.4 Conclusion

Cervical cancer screening rates of 39% is still far below the national target of 75% (Ministry of Health, 2001). Majority of the respondents are aware of their perceived susceptibility to cervical cancer, perceived severity of cervical cancer, perceived benefits of seeking cervical cancer screening and do not have barriers to seeking cervical cancer screening. However, only perceived susceptibility was shown to improve cervical cancer screening among the respondents.

5.5 Recommendation

Based on the findings of this study, the following recommendations are suggested;

- Cervical cancer screening rates have remained below the national target and needs to be improved through creating awareness and educating eligible women about availability of cervical cancer screening and usefulness of doing cervical cancer screening.

- Perceived susceptibility should be emphasized through education and awareness campaigns as it was found to improve uptake of cervical cancer screening.

- Perceived barriers, perceived severity and perceived benefits were not found to be contributing to low uptake of cervical cancer screening and therefore reasons for low uptake needs to be explored and addressed further through a qualitative study. Perhaps this could address the root cause of the low uptake seen in this unique population.
- Improving monthly income, unemployment status as well as residential area that were found to be significantly associated with perceived susceptibility may be vital to improve cervical cancer screening uptake.

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APPENDIX 1

UNIVERSITY OF LIMPOPO (Medunsa Campus) CONSENT FORM

Statement concerning participation in a Study.

Title of the study;

Factors influencing cervical cancer screening uptake among women attending Mahalapye District Hospital using the Health Belief Model.

Introduction;

The study seeks to elucidate factors influencing cervical cancer screening uptake among women attending Mahalapye District Hospital using the Health Belief Model. Despite availability of cervical cancer screening services in all government hospital free of charge, the uptake of cervical cancer screening is still very low and the same clients keep presenting for follow up while new cases seldom presents. The findings of the study will be used to re-engineer the process with the aim of improving cervical cancer screening uptake among women attending Mahalapye District Hospital.

Purpose of the study;

The research is a dissertation for the award of a Masters in Public Health degree at the University of Limpopo. The study is also aimed at finding issues which when addressed will increase cervical cancer screening uptake.

Eligibility criteria;

Participants of the study include all adult women above 21 years of age capable of consenting to participate in the study.

Study Procedure;

The study is a cross sectional descriptive study. Participants will be approached during hospital visits and the study explained to them. They will then be informed that the study is voluntary and they have the right to agree to participate or withdraw from the study at anytime. They will then be requested to consent and those who consent to participate will be interviewed.

No treatment or blood collection will be involved in the study. Participants will not be at risk of any injury and will not be rewarded in any form. Participants will not be having any direct

benefit but the findings of the study will be used to re-engineer the process of cervical cancer screening to increase uptake.

Privacy, Anonymity and Confidentiality;

Privacy and confidentiality will be ensured as no form of identifier will be in the questionnaire. The information you provide for the interview will be used for the purpose of the study and scientific purposes and the results may be published. The result of the study will be reviewed by National School of Public Health, University of Limpopo, and the Health Research Unit, Ministry of Health, Botswana.

Who to contact;

In cases of any questions regarding the research, you can contact

Dr. Chidiebere Maquincy Ibekwe,

Mahalapye District Hospital,

Box 49, Mahalapye

Central District, Botswana.

Tel; 4714779, Work; 4718000, Mobile; 71574677 Emails; maquincy@yahoo.com

Statement of consent;

I hereby give consent to participate in this study.

....

Name of participants Signature of participant.

....

Place. Date. Witness

Statement by the Researcher

I provided verbal information regarding this Study.

I agree to answer any future questions concerning the Study as best as I am able.

I will adhere to the approved protocol.

....

Name of Researcher Signature Date Place

APPENDIX 2

UNIVERSITY OF LIMPOPO (Medunsa Campus) CONSENT FORM

Seitlamo sa motsenelela Patlisiso.

Leina la patlisiso;

Mabaka a a rotloetsang go ka tlhathobelwa kankere ya molomo wa popelo mo basading ba ba tlang bookelong mo Mahalapye District Hospital- Go dirisiwa sekano sa tumelo ya botsogo (Health Belief Model).

Matseno;

Patlisiso e e leka go bona mabaka a a amang itlhatlhobelo kankere ya molomo wa popelo mo basading ba ba etelang sepatela sa Mahalapye. Le fa didirisiwa tse di tlhatlhobelang kankere ya molomo wa popelo di le teng e bile e tlhatlhobelwa mahala, batho ga ba itlhatlhobe ka bontsi e bile go ipoeletsa batho ba le bangwe. Maduo a patlisiso e, a tla dirisiwa go tokafatsa tlhatlhobo ya kankere mo basading ba ba etelang sepatela sa Mahalapye.

Maikaelelo a Patlisiso;

Patlisiso e e a tlhokafala go nna le dithuto tse di kwa godimo tsa botsogo jwa sechaba kwa Unibesithing ya Limpopo, gape e leka go batla ditsela tse di ka oketsang tlhatlhobo ya kankere ya popelo.

Ba ba tshwanetseng go tsaya karolo;

Ba tsaya karolo ke bomme botlhe ba ba dingwaga tse di fetang masome a mabedi le bongwe (21) ba ba dumalanang le go tsaya karolo.

Mokgwa wa go dira patlisiso;

Ba tsaya karolo batla tlhalosediwa ka patlisiso e ka nako e ba etetseng sepatela. Batla tlhalosediwa fa patlisiso e e sa patelediwe e bile ba na le tshwanelo ya go tswa mo go tseyeng karolo ka nako nngwe le nngwe fa ba batla. Ba tsaya karolo batla kopiwa go dira tumalano mme morago ba bodiwe dipotso.

Ga go alafiwe e bile ga go tsewe batho madi mo patlisisong e. Ba tsaya karolo ga ba mo diphatseng dipe ka jalo ga gona ditebogo dipe mo patlisisong e, mme maduo a patlisiso a tla dirisiwa go tlokafatsa lenaneo la itlhatlhobelo kankere ya molomo wa popelo le go oketsa itlhatlhobo.

Sepihiri mo patlisisong;

Go tla tlhomamisiwa gore go nna le sephiri mo patlisisong e, ka jalo ba tsaya karolo ga bana go patelediwa go ntsha sesupo sepe kgotsa maina a bone. Maduo a patlisiso e a tla dirisiwa mo boranyaneng e bile maduo a ka nna a ntshetswa ko ntle jaaka go kwala buka ka one. Maduo a patlisiso e a tla seka-sekiwa ke ba sekolo sa botsogo jwa sechaba kwa Unibesithing ya Limpopo, le ba lekalana la dipatlisiso mo lephateng la botsogo mo Botswana.

Yo o ka bonwang mabapi le patlisiso;

Fa o batla go botsa sengwe mabapi le patlisiso e o bone ba ba latelang;

Dr. Chidiebere Maquincy Ibekwe,

Mahalapye District Hospital,

Box 49, Mahalapye,

Central District, Botswana.

Tel; 4714779, Work; 4718000, Mobile; 71574677 Emails; maquincy@yahoo.com

Mokwalo wa tumalano;

Ke dumela go tsenelela patlisiso e

....

Leina la motseneledi Setlamo sa Motseneledi.

....

Lefelo Letsatsi. Mosupi

Seitlamo sa mmatlisisi

Ke file molaetsa ka go bua mabapi le patlisiso e.

Ke dumela go araba dipotso tse di tlhagang mo nakong e e tlang ka bojotlhe jame mabapi le patlisiso e.

Ke tla sala melawana e e beilweng morago.

....

Leina la Mmatlisisi Setlamo Letsatsi Lefelo

APENDIX 3

QUESTIONNAIRE

SECTION A

SOCIO-DEMOGRAPHIC DATA;

1. AGE IN YEARS; Date of birth;...../...../.....

2. MARITAL STATUS

Single ☐

Married ☐

Divorced ☐

Widowed ☐

Cohabiting ☐

3. ETHNIC GROUP/RACE

Black ☐

White ☐

Colored ☐

Indian ☐

Others ☐ Specify…….

4. EDUCATIONAL LEVEL

None ☐

Primary ☐

Secondary ☐

Tertiary ☐

5. EMPLOYMENT STATUS

Employed ☐

Unemployed ☐

Self employed ☐

Pensioners ☐

6. MONTHLY PERSONAL INCOME

>P5000 ☐

P3000- P5000 ☐

P1000- P3000 ☐

< P1000 ☐

No income ☐

7. RESIDENTIAL AREA

Urban ☐

Peri-urban ☐

Rural ☐

Others ☐ Specify.....

SECTION B

PARTICIPATION IN CERVICAL CANCER SCREENING;

8. HAVE YOU EVER HAD CERVICAL CANCER SCREENING?

Yes ☐

No ☐

9. IF YOU ANSWERED YES TO QUESTION 13, WAS THE CERVICAL CANCER SCREENING DONE WITHIN THE PAST 3 YEARS?

Yes ☐

No ☐

SCETION C

PERCEPTION ABOUT SUSCEPTIBILITY TO CERVICAL CANCER;

10. OLDER WOMEN ARE MORE AT RISK OF CERVICAL CANCER THAN YOUNGER WOMEN.

- Strongly Agree ☐
- Agree ☐
- Not Sure ☐
- Disagree ☐
- Strongly disagree ☐

11. EVERY WOMAN OF CHILD BEARING AGE IS AT RISK OF CERVICAL CANCER.

- Strongly Agree ☐
- Agree ☐
- Not Sure ☐
- Disagree ☐
- Strongly disagree ☐

12. WOMEN WITH MULTIPLE SEXUAL PARTNERS ARE MORE PRONE TO CERVICAL CANCER.

- Strongly Agree ☐
- Agree ☐
- Not Sure ☐
- Disagree ☐
- Strongly disagree ☐

13. CERVICAL CANCER IS MORE COMMON TO WOMEN WHO ARE HIV POSITIVE.

- Strongly Agree ☐
- Agree ☐
- Not Sure ☐
- Disagree ☐
- Strongly disagree ☐

14. SUSCEPTIBILITY TO CERVICAL CANCER INCREASES WITH NUMBER OF PREGNANCY.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

15. CERVICAL CANCER ONLY HAPPENS TO WOMEN WHO ARE ABOVE THE AGE OF 50 YEARS.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

SECTION D

PERCEPTION ABOUT SERIOUSNESS OR SEVERITY OF CERVICAL CANCER;

16. THERE IS EFFECTIVE TREATMENT FOR CERVICAL CANCER?

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

17. HAVING CERVICAL CANCER WILL MAKE A WOMAN'S LIFE DIFFICULTY.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

 ☐

Strongly disagree

18. CERVICAL CANCER IS NOT AS SERIOUS AS OTHER TYPES OF CANCERS.

Strongly Agree ☐
Agree ☐
Not Sure ☐
Disagree ☐
Strongly disagree ☐

19. CERVICAL CANCER IS EASILY CURED.

Strongly Agree ☐
Agree ☐
Not Sure ☐
Disagree ☐
Strongly disagree ☐

20. HAVING CERVICAL CANCER CAN RESULT TO INFERTILITY.

Strongly Agree ☐
Agree ☐
Not Sure ☐
Disagree ☐
Strongly disagree ☐

21. DEATH RESULTING FROM CERVICAL CANCER IS RARE.

Strongly Agree ☐
Agree ☐
Not Sure ☐
Disagree ☐
Strongly disagree ☐

SECTION E

PERCEIVED BENEFITS OF CERVICAL CANCER SCREENING;

22. IT IS IMPORTANT FOR A WOMAN TO HAVE CERVICAL CANCER SCREENING TO KNOW IF SHE IS HEALTHY.

Strongly Agree ☐
Agree ☐
Not Sure ☐
Disagree ☐
Strongly disagree ☐

23. CERVICAL CANCER SCREENING CAN FIND CHANGES IN THE CERVIX BEFORE THEY BECOME CANCER.

Strongly Agree ☐
Agree ☐
Not Sure ☐
Disagree ☐
Strongly disagree ☐

24. IF CERVICAL CHANGES ARE FOUND EARLY FROM CERVICAL CANCER SCREENING, THEY ARE EASILY CURABLE.

Strongly Agree ☐
Agree ☐
Not Sure ☐
Disagree ☐
Strongly disagree ☐

25. DOING CERVICAL CANCER SCREENING CAN HELP IMPROVE THE CHANCES OF AN INFERTILE WOMAN BECOMING PREGNANT.

Strongly Agree ☐
Agree ☐
Not Sure ☐
Disagree ☐
☐

Strongly disagree

26. CERVICAL CANCER SCREENING CAN DECREASE THE CHANCES OF A WOMAN HAVING AN ABORTION.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

SECTION F

PERCEIVED BARRIERS TO CERVICAL CANCER SCREENING;

27. IT IS TOO EMBARRASSING TO DO CERVICAL CANCER SCREENING.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

28. CERVICAL CANCER SCREENING IS PAINFUL.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

29. IF A YOUNG UNMARRIED WOMAN DOES CERVICAL CANCER SCREENING, EVERY ONE WILL THINK SHE IS HAVING SEX.

Strongly Agree ☐

Agree ☐

Not Sure ☐

 ☐

Disagree

Strongly disagree ☐

30. DOING CERVICAL CANCER SCREENING WILL ONLY MAKE ONE WORRY.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

31. IF A WOMAN HAS NOT HAD SEX, CERVICAL CANCER SCREENING WILL TAKE AWAY HER VIGINITY.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

32. NOT KNOWING WHERE TO GO FOR CERVICAL CANCER SCREENING IS A REASON WHY PEOPLE DONT DO CERVICAL CANCER SCREENING.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

33. ONLY WOMEN WHO HAVE HAD BABIES NEED TO DO CERVICAL CANCER SCREENING.

Strongly Agree ☐

Agree ☐

Not Sure ☐

☐

Disagree

Strongly disagree ☐

34. MY PARTNER WILL NOT WANT ME TO DO CERVICAL CANCER SCREENING.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

35. LACK OF FEMALE SCREENERS IN HEALTH FACILITIES IS A REASON FOR NOT DOING CERVICAL CANCER SCREENING.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

36. ATTITUDES OF HEALTH WORKERS CAN DISCOURAGE ONE FROM GOING FOR CERVICAL CANCER SCREENING.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

37. LACK OF CONVINIENT CLINIC TIME IS A BARRIER TO ROUTINE CERVICAL CANCER SCREENING.

Strongly Agree ☐

Agree ☐

Not Sure ☐

☐

Disagree

Strongly disagree ☐

38. LACK OF INFORMATION ABOUT CERVICAL CANCER SCREENING PROCEDURES IS A BARRIER TO UPTAKE OF CERVICAL CANCER SCREENING.

Strongly Agree ☐

Agree ☐

Not Sure ☐

Disagree ☐

Strongly disagree ☐

Adapted from A Study Cervical cancer screening beliefs among young Hispanic women by Byrd T. L, Peterson K. S, Chavez R and Heckert A, published by The Institute for Cancer Prevention and Elsevier Inc, 2003.

APPENDIX 4

PATLO MAIKUTLO

KAROLO A

TSA SELEGAE

1. DINGWAGA; Date of Birth;...../...../.....

2. SEEMO SA NYALO

Ga ke a nyalwa/nyalo ☐

Ke nyetswe/nyetse ☐

Ke tlhadilwe/tlhadile ☐

Ke swetswe ☐

Ke nna fela le molekane ntleng ga lenyalo ☐

3. LETSO

Motho Montsho ☐

Motho Mosweu ☐

Mokwtwane ☐

Mo intia ☐

Tse dingwe ☐ Tlhalosa…….

4. SEEMO SA THUTO

☐

Ga ke a tsena sekolo

Dithuto tse di potlana ☐

Dithuto tse di kgolwane ☐

Dithuto tsa go ithutela pereko ☐

5 .SEEMO SA MMEREKO

Ke a bereka ☐

Ga ke bereke ☐

Ke a ipereka ☐

Ke tlogetse tiro ka bogodi ☐

6. MADI A O A AMOGELANG KA KGWEDI?

Go feta P5000 ☐

P3000- P5000 ☐

P1000- P3000 ☐

Ko tlase ga P1000 ☐

Ga ke amogele sepe ☐

7. LEFELO LA BONNO

Toropo ☐

Go bapa le toropo ☐

Legae ☐

Tse dingwe ☐ Tlhalosa…….

KAROLO YA BOBEDI

<u>GO TSENELELA TLHATLHOBO YA KANKERE YA MOLOMO WA POPELO;</u>

8. A O KILE WA TLHATLHOBELWA KANKERE YA MOLOMO WA POPELO?

Ee ☐

Nyaa ☐

9. FA O ARABILE EE FA GODIMO, A O TLHATLHOBETSWE KANKERE YA POPELO MO DINGWAGENG TSE THARO TSE DI FITILENG?

☐

Ee

Nyaa ☐

KAROLO YA BORARO

KAKANYETSO KA GO KA TSENWA KE KANKERE YA MOLOMO WA POPELO;

10. BASADI BA BATONA BA MO BODIPHATSENG JA GO TSENWA KE KANKERE YA MOLOMO WA POPELO GO NA LE BASADI BA BANANA.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

11. BASADI BA BA MO DINGWAGENG TSA TSHOLO BA MO BODIPHATSENG JA GO TSENWA KE KANKERE YA MOLOMO WA POPELO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

12. BASADI BA BA NNANG LE BAKAPELO BA BANTSI BA TSHABELELWA KE GO TSENWA KE KANKERE YA MOLOMO WA POPELO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

13. KANKERE YA MOLOMO WA POPELO E TWAELESEGILE THATA MO BASADING BA BA NANG LE MOGARE WA HIV.

Ke dumela thata ☐

 ☐

Ke a dumela

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

14. GO KA TSENWA KE KANKERE YA MOLOMO WA POPELO GO O KETSEGA KA PALO YA GO IMA.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

15. KANKERE YA MOLOMO WA POPELO E TSENA BASADI BA DINGWAGA TSE DI FETANG MASOME A MATLHANO FELA.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

KAROLO YA BONE

<u>KAKANYETSO KA BORAI JA KANKERE YA MOLOMO WA POPELO;</u>

16. KANKERE YA MOLOMO WA POPELO E NA LE KALAFI.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

17. GO NNA LE KANKERE YA MOLOMO WA POPELO GO KA KETEFALETSA MOSADI BOTSHELO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

18. KANKERE YA MOLOMO WA POPELO GA E BORAI JAAKA DI KANKERE TSE DINGWE.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

19. KANKERE YA MOLOMO WA POPELO E ALAFESEGA MOTLHOFO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

20. GO NNA LE KANKERE YA MOLOMO WA POPELO GO KA BAKA GO TLHOKA GO TSHOLA.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

☐

Ga ke dumele gotlhelele

21. DINTSHO TSA KANKERE YA MOLOMO WA POPELO DI BOUTSANA.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

KAROLO YA BOTLHANO

DIKAKANYO KA BOMOSOLA JA GO ITLHATLHOBELA KANKERE YA MOLOMO WA POPELO;

22. GO MOSOLA GORE MOSADI A ITLHATLHOBELE KANKERE YA MOLOMO WA POPELO GORE A ITSE GORE O ITEKANETSE.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

23. GO TLHATLHOBELWA KANKERE YA MOLOMO WA POPELO GO BONTSHA DIPHETOGO TSE DI MO MOLOMONG WA POPELO PELE E NNA KANKERE.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

☐

Ga ke dumele

Ga ke dumele gotlhelele ☐

24. FA DIPHETOGO MO MOLOMONG WA POPELO DI BONWE NAKO E LE TENG, DI ALAFESEGA MOTLHOFO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

25. GO DIRA TLHATLHOBO YA KANKERE YA POPELO GO KA THUSA GO TOKAFATSA GO KA TSHOLA GA MOSADI YO O SA TSHOLENG MME A FELELA A IMILE.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

26. GO TLHATLHOBELA KANKERE YA MOLOMO WA POPELO GO FOKOTSA GO KA SENYEGELWA GA MOSADI.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

KAROLO YA BORATARO

<u>DIKAKANYO TSE DI KA KGANELANG/THIBELANG GO KA ITLHATLHOBELA KANKERE YA MOLOMO WA POPELO;</u>

27. GO TLHABISA DITLHONG GO DIRA TLHATLHOBO YA KANKERE YA MOLOMO WA POPELO.

☐

Ke dumela thata

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

28. GO TLHATLHOBELA KANKERE YA MOLOMO WA POPELO GO BOTLHOKO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

29. FA MOSADI WA MONANA A SA NYALWA A DIRA TLHATLHOBO YA KANKERE YA MOLOMO WA POPELO MONGWE LE MONGWE O TLA A KANYA GORE O TLHAKANELA DIKOBO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

30. GO TLHATLHOBELA KANKERE YA MOLOMO WA POPELO GO DIRA FELA GORE MOTHO A TSHWENYEGE MAIKUTLO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

31. FA MOSADI A ISE A KO A TLHAKANELE DIKOBO, GO DIRA TLHATLHOBO YA KANKERE YA MOLOMO WA POPELO GO KA NTSHA BOLENG JWA GAGWE, E BO E KARE O TLHAKANETSE DIKOBO MORAGO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

32. GO TLHOKA GO ITSE KO TLHATLHOBO YA KANKERE YA MOLOMO WA POPELO E DIRWANG TENG KE LEBAKA LE LE ITSANG BATHO GO TLHATLHOBELA KANKERE YA MOLOMO WA POPELO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

33.BASADI BA BA NANG LE BANA KE BONE FELA BA BA TSHWANETSENG GO DIRA TLHATLHOBO YA KANKERE YA MOLOMO WA POPELO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

34.MOKAPELO WAME GA A BATLE KE TLHATLHOBELA KANKERE YA MOLOMO WA POPELO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

 ☐

Ga ke dumele gotlhelele

35. GO TLHAELA GA BATLHATHOBI BA BOMME MO MADIRELONG A BOTSOGO KE LEBAKA LE LE ITSANG GO ITLHATLHOBELA KANKERE YA POPELO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

36. MEKGWA YA BOITSHOLO YA BADIRI BA BOTSOGO E KA DIRA GORE MOTHO A SE KA A YA GO TLHATLHOBELA KANKERE YA MOLOMO WA POPELO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

37. GO TLHOKA GO NNA LE NAKO E E TLHAMALETSENG/ TSEPAMENG MO DIKOKELWANENEG YA GO TLHATLHOBELA KANKERE YA POPELO GO ILETSA ITLHATLHOBELO KANKERE YA MOLOMO WA POPELO.

Ke dumela thata ☐

Ke a dumela ☐

Ga kena bosupi ☐

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

38. GO TLHAELA GA MOLAETSA MABAPI LE TSAMAISO YA TLHATLHOBO YA KANKERE YA MOLOMO WA POPELO KE SEKGORELETSI MO GO TSEYENG TLHATLHOBO YA KANKERE YA MOLOMO WA POPELO.

Ke dumela thata ☐

Ke a dumela ☐

 ☐

Ga kena bosupi

Ga ke dumele ☐

Ga ke dumele gotlhelele ☐

Adapted from A Study Cervical cancer screening beliefs among young Hispanic women by Byrd T. L, Peterson K. S, Chavez R and Heckert A, published by The Institute for Cancer Prevention and Elsevier Inc, 2003.

APPENDIX 5

CODING MANUAL

QUESTION NUMBER	VARIABLE/LABEL	CODE
Q1	Age	1=21-29 years, 2=30-49 years, 3= 40-49 years, 4=50-59 years.
Q2	Marital Status	1= Single, 2=Married, 3= Divorced, 4= Widowed, 5= Cohabiting
Q3	Ethnic group	1= Black, 2= White, 3=Colored, 4= Indian, 5=Others
Q4	Educational level	1= None, 2= Primary, 3= Secondary, 4= Tertiary
Q5	Employment status	1= Unemployed, 2= Employed, 3=Self employed, 4= Pensioners
Q6	Monthly income	1=>P5000, 2=P3000-P4999,

		3=P1000-P2999, 4=P<999, 5=No income
Q7	Residential Area	1= Urban, 2=Peri-urban, 3=Rural, 4=Others
Q8	Done cervical cancer Screening	0=No, 1= Yes
Q9	Done Cervical cancer screening within 3years	0=No, 1= Yes, 3=Not applicable.
Q10	Risk in older women>younger women	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
Q11	Risk in all women of child bearing age	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
Q12	Greater risk in women with multiple sexual partners	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
Q13	Greater risk in HIV positive women	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
**Q14	Increased susceptibility with parity	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
**Q15	Occurs only above age 50years	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
**Q16	Effective treatment for cancer	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
Q17	Cervical cancer makes a woman's life difficult	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree

**Q18	Cervical cancer is not as serious as other cancers	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
**Q19	Cervical cancer is easily cured	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
Q20	Cervical cancer can result to infertility	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
**Q21	Death from cervical cancer is rare	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
Q22	Cervical cancer screening is important to be done, so a woman will know if she is healthy	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
Q23	Cervical cancer screening can find changes in the cervix before they become cancer	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
Q24	Easily curable when found early	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
**Q25	Cervical cancer screening improves chances of pregnancy in an infertile woman	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
**Q26	Cervical cancer screening decreases the chances of abortion	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
Q27	Embarrassing to do cervical cancer screening	5=Strongly agree, 4=Agree,3=Not sure,

		2=Disagree, 1=Strongly disagree
**Q28	Cervical cancer screening is painful	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
**Q29	Doing cervical cancer screening suggest that the person is having sex	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
**Q30	Doing cervical cancer screening will only make one worry	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
**Q31	Cervical cancer screening takes away virginity in virgins?	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
Q32	Not knowing where to go, is a reason for not doing cervical cancer screening	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
**Q33	Only those who have had babies need to do cervical cancer screening	1=Strongly agree, 2=Agree,3=Not sure, 4=Disagree, 5=Strongly disagree
Q34	Partner resisting cervical cancer screening	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
Q35	Lack of female screeners in health facilities contributes for not doing cervical cancer screening	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree

Q36	Attitude of health workers discourages one from doing cervical cancer screening	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
Q37	Lack of convenient clinic time is a barrier to routine cervical cancer screening	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree
Q38	Lack of information about cervical cancer screening is also a barrier to uptake of cervical cancer screening	5=Strongly agree, 4=Agree,3=Not sure, 2=Disagree, 1=Strongly disagree

**** The above denotes negatively worded questions whose coding was reversed.**

FACULTY OF HEALTH SCIENCES, SCHOOL OF PUBLIC HEALTH
STUDENT RESEARCH PROJECT MANAGEMENT
DATA COLLECTION CONFIRMATION SHEET

1. Researcher declaration

Name of Researcher; **Dr. Chidiebere Maquincy Ibekwe**
Title of study: **Factors Influencing Cervical Cancer Screening Uptake Among Women Attending Mahalapye District Hospital- use of the Health Belief Model.**

Research project Number ;**MREC/PH/22/2009:PG**

Period of data collection: Initiated.;**6th April 2009**..Completed;**24th June 2009**
I hereby declare that I collected data according to the specifications of the approved proposal.

Signed:.....

2. Research site and activities

Name of organization/institution; **Mahalapye District Hospital.**

Type of organization/institution (mark with an X)				
Industry	Health facility **X**	Educational institution	NGO	Other (specify)

Town/Village (name)	Country; **Botswana**
Mahalapye	

Main data collection activities (sign against all applicable)			
Interviews **X**	Focus groups	Record reviews	Self-administered questionnaire

Other people involved in data collection; **Selomo Elizabeth**
I, **Dr. K. S. Bose** being the **Superintendents** (position) of the above organization/institution, hereby confirm that the researcher named above collected data as indicated

Signature_____ Date: 17/7/09

Contact details of organization/institution
Postal/Physical address; **Box 49 Mahalapye, Botswana**
Telephone; **00267)471800,** Facsimile**(00267) 4711179.**
Telegrams ; RABONGAKA

Official stamp of organization

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MINISTRY OF HEALTH
PRIVATE BAG 0038
GABORONE

REPUBLIC OF BOTSWANA

REFERENCE NO: PPME 13/18/1 PS IV (23) 3 June 2009

PERMANENT SECRETARY
MINISTRY OF HEALTH
RESEARCH UNIT
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GABORONE
REPUBLIC OF BOTSWANA

Health Research and Development Division

Notification of IRB Review: New application

Dr Chidiebere Maquincy Ibekwe
P.O. Box 49
Mahalapye

Protocol Title:	**FACTORS INFLUENCING CERVICAL CANCER SCREENING UPTAKE AMONG WOMEN ATTENDING MAHALAPYE DISTRICT HOSPITAL – USE OF HEALTH BELIEF MODEL**
HRU Protocol Number:	HRU 00515
Sponsor:	N/A
HRU Review Date:	May 29, 2009
HRU Expiration Date:	May 28, 2010
HRU Review Type:	HRU reviewed
HRU Review Determination:	Approved
Risk Determination:	Minimal risk

Dear Dr Ibekwe

Thank you for submitting a new Application for the above referenced Protocol.
This approval includes the following:

1. Application form
2. Proposal
3. Data collection tool

This permit does not however give you authority to collect data from the selected site without prior approval from the management. Consent from the identified individuals should be obtained at all times.

The research should be conducted as outlined in the approved proposal. Any changes to the approved proposal must be submitted to the Health Research and Development Division in the Ministry of Health for consideration and approval.

Furthermore, you are requested to submit at least one hardcopy and an electronic copy of the report to the Health Research, Ministry of Health within 3 months of completion of the study. Approval is for academic fulfillment only. Copies should also be submitted to all other relevant authorities.

If you have any questions please do not hesitate to contact Mr. P. Khulumani at pkhulumani@gov.bw, Tel +267-3914467 or Mary Kasule at mkasule@gov.bw or marykasule@gmail.com Tel: +267-3632466

Continuing Review
In order to continue work on this study (including data analysis) beyond the expiry date, submit a Continuing Review Form for Approval at least three (3) months prior to the protocol's expiration date. The Continuing Review Form can be obtained from the Health Research Division Office (HRDD), Office No. 9A 11 or Ministry of Health website: www.moh.gov.bw or can be requested via e-mail from Mr. Kgomotso Motlhanka, e-mail address: kmotlhanka@gov.bw As a courtesy, the HRDD will send you a reminder email about eight (8) weeks before the lapse date, but failure to receive it does not affect your responsibility to submit a timely Continuing Report form

Amendments
During the approval period, if you propose any change to the protocol such as its funding source, recruiting materials, or consent documents, you must seek HRDC approval before implementing it. Please summarize the proposed change and the rationale for it in the amendment form available from the Health Research Division Office (HRDD), Office No. 9A 11 or Ministry of Health website: www.moh.gov.bw or can be requested via e- mail from Mr. Kgomotso Motlhanka, e-mail address: kmotlhanka@gov.bw . In addition submit three copies of an updated version of your original protocol application showing all proposed changes in bold or "track changes".

Reporting
Other events which must be reported promptly in writing to the HRDC include:
- Suspension or termination of the protocol by you or the grantor
- Unexpected problems involving risk to subjects or others
- Adverse events, including unanticipated or anticipated but severe physical harm to subjects.

Do not hesitate to contact us if you have any questions. Thank you for your cooperation and your commitment to the protection of human subjects in research.

Yours sincerely

P. Khulumani
For Permanent Secretary

UNIVERSITY OF LIMPOPO

Medunsa Campus

MEDUNSA RESEARCH & ETHICS COMMITTEE

CLEARANCE CERTIFICATE

P O Medunsa
Medunsa
0204
SOUTH AFRICA

Tel: 012 - 521 4000
Fax: 012 - 560 0086

MEETING: 02/2009

PROJECT NUMBER: MREC/PH/22/2009: PG

PROJECT :

Title:	Factors influencing cervical cancer screening uptake among women attending Mahalapye District Hospital – Use of the Health Belief Model.
Researcher:	Dr CM Ibekwe
Supervisor:	B Ntuli-Ngcobo
Superintendent:	Dr KS Bose (Chief Medical Officer)
Department:	Social and Behavioural Health Sciences
School:	Public Health
Degree:	MPH

DECISION OF THE COMMITTEE:

MREC approved the project.

DATE: 12 March 2009

RESEARCH & PARTNERSHIP
2009 -03- 12
MEDUNSA CAMPUS

PROF GA OGUNBANJO
CHAIRPERSON MREC

Note:

i) **Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.**

ii) **The budget for the research will be considered separately from the protocol.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.