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UPTAKE OF CERVICAL CANCER SCREENING AMONG FEMALE HEALTH PROFESSIONALS AT THE GREATER ACCRA REGIONAL HOSPITAL

BY

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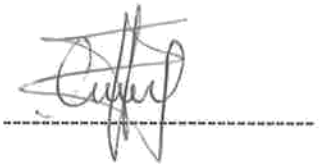
DECLARATION

I, Nana Akua Serwaah Afranie, declare that apart from other researchers' works, which have been duly acknowledged by means of referencing, this work is the result of my own original research, and it has not either in whole or in part been presented elsewhere.



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DEDICATION

I dedicate this dissertation to my family and friends, most especially to my Mother, Mrs. Dora Boateng, Mr. Andrew Annor Apo and Miss Edwina Davies for the support and words of encouragement throughout my studies.

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ABSTRACT

Background: An estimated 570,000 cases of cervical cancer were recorded in 2018 representing 6.6% of all female cancers, making it the fourth most frequent cancer in women. Approximately, about 90% of deaths is due to cervical cancer in low-and middle-income countries.

Objective: The objective of this study was to assess the uptake of cervical cancer screening services among female health professionals at the Greater Accra Regional Hospital.

Methods: A cross-sectional analytical study design was used to gather data from 223 female health professionals (doctors, nurses, pharmacists, and all allied health professionals) who had worked for more than a month at the Greater Accra Regional Hospital. Selection was done by means of simple random sampling method. A structured questionnaire (capturing uptake of cervical cancer screening, predisposing and enabling factors, among others) validated in previous studies was adapted and administered to these female health professionals using the self-administered strategy. The level of knowledge of the signs and symptoms and risk factors were assessed by scoring participants' answers into low, adequate and high. Uptake of cervical cancer screening services was determined by participants answering 'Yes' or 'No' and level of awareness of cervical cancer screening was determined by categorizing Likert scale scores into low, adequate and high. Descriptive statistics were used to analyse and describe the basic features of the data. Chi square test was applied to establish relationships between the dependent and independent variables. The strength of the relationships was established by applying the logistic regression. The significance of the association was accepted at $p<0.05$ at 95% confidence interval.

Results: The uptake of cervical cancer screening amongst health professionals was 34%. The study found that 40% of the female health professionals had inadequate knowledge of signs and symptoms of cervical cancer. While 45% of the female health professionals/workers had adequate knowledge of the signs of cervical cancer, 15% had high knowledge of the signs of cervical cancer. The findings also revealed that 86.7% of the respondents knew that HPV could cause cervical cancer. The awareness of female health professionals of cervical cancer screening was 92%. Lack of designated rooms for screening was found to decrease the uptake of cervical cancer screening by 81.0% (AOR=0.19; p-value= 0.02).

Conclusion: The study concludes that low uptake of cervical cancer screening may have dire consequences for women in general because this means cervical cancer, could be detected late, leading to an increase in morbidity and mortality amongst females. Therefore, health policy makers and stakeholders should initiate efforts to enhance awareness and education among female health professionals in particular and women in general.

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LIST OF ABBREVIATIONS

AMA	Accra Metropolitan Assembly
ACOG	American College of Obstetricians and Gynaecologists
GARH	Greater Accra Regional Hospital
HPV	Human Papillomavirus
LEEP	Loop Electrosurgical Excision Procedure
MMDA	Metropolitan, Municipal and District Assemblies
NCCP	National Cancer Control Programme
PAP	Papanicolaou
VIA	Visual Inspection with Acetic Acid
VILI	Visual Inspection using Lugol's Iodine
WHO	World Health Organization

DEFINITION OF TERMS

Cervix: - A muscular tissue that connects the vagina and uterus.

Cervical Cancer – Abnormal growth of cells in the cervix.

Cervical Cancer Screening – Examining of the cervix of women with or without signs and symptoms to detect precancerous cells.

Uptake of Cervical Cancer Screening- Undergoing cervical cancer screening.

Pap smear –Test for detecting Precancerous Lesions.

CHAPTER ONE

INTRODUCTION

1.0. Background to the study

Available evidence shows that cancer is a huge societal problem in both developing and developed countries; and cancer rate is growing due to an increase in population growth, and also due to the occurrence of various causes like smoking, overweight, and physical dormancy (Global Cancer Statistics, 2012). The World Health Organisation (WHO) reveals that an estimated 570,000 cases of cervical cancer were recorded in 2018 representing 6.6% of all female cancers, making it the fourth most frequent cancer in women (WHO, 2018a). It is the second most common cancer in developing areas with an estimated 445000 new cases each year (Ferlay, Soerjomataram, Dikshit, Eser, Mathers, Rebelo, ico& Bray, 2015).

The World Health Organisation (2018a), approximated that there was about 90% of deaths due to cervical cancer in low-and middle-income countries. It was estimated that 3151 women were diagnosed with cervical cancer each year and 2119 die from the disease, which makes cervical cancer the 2nd most frequent cancer among women between 15 and 44 years of age in Ghana (Information Centre on HPV and Cancer (ICO) / International Agency for Research on Cancer (IARC), 2018).

The World Health Organization (WHO) further estimated that the annual age-standardized occurrence of cervical cancer in Ghana was 29.3/100,000, while the mortality rate was 23.8/100,000, equivalent to four times and ten times the rate in the US respectively before 2000 (Nkyekyer, 2000; Adanu, 2002; Abotchie & Shokar, 2009; WHO, 2018a). Some studies have shown that cervical cancer accounted for about 60% of gynecological

cancers diagnosed at a hospital in Ghana, with 70% been diagnosed at an advanced stage (Nkyekyer, 2000; Adanu, 2002; Abotchie & Shokar, 2009; WHO, 2018a).

It has been argued that cervical cancer is caused by the human papillomavirus (HPV) infection. Also, repetitive or constant HPV infections increases an individual's risk of developing the disease (Awodele, Adeyomoye, & Dolapo, 2011) This is why the World Health Organisation (WHO, 2018a), suggests that prevention, early diagnosis, effective screening and treatment programmes could aid in dropping the high death rate of cervical cancer globally. For instance, to detect precancerous cervical lesions and cervical cancer early, screening should be done with cervical cytology or HPV testing (Moyer, 2012).

This means that the future looks bright because vaccines that protect against common cancer-causing types of human papilloma virus are available and this can bring about a noteworthy reduction of the risk for cervical cancer (WHO, 2018a). The idea is that the screening is to detect precancerous lesions, which may lead to cancer. This will help to identify women who have abnormalities of the cervix for early treatment, to avert the growth of cancer (WHO, 2018a).

It is believed that if countries follow the modalities suggested by the World Health Organisation, to screen for cervical cancer, there would be some successes to be chalked (WHO, 2018a). The WHO (2018a) modalities include the suggestion that: every woman should get screened at least once between the ages of 30-49 years which happens to be the target group. But the screening can also be done for those less than 30 years if they are at risk. Screening tests includes HPV testing, cytology and visual inspection with acetic acid

(VIA). Cryotherapy or loop electrosurgical excision procedure (LEEP) can also be used for treatment of women who screen positive for cervical pre-cancer (WHO, 2018a).

It is noted that, getting the largest population of women screened and treated for cervical cancer is the key of an effective screening programme, however, the population prefers organized screening programmes to opportunistic screening (WHO, 2018a).

However, organised cervical screening programmes in low-income countries, are non-existing or have not been as successful compared with other developed countries (Adageba, Danso, Ankobea, Kolbilla, & Opoku 2011). In most developing countries, cervical screening starts as opportunistic or adhoc (Adanu *et al*., 2010). The Papanicolaou (Pap) test, is the test usually performed in developed countries. The test is being conducted in some healthcare facilities in the country. Because there is no all-inclusive national screening programme and the test been conducted in few health locations, the number of women who receive screening is limited (Abotchie, & Shokar, 2009). One survey reported a 2% prevalence of cervical cancer screening, using the Pap test. It is observed that cervical cancer screening is uncommon in Ghana (Abotchie, & Shokar, 2009). Since the World Health Organisation (WHO, 2018a), has suggested we can globally reduce the high death rate from cervical cancer through a comprehensive approach, it thus, calls for the need for early screening. (WHO, 2018a).

In spite of the fact that numerous research have been conducted to evaluate people's level of knowledge on cervical screening tests among health professionals in Ghana, not too many of such studies have examined the uptake of the screening by health professionals (Abotchie, & Shokar, 2009; Ebu, Mupepi, Siakwa, & Sampselle, 2015). Therefore, this

study assessed the interest of cervical cancer (pap smears) screening among health professionals at the Greater Accra Regional Hospital.

1.1. Problem Statement

A World Health Organisation (2018a) report indicates that cervical cancer is caused by the human papillomavirus (HPV). It is explained that when cervical cancer is diagnosed at its onset (at early stages) and effective treatment provided, individuals' chance of survival can be improved in countries where screening programmes are not available (it's mortality rate will be reduced) (WHO, 2018a). The WHO shows further that, in places that are inadequately resourced, the disease is usually diagnosed at an advanced stage or when treatment is not readily accessible resulting in a higher mortality rate. The cancer can be diagnosed early if there is an understanding and detection of the symptoms (WHO, 2018a).

It is recommended that women from the age range 21 to 29 years, should have a Pap test every 3 year and from 30- 65 years should have it done every 5 years (American Cancer Society, 2019). The World Health Organisation (2014), estimated that out of 5500 cancer deaths in Ghana, 28.3% was due to cervical cancer. Crucially, cervical cancer has the highest incidence as compared with other cancers affecting women in Ghana with age standardized mortality rate between 20-25 / 100,000 (WHO, 2014). In Ghana, just a few healthcare facilities have access to the papanicolaou (Pap) test (Adanu, 2002; Gaffikin, Lauterbach, Emerson, & Lewis, 2004; Abotchie, & Shokar, 2009). Although screening for cervical cancer leads to early diagnosis (WHO, 2018a), cervical cancer screening is uncommon in Ghana (Abotchie, & Shokar, 2009).

In Ghana, pap smears are performed in cases of abnormal vaginal bleeding rather than as part of a routine gynecologic examination (Adanu, 2002). Adanu (2002) found that 2.1% of women had ever been screened for cervical cancer while another study found that only 14.3% of women reported having had regular gynecologic examinations (Handlogten *et al*., 2014).

A World Health Organisation report showed that cervical cancer screening procedures are not accessible in most of the primary health care facilities in Ghana (WHO 2014). For instance, for cervical cytology (PAP), and Acetic acid visualization (VIA), data was not obtainable at the public primary health care level (WHO 2014). This confirms the assumption that cervical cancer screening in many middle income countries like Ghana is still low because of varying factors, some of which have been explained below.

A key factor that influences the uptake of cervical cancer screening is the individual's socio-demographic characteristics, such as education, age, and marital status (Lyimo & Beran, 2012). As regards education, numerous research discovered that women with higher level of education recorded a high screening rate (Dim, Ekwe Madubuko, Dim & Ezegwui, 2009). Nevertheless, these women may not necessarily go for screening. Hence, other causes must be well-thought-out. The uptake of screening is substantially lower in younger women aged 20-29 years and elderly women aged 60 years and above (Dim et al., 2009). Additionally, women who are single, divorced and widowed were less likely to go for screening than the married ones (Liao, Wang, Lin, Hsieh & Sung, 2006; Lyimo & Beran, 2012).

It has been indicated that although awareness can be associated with getting screened, some women do not go for screening (Dim *et al*., 2009). A study assessed some women's knowledge of cervical cancer so as to determine screening practices and determinants, and to identify barriers to screening (Aswathy, Quereshi, Kurian, & Leelamoni, 2012). Aswathy et al. (2012), concluded that specific knowledge of cervical cancer screening played an important role in determining if a woman would undergo Pap test in addition to making available the screening facilities in the primary health centre. A study in Nigeria observed that 18% of the female health workers (who were aware of the Pap smear) had been screened (Dim et al., 2009).

The above goes to show that other factors need to be considered in addition to using awareness as a factor to determining uptake of cervical cancer screening services. Some of these factors should include the healthcare provider factors (Waller, Bartoszek, Marlow and Wardle (2009) and socio-cultural factors (Singh & Badaya, 2012) as analysed below.

A study noted that health care provider factors could be a stumbling block to women's uptake of cervical cancer screening (Waller *et al*., 2009). These researchers also observed that the distance to the cervical cancer screening service centres could reduce women's uptake of cervical cancer screening. Akinyemiju (2012) suggested that more work needed to be done to improve the uptake of screening for breast and cervical cancer in developing countries.

Moreover, it is needful to consider socio-cultural factors as paramount to the challenges confronting women's uptake of cervical cancer screening. A study reports that women

born into some cultures may find it embarrassing to go for screening because it is a taboo to talk about reproductive health (Singh & Badaya, 2012).

1.2. Justification of the study

The World Health Organisation (WHO, 2018b) explain that a national cancer control program (NCCP) is a program of public health interest planned to lower the occurrence and the death rate of cancer and also for the improvement of quality of life of patients with cancer. This program works by implementing policies for prevention, early detection, diagnosis, and treatment using resources that are readily available (WHO, 2018b)

Health professionals contribute to the prevention of both communicable and communicable disease (WHO, 2018b). Hence, they have a role to play in the fight to reduce cervical cancer incidence in the form of education and recommending the tests to patients and the general public. Health workers were anticipated to be knowledgeable of cervical cancer screening compared to non-health workers and consequently, to cause an increase in cervical cancer screening among women. Moreover, health care workers should be knowledgeable and improve their personal conformity with recommended practice so they can advance preventive practice for cervical cancer (WHO, 2018b).

Various studies have been conducted to assess the knowledge of the health professionals in Africa and Ghana but few have been done on the uptake of the tests among female health professionals in Ghana (Abotchie & Shokar 2009: Asante, 2013). The present study investigated the uptake of cervical cancer screening among female health professionals in a public hospital as they are supposed to educate women on the need for cervical cancer screening. This information may be considered during policy formulation

in Ghana and identification of where and how to allocate resources to tremendously augment cervical cancer screening uptake.

1.3. Objectives of the study

The objectives of the study have been grouped into both general and specific as shown below.

1.3.1. General Objective

The general objective was to assess the uptake of cervical cancer screening (Pap smear test) among female health professionals at the Greater Accra Regional Hospital.

1.3.2. Specific Objectives

The following specific objectives helped to address the general objective:"

1. To determine the level of knowledge of signs and symptoms and risk factors of cervical cancer.
2. To determine the level of awareness of cervical cancer screening.
3. To examine the relationship between predisposing (socio-demographic characteristics) factors and uptake of cervical cancer screening.
4. To assess the relationship between enabling factors and uptake of cervical cancer screening.

1.3.3. Research Questions

The specific objectives were addressed by answering the following questions :

1. What is the level of knowledge of female health professionals of the signs and symptoms and risk factors of cervical cancer?

2. What is the level of awareness of cervical cancer screening (Pap smear tests)?
3. What is the relationship between predisposing (socio-demographic characteristics) factors and uptake of cervical cancer screening?
4. What is the relationship between enabling factors and uptake of cervical cancer screening?

1.4. Outline of the Dissertation

This dissertation is presented according to chapters. In chapter one, the introduction to the study is presented. In this chapter, the background to the study, problem statement, justification, objectives and research questions have been analyzed and presented. What is presented in chapter two is the review of related literature of the concepts of the study. What is indicated in chapter three is the methods that were applied to collect data for analysis in this current study. Chapter four presents the results obtained from the conduct and analysis of the empirical study. In chapter five, the findings of the study have been analyzed in relation to present literature. The chapter six is where the summary of the study, conclusions, contribution to knowledge, recommendations, limitations to the study and direction for future research are presented.

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.0. Introduction

This chapter gives a review of related literature on the key concepts forming the basis of the study. Section one presents the concept of cervical cancer. In section two, analysis is presented on the concept of screening. Section three gives relevant literature on knowledge of cervical cancer and screening services. In section four, existing literature on the factors affecting uptake of cervical cancer screening services is discussed. Section five is where the theoretical model of health service utilisation underpinning the design of the conceptual framework is enumerated. The conceptual framework for the study is presented in section six. The chapter ends with a chapter summary in section seven.

2.1. Cervical cancer

The human papillomavirus (HPV) is said to be the most shared infection of the reproductive tract (WHO, 2018). The WHO (2018) notes that most sexually active women and men has the probability of being infected with HPV at a time in their lives with some being infected repeatedly. The infection is mostly acquired usually after becoming sexually active. HPV is sexually transmitted, with skin-to-skin genital contact being the most common mode of transmission.

The WHO document reports that there are other types of HPV that do not cause problems (WHO, 2018). It is assumed that the HPV infections usually resolves on its own usually within a few months after acquisition, and about 90% within 2 years. However, some of these infections with certain types of HPV can advance to cancer (WHO, 2018). It is

documented that cervical cancer is usually caused by the most common HPV infection (WHO, 2018).

2.1.1. Signs and symptoms of cervical cancer

The majority of HPV infections do not cause symptoms or disease and resolve on its own (see Handisurya, Schellenbacher, & Kirnbauer, 2009). However, persistent infection with specific types of HPV (types 16 and 18) may lead to precancerous lesions. If left untreated, these lesions may progress to cervical cancer after several years. Symptoms of cervical cancer usually manifest only after the cancer has advanced. They include; abnormal vaginal bleeding after sexual intercourse, pain in the back, leg and pelvic region, fatigue, loss of appetite leading to weight loss and foul smelling vaginal discharge - More severe symptoms may arise at advanced stages (see Handisurya *et al.*, 2009).

2.1.2. Risk factors for HPV persistence and development of cervical cancer

The risk factors for HPV, which could lead to the development of cervical cancer could include the following: first sexual intercourse at an early age, multiple sexual partners, tobacco use and immuno suppression (WHO, 2018). Worldwide, cervical cancer is one of the most frequent cancer in women with an estimated 530,000 new cases recorded in 2012. (Garland *et al.*, 2016). 270,000 deaths from cervical cancer from occur every year with more than 85% of them in less developed regions (Garland *et al.*, 2016).

In developed countries, there are programmes in place, for women to get screened, thereby helping to identify most pre-cancerous lesions at stages when they could easily be treated (see Belinson, & Belinson, 2010). Early treatment reduces the incidence of cervical cancer by 80% in these countries. However, in developing countries, there is limited access to

effective screening therefore the disease is often identified at the advanced stages where symptoms have developed. Also, there might be poor prospects for treatment the the advanced stage, resulting in a higher mortality rates in these countries. Implementing of effective screening and treatment programmes could reduce the mortality rate of cervical cancer globally (see Belinson, & Belinson, 2010).

2.2. Cervical cancer screening

In this section, analysis is presented on the concept of screening. It is anticipated that Cervical screening is the act of testing all women at risk of cervical cancer, whether they are exhibiting signsb and symptoms or not. Screening aims to detect precancerous lesions, which, if left untreated, may lead to cancer. Women who are found to have abnormalities on screening need treatment early in order to prevent the development of cancer. Those found with cancer need to be treated at the early stage (WHO, 2006). Several tests can be used in screening for cervical cancer (American College of Obstetrician and Gynaecologist (ACOG), 2019). The Pap smear (cytology) has been adopted by large populations has evidence shows it helps reduce cervical cancer incidence and mortality. Other tests (Via, VILI, HPV) even though in use has not been validated by evidence on their effectiveness. (WHO, 2018).

2.2.1. Uptake of cancer screening services

A study conducted in India argued that women in developed countries have a higher tendency for cervical cancer screening uptake than those in developing countries (Shekhar, Sharma, Thakur & Raina, 2013). This finding is supported by another study, which observed that uptake of screening was high in developed countries like Sweden and Finland as compared with developing countries (Hyacinth, Adekeye, Ibeh & Osoba,

2012). A study on knowledge, attitudes and practices among urban and rural Nigerian women asserted that, several developing countries have shown underutilization of cervical cancer screening services by women, including health workers (Nkwankwo, Aniebue, Anarado & Agunwah, 2011).

These findings are not peculiar to Nigeria. A 15% utilisation rate was reported among hospitalised women in India (Singh & Badaya, 2012), and 7% among nursing staff in a tertiary level institution in rural India (Shekhar *et al*., 2013). This has implications for uptake of screening since a low motivation for utilising the service among health providers might send wrong signals towards utilisation of the service by the general population (Oche, Kaoje, Gana, & Ango, 2013). Reasons for low uptake of cervical cancer screening services have been identified in many studies as demographic, personal, cultural and health service-related (Mupepi, Sampselle & Johnson, 2011).

2.3. Knowledge of cervical cancer and screening services

This section is where relevant literature on the knowledge of cervical cancer and screening services is presented. Information on Pap smear screening and cervical cancer detection should be spread extensively (Makin *et al*., 2011). The rate of cervical cancer screening in rural and urban areas in Ghana are very low (3.2 % and 2.2%) respectively (Williams & Amoateng 2012). Williams and Amoateng (2012) reported that low level of knowledge of cervical cancer among Ghanaians could be considered as a factor affecting cervical cancer screening uptake.

Women with low levels of cervical cancer knowledge and its prevention are not likely to get screened for cervical cancer (Abotchie, & Shokar 2010). A study done in Moshi,

Tanzania which looked at the factors related to the uptake of screening among 354 women revealed that, about (59.6%) had a low level of knowledge of cervical cancer and its prevention. Out of which only 80 (22.3%) women had been screened (Lyimo & Beran, 2012). Lyimo and Beran (2012) suggested that the probability of women with high level of knowledge of cervical cancer and its prevention to get screened is high as compared to women with low or medium level of knowledge.

In another study done in Ghana on knowledge and health beliefs of cervical cancer, there were some gaps in knowledge of risk factors and screening intervals (Abotchie & Shokar, 2009). A study among 503 female nurses on the perception and utilization of cancer screening services in the University College Hospital, Ibadan, and Lagos found that less than 80.9% had knowledge of cervical cancer and 85.1% had knowledge of screening centres (Oyedunni & Opemipo, 2012). Oyedunni and Opemipo (2012) reported that 34.6% had been screened for cervical cancer.

In Lagos, Nigeria, a study, which assessed the knowledge, attitude and practice of cervical cancer screening among nurses found that of the 200 randomly selected women, only 91% had knowledge of Pap smear test being a cervical cancer screening method, however, 79.5% had never been screened (Awodele *et al*., 2011). Although awareness may be an enabling factor, some women did not seek screening as only 18% of female health workers (who were aware of the Pap smear) had actually been screened for cervical cancer (Dim *et al*., 2009).

Ombech *et al*. (2012) showed that 87% of 384 female teachers had knowledge of cervical cancer and 75% had knowledge of Pap smear test, 41% had gotten themselves screened in

Kenya. It has been established that knowledge does not always cause a change in behavior, but knowledge that has been improved has been found to have a positive impact on uptake of cervical cancer screening in most settings (Ibekwe, 2009) .

2.4. Factors influencing uptake of cervical cancer screening services

This section presents analysis of the factors that could influence the uptake of cervical cancer screening among women in the general population and health professionals in particular**.**

2.4.1. Predisposing (Socio-demographic characteristics) factors

Utilisation of screening services has been found to be linked to parity, age and marital status (Singh & Badaya, 2012; Ncube, Knight, Bessler & Jolly, 2015). Socio-demographic factors also include educational status and several studies have found that women with high screening rates usually have a high level of education (Fernandez *et al*., 2009). The uptake of cervical cancer screening has been shown to be directly proportional to higher levels of education as better educated women were more likely to have knowledge of cervical cancer and screening than the less educated (Hyacinth *et al*., 2012; Mupepi *et al*., 2011).

Other studies have also revealed that despite the high level of education and good knowledge of screening, some women still do not patronize the services (Hyacinth *et al*., 2012; Mupepi *et al*., 2011; Arulogun & Maxwell, 2012). This goes to show that other factors not related to knowledge needs to be considered, which this study intended to establish. Rates of screening are found to be low in younger women between the ages 20-29 years and elderly women aged 60 years and above (Dim *et al*., 2009). Additionally,

unmarried and widowed women were less likely to get screened than married women or women living with a partner (Lyimo & Beran 2012; Liao *et al*., 2006). However, some studies found that women who were single were more likely to have a Pap smear screening than married women (Dim *et al*., 2009).

Studies conducted in Tanzania and Jamaica suggested that women with 0-2 children were more likely to access screening than women who had five or more children (Kahesa *et al*., 2012; Ncube *et al*., 2015). Mupepi *et al*. (2011) also suggested that women aged more than 45 years old were less likely than younger women to access cervical screening. These researchers implied that a woman's occupation determines the time at their disposal for attending health services and the availability of finances to pay for the services.

2.4.2. Socio-cultural factors

Gifford and Nilsson (2014) explained that social factors such as religion, urban–rural differences, norms, social class, cultural and ethnic variations have an influence on the way people behave. Valsiner (2009) explains that culture is the mindset of a people, an explication of how culture operates at the mentalistic and social planes of human existence and these have an influence on everything, including savings and health outcomes. Literature explains that culture is a pattern of shared attitudes, beliefs, norms, and values that are accepted by a group of people that could be identified with a particular language, during a specific historic period, and in a defined geographic region (Cohen & Cohen, 2015). It is argued that chronic diseases are caused by spiritual beings and these theories are the reasons for some people's engagement with traditional healing systems (Aikins, 2010).

Other studies have noted that culture-influenced personal beliefs (knowledge of mental illness and stigmatism) are found to play a substantial role in shaping individuals' attitudes toward health services (Jang, Kim, Hansen, & Chiriboga, 2007). In a study among students on cervical cancer screening, culture was identified as a barrier - this suggests that there are cultural and traditional beliefs that are influencing the responses to screening (Abotchie, & Shokar, 2009).

Personal factors

Personal factors, which seem to have an influence on screening uptake are knowledge and awareness of the disease and the benefits of screening (Mupepi *et al*., 2011; Singh & Badaya, 2012). Singh and Badaya (2012) observed that women born into some cultures may find it embarrassing to go for screening because it is a taboo to talk about reproductive health. In addition, these analysts informed that, a lot of women also find it uneasy to be examined by male doctors and nurses and may then choose not to be screened.

Ibekwe (2009) notes that while most women understand that cervical cancer screening detects cervical cancer at an early stage, they do not see themselves as being at risk of developing cancer if they do not have any symptom. Singh and Badaya (2012) implied that women who perceive themselves as not being at risk for cervical cancer were less likely to utilize screening services. Ibekwe (2009) supports this view by revealing that most women know that cervical cancer is a serious disease with serious consequences, but still refuse to get screened. Other studies argue that most women in low resource countries do not see preventive services like cervical cancer screening as a priority as compared with curative medicine (Hummeida, Elrasheed & Burhan, 2009). Hummeida *et*

al. (2009) reported that some women's concern about exposure of private body parts may be a cultural barrier leading to refusal to get screened.

2.4.3. Health service-related factors

Barriers to accessing cervical cancer screening services include long distances to the health facility, lack of quality reproductive health services at health facilities, unavailability of screening services at local facilities, and unaffordable service fees (Mupepi *et al*., 2011). A study conducted in Uganda revealed that availability of cervical screening centres had an impact on the uptake of screening (Atuhaire, 2013). The importance of taking the screening services closer to the communities for improved uptake has also been highlighted (Kagumire, 2010). It could be assumed that cervical screening services in the Greater Accra Region are only provided at the tertiary institutions and a few private hospitals. Thus, this study determined if the uptake of screening was being influenced by accessibility to the screening centre as well.

2.5. Theoretical Framework

This section is where the theoretical model of health service utilisation underpinning the design of the conceptual framework is enumerated. Theories and models are used in public health programme planning to understand and explain various health behaviours and also guide the identification, development, and implementation of interventions (Glanz& Bishop 2010). There are different models that can be used to design a conceptual framework, namely; the health belief model, social cognitive theory model, theory of reasoned behaviour, theory of planned behaviour and health services utilisation. Three of these models have been explained below.

2.5.1. Health belief model (HBM)

Some researchers have explained that the health belief model (HBM) as is based on the understanding that people will take a health-related action (i.e., in this study, uptake of cervical cancer screening) if they feel that a negative health condition can be avoided; have a positive expectation that, by taking a recommended action, they will avoid a negative health condition; and believe that they can successfully take a recommended health action (Glanz, Rimer, & Lewis, 2002; Quist, & Adomah-Afari, 2017). Four perceptions serve as the main constructs of the model: perceived seriousness, perceived benefits and perceived barriers, perceived susceptibility (Rosenstock, Strecher, & Becker, 1988; Quist, & Adomah-Afari, 2017). However, this model was not applied in the determination of the conceptual framework for this study.

2.5.2. Theory of reasoned behaviour

It is reported that the Theory of Reasoned Action (TRA) was propounded by earlier researchers to explain and predict variety of health behaviours of patients, and help caregivers and policy makers in their bid to understand reasons why many patients accept (or do not accept) medical care and recommended treatments from primary caregivers (Ajzen & Fishbein, 1980; Dadzie, 2019). The idea is that intentions are the most important basis for behaviour, which are prompted by one's beliefs and attitudes regarding treatment behaviours (for instance, the belief and attitude regarding the effectiveness and side effects of medical prescriptions), past behaviours (history of treatments), anticipated behavioural control, and self-efficiency (Ajzen & Fishbein, 1980; Carter, 1990; Hagger, Chatzisarantis & Biddle, 2002; Dadzie, 2019). Nevertheless, this theory was not used as the basis to develop the theoretical perspective of this study.

2.5.3. Health services utilisation

The Andersen and Newman's (1974) health services utilisation framework was first developed in the 1960s with the view to discovering conditions that either facilitate or impede utilization - was aimed also to develop a behavioural model that would provide measures of access to medical care (Umanitoba, 2018). Arguably, the framework posits that an individual's access to and use of health services is considered to be a function of three characteristics as presented below (Andersen & Newman, 1974; Umanitoba, 2018).

Predisposing factors

This consists of the socio-cultural characteristics of individuals that exist prior to their illness. The social structure includes; education, occupation, ethnicity, social networks, social interactions, and culture. Moreover, there are health beliefs, which include; attitudes, values, and knowledge that people have concerning and towards the health care system. In addition, another feature of the predisposing factors is the demographic characteristics, which include; age and gender (Andersen & Newman, 1974; Umanitoba, 2018).

Enabling Factors

According to the framework, the enabling factors include things like the logistical aspects of obtaining care. Under these are variables such as personal or family issues, which is the means and know-how to access health services, income, health insurance, a regular source of care, travel, extent and quality of social relationships. Within the enabling factors are also other variables such as the community, which presents other considerations as available health personnel and facilities, and waiting time. The measurement of enabling factors is complete when researchers consider another variable such as possible additions,

which include the genetic factors and psychological characteristics of the patient (Andersen & Newman, 1974; Umanitoba, 2018).

Need Factors

The next key indicator to measuring people's utilisation of healthcare is the need factors, which explains the most immediate cause of health service use, from functional and health problems that generate the need for health care services. Within this are the 'perceived need and evaluated need' (Andersen & Newman, 1974; Andersen, 1995; Umanitoba, 2018). The perceived need better helps to understand care-seeking and adherence to a medical regimen. This explains how people view their own general health and functional state, as well as how they experience symptoms of illness, pain, and worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek professional help (Andersen & Newman, 1974; Andersen, 1995; Umanitoba, 2018). The evaluated need on the other hand, is more closely related to the kind and amount of treatment that will be provided after a patient has presented to a medical care provider, thus, it represents professional judgment about people's health status and their need for medical care (Andersen & Newman, 1974; Andersen, 1995; Umanitoba, 2018).

Taking into consideration all the key models in public health, the Andersen and Newman's health service utilization framework was the best fit for the study. Thus, the conceptual framework in figure 2.1 demonstrates how this framework was adapted in this study.

2.6. Conceptual framework of the uptake of cervical cancer screening

In this section, the conceptual framework for the study is presented. The variables in the study were Pap smear uptake as the dependent variable; predisposing (socio-demographic characteristics) factors, enabling (knowledge of Pap smear test, availability of services, personal and cultural norms) factors as independent variables. These were linked together and developed based on evidence from literature and the theoretical perspective/framework. The framework shows the relationship between predisposing, enabling and outcome variables. Thus, the Pap smear uptake, which was the dependent variable was measured as the outcome based on the relationship with the predisposing and enabling factors**.**

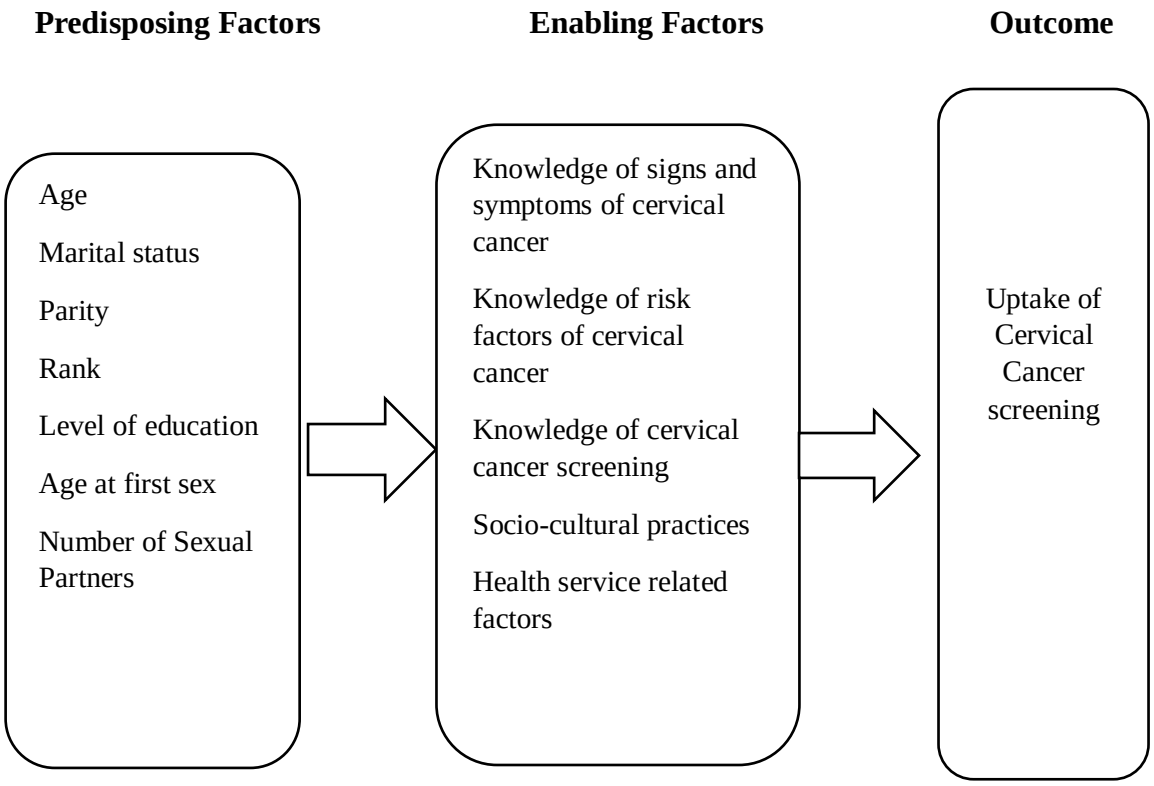

Figure 2.1: Conceptual framework of uptake of cervical cancer screening among Female Health Professionals.

Source: Adapted from Andersen's health care utilization model (Andersen & Newman, 1974; Andersen, 1995; Umanitoba, 2018).

2.7. Chapter summary

This chapter has presented evidence of recent literature on the key concepts informing the background to the study. It has explained the key concepts of cervical cancer, screening, uptake of Pap smear and factors associated with the uptake of Pap smear. The justification of the study (refer to 1.2) was provided based on the limitations identified in the literature. The next chapter presents the methods that were applied to collect empirical data.

CHAPTER THREE

METHODS

3.0. Introduction

This chapter presents the methods and procedures that were used to gather data for analysis in study. These procedures have been grouped according to sections. Section one presents the philosophical perspectives based on which the research methods were adopted. In section two, the study design is explained. In section three, the study setting as the Greater Accra Regional Hospital is indicated. The section four presents the study population indicating both the inclusion and exclusion criteria. In section five, the sampling strategy that was adopted to select the study area and the participants has been analysed. The section six also shows how the study variables, including the dependent and independent variables assessed in the study have been enumerated on. In section seven, the methods that were applied to collect data, pre-testing of the tools, quality assurance, data analysis, and ethical considerations, have been shown. Section eight is where the achievement of this current chapter has been summarised under chapter summary.

3.1. Study Design

A descriptive cross-sectional study design using quantitative methods was applied to collect data by administering a structured questionnaire with both closed and open ended questions to the participants. This was a quantitative research study design that made use of a probability sampling technique. A quantitative research is classified either as descriptive versus analytical study designs or as observational versus interventional (Omair, 2015).

Cross-sectional Descriptive study: Within this framework, are cross-sectional surveys or prevalence studies, which are easy to conduct and are the most common study designs that could be completed in a relatively short time depending upon the sample size required and access to the study population (Omair, 2015). The cross-sectional studies can also be classified as descriptive if one wants to describe a desired characteristics of a sample that is being studied. (Omair, 2015). The main aspect of this descriptive cross sectional study design is that it takes a representative sample (cross-section) from the population to generalize the findings for the study population (Levin, 2006; Omair, 2015). Omair (2015) explains that in a descriptive study designs there is a single sample with no comparison group involved. The choice of this research design helped the researcher to address the study objectives.

3.2. Study Area

The study was conducted at the Greater Accra Regional Hospital, which is a secondary referral centre in the Greater Accra Region of Ghana (Yorke, 2018). The hospital is located at ridge, which is in the Accra Metropolitan Assembly (AMA) milieu**.** The Greater Accra Regional Hospital (formerly known as Ridge Hospital) is one of the leading state hospitals in Ghana, located in Accra (Yorke, 2018). The hospital was opened in 1928 by the British (Elective Ghana, 2018; Yorke, 2018). According to Yorke (2018), the hospital was chosen to be expanded and upgraded as part of plans to improve healthcare. The hospital now has among others, a 420-bed capacity, a diagnostic and treatment block, a delivery unit, accident and emergency unit, pharmacy, a logistic building, a 42-accommodation facility for staff, a school of Anaesthesia, and a new mortuary (Elective Ghana, 2018; Yorke, 2018).

Available evidence shows that as referral centre in the Accra, the Greater Accra (Ridge) Regional Hospital has the vital services to provide effective and optimum care to patient (Yorke, 2018). The hospital has facilities for the following services; out-patient services (General O.P.D, Dental, ECG Clinic, Diabetic Clinic, Eye Clinic, Laboratory, Pharmacy, Radiology, Physiotherapy), In-Patient Care Services (Medical ward, Post Natal Ward Labour Ward, Theatre Surgical Ward) and Specialist Services (Internal Medicine, Pediatrics, Neurosurgery, Clinical Psychology, Dermatology and Spinal Clinic).

As a regional hospital for the Greater Accra Region, it is supposed to cater for the health needs of the region with population of about 4,283,322 inhabitants. Nevertheless, the immediate suburbs are: Nima, Maamobi, Kanda, Accra New Town, Kotobabi, Osu, La, Adabraka, Achimota, Airport Residential Area and Central Accra (Elective Ghana, 2018; Yorke, 2018).

3.3. Study population

According to Lavrakas (2008), the target population for a survey is the complete set of units from data inferences can be made – thus it defines the units for which the study results can be generalised the survey are meant to generalize. For this study, the population consisted of female health professionals (doctors, nurses, pharmacists, and all allied health professionals) who had worked for more than a month in the Greater Accra Regional Hospital.

Inclusion criteria

The inclusion criteria used to select the female health professionals were:

1. All female health professionals who had worked at the Greater Accra Regional Hospital for more than one month and over.
2. All female health professionals in the various departments of the Greater Accra Regional Hospital who gave their consent.
3. All female health professionals who were regular staff, interns, and 18 years and above.

Exclusion criteria

The following criteria were used to exclude participants:

1) All female health professionals who had not worked at the Greater Accra Regional Hospital for more than one month.
2) All female health professionals in the various departments of the Greater Accra Regional Hospital who did not give their consent.
3) All female health professionals who were not regular staff, interns, and below 18 years.
4) All female health professionals who were on leave during the data collection period.

3.4. Sample size determination

Cochran's (1963) formula for cross-sectional study was employed to calculate the sample size for this study. This took into account the estimated prevalence being studied, the margin of error and confidence interval required for the study. The estimated occurrence of cervical cancer uptake in Port Harcourt Teaching Hospital, which 20% with 95% confidence interval and 5% significant error based on literature was adopted to determine

the sample size for this study (Ehiemere, Frank, & Robinson-Bassey, 2015). The formula was given as:

$$n=\frac{Z\text{^}2\text{x}P\ (1-P)}{e\text{^}2}$$

Where,

n = sample size

P = 0.200

Z =1.96

e = 0.05

Substituting,

$$n= \frac{(1.96)\ \text{^}2\ \text{x}\ 0.200\text{x}\ (1-0.200)}{(0.05)\text{^}2}$$

$$=246$$

Adding a 5% non-response rate was 12, which gave the total sample to be 258.

3.5. Sampling method

The simple random sampling method was applied to select the research participants (Lavraskas, 2008). Karlton (2008) explained that simple random sampling is a scheme where every individual in the population has the same probability of being selected for the sample. This was applied in this study where the researcher introduced the notation that the sample size was given by 'n' and the population size by 'N' (N/n). Simple random sampling was used to select 258 health professionals from the various departments of the hospital to respond to the open and closed ended questionnaires (Jupp, 2006). The simple random sampling method assisted with the selection of the individual participants using a lottery method. Pieces of papers with 'yes' (for inclusion) and 'no' (for non-inclusion)

were used to select the participants according to the sample size. Those who picked 'yes' and accepted to take part were recruited accordingly.

3.6. Study Variables

The variables that were measured in this study were categorised into dependent and independent as shown below.

3.6.1 Dependent variable

The dependent variable was uptake of cervical cancer screening.

3.6.2 Independent variable

The independent variables were:

Predisposing (socio-demographic characteristics) factors: Age, marital status, educational level, rank, parity, age at first sex, number of sexual, among others.

Enabling factors: Level of awareness of cervical cancer screening, level of knowledge of cervical cancer signs, symptoms and risk factors, socio-cultural factors, health service related factors, among others.

These variables have been outlined with their respective measurement scales in the table 3.1.

Table 3.1: Study Variables and Measurement

Variables	Description	Data Analysis Plan
Dependent variable	Uptake of cervical cancer Screening: Binary	Descriptive Statistics Proportion of female health Professionals who have undergone cervical cancer screening out of the total number surveyed. (Those seeking to get screened during the period were excluded)
Independent variable	*Predisposing (Socio-demographic) factors:* Age : Categorical Marital Status: categorical (nominal) Parity: Categorical Educational Level: categorical (Ordinal) Monthly income : Categorical Number of sexual Partners : Nominal Age at first sex :Nominal *Enabling factors*: Level of knowledge of signs and symptoms and risk factors of cervical cancer : Categorical Level of Awareness on cervical cancer screening : Categorical Health service related factors : Binary Socio-cultural factors : Binary	Descriptive Statistics Frequency Distribution of responses Inferential Statistics Chi-squared test Bivariate logistic and multivariate regression to identify relation to the uptake of cervical cancer screening Descriptive Statistics Frequency distribution of responses Inferential Statistics Chi-squared test Bivariate logistic and multivariate regression to identify relation to the uptake of cervical cancer

Source: Researcher's Design (2019)

3.7. Data collection tools and techniques

This study was done between the periods of May and June, 2019. A structured questionnaire with both open-ended and closed-ended questions was used to gather data from the health professionals at Greater Accra Regional Hospital. The questionnaire was divided into sections.

Section A sought information from participants on the predisposing (socio-demographic characteristics) factors: age, marital status, educational level, rank, parity, age at first sex, number of sexual partners, among others. This was measured categorically. Section B contained questions regarding the respondents' knowledge of cervical cancer signs and symptoms. This was answered as 'Yes or No' with level of knowledge assessed by scoring participants' answers and categorizing them into 'low (0-2) , adequate (3-5) and high (6-8).

Section C asked questions relating to the knowledge of risk factors of cervical cancer. This was answered as 'Yes or No' with level of knowledge assessed by scoring participants' answers and categorizing them into low (0-4), adequate (5-7) and high (8-11).

Section D asked questions regarding the awareness and uptake of cervical cancer screening. This was answered as 'Yes or No' with two Likert scale type answers as 'agree, disagree'. Level of awareness was assessed by categorizing participants' answers into low (0-1), adequate (2-3) and high (4-5).

The questionnaires were self-administered by the participants after the distribution by the two research assistants. Each of the questionnaires was answered between 20 and 40 minutes and immediately retrieved by the research assistants. The data collection instrument was based on a tool that was used in a previous study (Murugi, 2014). The questionnaire used is shown in appendix B.

3.8. Quality assurance

To ensure data quality, data for the study was collected by the researcher with assistance from two research assistants who had a background in health. The research assistants were recruited taking into account their ability to speak English fluently but were given training prior to data collection. This involved training on the data collection instrument, data collection method, explanation of the questionnaire, ethics and seeking informed consent from the participants of the study. Every single question in the questionnaire was explained to them to avoid interviewer bias as well as training in how to abide by the ethical guidelines of the study.

In ensuring adherence to research guidelines by research assistants during data collection, discussions were held with them to know the difficulties and challenges so they could be addressed. To ensure compliance with research guidelines, the data collection procedures were monitored and validated daily before data entry. During the entry process, the questionnaires that were not completely filled were not entered and the dataset cleaned after completing the entry before running the analysis.

3.9. Pre-testing of the questionnaire

The objectives of the study was taken into consideration when the questionnaire of this study was designed. Pretesting of the data collection tools was done at the Airport Clinic Limited with 20 participants to verify the survey tools in this study. The purpose of this pretesting was to ensure that the questionnaires were correctly structured with no biases in order to collect the required information. Pretesting was done with the aim of getting rid of irrelevant questions to make it more reliable. The research assistants had the chance to administer the questionnaires at the pre-testing phase.

The pre-test exposed the unforeseen problems such as repetition of questions and un-worded questions as well as questions, which could not be applied to the research context/setting. It was also to give the research assistants a better understanding of the questions and the appropriate responses from the participants. After the pre-test, the research team (comprising the researcher, supervisor and research assistants) had a day's meeting to discuss issues from the pre-test and modifications were applied appropriately (where needed).

3.10. Validity and reliability

The concept of validity states that a test is valid if it measures what it claims to measure (Kelly, 1927; McLeod, 2013). McLeod (2013) provides that there is a distinction between internal and external validity. While the internal validity refers to whether the effects observed in a study are due to the manipulation of the independent variable and not some other factor, the external validity could be improved by setting experiments in a more natural setting and using random sampling to select participants (McLeod, 2013). Strategies were applied using the data collection tools to collect the needed data for analysis in this study.

McLeod (2013) explains that reliability refers to the consistency of a research study or measuring test meaning that when findings from research are replicated consistently, then they are reliable. A correlation coefficient can be used to assess the degree of reliability (McLeod, 2013). It is anticipated that the tools that were applied to measure the variables in this study could be applied by other researchers to achieve the same or similar results.

3.11. Data management and analysis

To make data entry easier, each questionnaire was cleaned and coded. Data was entered directly into STATA version 15 and analysed. Simple frequencies were run to determine socio-demographic characteristics of the respondents, knowledge of signs and symptoms of cervical cancer, knowledge of risk factors of cervical cancer, and uptake of cervical cancer screening (Pap smear test). In addition, bivariate analysis was conducted to examine possible relations between uptake of cervical cancer screening (dependent variable) and the independent variables (socio-demographic characteristics, level of knowledge of cervical cancer screening, level of knowledge of signs and symptoms, and risk factors of cervical cancer, health service related and socio-cultural factors).

The analysis was performed using Pearson's Chi Square test where the level of importance in the relationship was assumed to be $p<0.005$. Multivariate analysis was also conducted to examine the relationship between some factors and uptake of cervical cancer screening. Crude odds ratio and adjusted ratio were used to measure the strength of the relationship. The strength of the relationship was accepted at 95% confidence interval. The results have been presented in tables, pie charts, and graphs. A similar analytical strategy was applied by earlier researchers (Murugi, 2014).

3.12. Ethical considerations

The proposal was submitted to the Health Policy Planning and Management Department of the School of Public Health, which was then taken for ethical clearance from the Ethical Review Committee of the Ghana Health Service. Clearance was given by the GHS-ERC prior to data collection. The ethical clearance reference number is GHS-ERC 036/06/1.

Permission from the study site

An introduction letter was sent from the head of department of the Health Policy, Planning and Management, School of Public Health, College of Health Sciences, University of Ghana, to the management of the Greater Accra Regional Hospital. Based on this, introductory letters were sent to the heads of units and directorates at the GARH, which enabled the researcher to have easy access to the participants.

Study subjects

The study subjects consisted of female health professionals of all categories working at the GARH who were available during the study period and willing to participate.

Risks and benefits

This study did not pose any risk or cost to participants except their time, which was spent in answering the questionnaires**.**

Anonymity and confidentiality

To obtain confidentiality and anonymity, respondents' names were not given. Questionnaires coded for unique identification during data entry and analysis. They were also given an assurance of the fact that the study was purely academic with their privacy protected and not to cause any harm.

Data storage

The returned questionnaires were kept under lock and key to prevent access from any third party not involved in the study as well as the soft copy saved on the laptop password

protected. While the hard copies of the data were destroyed, the soft copies will be discarded after a period of five years.

Informed consent

Written informed consent was given to all participants to read and sign before their involvement in the study. The forms were in English and written in simple terms. Participants' consent form is shown in appendix A.

Voluntary participation

Taking part in this study was voluntary and participants had the option of not participating or to withdraw from it without any consequences. Respondents were given enough information about the study to enable them decide if they would want to take part or not.

Dissemination of results

Even though the main purpose to fulfill the researcher's academic requirement for Masters of Public Health (MPH), the results of this study were shared with stakeholders at Greater Accra Regional Hospital through feedback meetings.

Safety of study subjects

Precautionary measures was put in place to ensure that the safety of the participants was ensured. Suitable locations were selected for the conduct of the study, which were free from undue interferences from others.

Conflict of interest

There was no known conflict of interest to declare.

Funding of the study

The cost of the conduct of this study was borne by the researcher without any third-party funding support.

3.13. Chapter summary

This chapter has presented the methods that were applied to collect empirical data for subsequent analysis in the study. The philosophical assumption underlying the choice of the research method has been demonstrated. The appropriate research design and strategy and adherence to the ethical issues involved in using human beings as subjects of research have also been expounded. The following chapter gives the findings as analysed from the data collected

CHAPTER FOUR

RESULTS

4.0. Introduction

This chapter presents the findings obtained after analysing the returned questionnaires. It is divided into eleven sections. Section one presents the socio-demographic characteristics of the respondents. Section two presents the awareness of signs and symptoms of cervical cancer. Section three presents the level of knowledge of signs and symptoms of cervical cancer. Section four presents the knowledge of the causes of cervical cancer. Section five presents the level of knowledge of the causes of cervical cancer. Section six presents the reasons for not screening for cervical cancer screening. Section seven presents the Chi square test of relation between socio-demographic characteristics and cervical cancer screening uptake. Section eight presents the Chi square test of association between personal factors and uptake of cervical cancer screening. Section nine presents the chi square test of association between health service-related factors and uptake of cervical cancer screening. Section ten presents the logistic regression of the association between selected variables (predictors) and uptake of cervical cancer screening. Section eleven presents the chapter summary.

4.1. Socio-demographic characteristics of the respondents

With a sample size of 258, 223 questionnaires were returned and used for the analysis. There was a response rate of 86% (223/258). The results in tables 4.1a and 4.1b show the description of the socio-demographic characteristics of the respondents. Majority, 195 (90.6%) of the females interviewed were young adults between the ages of 20 and 39. These are sexually active and are at risk of cervical cancer if care is not taken or uptake

not taken seriously. These are also women in the working age as well as child bearing age. In all, 142 (65%) of the respondents were single while 76 (34%) were married.

In all, 170 (76%) of respondents were Christians. However, a significant proportion of the respondents were Muslims - they constituted 23.7% of the respondents. A total of 158 (73.8%) of the respondents had attained university degree in education. The results showed that 51 (24%) of the respondents had less than 3 months work experience. Similarly, an equal proportion of respondents, 52 (23.7%) had about 3 to 6 months of work experience. In all, 71 (39%) of the participants received an average monthly income less than GHS1000 while more than half, 96 (52.8%) received an average income of between GHS1000 and GHS5000. Amongst the respondents, 158 (74.5%) were nurses while 7 (3.3%) were medical doctors.

Table 4.1: Socio-demographic characteristics of respondents

VARIABLE	FREQUENCY	PERCENTAGE
Age		
10 – 19	4	1.86
20 – 29	140	65.12
30 – 39	55	25.58
40 – 49	14	6.51
50 – 59	2	0.93
Total	215	100
Marital status		
Single	142	64.55
Married and staying together	62	28.18
Married but not with partner	14	6.36
Divorced	1	0.45
Widowed	1	0.45
Total	220	100
Educational Background		
Secondary	3	1.40
Technical college	40	18.69
University	158	73.83
NMTC	12	5.61
Diploma	1	0.47
Total	178	100
Religion		
Christianity	170	75.89
Islamic	53	23.66
HIMU	1	0.45

Table 4.1: Socio-demographic characteristics of respondents Cont'd

VARIABLE	FREQUENCY	PERCENTAGE
Months of experience		
Less than 3	51	23.29
3 – 6	52	23.74
7 – 9	24	10.96
10 -12	29	13.24
Greater than 12	63	28.77
Total	219	100
Average monthly income		
Less than ₵1000	71	39.01
₵1001 - ₵5000	96	52.75
₵5001 - ₵10000	9	4.95
₵10001 - ₵20000	3	1.65
More than ₵20000	3	1.65
Total	182	100
Profession		
Medical officer	7	3.3
Nursing	158	74.53
Allied health professional	47	22.17
Total	212	100
Religion		
Christianity	148	75.89
Islamic	75	23.66
HIMU	1	0.45
Total	224	100

4.2 Awareness (heard) of Cervical Cancer

When respondents were asked about whether they had heard of cervical cancer before, 148 (66.4%) said 'yes' while 75 (33.6%) stated 'no'. This is shown in Figure 4.1 below".

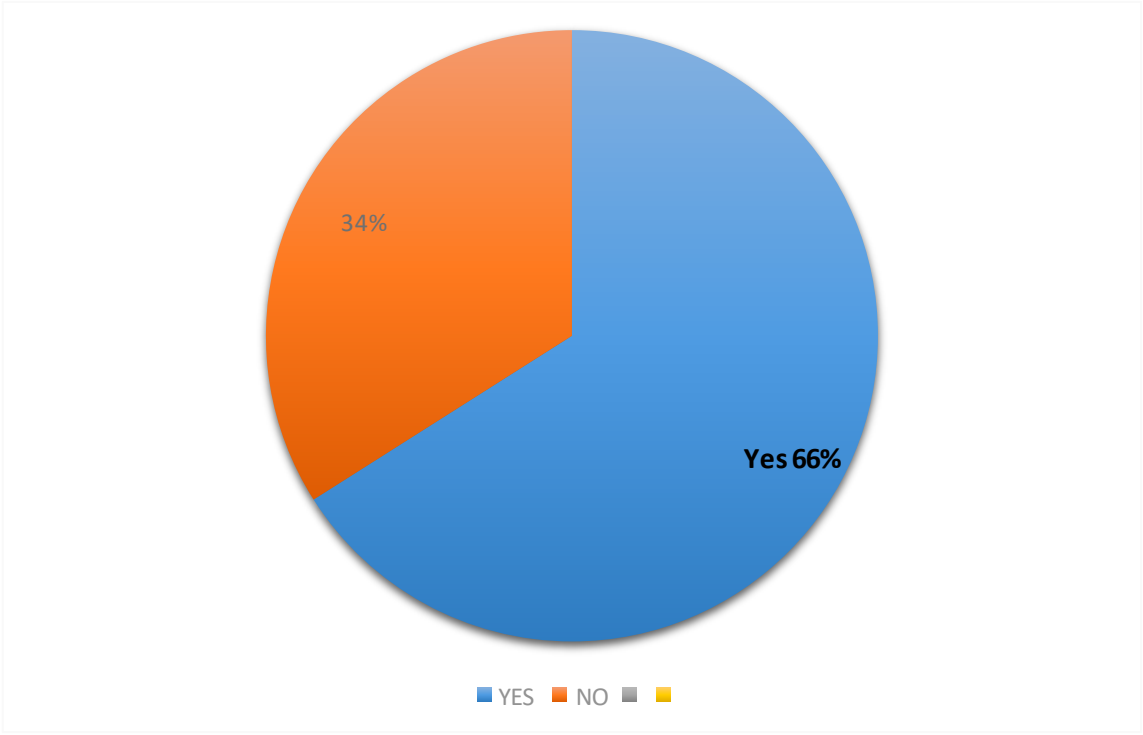

Figure 4.1: Awareness (heard) of Cervical Cancer

4.3. Knowledge of signs and symptoms of cervical cancer

Respondents were assessed on their knowledge of the signs and symptoms of cervical cancer. The results showed that most of the respondents, 199 (77.8%) mentioned bleeding during or after sex. When this happens after menopause too, it was agreed by 199 (77.8%) that this was a sign of cervical cancer. A substantial number, 111 (72.6%) asserted that pain or discomfort during sex was a sign of the presence of cervical cancer. About half, 88 (57.5%) supported the statement that unexplained weight-loss could be a sign of cervical cancer. Many of the respondents, 116 (75.8%) did not approve that persistent diarrhea was a sign of cervical cancer. In all, 106 (69.3%) of the respondents said 'yes' to the statement

that vaginal bleeding between periods was a sign and symptom of cervical cancer. Asked whether heavier or longer menstrual flow was a sign and symptom of cervical cancer, 92 (60.1%) said 'yes' while 61 (39.9%) noted 'no' to the statement. The results showed that 103 (67.3%) disagreed while 50 (32.7%) agreed to the statement that blood in stool or urine was a sign and symptom of cervical cancer. The results are shown in table 4.2

Table 4.2: Knowledge of signs and symptoms of cervical cancer

Signs of cervical cancer	Response	Percentage
Vaginal bleeding between periods		
Yes	106	69.28
No	47	30.78
Pain during sex		
Yes	111	72.55
No	42	27.455
Heavier or longer menstrual flow		
Yes	92	60.13
No	61	39.87
Persistent diarrhea		
Yes	37	24.18
No	116	75.82
Vaginal bleeding after menopause		
Yes	119	77.78
No	34	22.22
Vaginal bleeding during or after sex		
Yes	119	77.78
No	34	22.22
Blood in stool or urine		
Yes	50	32.68
No	103	67.32
Unexplained weight loss		
Yes	88	57.52
No	65	42.48

4.4. Level of knowledge of signs and symptoms of cervical cancer

Based on the identification of the respondents' knowledge of the signs and symptoms of cervical cancer, attempts were made to determine their level of knowledge of same.

Figure 4.2 provides a pie chart describing results of the level of knowledge of participants of the signs and symptoms of cervical cancer. The results showed that 15% of respondents had high knowledge, 45% had adequate knowledge while 40% had low knowledge on the signs and symptoms of cervical cancer.

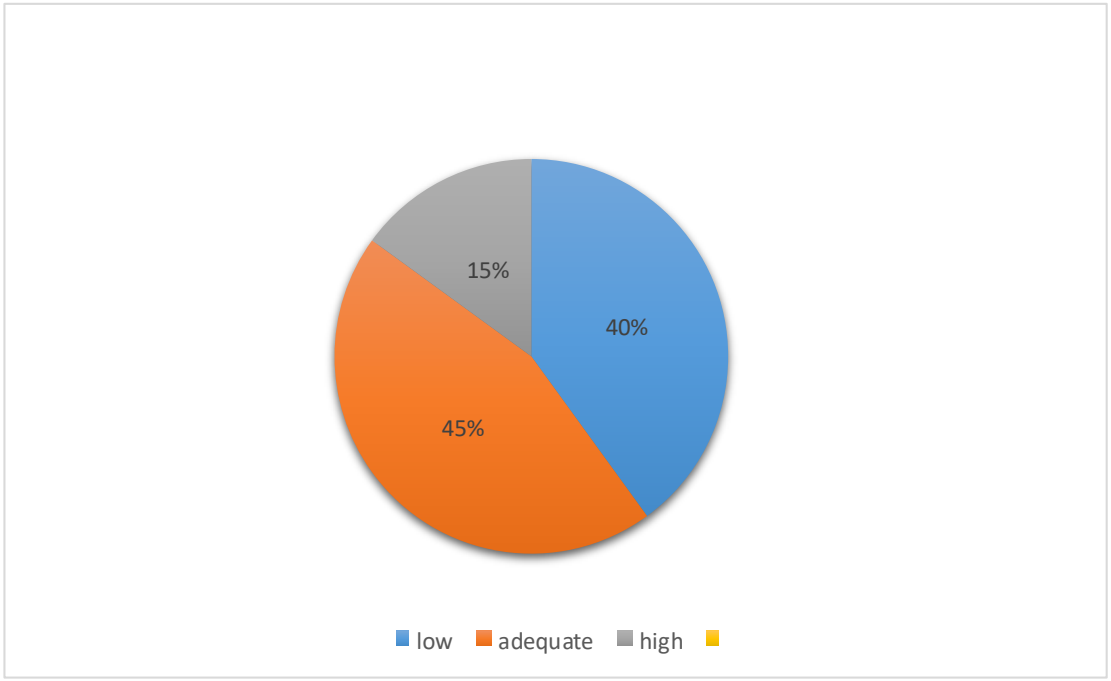

Figure 4.1: Level of Knowledge of signs and symptoms of cervical cancer

4.5. Knowledge of risk factors of cervical cancer

A question was asked to find out the respondents' knowledge of the causes of cervical cancer using some indicators. Thus, the results showed that 130 (86.7%) of the respondents knew that cervical cancer may be caused by Human papillomavirus. Additionally, 118 (78.7%) responded that cervical cancer may be caused by compromised/weakened immune system. Furthermore, 99 (66.0%) believed that cervical

cancer could be caused by prolonged use of contraceptive by women. Others, 118 (78.7%) believed that other ssexually transmitted infections could cause cervical cancer. Again, 59 (39.33%) of the respondents thought that having sex with uncircumcised partners contributed to cervical cancer. Majority of the respondents, that is, 121 (80.7%) believed that keeping multiple sexual partners contributed to the risk of developing cervical cancer. Moreover, 55 (36.7%) of the respondents believed that having many children could cause a cervical cancer. In addition, 97 (64.7%) noted that cervical cancer could be caused by smoking cigarettes. It was reported that 102 (68.0%) informed that cervical cancer could be caused by having sex at a younger age. The results have been displayed in table 4.3 below .

Table 4.3: Knowledge of risk factors of cervical cancer

CAUSES	RESPONSE	PERCENTAGE
Human papillomavirus	130	86.67
Smoking cigarettes	97	64.67
Weak immuned system	118	78.67
Prolonged use of contraceptive	99	66.00
Sexually transmitted infection	118	78.67
Uncircumcised partner	59	39.33
Having sex at a younger age	102	68..00
Multiple sex partners	121	80.67
Several children	55	36.67
Sexual partner with multiple partners	108	72.00
Not going Regular pap tests	114	76.00

4.6. Level of knowledge of the Risk Factors of cervical cancer

Based on the identification of the respondents' knowledge of the risk factors of cervical cancer, attempts were made to determine their level of knowledge of same. The level of knowledge of the risk factors of cervical cancer was scored among the respondents using excellent, adequate and low. Hence, figure 4.3 presents the results of the level of knowledge of respondents of the risk factors of cervical cancer. The results showed that 13% of respondents had low knowledge of the risk factors of cervical cancer. More than half of the respondents, 67% had adequate knowledge while 20% of respondents had high knowledge of the causes of cervical cancer in women.

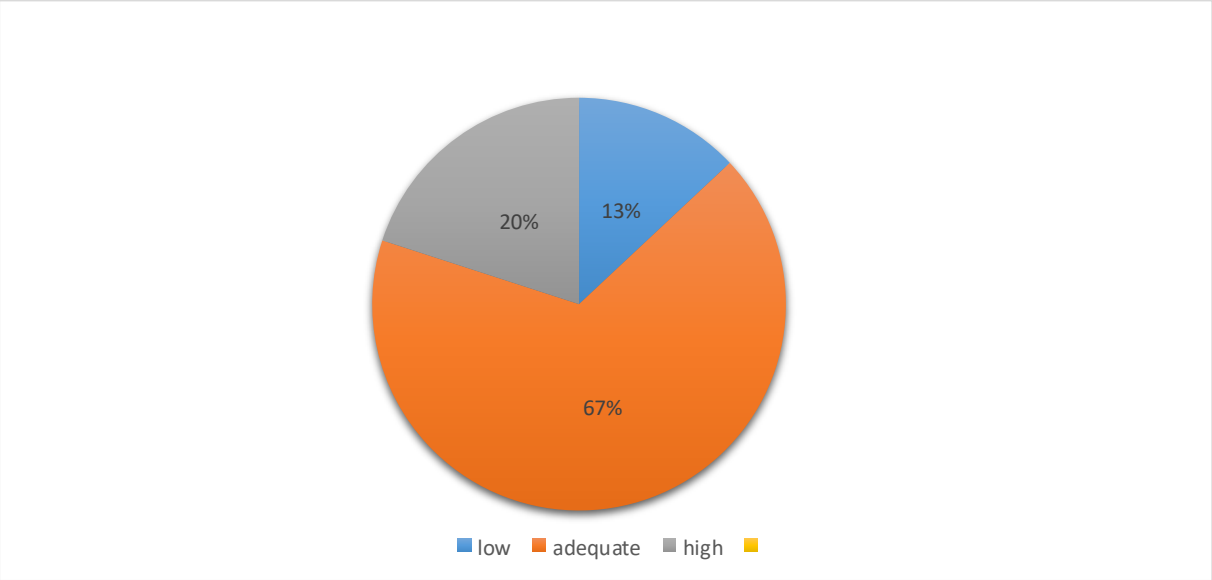

Figure 4.2: Level of Knowledge of Risk factors of Cervical Cancer

4.7. Awareness of Cervical Cancer Screening

When respondents were asked about whether they had heard of cervical cancer screening before 127 (92%) said yes and 11 (8%) said no. This is illustrated in figure 4.4 below"

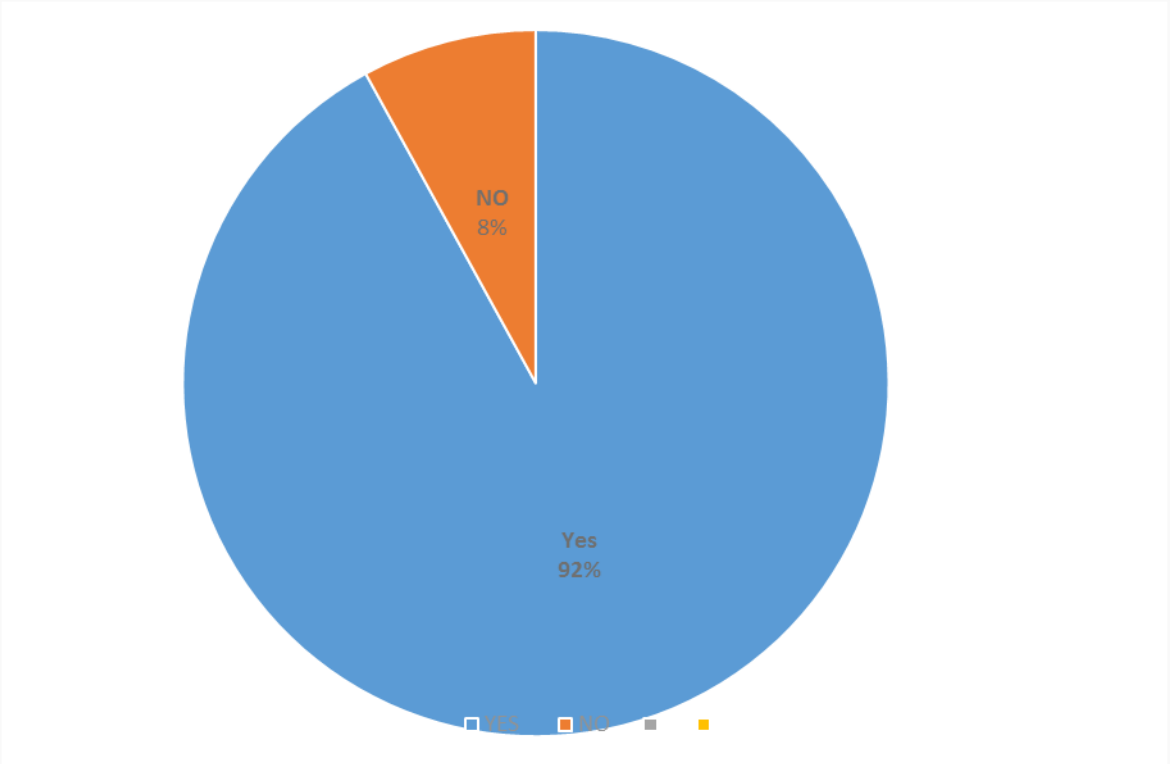

Figure 4.3: Awareness of cervical cancer screening

4.8. Level of Awareness of Cervical Cancer Screening

The level of Awareness of cervical cancer Screening was scored among the respondents using High, Moderate, and low Awareness. Hence, figure 4.5 presents the results of the level of awareness of cervical cancer screening among the respondents. The results show that 5 (4%) of respondents were not aware of cervical cancer Screening, 15 (13%) respondents, were adequately aware while 107 (83%) are highly aware of cervical cancer screening. The level of awareness was measured among 127 respondents.

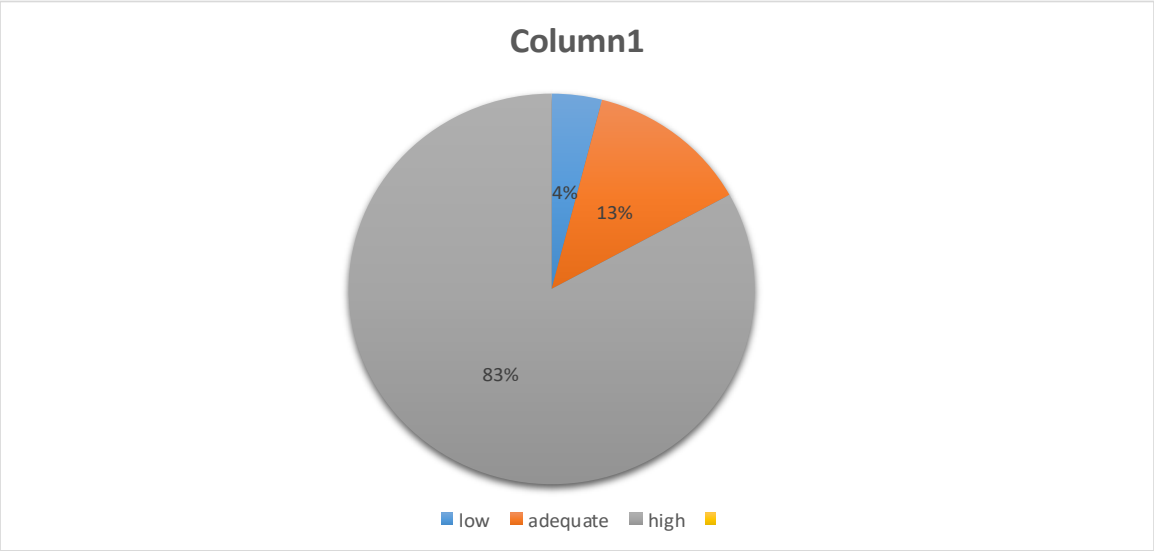

Figure 4.4: Level of Awareness of Cervical Cancer Screening

4.9. Uptake of Cervical Cancer Screening

As shown in figure 4.6 below on the uptake of cervical cancer screening, out of the 223 respondents, 47 (34%) reported that they had done the screening while 92 (66%) reported that they had not done the screening and 84 of the respondents did not answer this question.

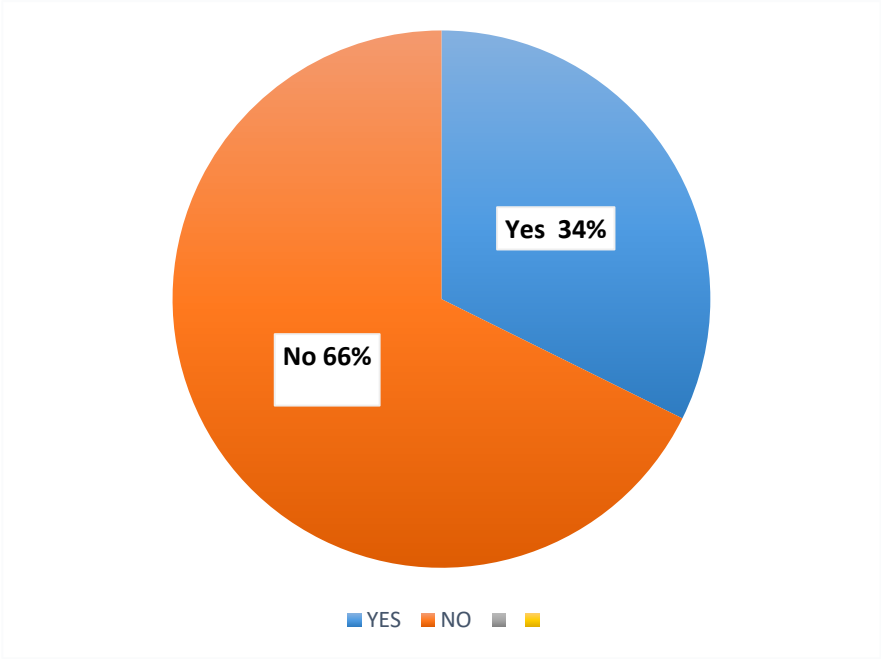

Figure 4.5: Uptake of Cervical Cancer Screening

4.10. Health service related and socio cultural factors affecting Uptake of cervical cancer screening

Figure 4.7 presents results relating to health service related and socio cultural factors that affect the uptake of cervical cancer screening. Among other things, it was shown that 40% of the respondents did not screen because they had poor knowledge of cervical screening. About 37% of the participants were not sure of their risk of suffering from cervical cancer, hence, did not screen. Moreover, 46% of the respondents believed that the fear of vaginal examination reduced the incidence of cervical cancer screening. About 40% believed that the lack of screening facilities hampered the incidence of screening for cervical cancer. About a quarter (25%) of the respondents believed that their religious belief hindered them from going for vaginal screening. In addition, 34% of respondents believed that the cost of pap smear prevents women from screening for cervical cancer. About 45% of the respondents did not screen for cervical cancer because they felt that there was no convenient clinic

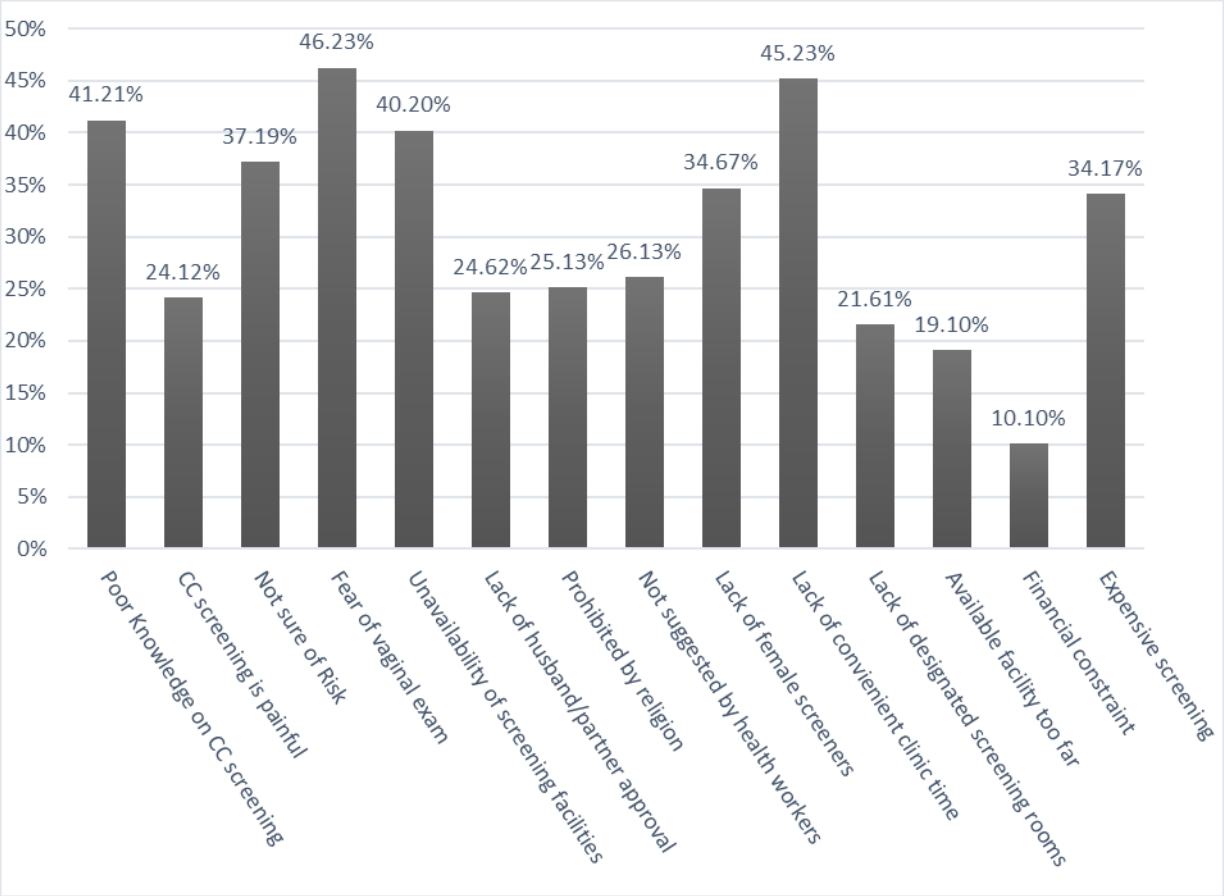

Figure 4.6: Health Service related and socio cultural factors affecting uptake of cervical cancer screening

4.11. Chi square test: Relationship between socio-demographic characteristics and uptake of cervical cancer screening

"Table 4.4 represents results of the Pearson's chi square test of the relationship between the socio-demographic characteristics and uptake of cervical cancer screening. The results indicated that the age of the participants was statistically related to the uptake of cervical screening (χ^2= 15.92; p-value= 0.001). In addition, the marital status of participants was found to be significantly related to the uptake of cervical cancer screening (χ^2= 18.32; p-value< 0.001). However, parity, level of education, average monthly income, months of experience, and religion were not statistically related to uptake of cervical cancer screening (p>0.05).

4.12. Chi square test: Relationship between enabling factors and uptake of cervical cancer screening

Table 4.4: Chi square test: Relationship between socio-demographic characteristics and uptake of cervical cancer screening

	UPTAKE			
VARIABLE	**YES**	**NO**	χ^2	**P-VALUE**
Age			15.92	0.001
10 – 19	2	1		
20 – 29	20	66		
30 – 39	19	14		
40 – 49	4	5		
Parity			0.57	0.805
1 – 2	8	10		
3	1	3		
4 – 5	1	1		
Marital status			18.32	<0.001
Single	21	71		
Married	17	19		
Divorced	7	1		
Level education			6.15	0.104
Secondary	0	1		
Technical	6	10		
University	38	65		
NMTC/Diploma	0	10		
Religion			4.23	0.099
Christianity	36	81		
Muslims	11	10		
HIMU	0	1		
Months of experience			8.86	0.065
Less than 3	9	26		
3 – 6	7	27		
7 – 9	8	7		
10 -12	7	6		
Greater than 12	14	23		
Average monthly income			4.02	0.377
Less than ₵1000	11	39		
₵1001 - ₵5000	18	33		
₵5001 - ₵10000	3	4		
₵10001 - ₵20000	0	2		
More than ₵20000	1	1		

Table 4.5 shows the univariable/univariate association tests between the enabling factors and the uptake of cervical cancer. The results showed that knowledge of the risk factors of cervical cancer was found not to be associated with uptake (χ^2= 2.602; p-value= 0.272). Knowledge of signs and symptoms of cervical cancer was not significantly associated with uptake of cervical cancer screening (χ^2= 1.003; p-value= 0.606). Level of awareness of cervical cancer screening was not associated with uptake of cervical cancer (χ^2= 0.647; p-value= 0.724)

Table 4.5: Chi square test: Relationship between enabling factors and uptake of cervical cancer screening

VARIABLE	UPTAKE YES	NO	χ^2	P-VALUE
Knowledge of risk factors of cervical cancer				
High	5	20	2.602	0.272
Adequate	31	52		
Low	5	10		
Knowledge of signs and symptoms of cervical cancer				
Excellent	7	13	1.003	0.606
Adequate	22	34		
Poor	15	35		
Awareness of cervical cancer screening				
High	36	64	0.647	0.724
Adequate	7	8		
Low	2	3		

4.13 Chi square test: Relationship between uptake of cervical cancer screening and socio-cultural factors

Table 4.6 shows the chi square test of the association between some selected personal factors and the uptake of cervical cancer screening. The results showed that understanding of cervical cancer screening was found to have an influence on the uptake of cervical

cancers creening (χ^2= 6.95 p-value= 0.008). Moreover, the results indicated that uncertainty of one's risk of developing cervical cancer was associated with uptake of cervical cancer screening (χ^2= 6.96; p-value= 0.008) as well as uncertainty of screening facility was associated with uptake of cervical cancer screening (χ^2= 8.94; p-value= 0.003). However, factors such as screening is painful, fear of vaginal exam, lack of partner support and culturally not acceptable all showed no statistically significant association with uptake of cervical cancer screening (p>0.05).

Table 4 6: Chi Square Test: Relationship between uptake of cervical cancer screening and socio- cultural factors

VARIABLE	UPTAKE YES	NO	χ^2	P-VALUE
Little Understanding of cervical cancer screening				
Yes	17	55	6.95	0.008*
No	30	37		
Screening is painful				
Yes	11	27	2.42	0.298
No	35	65		
Not Sure I am at risk				
Yes	13	47	6.96	0.008*
No	34	45		
Fear of vaginal exam				
Yes	21	51	1.44	0.230
No	26	41		
Uncertainty over screening site				
Yes	13	50	8.94	0.003
No	34	42		
Lack of partner support				
Yes	11	22	0.01	0.947
No	36	70		
Culturally not acceptable				
Yes	13	34	0.39	0.531
No	21	71		

4.14 Chi Square Test: Relationship between uptake of cervical cancer screening and health related factors

Table 4.7 shows the Chi square test of the association between the health service related factors and the uptake of cervical cancer screening. Results from the table indicate that attitude of health care workers was statistically associated with uptake of cervical cancer screening (χ^2= 5.15; p-value= 0.023). The convenience of screening time was found to be associated with uptake of cervical cancer screening (χ^2= 13.72; p-value= 0.001). It was shown that lack of designated screening rooms was found to be associated with uptake of cervical cancer screening (χ^2= 5.41; p-value = 0.002). Nonetheless, recommended by a health care worker (HCW), lack of female screeners, cost of screening, and Screening facility far away were all not statistically associated with the uptake of cervical cancer screening (p>0.05).

Table 4.7: Chi Square Test: Relationship between uptake of cervical cancer screening and health related factors

VARIABLE	UPTAKE YES	NO	χ^2	P-VALUE
Recommended by a HCW				
Yes	13	34	0.00	0.952
No	25	67		
Lack of female screeners				
Yes	13	41	3.74	0.053
No	34	51		
Attitude of HCW				
Yes	15	48	5.15	0.023
No	32	44		
Cost of screening				
Expensive	14	39	2.09	0.148
Moderate	33	53		
Convenient clinic time				
Yes	13	56	13.72	<0.001
No	34	36		
Designated screening rooms				
Yes	6	28	5.41	0.02
No	41	63		
Screening facility far away				
Yes	9	29	2.40	0.122
No	38	63		

4.15. Logistic regression: Uptake of cervical cancer screening and selected variables

An analysis was conducted to assess some variables that could have an influence on the uptake of cervical cancer screening using the logistic regression. The results of the logistic regression are provided in table 4.8. It was shown that lack of designated rooms for cervical cancer screening was associated with an uptake of cervical cancer screening (p=0.022). However, all the other factors were not associated with uptake of cervical

cancer screening. Crude odds ratio and adjusted odds ratio were used to measure the strength of association between the various variables with uptake.

Table 4.8: Logistic regression between Uptake of cervical cancer screening and selected variables

VARIABLE	COR	P-VALUE	AOR	P-VALUE
Age				
10 – 19			1	
20 – 29	6.60	0.03	0.385	0.46
30 – 39	1.47	0.76	0.855	0.91
40 – 49	2.50	0.41	0.680	0.81
Marital status				
Single	1		1	
Married	0.33	<0.01	1.900	0.292
Divorced	0.04	<0.01	10.652	0.085
Understanding of cervical cancer screening				
Yes	1		1	
No	0.381	0.009	0.80	0.685
Sure I am at risk				
Yes	1		1	
No	0.366	0.009	0.461	0.173
Certainty over screening site				
Yes	1		1	
No	0.321	0.003	0.453	0.138
Attitude of HCW				
Yes	1		1	
No	0.430	0.025	1.795	0.310
Convenient clinic time				
Yes	1		1	
No	0.246	<0.001	0.485	0.183
Designated screening rooms				
Yes	1		1	
No	0.329	0.024	**0.193**	**0.022***

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0. Introduction

In this chapter, the analysis of the results of the study relating to current literature is presented. The chapter is divided into seven sections. Section one presents the socio-demographic characteristics and uptake of cervical cancer screening. Section two presents the prevalence of uptake of cervical cancer screening. Section three presents the level of knowledge of cervical cancer. Section four presents the awareness on cervical cancer. Section five presents the personal factors influencing the uptake of cervical cancer screening. Section six presents the health related factors influencing the uptake of cervical cancer. Section seven presents the chapter summary.

5.1. Socio-demographic characteristics and uptake of cervical cancer screening

Several studies have identified factors that may affect the uptake of cervical cancer screening amongst females (Tefera & Mitiku, 2016). Tefera and Mitiku (2016) identified the background characteristics of females as factors that influenced the uptake of cervical cancer screening. This study sought to identify some of these background characteristics that could influence the uptake of cervical cancer screening. However, it was found out female health workers' age did not affect cervical cancer screening uptake. This finding contradicts a study, which found that women who were 25-34 years were about five times more likely to uptake cervical cancer screening and those who were 34-49 years were six times more likely to uptake cervical cancer than women who were 14-24 (Tefera & Mitiku, 2016).

Tefera and Mitiku's (2016) findings could be explained as resulting from an augmented risk of cervical cancer due to increased age. Therefore, women who are older are often encouraged to screen for cervical cancer. The inconsistency between the findings of this current study and that of Tefera and Mitiku's (2016) could result from the fact that respondents of this study were female health workers and by virtue of their profession, are privy to the need for cervical cancer screening uptake, hence, without a variation in age.

Another socio-demographic factor that was considered as having an influence on cervical cancer screening uptake respondents' educational level. It is expected that the higher the level of education of the respondents, the more likely to witness an increase in the uptake of cervical cancer screening. This is because the higher an individual climbs the academic ladder, the more knowledgeable and informed they are likely to be. Hence, respondents may have heard of cervical cancer and the need to be screened. Some studies established that uptake of cervical cancer screening has been shown to be directly proportional to higher levels of education as better educated women are more likely to have knowledge of cervical cancer and screening than the less educated (Hyacinth *et al*., 2012; Mupepi *et al*., 2011). Tefera and Mitiku (2016) established that women with secondary education were two times more likely to have cervical cancer screening compared with women without formal education. Nevertheless, the findings of this current study established that the level of education of these female health workers did not affect their uptake of cervical cancer screening.

The years of experience of the female health workers offers the health workers the opportunity to be informed on several health conditions. During their continuous practice, they engage in institutional training, continuous professional development, among others.

All these activities offer opportunities to acquire knowledge of the disease conditions, screening and diagnostic approaches, signs and symptoms of numerous health conditions. Therefore, it is expected that cervical cancer screening uptake would be influenced by the professional experience of these female respondents. It is expected that an increase in work experience should lead to an increase in the uptake of cervical cancer screening among the female health workers. Yet, findings of this study indicated that the work experience of the respondents did not affect the uptake of cervical cancer screening.

The average income of respondents has been found by several studies to have an influence on the uptake of cervical cancer screening (Nuche-berenguer & Sakellariou, 2019). Nuche-berenguer and Sakellariou (2019) identified income as a factor that increases cervical cancer uptake explaining that the more respondents earned, the more they were able to afford cervical cancer screening. Nonetheless, this current study found that income of the female health workers did not affect their uptake of cervical cancer screening. This was because the profession of these participants as health workers might have confounded the association that income might have had with the uptake of cervical cancer screening. Since the respondents of this current study were health workers, they were more likely to screen for cervical cancer without necessarily considering the cost involved. This was consistent with other findings where income did not influence cervical cancer screening uptake (Bante, Getie, Getu, & Mulatu, 2019).

5.2. Prevalence of Uptake of cervical cancer screening

The uptake of cervical cancer screening amongst the health professionals was 33.8%. Amongst health professionals, this proportion was low. However, compared with similar studies, this prevalence of uptake was high. Singh et al. (2012) recorded a prevalence of

uptake of cervical cancer screening of 15%. This is because in this study, the participants were health professionals and were therefore, expected to have a higher uptake. The rather low uptake of cervical cancer screening might be as a result of the reduced proportion of health professionals who had heard of cervical cancer. It was realized in this current study that the percentage of respondents who had heard of cervical cancer was 66.4%.

It could be contended that low uptake of cervical cancer screening has dire consequences for the female health professionals in particular and other females in general. This is because there could be an increased rate of cervical cancer resulting from late detection. The basis of the argument is that the cervical cancer screening rates in rural (3.2%) and urban (2.2%) areas in Ghana were seen to be very low (Williams & Amoateng, 2012). Yet, this study recorded a higher prevalence compared with these findings, especially in an urban or a city of Ghana.

5.3. Level of Knowledge of Cervical cancer Signs and symptoms and Risk factors

Knowledge of cervical cancer and its screening is relevant to increasing cervical cancer screening uptake. Health professionals are expected to have enough knowledge. On the other hand, the results from this study showed that 40% of the health professionals had inadequate knowledge of signs and symptoms of cervical cancer. However, lower compared with a study, which indicated that 78.8% of women were not knowledgeable of cervical cancer screening (Erku, Netere, Mersha, & Abebe (2017). Nevertheless, the difference between these two studies on the seeming improved level of knowledge was due to the fact that the study population was health professionals and were supposed to know about cervical cancer screening. Therefore, only 60% of these health professionals having adequate level of knowledge of the signs and symptoms of cervical cancer was

worrying. More importantly, this was worrying because most patients and clients look up to health professionals for medical advice and information.

Therefore, it is imperative that as cervical cancer awareness is supposed to be championed by these health professionals, most of them preferably, 80% should have knowledge of cervical cancer. Alwahaibi, Alsalami, Alramadhani, and Alzaabi (2018) found that 85% of the health professionals had knowledge of cervical cancer, and could therefore, advocate for early screening and prevention of cervical cancer amongst women. Another study among 503 female nurses on the insight and utilization of cancer screening services in the University College Hospital, Ibadan, Lagos found that less than 80.9% of them had knowledge of cervical cancer. Therefore, the knowledge of cervical cancer was low among the female health professionals at the Greater Accra Regional Hospital.

The knowledge of the respondents was assessed on the causes of cervical cancer in this study. The results revealed that about 86.7% of the health professionals believed that Human Papillomavirus caused cervical cancer. This was encouraging because the health professionals would be able to educate the populace on the causes of cervical cancer and ways to reduce the risk of infection. Since other studies had identified other risk factors of cervical cancer, this study assessed if the health workers could identify some risk factors of cervical cancer (see Alwahaibi *et al.*, 2018). Generally, most health professionals identified smoking, compromised immune system, STI and multiple sexual partners as some of the risk factors for developing cervical cancer.

Nonetheless, a less proportion of the respondents, that is, 39.3%, did not know that having sex with an uncircumcised partner augments a woman's risk of developing cervical

cancer. Also, 36.7% of the respondents didn't know that earlier studies had identified that multiparous women were more prone to developing cervical cancer (Alwahaibi *et al*., 2018). It is anticipated that enhanced knowledge of the risk factors of cervical cancer could be very useful for screening of women for cervical cancer. The view is that if the health professionals have knowledge of the various risk factors in mind, they could initiate steps to assess women at risk of cervical cancer, and then proceed to do the Pap smear for women who are at high risk of developing cervical cancer. This would significantly reduce cost and the work load on the health professionals. Hislop *et al*. (2007) established that women with adequate on knowledge of the risk factors of cervical cancer had 6.4 times increase in uptake of cervical cancer screening compared with women with inadequate knowledge of the risk factors of cervical cancer. However, this study's findings indicated that knowledge of the risk factors of cervical cancer among female healthcare professionals did not influence the uptake of cervical cancer screening

When people have knowledge of the signs and symptoms of cervical cancer, it helps in its early diagnosis and rapid management. Cervical cancer is the chief cause of disease and death among gynecological cancers around the world, estimated to 528,000 newly diagnosed cases in 2012. This accounts for 7.5% of all female cancer deaths (Alwahaibi *et al*., 2018). Thus, health professionals need to be conscious of the signs of this disease to reduce it globally. High knowledge of the signs and symptoms of cervical cancer is believed to augment or improve the uptake of cervical cancer screening. This is because when females know the signs and symptoms of cervical cancer, they understand the relevance of getting screened so as to diagnose the presence of cervical cancer. Nonetheless, the results of this research suggested that the knowledge of female healthcare

professionals of the signs and symptoms of cervical cancer had no influence on the uptake of cervical cancer.

Results from this study showed that 69.3% of the respondents were aware that vaginal bleeding between menstrual periods was a classical sign of cervical cancer. This finding supports that of a previous study that the proportion of health workers who were aware of vaginal bleeding as a sign of cervical cancer was about 64.7% (Alwahaibi *et al.*, 2018). About 72% of respondents of this current study identified pain during sex as a sign of cervical cancer and this was encouraging. This is because most people associate pain during sexual intercourse with other gynaecological conditions such as Endometriosis or Chronic Pelvic inflammation. However, it is also a classical sign of cervical cancer and health providers are to screen for cervical cancer when women present with such symptoms.

Cervical cancer is characterized with a plethora of signs that health professionals would look for. Cervical cancer may sometimes be associated with an increased menstrual flow. Therefore, 60% of the respondents recognized that heavier menstrual flow was associated with cervical cancer. Other signs such as Haematuria may be a characteristic of cervical cancer. However, only 32.7% of the respondents dentified this sign as a cervical cancer sign. It was expected that as health professionals, a greater proportion would be able to identify the signs and symptoms of cervical cancer.

5.4. Awareness of Cervical Cancer Screening

Most experts have advocated for awareness creation as regards cervical cancer (Getachew *et al.*, 2019). Getachew *et al.* (2019) recommended the need to increase sensitization

campaigns on cervical cancer. When people have knowledge of this disease and its screening, they will regular screen resulting to early detection of the condition. The level of awareness of female health professionals of cervical cancer screening was 92%. This result indicated that the level of awareness amongst the health professionals was very high compared with a study, which found that 52.0% of women were aware of cervical cancer (Alafifi, Kindratt, Pagels, Saleh, & Gimpel, 2018). Being aware of cervical cancer screening is imperative for an increased screening uptake and significant for early diagnosis, detection and treatment of cervical cancer. This goes a long way to ameliorate the occurrence of cervical cancer among females. From this study, it was realized that the level of awareness of female health professionals of cervical cancer screening did not influence the uptake of cervical cancer screening.

5.5. Socio-cultural factors influencing uptake of cervical cancer screening

Majority of the health professionals in the study reported that fear of the exam (46.2%), lack of convenient clinic time (45.2%), and poor knowledge on cervical cancer screening (41.2%) as reasons why they have not been screened for cervical cancer. Unavailability of screening services, cost of screening, not sure they at risk, and the screening being painful amongst others were the reasons why some health professionals have not been screened for cervical cancer. There are other studies that support these findings. In a study done in Nigeria, poor knowledge about the screening, not having the time, the cost of the screening, not being aware of screening venues were factors that affected the uptake of the screening (Goyal, Vaishnav, Shrivastava, Verma & Modi, 2012).

Studies have identified a factor such as the parity of the female as affecting cervical cancer screening uptake. Ncube *et al*. (2015) discovered a significant relationship between parity

and the uptake of cervical cancer screening. It was realized that women who had two or more kids were twice as likely to have had Pap smear compared to females who had no child. Explanation to this is because multiparous mother have more interactions with health professionals hence the increased opportunity of awareness of cervical cancer. The findings of our research indicated that parity did not affect the uptake of cervical screening amongst female health workers of the Greater Accra Regional Hospital.

Other personal factors identified by some studies to affect the uptake of cervical cancer amongst females are knowledge and understanding of cervical cancer. This is because the more the individual is aware of the harmful effect of cervical cancer; the more likely they are to be screened. From the findings of our study, it was realized that 41.2% of the respondents thought that poor knowledge on cervical cancer was a personal factor why they do not screen for cervical cancer. It was therefore not surprising that 37.2% of the female health workers were not sure of their risk of developing cervical cancer. Nonetheless, this was not found to affect cervical cancer uptake among female health workers.

Fear of pap smear test or vaginal examination was identified by 46.2% respondents as a barrier to cervical cancer screening uptake. Since the cervical cancer screening (Pap smear) is invasive, it may come with some level of pain. Some studies have attributed the reduced incidence of cervical cancer screening to the invasive nature of the procedure. For that reason, some participants are afraid to have the Pap smear done. Some studies have attributed the reduced incidence of cervical cancer screening to the invasive nature of the procedure for which reason, some participants were afraid to have the Pap smear done (Abotchie, & Shokar, 2009).

Results from this studies established that fear of vaginal examination did not influence the uptake of cervical cancer screening. Sometimes the fear of vaginal examination could be overcome if there is adequate partner support. The urge on by a partner could motivate a female to get screened, this would in all increase the uptake of cervical screening. Discoveries of this study indicates that amongst female health workers, partner support did not influence uptake of cervical cancer screening .

This study sought to find out whether the uptake of cervical cancer screening was influenced by cultural acceptance. Verdicts of the study proved that most female health workers did not consider culture as an influence on cervical cancer uptake. This is in variance to a study among students on cervical cancer screening where culture was identified as a barrier to cervical cancer screening uptake (Abotchie, & Shokar, 2009). Since some cultures frown upon females going naked before other persons besides their husbands, it was expected that cultural belief would influence uptake of cervical screening. Amongst female workers, cultural belief did not have any association with the uptake of cervical cancer screening.

5.6. Health related factors influencing uptake of cervical cancer screening

The financial cost of getting cervical cancer done may be a major deterrent to females who would want to be checked. Expensive cost of pap smear test means most females would have to pay hefty sums for cervical cancer screening. The financially constraint women may be reluctant to get check. From the findings of this study, the cost of a cervical cancer screening did not influence the uptake of cervical cancer screening. This is because most health professionals may receive incentives or discounts for services rendered at the health facility. Therefore, the cost of a pap smear may be cheaper or easy to afford.

Proximity of health facility has been established by most studies to influence utilisation of health services (Akinyemi, Banda, Wet, Akosile, & Odimegwu, 2019; Kambala, Morse, Masangwi, & Mitunda, 2011). For example a study by Latunji, Akinyemi (2018) on factors influencing health seeking behaviour amongst civil servants working in Ibadan, Nigeria revealed that, nearly a quarter of the civil servants considered the proximity of the health facility from their residence. The closer the facility is to the individual the more likely that the individual would utilize the services of the facility. Results from this study indicated that the distance from a health facility did not influence the uptake of cervical cancer screening amongst female health workers. This is because with female health workers, the health facilities are the very places they work thus, proximity to the screening facilities is short

Another health-related factor that was considered in this study was designating rooms for cervical cancer screening. Privacy in the conduct is very important in gynaecological care. Sexual history and its related health issues are parts of life that most people are sensitive and secretive about sharing with others. Findings showed that designated rooms for cervical cancer screening influenced uptake of cervical cancer screening. It was realized that the uptake of cervical cancer amongst female health workers who considered lack of designated was reduced by an odds of 80.7% compared to uptake of cervical cancer amongst female health workers who did not consider lack of designated screening room. This is to explain that the use of designated room would a the uptake augment cervical cancer screening by 5.1 times amongst female health workers. This result is an indication that most females place some level of privacy and confidentiality on sexual health. They would prefer to have screening of their cervix secluded from major health screening facilities.

There has been ethical dilemma on the sex of the screeners for gynaecological screenings. Due to the privacy and secrecy most patients place on sexual health, they prefer to be examined by same sex. Therefore, for cervical cancer screening, the preferred screener should be a female. Where female screeners are not available, most institutions would prefer to offer chaperons. The extent of the availability of female screeners may not be over emphasized. However, outcomes from this study indicate that the availability of female screeners did not affect cervical cancer screening uptake amongst female health workers.

5.7. Chapter summary

This chapter presented the findings of the current study and how they related to prevailing literature. It has shown how some of the key findings in this study had a relationship with some of the existing studies, which helped to draw the needed differences and similarities. The next chapter presents the summary, conclusions and recommendations of the study.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0. Introduction

This chapter presents the six sections therein as section one on summary, section two on the conclusions, section three as the contribution to knowledge, section four on the recommendations, section five on the limitations to the study and section six on the future research.

6.1. Summary of the study

The aim of this study was to assess factors influencing the uptake of cervical cancer screening amongst female health professionals working at the Greater Accra Regional Hospital in the Greater Accra Region of Ghana. The study found that the uptake of cervical cancer screening amongst the female health professionals was 34%. Amongst the female health professionals, this proportion was low. Thence, the argument is that low uptake of cervical cancer screening has dire consequences for women in general because this means there could be late detection of cervical cancer, hence, causing an increase in mortality and infertility amongst females. However, in terms of comparison, this prevalence rate was seen to be relatively higher than what was reported in other studies such as the 15% recorded earlier (Singh *et al*., 2012).

6.2. Conclusions of the study

This section presents the conclusions of the study based on the key themes and objectives as below.

6.2.1. Uptake of Cervical cancer Screening

Even though the awareness of cervical cancer screening among the female health professionals was high, the uptake of cervical cancer screening amongst the health professionals was 34%. This proportion could be considered as low for health professionals who are supposed to be advocates of such an intervention.

6.2.2. Level of knowledge of signs and symptoms and risk factors of cervical cancer

The findings of this study revealed that 40% of the health professionals had low level of knowledge of cervical cancer. While 45% had adequate knowledge of the signs and symptoms of cervical cancer and 15% of the female health workers had excellent knowledge of cervical cancer signs. Estimating the knowledge of the respondents of the risk factors of cervical cancer, the findings revealed that 86.7% of the respondents knew that Human Papillomavirus could cause cervical cancer. This together with knowledge of other signs and symptoms of cervical cancer was conformable with earlier evidence, which showed that the proportion of health workers who were aware of vaginal bleeding as a sign of cervical cancer (Alwahaibi *et al*., 2018).

6.2.3. Level of awareness of cervical cancer and its screening

The level of awareness of this condition of would lead to regular screening and its early diagnosis accordingly. The study found that the level of awareness of female health professionals of cervical cancer and screening were 66% and 92% respectively. Hence, the proportion of health workers who were aware of cervical cancer was considered high. These figures were relatively good in real terms as they were higher than those recorded in previous studies; a study revealed that 78.8% of women were not knowledgeable of cervical cancer screening (Erku, Netere, Mersha, & Abebe, 2017). A study revealed that

52.0% of women were aware of the condition (Alafifi *et al*., 2018). Results revealed that 4% of the health professionals had inadequate knowledgeable of cervical cancer screening. While 13% of the female health workers had adequate knowledge, 83% had high knowledge of cervical cancer screening. Similarly, a study in Nigeria amongst female nurses also recorded a high knowledge of cervical cancer screening (Goyal *et al*., 2012).

6.2.4. Influence of predisposing (socio-demographic characteristics) factors on uptake of cervical cancer screening

Evaluating the socio-demographic characteristics that could influence the uptake of cervical cancer screening, findings of this study revealed that the age of the female health worker could not have an influence on the uptake of cervical cancer screening. In addition, marital status of the respondents did not show any influence on their uptake of cervical cancer screening. Again, the conclusions of this study showed that the educational status did not have an influence on the uptake of cervical cancer screening. The average income was also found not to have an influence on the uptake of cervical cancer screening. The religion a female health worker belonged to did not have any effect on their uptake of cervical cancer screening. These findings showed both direct and indirect relationship with earlier studies found in the literature (Hyacinth *et al*., 2012; Mupepi *et al*., 2011; Nuche-berenguer & Sakellariou, 2019).

6.2.5. Influence of enabling factors on uptake of cervical cancer screening

The study found and concludes that factors such as the understanding of cervical cancer screening did not influence the uptake of cervical cancer screening among the female health workers of the Greater Accra regional Hospital. Respondents' fear of having vaginal screening was found not to influence cervical cancer screening uptake. Moreover,

partner support towards cervical cancer screening did not seem to affect the uptake of cervical cancer screening amongst the female health workers. Assessing the influence of participants' cultural beliefs on the uptake of cervical cancer screening indicated that cultural belief did not appear to have an influence on the uptake of cervical cancer screening amongst the female worker. Uncertainty over participants' risk status did not show an influence on their uptake of cervical cancer screening. These contrasted with the findings of a study, which reported a strong association between parity and the uptake of cervical cancer screening (Ncube *et al*., 2015).

The study also assessed the influence of health related factors on cervical cancer screening and concludes that availability of female screeners did not show an influence on the uptake of Pap smear screening amongst the female health workers at the Greater Accra Regional Hospital. In addition, the cost of screening for cervical cancer did not affect the uptake of cervical cancer screening. The uptake of cervical cancer screening was not influenced by the convenience of time for screening. Likewise, the proximity to the facility for screening did not indicate any influence on the Pap smear test been done amongst the female health workers. However, the designation of rooms for Pap smear test was found to increase the uptake of cervical cancer screening by about five folds. These findings, especially the proximity to a health facility encouraging the uptake of cervical cancer screening showed some inconsistent relationship with extant literature (Latunji, & Akinyemi, 2018).

6.3. Contribution to knowledge

The current study contributes to knowledge in the area of gynaecological studies, particularly relating to the study of factors influencing the uptake of cervical cancer

screening among women in general and female workers in specific terms. Two main areas that this study's contributions could be identified are policy and methodology as explained below.

Contribution to policy and practice

The study contributes to the need for health care policy makers and healthcare stakeholders to initiate strategies and plans to develop and enforce policies directives on cervical cancer screening among women in Ghana. This confirms earlier recommendations made in earlier studies (Nartey *et al*., 2018). Nartey *et al*. (2018) argue that cervical cancer is a very important public health issue in Ghana and there are opportunities to reduce the burden of the disease through education, HPV vaccination, screening and treatment of the disease.

However, it must be informed that education is very vital to realising this crucial objective. The study argues that even if the prevalence of the uptake of cervical cancer screening was relatively low among female health care professionals who constituted medical doctors, nurses, pharmacists, and all allied healthcare professionals, then the challenge posed by the relatively lack of education among the general women population would be great.

Thus, it is imperative that efforts at increasing the level of awareness among the Ghanaian women populace would be urgent now than before. Crucial policies in the light of the low level of awareness of cervical cancer screening among the female healthcare professionals would be one thing that policy makers would have to consider in their attempts to reducing the menace of cervical cancer morbidity and mortality in the country.

There is the need for policy makers to revisit and revise the curricula for health care workers to ensure that issues like health screening is made a priority.

The need for healthcare policy makers to consider the personal factors of women when developing policies towards reducing the upsurge of cervical cancer morbidity and mortality is recommended. The findings of this study that the female healthcare workers did not consider parity as an indicator of a risk factors for contracting cervical cancer should provide the basis for healthcare policy makers to juxtapose that this idea with what is likely to pertain among the general women populace. This would be relevant when considering factors hindering the uptake of cervical cancer screening in the country.

Moreover, there is the need to consider health related factors in the development of relevant policies and programmes toward encouraging the uptake of cervical cancer screening in the country. Proximity to the healthcare facility where the screening could be conducted as well as the need to provide a designated room for the procedure at healthcare institutions to ensure privacy among the women who intend to undergo the procedure should be factored into the discourse on cervical cancer screening. Against this background, some researchers suggested that achieving this would require a coordinated systematic approach from the government, private agencies, health professionals and the general population (Nartey *et al*., 2018). Nartey *et al*. (2018) recommended the need for a whole-of-government approach involving all the relevant governmental agencies and other key stakeholders to develop an integrated approach for cervical cancer control and prevention in Ghana.

Contribution to methodology

The study also makes some contribution to knowledge in respect of the use of appropriate methodology in the conduct of a study on this topic. It would be recalled that earlier studies applied qualitative research methods to assess the awareness, perception and factors affecting utilization of cervical cancer screening services among women in Ibadan, Nigeria (Ndikom, & Ofi, 2012). Such a methodology yielded only theoretical explanations on the views of the participants to the issues raised. However, this current study applied a quantitative research method to collect data from the female healthcare professionals. This enabled the researcher to quantify their views, which would not have been possible in the qualitative research approach.

6.4. Recommendations

This section presents the recommendations resulting from the findings of this study.

Policy makers at the Ministry of Health and Ghana Health Service

The study makes recommendations to policy makers at the Ministry of Health, Ghana Health Service and management of healthcare institutions in the country and elsewhere. That is, mortality and morbidity due to cervical cancer coupled with the poor uptake of cervical cancer screening amongst female health professionals in this study warrant the formulation of Cervical Cancer Policy to tackle issues of poor uptake of cervical cancer screening amongst females or women in the country.

Public Health Practitioners

Findings of this study indicated that knowledge of female health professionals of cervical cancer was low. It is therefore, imperative that an awareness campaign is raised to

sensitize the general public on the impact of cervical cancer on the social and economic life. It is envisaged that raising the level of awareness and knowledge of cervical cancer screening among the population would ensure an increase in the uptake of it as well.

6.5. Limitations to the study

The study was faced with some challenges, which impeded the process somehow. The use of only female healthcare professionals in the Greater Accra Regional Hospital made it difficult to include all other potential women in the Greater Accra Region who could have contributed to unearthing the knowledge sought in this study. Additionally, the sample size was also limited considering the number of female health professionals in the whole of the Greater Accra Region and the entire country. The lack of application of a qualitative research method also served as a limitation to the study as the researcher could not understand the perspectives of the respondents' in terms of the answers provided to the questions. Nonetheless, the strategies applied ensured validity and reliability of the study as researcher's potential biases were controlled.

6.6. Future research

Considering the increasing mortality and infertility due to increased incidence of cervical cancer, further studies should be conducted to evaluate the prevalence of infertility and mortality due to cervical cancer in the country and elsewhere. Research should be carried out to ascertain the knowledge of the general public of cervical cancer. The challenges caused by the choice of only female healthcare professionals, the Greater Accra Regional Hospital and the sample size should be rectified in future studies.

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APPENDICES

Appendix A: Participants Information Sheet

SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

Title of Study: Uptake of cervical cancer screening among female health professionals at Greater Accra Regional Hospital

Introduction

Principal Investigator: Nana Akua Serwaah Afranie

Contact of Principal Investigator: 0502681060 Email: nanasa117@gmail.com

Institution Of Affiliation: Health Policy Planning, and management, School Of Public Health, College of Health Sciences, University of Ghana, Legon.

Background and Purpose of the research: This research is a study on the uptake of cervical cancer screening among female health professionals of all ranks, in all departments at the Greater Accra Regional Hospital. The purpose of the study is to assess the uptake of cervical cancer screening among the study participants and identify factors that affect the uptake of the services.

Nature of Research: I am interested in finding out your knowledge on signs, symptoms and risk factors of cervical cancer. Also the uptake of cervical screening services and identify factors that affect the uptake. The findings will be used by the policy makers and stake holders to make decisions regarding cervical cancer prevention and find ways to enhance the uptake of the screening services. This is a cross-sectional analytical study which will involve administering questionnaire with both closed and open ended questions to the participants by the Principal investigator and the research assistants. You were randomly selected as part of the 263 participants after the health professionals were grouped in strata consisting of various department.

Participants Involvement:

Duration/ What is involved: it may take you 10- 20 minutes to complete the questionnaire. Some of the questions may need you to provide your own answers and some have options which you are to choose from.

Potential Risks: taking part in this study will pose minimal risks to the participants. These involves the inconvenience and time spent in answering the questionnaire will cause you. Some of the questions might be may seem too personal and private. You can choose to skip questions you don't feel comfortable answering.

Benefits: you will gain no direct benefits for taking part in this study. However, the findings will be communicated to key stakeholders in the facility and county to be able to make key decisions in regards to cervical cancer screening.

Costs:

Compensation: the study is strictly academic and as such you will not be compensated for your time lost.

Confidentiality: personal information provided in the questionnaire will be protected to the best of our ability. The questionnaire will have codes and you will anonymous anywhere in the reports. All questionnaires will be securely stored after data has been collected and access will be to the research team only.

Voluntary participation/withdrawal: Taking part in this research is entirely voluntary. You can choose to avoid some questions if the need be. In any situation where there is a change of mind with regards to participating in the study, you can withdraw your consent.

Outcome and Feedback: The results of this study will be shared with Stakeholders at Greater Accra Regional Hospital through feedback meetings. A policy brief will also be made available to the Ghana Health Service.

Feedback to Participants: The findings in this research will be shared with you through feedback meetings before making it available to other people. Confidentiality will still be maintained here.

Funding Information: This research is personally funded.

Sharing of participants information/data: the data generated from this study will be solely owned by the principal investigator and available only to other members of the research team.

Who to contact for further clarification/questions:

You are at liberty to ask me any more questions about any part of the research study, if you wish to do so you can contact the Principal Investigator, Nana Akua Serwaah Afranie, Phone Number: 0502681060 Email: nanasa117@gmail.com Department: Health Policy Planning and Management.

For additional information you can contact Dr. Augustine Afari, Phone Number: 0265435294 the supervisor of this research

If you have any questions as to your rights as a participant or need any further clarification, you can contact the Ghana Health Service Ethics Review Committee administrator Ms. Hannah Frimpong Contact Number: 0243235225/0507041223

Appendix B Informed Consent Form

SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

I acknowledge that I have read or have had the purpose and contents of the Participants' Information Sheet read and satisfactorily explained to me in a language I understand (English). I fully understand the contents and any potential implications as well as my right to change my mind (ie withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name or Initials of Participant…….. ID Code ……

Participants' Signature ……OR Thumb Print…… OR Mark (Please specify)…….

Date:…….

INVESTIGATOR STATEMENT AND SIGNATURE

Researcher's name…….

Signature …….

Date…….

Appendix C: Questionnaire on Uptake of Cervical Cancer Screening Among Female Health Professionals at the Greater Accra Regional Hospital

SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA

Introduction

The purpose of this survey is to assess the Uptake of Cervical Cancer Screening among Female Health Professionals in Ghana. For this reason, this questionnaire is aimed to find out your knowledge of the signs, symptoms and risk factors of cervical cancer. The study is being conducted at the Greater Accra Regional (Ridge) Hospital. Your willingness to be part of this study will enhance its success. The information you share would be of immense benefit to you in the future because it would arouse the interest of policy makers to focus more attention on cervical cancer and its prevention in the health institutions of the country. The aftermath of this study will be used entirely for academic work and your confidentiality is assured. Even as you have the right to withdraw from this interview at any stage that you wish, it would be grateful if you could complete it. The interview will take between 15 and 20 minutes of your time. Thank you.

Questionnaire ID: _____ Date: ___/___/_____ Department:_____

SECTION A. DEMOGRAPHIC INFORMATION

This section asks questions relating to the socio-demographic characteristics.

Q1. What is your age? _____

Q2. Parity (Number of previous deliveries) _____

Q3. What is your marital status?

1. Single (never married) [ ] 2. Married (Living with partner) [ ]
3. Married (separated) [ ] 4. Divorced [ ]
5. Widowed [ ]

Q4. What is the highest level of education you have obtained?

1. Primary [ ] 2. Secondary [ ]
3. Technical college [ ] 4. University [ ]
5. Other (specify) [ ]

Q5. What is your religion?

1. Christianity [ ] 2. Muslim/Islam [ ]

3. Traditionalist [ ]

4) Other (specify)……

Q6. How long have you worked in this facility?

1. Less than 3 months [ ] 2. 3-6 months [ ]

3. 6-9months [ ] 4. 9-12months [ ]

5. >1year [ ]

Q7. How much do you earn in a month?

1. Less than Ghc 1000 [ ] 2. Ghc 1000-5000 [ ]

3. Ghc 5000-10,000 [ ] 4. Ghc 10,000-20000 [ ]

5. More than Ghc 20,000 [ ]

Q8. What is your specialty?

1. Doctor [ ] 2. Nurse [ ]

3. Allied health Professional [ ]

Q9. Age at first sex? [ ]

Q10. Number of sex partners? [ ]

SECTION B: KNOWLEDGE OF CERVICAL CANCER SIGNS AND SYMPTOMS

This section ask questions relating to the knowledge/awareness of the signs, symptoms of cervical cancer.

Q11. Have you ever heard of cervical cancer?

1. Yes [ ] 2. No [ ]

If **Q11** is **NO,** Please skip to **Q21.**

Q12. The following may be signs and symptoms of cervical cancer. Answer with the options listed below Yes /No/ don't Know

QUESTIONS	RESPONSES	
Q12.1 Do you think vaginal bleeding between periods could be a sign of cervical cancer?	1. Yes	2. No
Q12.2 Do you think discomfort or pain during sex could be a sign of cervical cancer?	1. Yes	2. No
Q12.3 Do you think menstrual periods that are heavier or longer than usual could be a sign of cervical cancer?	1. Yes	2. No
Q12.4 Do you think persistent diarrhea could be a sign of cervical cancer?	1. Yes	2. No

Q12.5. Do you think vaginal bleeding after the menopause could be a sign of cervical cancer?	1. Yes	2. No
Q12.6 Do you think vaginal bleeding during or after sex could be a sign of cervical cancer?	1. Yes	2. No
Q12.7 Do you think blood in the stool or urine could be a sign of cervical cancer?	1. Yes	2. No
Q12.7 Do you think unexplained weight loss could be a sign of cervical cancer?	1. Yes	2. No

Q13. Are you confident that you would notice a cervical cancer symptom? (Please, circle or tick applicable answer)

1. Not confident [ ] 2. Fairly confident [ ]

3. Very confident [ ]

Q14. If you had a symptom that you thought might be a sign of cervical cancer, would you seek medical care? (Please, circle or tick applicable answer)

1. Yes [ ] 2. No [ ]

3. Don't Know [ ]

SECTION C. KNOWLEDGE OF RISK FACTORS OF CERVICAL CANCER

This section asks questions regarding the knowledge of risk factors of cervical cancer.

Q15. The following are risk factors of cervical cancer. (Please, indicate True / False against your possible answers – as many as are applicable)

QUESTIONS	RESPONSES	
Infection with Human Papillomavirus (HPV)	1. Yes	2. No
Smoking cigarettes	1. Yes	2. No
Having a weakened immune system (e.g. Having HIV, Transplant)	1. Yes	2. No
Long-term use of contraceptive pill	1. Yes	2. No
Infected with sexually transmitted infections	1. Yes	2. No
Having a sexual partner who is not circumcised	1. Yes	2. No
Starting to have sex at young age (before 17 years)	1. Yes	2. No
Having many sexual partners	1. Yes	2. No
Having many children	1. Yes	2. No
Having a sexual partner with many previous sexual partners	1. Yes	2. No
Not going for regular smears (Pap tests)	1. Yes	2. No

SECTION D. AWARENESS AND UPTAKE OF CERVICAL CANCER SCREENING

This section asks questions regarding the awareness and uptake of cervical cancer screening.

Q16. Have you ever heard of cervical cancer screening? If yes go to 17, if no skip to 19.

1. Yes [ ] 2. No [ ]

Q17. If yes, how did you know about the screening? Tick all that apply

1. Family members [ ] 2. Friends [ ]
3. Nurse [ ] 4. Doctor [ ]
5. Community health worker [ ]
6. Others (specify)……

Q18. What do you think about the statements below? (Please, indicate Agree / Disagree against the possible answers – as many as possible).

QUESTIONS	RESPONSES	
Screening can detect treatable, precancerous lesions before they progress to cancer	1. AGREE	2. DISAGREE
Women aged 30 and older are more likely to develop cervical cancer than younger women.	1. AGREE	2. DISAGREE
Women in their 30s and 40s should be screened at least once	1. AGREE	2. DISAGREE
The screening procedure is relatively simple and quick.	1. AGREE	2. DISAGREE
Screening test that is positive is not a death sentence!	1. AGREE	2. DISAGREE

Q19. Have you ever been screened for cervical cancer? If yes go to 21, if no skip to 22

1. Yes [ ] 2. No [ ]

Q20. When was the last time you got screened?

1. Less than 1 month ago [ ] 2. 3 months ago [ ]
3. Six months ago [ ] 4. 1-3 years ago [ ]
5. 3-5 years ago [ ] 6. Over 5 years ago [ ]

Q21. Below are some of the reasons women do not go for screening. Select any that applies to you? **MULTIPLE RESPONSE**

1. Little understanding of cervical cancer screening [ ]
2. Cervical cancer screening is painful [ ]
3. Not thinking that one is at risk [ ]
4. Fear of a vaginal exam [ ]

5. Not knowing where to go for screening [ ]
6. Lack of husband/partner approval [ ]
7. Not allowed by religion/culture [ ]
8. Not suggested by the health care workers [ ]
9. Lack of female screeners at the health facility [ ]
10. Attitude of health care workers [ ]
11. Lack of convenient clinic time [ ]
12. The screening is expensive [ ]
13. Lack of designated rooms for screening at health facility (privacy) [ ]
14. Not offered at the health facility [ ]
15. Long distances to a health facility [ ]
16. Others……

……

Q22. Recommendations:

……

……

END. Thank you for your time

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

In case of reply the number and date of this Letter should be quoted.

MyRef. GHS/RDD/ERC/Admin/App/19/305
Your Ref. No.

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9th July, 2019

Nana Akua Serwah Afranie
University of Ghana
School of Public Health
Legon

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	**GHS-ERC 036/06/19**
Project Title	Uptake of Cervical Cancer Screening among Female Health Professionals at the Greater Accra Regional Hospital
Approval Date	9th July, 2019
Expiry Date	8th July, 2020
GHS-ERC Decision	**Approved**

This approval requires the following from the Principal Investigator

- Submission of yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report after completion of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.
- Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....
Dr. Cynthia Bannerman
(GHS-ERC CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra