

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI, GHANA

COLLEGE OF HEALTH SCIENCES SCHOOL OF PUBLIC HEALTH DEPARTMENT OF
HEALTH POLICY, MANAGEMENT AND ECONOMICS

KNOWLEDGE, ATTITUDES, PRACTICES AND BARRIERS RELATED TO CERVICAL
CANCER, SCREENING AND HUMAN PAPILLOMA VIRUS (HPV) VACCINATION
AMONG FEMALE NON-HEALTH PROFESSIONALS IN THE OFFINSO SOUTH
MUNICIPALITY, ASHANTI REGION, GHANA

BY

DR. FRED KWESI BUADU

NOVEMBER, 2016

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DR. FRED KWESI BUADU (MBChB)

A THESIS SUBMITTED TO THE DEPARTMENT OF HEALTH POLICY, MANAGEMENT
AND ECONOMICS, COLLEGE OF HEALTH SCIENCES, SCHOOL OF PUBLIC HEALTH,
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER
OF PUBLIC HEALTH IN HEALTH SERVICES PLANNING AND MANAGEMENT

NOVEMBER, 2016

KNUST

DECLARATION

I hereby do declare that except for references to the other people's work which have been duly acknowledged, this piece of work is my own composition and neither in whole nor in part has this work been presented for award of a degree in this university or elsewhere.

SIGNATURE..... DATE.....

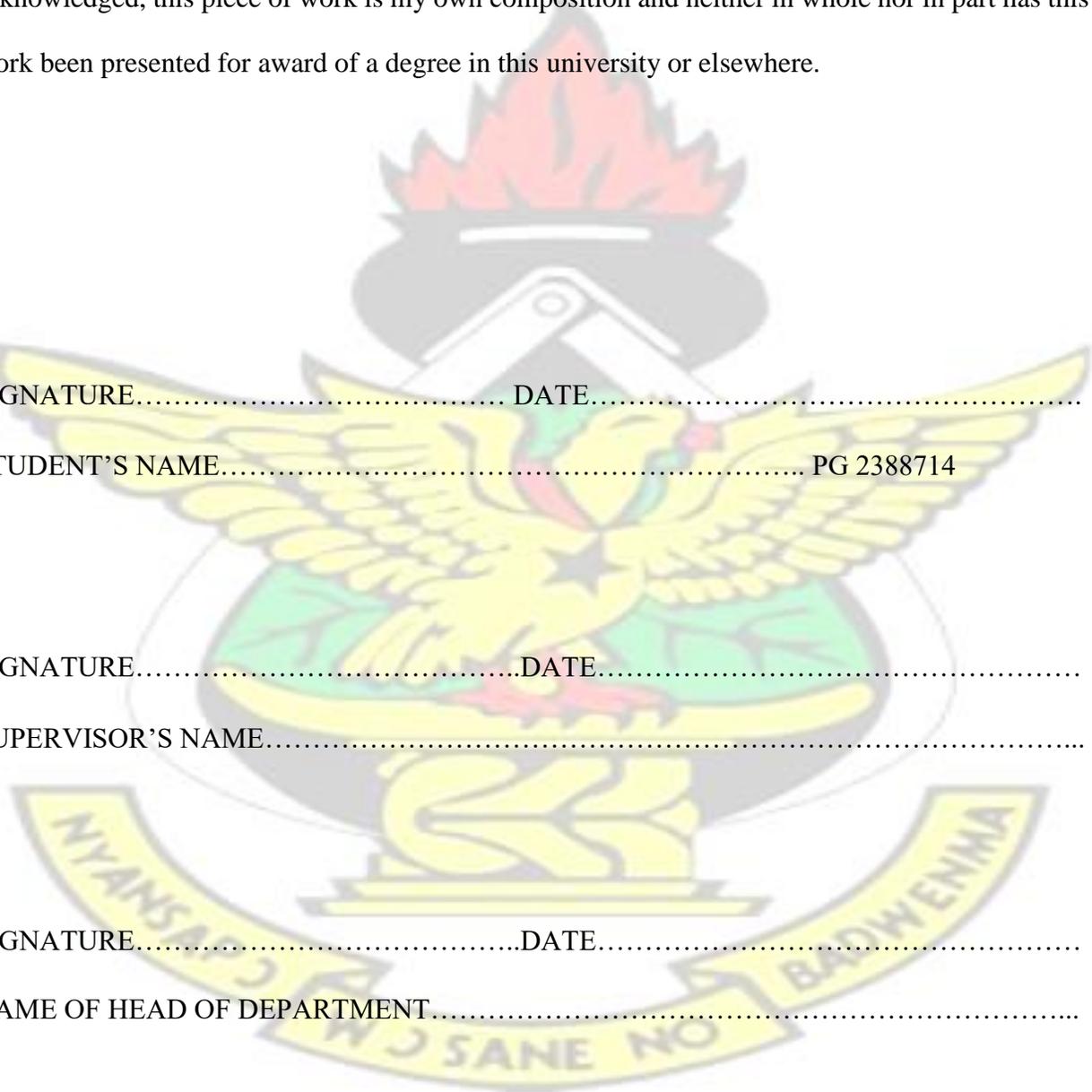
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SIGNATURE..... DATE.....

SUPERVISOR'S NAME.....

SIGNATURE..... DATE.....

NAME OF HEAD OF DEPARTMENT.....



DEDICATION

This dissertation is dedicated to my immediate family; my wife, Veronica Sekyere Buadu and my three lovely children, Nana Kwame Gyimah, Maame Yaa Animwaa and Ewura Ama Antwiwaa. They inspire me to be a better person.



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Last, but not the least, I would like to thank all the respondents who were kind enough to participate in my research.

DEFINITION OF TERMS

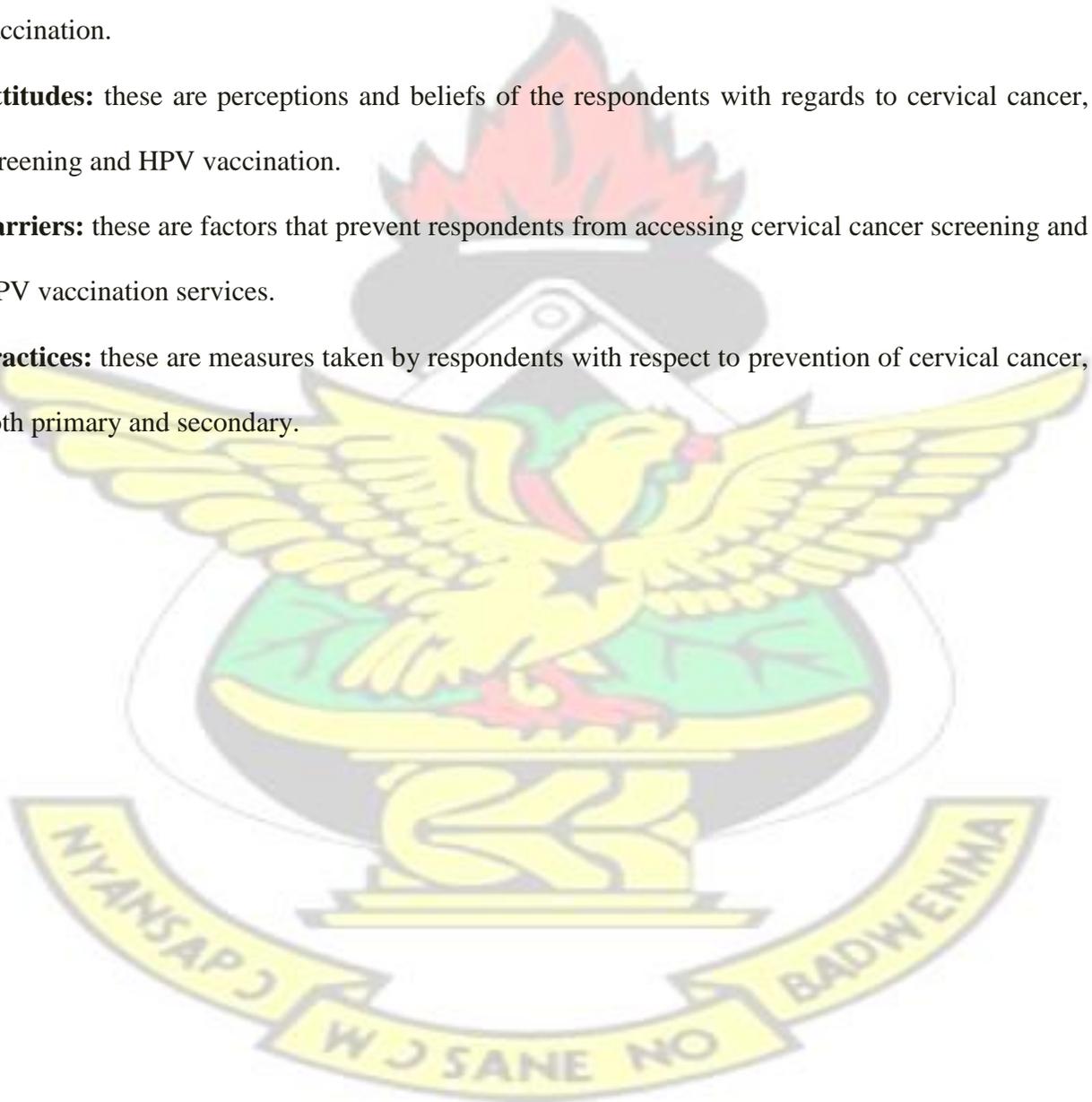
Professional: Individual with a minimum of Senior High Secondary School Certificate who has had formal training and/or further education in their chosen field of work or endeavour.

Knowledge: the knowledge the respondents have about cervical cancer, screening and HPV vaccination.

Attitudes: these are perceptions and beliefs of the respondents with regards to cervical cancer, screening and HPV vaccination.

Barriers: these are factors that prevent respondents from accessing cervical cancer screening and HPV vaccination services.

Practices: these are measures taken by respondents with respect to prevention of cervical cancer, both primary and secondary.



ABBREVIATIONS

ACCP: Alliance for Cervical Cancer Screening and Prevention

CDC: Center for Disease Control and Prevention

CHAG: Christian Health Association of Ghana

CHO: Community Health Officer

CHPS: Community-based Health Planning and Services

DNA: Deoxyribonucleic Acid

FDA: Food and Drug Administration, United States of America

HPV: Human Papilloma Virus

IARC: International Agency for Research on Cancer

KAP: Knowledge, Attitude and Practice

SD: Standard deviation

VIA: Visual Inspection of the cervix with Acetic acid

WHO: World Health Organization



ABSTRACT

Background: Cervical cancer, a largely preventable cancer, is the commonest cancer among women in Ghana and the leading cause of cancer mortalities. Prevention is through HPV vaccination and cervical screening. Developed countries, through effective screening programmes, have seen a remarkable decline in the incidence of and mortality associated with cervical cancer. This is in sharp contrast to what pertains in developing countries where the majority of cases are seen.

Objectives: The main objective of the study was to identify the factors that are associated with the patronage of HPV vaccination and cervical cancer screening services among female nonhealth professionals in the Offinso South municipality in the Ashanti Region of Ghana. **Materials and**

Methods: A cross sectional descriptive study with a self-administered questionnaire was conducted from July to September, 2015 to assess the knowledge, attitudes, practices and barriers related to cervical cancer, screening and HPV vaccination. A total of 301 randomly selected women participated in this study.

Results: Only 19.6% of respondents had adequate knowledge about cervical cancer, screening and HPV vaccination. 90% of them had a positive attitude towards the disease. Only 2% of the non-health professionals had previously been screened. 2 out of the 301 participants had received the HPV vaccine. Major barriers to these services are lack of knowledge about screening/HPV vaccination and where to access them. Their knowledge and attitudes were not significantly associated with their practice.

Conclusion: Majority of the study participants are not knowledgeable about cancer of the cervix, screening and HPV vaccination. Despite their positive attitudes, very few of them had been screened or vaccinated.

Recommendations: Efforts should be made to provide adequate information on the disease and increase access to the preventive measures by addressing the barriers to these services.

Keywords: Cervical cancer, Screening, HPV vaccination, Knowledge, Attitudes, Barriers, Professionals.

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CHAPTER 1

1.0 INTRODUCTION

1.1 Background Information

Cervical Cancer is cancer that affects the lower end of uterus, called the cervix. Like all cancers it results from abnormal growth of cells of the cervix. These cancerous cells have the capability to invade surrounding tissues and spread or metastasize to other parts of the body to cause morbidity and mortality.

Cervical Cancer mainly affects women between the ages of 30 to 65. It is the second commonest cancer among women globally, surpassed only by breast cancer. 530,000 new cases are diagnosed every year out of which 275,000 die. It affects 16 out of a 100,000 women and has a death rate of 9 per 100,000 annually (GLOBOCAN, 2008). Worldwide, an estimated 2.3 million women, 15 years and above, are at risk of being diagnosed with cervical cancer (WHO/ICO, 2010). It is also said to cause 2.4 million Years of Life Lost (YLL) among women aged 25 to 65 (Ferlay et al., 2004)

The human papillomavirus (HPV) is the aetiological agent in the causation of cervical cancer and is a necessary, but not a sufficient cause of cervical cancer. HPV infection is the commonest sexually transmitted infection (STI) worldwide (Denny et al., 2012). Between 80 to 90% of sexually active women are infected with HPV and in the U. S.A., approximately 80% of women would have contracted at least a strain of HPV by the time they turn 50. (Nobbenhius et al., 2001;

Centers for Disease Control and Prevention, 2008). Cervical cancer is caused mainly by infection with some particular strains of the HPV. The virus infects the epithelial cells of the cervix and that can result in precancerous lesions and invasive cancer. Types 16 and 18 strains of the HPV are considered highest risk and accounts for close to 70% of all cervical cancer cases (Smith et al., 2007).

It is important to point out that not all cervical lesions progress to cancer. Only 3-4% of all HPV infections go on to develop into cervical cancer. The progression from infection through precancerous to ultimately a cancerous lesion is a very slow process, thus making cervical cancer the type that can be picked up early through effective screening (Schiffman et al., 2007). Certain factors predispose women to HPV exposure and subsequent development of cervical cancer. These include: early age of sexual debut, unprotected sex, high parity and multiple sexual partners. Other risk factors of the disease include smoking, a weak immune system, especially HIV infection, and chronic use of birth control pills.

The early stages of the disease are usually symptomless. Abnormal vaginal bleeding including contact bleeding and abnormal vaginal discharge are typical symptoms of the malignancy. In advanced stages of cervical cancer patient may present with signs and symptoms of spread or metastases of the cancerous cells. These include weight loss, loss of appetite, fatigue and bone fractures. Management of cervical cancer depends on the stage of the disease. This can be through surgery, chemotherapy and/or radiation.

Cervical cancers can be prevented through primary and secondary measures. Primary prevention is aimed at decreasing the incidence of the disease by controlling the risk factors. The main primary prevention method is through vaccination against specific strains of the virus. There are two vaccines on the market currently; Gardasil and Cervarix. The former is quadrivalent and protects against four types of HPV; 6, 11, 16, 18. The latter is bivalent and effective against types 16 and

18 of the virus. Clinical trials done extensively have demonstrated amply that these vaccines offer an almost 100% protection against persistent infection with types 16 and 18 of HPV and the development of precancerous lesions (Bosch et al., 2008). The Centre for Disease Control's (CDC) Advisory Committee for Immunization Practices, American Academy of Pediatrics and American Academy of Family Physicians all recommend that girls be vaccinated against HPV at age 11 or 12. The idea is to maximize protection against HPV because girls at that age are usually not sexually active but even those who have had sex can benefit from the vaccine. Chesson et al (2014) used a dynamic model that had been published in the past to illustrate the potential benefits of HPV vaccination among girls currently 12 years or younger in the United States. They showed that increasing vaccine coverage of young girls to 80% would avert 53,300 lifetime cervical cancer cases versus 30% coverage and 28,800 cases versus 50% coverage. Other primary prevention measures include avoiding cigarette smoking and multiple sexual partners, practising safe sex and consuming diet rich in anti-oxidants. The WHO position paper on HPV vaccines, published in 2009, recommended that HPV vaccination be incorporated into existing national immunization programmes as a matter of public health importance.

Secondary prevention involves identifying the disease in its early or precancerous stages. Papanicolaou (Pap) smear has remained the standard for cervical cancer screening since it was discovered in the 50's. Other screening methods are Visual Inspection with Acetic Acid (VIA) and more recently HPV –DNA tests. Pap smear has been and still remains a huge challenge for underdeveloped countries or low resource settings because it requires well set up laboratories manned by skilled personnel to perform. These are more often than not unavailable in these settings (Maine et al., 2011). In their effort to decrease the incidence and prevalence of cervical cancer in third world nations, the World Health Organization (WHO) and the International

Agency for Research on Cancer (IARC) have implemented screening programmes that require less skilled personnel and little infrastructure by way of laboratories to perform. This alternative screening method was based on visual inspection with acetic acid (VIA) (Miller et al., 2003).

The American Cancer Society recommends that women start cervical screening at age 21 and repeat it every 3 years till they get to 29 years. Those above 30 years should do a Pap smear and an HPV test every 5 years till they reach 65. Women above 65 years whose results have been normal do not need to be screened anymore. Women who have had their wombs removed by surgery ie hysterectomy and do not have any history of cervical cancer or precancerous lesions do not need any further screening (Saslow et al., 2012). Since the implementation of Pap smear in the 50's, there has been a 90% reduction in cervical cancer deaths in the United States (American Family Physician, 2005). Research has also shown that the incidence of cervical cancer could be reduced by as much as 80% if women were screened regularly and the necessary follow up and referral done (Arbyn, 2010).

Cancer of the cervix can be prevented and controlled by establishing the appropriate screening programmes such as the Pap smear test and VIA. This would contribute to the achievement of the Millennium Development (MDG) goals by ensuring that women have universal access to sexual and reproductive health services. In Mozambique, cervical cancer screening has been incorporated into the National Family Planning Programme and in Botswana, Cote d'Ivoire and Zambia, screening services are now part of Human Immunodeficiency Virus (HIV) programmes. These countries have recorded high uptake of screening as a result of these measures (Global Health Group, 2012).

The development of HPV vaccines undoubtedly offers great prospects for the fight against cervical cancer through primary prevention. It should not, however be seen as an alternative to or

replacement for secondary prevention through screening. The two are supposed to complement each other. Even though the impact of the vaccines on new cases of HPV and cervical cancer is reassuring, screening targeted at secondary prevention of cervical cancer remains critical in the fight against cervical cancer. This is because it will be unrealistic to expect that all women will be vaccinated. Besides, some cervical cancers are caused by HPV types other than the ones the vaccines are made for and the vaccines don't work in women who already have acquired HPV infection (Denny et al, 2006).

1.2 Problem Statement

Cervical cancer is among the few preventable cancers known to man but it is still a major cause of cancer mortalities in underdeveloped nations. It is thus of serious public health concern.

In 2008, the World Health Organisation (WHO) estimated that there were 529,000 new cases of cervical cancer and that 270,000 women died as a result of the disease. Even more frightening is the fact that 85% of these deaths occur in developing countries. The greatest burden of cervical cancer occurs in the developing world where the death rate ranges from 10 to 35 per 100 000. In contrast, it kills between 2 to 4 women per 100 000 in advanced countries (Arbyn et al., 2011). Denny et al (2006) reported that between 1993 and 1995, the age standardized incidences of cervical cancer for all women was 22 per 100,000 while it was 27 per 100,000 for African women. This study also revealed that an African woman's chance of developing cervical cancer in her lifetime was 1 in 34 as against 1 in 93 for Caucasian women.

More than 20% of the annual deaths from cervical cancer occur in Africa specifically SubSaharan countries. It is the leading cause of mortalities related to cancer among females in these States (Jemal et al., 2011). The mortality rate from cervical cancer in most countries in Africa is around 80% while Switzerland has a mortality rate of 20%. Most cervical cancers diagnosed in

Africa are in the advanced clinical stage and do not respond to the minimal treatment options that are available. A meagre 5% of women in Africa have received a Pap smear. This is in sharp contrast to 75% of women in developed countries who have participated in some type of screening (Tsu & Levin, 2008). Most women in developing countries don't screen regularly for cervical cancer. The result of this poor uptake is the high incidence of the disease in these countries (Sankaranarayanan, 2006).

It is expected that the number of new cases and mortalities from cervical cancer in Africa will increase over the next couple of decades (Sylla & Wild, 2012). In advanced countries, where incomes are high, death due to cervical cancer is ranked between 8th and 9th among all cancer mortalities. It is, however, the commonest cause of fatalities due to cancer in women south of the Sahara in Africa (O'Brien et al., 2012; Parkin & Bray, 2006; Ferlay et al., 2010).

Early detection of cancer of the cervix is very important in its management, yet majority of patients in less developed countries present to hospitals at late stages of the disease when prognosis is poor and very little can be done for them (Ayinde et al., 2004). This is evidenced by the fact that of the women in developing countries who die from cervical cancer, less than 5% have ever been screened (Denny et al., 2006). This is in sharp contrast to cervical cancer mortalities in advanced countries. 40-50% of women who die from the disease have had some screening (Musmar, 2004).

In Ghana, cancer of the cervix is the leading cancer that afflicts women. HPV types 16 and 18 are responsible for 50.5% of cervical cancer cases and is the cause of 16% of all cancer deaths (Ghana Health Service, 2013). Currently, it's been estimated that 3,038 cases of cervical cancer are diagnosed annually and 2,006 of them result in fatalities (Ministry of Health, 2011).

GLOBOCAN in 2002 estimated the age standardised incidence rate of the disease in Ghana to be 29.3 per 100000 women and mortality rate of 23.8 per 100000 (Parkin et al., 2002). In third world

countries, like Ghana, these numbers have been rising rapidly as opposed to what pertains in developed countries where new cases of cancer and deaths are decreasing (Murthy et al., 2010). The mean age of cervical cancer victims in Ghana is about 52 years and most patients present with advanced disease (Nkyekyer, 2000).

The W.H.O. estimates that new cases of cancer will increase to 5,000 in the next decade (by 2025) 3,361 of whom will die annually in Ghana (WHO/ICO, 2007). The World Health Survey reports that cervical cancer screening rates in Ghana are extremely low; rates in urban only slightly higher than rural areas (3.2% and 2.2% respectively) (WHO/ICO, 2007). The incidence of cervical cancers in Africa is on the rise. The figures mentioned above are grossly underreported. Most African countries do not have a functioning cancer register and figures are often hospital-based (Parkin et al., 2002).

In spite of these alarming statistics, the promotion of cervical cancer prevention is not commonly done (Mayhew & Adjei, 2004; Reichenbach, 2002). The bulk of the resources for health education and promotion are channeled towards diseases such as malaria, tuberculosis, HIV/AIDS, and most recently breast cancer which have higher visibility (Afriyie, 2004).

As a country, Ghana has no functioning screening programme for cervical cancer in place. Majority of the screening that goes on in this country is usually opportunistic, where clinicians order clients to go for screening when they present at clinics for either medical examinations or for consultations other than cervical cancer (Duda et al., 2005).

1.3 Rationale of Study

It's often been said that cancers cannot be prevented by virtue of the fact that their specific causes are not known. The facts surrounding cervical cancer make this statement contentious.

- a) It is an established fact that HPV is the aetiological factor for cervical cancers.
- b) There are vaccines available against some cancer-causing strains of HPV.
- c) There are effective and efficient methods of screening to detect the cancer in its early and treatable stages.
- d) There are modifiable lifestyles that are associated with increased incidence of cervical cancers; smoking, birth control pills, sexual behaviours.

These facts have largely made cancer of the cervix a preventable disease. The fact that the most preventable cancer is the commonest cancer among women in developing countries such as Ghana raises a lot of questions. The purpose of this study is to provide some answers to these questions by exploring the factors that affect and/or inform the practices of women, in this case female non-health professionals in the Offinso South Municipality, with regards to cervical cancer.

1.4 Hypothesis

This study seeks to investigate how knowledge, attitudes and barriers related to cervical cancer of individuals affect their practices towards the disease. Below, are the hypotheses to be tested. Null

Hypothesis H_0 : The knowledge, attitudes and barriers related to cervical cancer, screening and HPV vaccination are not associated with practices.

Alternate Hypothesis H_A : The knowledge, attitudes and barriers related to cervical cancer, screening and HPV vaccination are associated with practices.

1.5 Research Question

This study seeks to find answers to why cervical cancer, which is arguably the most preventable and avoidable malignancy known to man, the commonest cause of mortalities due to cancer in Ghana?

What are the factors responsible for this?

Are non-health professionals in the Offinso South Municipality aware of this?

What are they doing about it?

1.6 General Objective

To identify the factors which determine the utilisation of cervical cancer screening and HPV vaccination services.

1.7 Specific Objectives

- 1) To assess the level of knowledge related to cervical cancer, screening and HPV vaccination among non-health professionals in the Offinso South municipality.
- 2) To determine their attitudes towards cervical cancer, screening and HPV vaccination.
- 3) To determine their practices towards cervical cancer, screening and HPV vaccination.
- 4) To identify any barriers to cervical cancer screening.
- 5) To identify any barriers against HPV vaccination.

1.8 Profile of study area

Offinso South Municipal Assembly was carved out of the then Offinso District Assembly in the year 2007. It was among the new Municipalities created in that year. The remaining part is now Offinso North District Assembly. The Municipality is bounded by Offinso North, Afigya Kwabre, Atwima Nwabiagya and Ahafo Ano South Districts in the North, East, South and West respectively.

The Municipal's capital is New Offinso which comprises about 22 suburbs. The Municipal has a total land area of about 600km². It experiences Wet Semi-Equatorial type climate with a semideciduous forest type vegetation. The municipality is largely an unplanned one characterised by poor drains, heaps of surface dumps and unkempt surroundings. The main Tamale and Kumasi road passes through the Municipality.

There is an estimated 85,542 people in the municipality with a growth rate of 2.7%. There are 82 communities. Majority of the populace are engaged in farming and trading.

The Municipal Health Services are organized around 5 sub municipalities namely; Bonsua, Abofour, Offinso Central, Anyinasuso and Kwagyekrom. There are nine (9) health facilities with the ownership being government/public, CHAG and private. Due to the absence of a municipal government or public hospital, St. Patrick's Hospital is earmarked as the Municipal hospital. In addition there is 1 functional CHPS compound (Kwagyekrom CHPS) which started operations in 2009. There are also 83 trained Traditional Birth Attendants and 61 Community Based Service Volunteers. As part of the implementation of the CHPS concept, all the 82 communities have been demarcated into 42 zones in line with the electoral areas and staffs (CHO) have been assigned to each of the demarcated zones. A total of 4 CHPS compounds have been built with support from Offinso South Municipal Assembly and the Member of Parliament. Three out of the four CHPS compounds are functional but with inadequate logistics to work with.

There are 69 Pre-schools, 71 Primary Schools, 46 Junior High Schools, 3 Senior High Schools, a College of Education, a Disabled Training school and a Midwifery Training School in the municipality.

The vision of the municipal health directorate is to ensure excellent health care for people living in the municipality to have access to quality and efficient health services. Its mission is to provide

quality health service responsive to the needs of all persons in the Municipality by implementing a highly motivated, well trained and client oriented personnel in collaboration with all stakeholders.

1.9 Scope of Study

The scope of the study was limited to female non-health professionals in the Offinso South Municipality of the Ashanti Region. The focus was mainly on Public and Civil servants and other professionals in the private sector. The main limitation of the study is that it provides information on a minority group in the municipality and the findings might be useful in understanding the factors that influence cervical cancer screening and HPV vaccination among this group of the population.

1.10 Organisation of Report

The study is organised into 6 chapters. Chapter 1 deals with introduction to the topic and the objective of the study. The second chapter reviews appropriate literature relevant to the research. The methodology of the study is presented in chapter 3. This captures methods such as study design, sampling and data collection. Chapter 4 contains the findings of the study. These results are discussed in chapter 5. The last chapter, 6, deals with the conclusions arrived at, and the necessary recommendations to stakeholders.

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Knowledge on cervical cancer, screening and HPV vaccination

The knowledge of individuals on a disease and related issues will largely determine how they utilize available preventive measures both primary and secondary. Various studies done

internationally have shown that the basic knowledge regarding cancer of the cervix and HPV among the general population, including health workers, ranges from low to moderate (Philips et al., 2003; Hislop et al., 2004; Anya et al., 2005; Denny-Smith et al., 2006).

The fact that 80% of all cervical cancers occur in developing countries can be attributed to the vast difference in the level of knowledge between advanced and third world countries. The successes chalked in developed countries are largely due to awareness of cervical cancer and the wide availability of screening services.

In the United Kingdom, a study done in 1998 among 650 women aged between 15 and 78 years revealed that 76.2% knew about the major risk factors for cervical cancer and 91.7% were of the view that if detected early enough through appropriate screening, cervical cancer could be treated (Yu & Rymer, 1998). In sharp contrast, a group of Malaysian women aged 21-56 years and who had never been screened for cervical cancer were studied to assess their knowledge and awareness of cervical cancer and screening. The findings showed that they generally lacked the knowledge on cervical cancer and the Pap smear test. Most of the women surveyed were unaware of the fact that the cancer needed to be detected early through an abnormal cervical smear. Many of them believed that the screening test was done to detect a cancer that already existed and that asymptomatic women did not need to be screened. No participant knew about HPV in spite of their considerable awareness of the relationship between cervical cancer and sexual activity, as well as the role of a sexually-transmitted infection (Wong et al., 2009).

A cross-sectional survey among female students of a premier tertiary institution in Ghana showed that only 7.9% of them were aware of the fact that HPV was linked to cervical cancer. This study involved 140 participants between the ages of 20 and 35 (Abotchie and Shokar, 2009). A similar

study done among women in Maroua, Cameroon showed that, of the 171 participants surveyed, just over a quarter of them (28%) had prior knowledge of cancer of the cervix (Tebeu et al., 2008).

Only 15% of women, attending the General outpatient department of a tertiary hospital in Ibadan, Nigeria, had heard of cervical cancer. These were women between the ages of 20 and 65 years (Anorlu, 2008). Still in Nigeria, female staff and students of Niger Delta University were studied to assess their knowledge, level of perception and the attitude towards cervical cancer screening. Most of the respondents, (72%), were aware of cervical cancer, while a little over half of them (50.6%) knew about cervical cancer screening. The smear test was the commonest screening cited by respondents (41.2%). Some of the women questioned (8.5% of staff and 16.3% of students) actually thought that cervical cancer could be screened through a blood test (Owoeye & Ibrahim, 2013).

In Tanzania, a case control study was conducted to assess knowledge of the symptoms of cervical cancer among patients with the disease and their controls. This study, which was done at Muhimbili between August 1999 and January 2000, revealed that the knowledge of the disease among the in-patients was very poor. Many patients attributed their symptoms to bewitchment, husbands' extramarital affairs, or husbands having sex with their daughters. This study also showed that more than 90% of patients presented late with invasive cervical cancer (Kidanto et al., 2002). Nkyekyer (2000) alluded to the same, with regards to late presentation, in Korle-Bu Teaching Hospital, Ghana.

A KAP study of 840 women aged 20 to 50 years in capital of Burkina Faso revealed that 64.2% of participants had heard about cervical cancer, only 8.5% knew about HPV. 580 of these women had no idea that cervical cancer was a preventable disease. Majority (90.4%) of them feared that they could develop cancer of the cervix and even though 96.67% were willing to be screened, only

11.07% had actually been screened for cervical cancer. This was a relatively young group of women with a mean age of 29.5 years. About two thirds (66.31%) had husbands and 59.28% were either illiterate or quit school at the basic level (Sawadogo et al., 2014).

Ebu et al (2015) conducted a cross-sectional study among 392 females in Elmina, Ghana. The participants were aged between 10 and 70 years and sexually active. They used a structured questionnaire. The study showed that 68.4% of them had no idea what cervical cancer was, 93.6% of them did not know any risk factor, only 9 rightfully cited unprotected sex and multiple sexual partners as risk factors and 92% did not know that cervical cancer could be prevented or treated. Majority (97.7%) of the participants knew nothing about the Pap smear test. Only 3 of the respondents had been screened.

Studies done among health personnel revealed some interesting results. Nurses in a teaching hospital and research institute of rural India were assessed on their KAP about cervical cancer in a survey. 262 of them were studied. 77% of them were aware that Pap smear is used for the diagnosis of cervical cancer, but less than half knew that the smear could also pick up precancerous lesions. Less than a quarter of them (23.4%) knew HPV infection as a risk factor. A surprisingly small percentage (26.7%) of these female staff could be described as being knowledgeable based on a predetermined scoring criterion. Only 17 (7%) of the respondents had been screened in the past and 85% of them had never performed a smear test on a patient. Being knowledgeable about cervical cancer and screening, multiparity and being more than 30 years were significantly associated with screening for cervical cancer. Majority of nurses surveyed thought that the Pap smear test was a procedure performed only by doctors, and close to 90% of them had never recommended or referred a client for a Pap smear (Shekhar et al., 2013).

A similar study was carried out among 592 midwives in the Cote d'Ivoire, specifically, Abidjan.

42.4% of them were adequately informed about prevention of cervical cancer. 109, representing 18.4% of them, had already been screened for cervical cancer, 37.7% of these midwives had recommended screening to clients and 8.4% of them had the necessary skills to perform a visual inspection with acetic acid (VIA). Half of the participants (50.3%) knew that the HPV vaccine was a prophylactic tool in cervical cancer prevention; among them 70.8% had recommended it to young girls (Tchounga et al., 2014).

In Kumasi, Ghana 361 female staff in three health facilities were surveyed. This group was made up of doctors, pharmacists, nurses, health care assistants and support staff. The majority of the participants (83.9%) considered cervical cancer as a disease that could be fatal. 55% of these health professionals mentioned sexual activity as the causal factor for cervical cancer whilst 33% of them did not know of the relationship between cervical cancer and sexual activity. More than half of them (55% and 58%) knew at least three risk factors and three symptoms of cervical cancer respectively. Three quarters of the respondents knew that cervical cancer was a disease that can be prevented and yet only a few of them had been screened at least once (11.6%). 16.1% knew about Pap smear and 4.4% reported VIA as screening tools for cervical cancer. The study also revealed that respondents' knowledge of where to go for screening, when screening should commence and how often it should be done was generally poor (Adageba et al., 2011).

Knowledge was also poor among healthcare workers in Niger, where a survey of 144 female staff at two referral health facilities that offered screening services, revealed that 22% could not provide a single risk factor associated with cervical cancer (Anya et al., 2005).

It is now an established fact that HPV is the aetiologic factor for cervical cancer. A cross-sectional study conducted in Netherlands among parents that sought to explore their knowledge related to HPV surprisingly revealed that 29.5% of the parents had heard of HPV, only 14.3% of parents knew about the relationship between HPV and cervical cancer, and only 6.2% of parents had heard

about the HPV vaccine (Lenselink et al., 2008). Even in the United States, where giant strides have been made in the fight against cancer of the cervix, less than half (40%) of women studied knew about HPV and just under 50% of these women knew that it causative agent for disease (Lenehan, et al., 2008). It was also found in a different study in the United States of America, that 78% of women knew that a vaccine against HPV was available on the market (Jain et al., 2009).

1,348 Italian females between the ages of 14 and 24 years were questioned about their knowledge related to the transmission and prevention of HPV. The results showed that 29.1% of them knew that HPV could be transmitted through incomplete sexual intercourse, 22.9% of them were aware that the virus could not be passed through needles and 34.8% knew that condoms were a barrier to the transmission of HPV. This survey also showed that 42.1% of the respondents knew that the HPV vaccine can prevent cervical cancer (Di Giuseppe et al., 2008). Researchers in an attempt to ascertain the fact that many people were not knowledgeable about the HPV vaccine, in Birmingham, England interviewed 420 people aged 16 to 54 years. They asked 6 basic questions related to HPV and cervical cancer and found that 340 (81%) of the study participants could not answer a single question correctly. Even more surprising was the fact that, in the age group of 16-24, only 12.7% got above a knowledge score of 1 while in the age group of 45-54, 28% got scores above 1. It seemed that with increasing age, the population became more aware of the HPV vaccine. In addition, 21.8% of females achieved a knowledge score above 1 while only 14.5% of males were able to do this. The study, however, showed no significant differences between non parents and parents (Walsh et al., 2008).

2.2 Attitudes

A systematic review of peer-reviewed literature on factors associated with HPV vaccine acceptability showed a high acceptability in African countries (59-100%). Despite the high acceptability, the review however showed that knowledge and awareness related to the vaccine

were surprisingly low. Barriers such as cost and accessibility were also identified (Cunningham et al., 2014). Perlman et al (2014), in another systematic review, revealed that in addition to overwhelming levels of acceptability, there was an equally high level of willingness to vaccinate in African countries south of the Sahara. They recommended that effort be made to educate and create the necessary awareness among the populace about the virus, the vaccine and the seriousness of cervical cancer as a disease. They further encouraged national governments to harness this high acceptability to roll out strategies for HPV vaccination that makes use and improve on existing infrastructures. The Alliance for Cervical Cancer Screening and Prevention (ACCP), in their 2008 report, stated that women regarded screening, irrespective of the type, more acceptable if the procedure was done by female health professionals and more so if the screening procedure was closely followed by treatment. This study examined women's perspective on cervical cancer screening and treatment modalities from third world countries in

South America, Asia and Africa. Ghana was part of this study (Bradley et al., 2006).

A study done in Uganda among 310 healthcare professionals that included physicians, nurses and others revealed that 65% of these workers who were eligible for screening did not consider themselves as women who could get or develop cervical cancer. A staggering 81% of them had never been screened (Mutya, et al., 2006).

138, representing 89.6%, of female doctors and nurses in a tertiary health facility in Bangalore, India who participated in a KAP study of cervical cancer screening and HPV vaccination, had a very favourable attitude towards Pap smear and HPV vaccination. The study also assessed barriers against the acceptance of Pap smear. The favourable attitude however did not reflect in their practices; 73.6% of the participants had never been screened. Even more surprising is the fact that 31% of them hadn't been screened because they had no symptoms. Doctors were generally more

knowledgeable than nurses, 78.9 % and 13.3% respectively, about risk factors for cervical cancer and Pap smear test ($p=0.001$) (Swapnajaswanth et al., 2014).

In advanced and industrialised countries, screening services are widely available and patronised as a result of a generally higher awareness of cervical cancer than in developing countries. 650 English women between the ages of 15 and 78 were studied in London. They were sampled randomly from two health facilities in the English capital. 76.2% believed that cervical cancer was a common disease and 91.7% knew that the disease could be properly managed if the cancer is picked up early enough through screening. (Yu & Rymer, 1998).

In South Africa, 146 students in an MBA class were studied to explore their attitudes towards HPV vaccination. The main idea was to assess acceptability of the vaccine among educated people. Researchers found out that there was an upward adjustment of attitudes after participants were given some factual information about cervical cancer and HPV to read. Participants' intent to get their daughters vaccinated rose to 97.2% from 88%. Three quarters (75.4%) of them felt that their daughters should be given the vaccine shot before they were old enough to understand sex or become sexually active and 80.3% said that they would discuss sex related issues with their daughters if they wanted to know more about the vaccine. The ones that did not want their daughters vaccinated claimed that they needed more information about the safety of the vaccine before they could make a decision as to vaccinate or not (Hoque & Van Haal, 2014).

Fort et al (2011) carried out a study in rural Malawi to investigate health-seeking behaviour of women with respect to cervical cancer screening. They employed qualitative approach for this research. The research found out that participants felt that they were not susceptible to the disease and that benefits to be derived from screening services were low. These attitudes, coupled with low levels of knowledge, were major barriers to seeking preventive measures. For most women

only the symptoms for cervical cancer would prompt them to seek screening services. Participants did not appreciate the importance of cervical cancer screening in the prevention of the disease. Interviews conducted showed that patronage of screening service could improve if women presenting with other conditions to the hospital were recruited.

A cross-sectional study of 201 women, who attend the gynaecological clinic in a Nigerian Tertiary Hospital, was conducted to assess the acceptability of the HPV vaccines and their determining factors. The study revealed that 70% of them would vaccinate their daughters if they had the opportunity. The rest wouldn't because they thought it would make their wards promiscuous (62.3%). Mothers more knowledgeable about STI were more willing to accept HPV vaccines ($p = 0.002$) (Ezeanochie, & Olagbuji, 2014).

Researchers in the Netherlands found that the knowledge, religion, age, education, and marital status of parents did not influence the acceptance of the HPV vaccine. Majority (87.9%) of the parents would accept the vaccination if the Dutch government approved the use of the vaccine.

It is important to note that even though the subjects were very unfamiliar with HPV and cervical cancer, they were not opposed to vaccination. This reflects that HPV acceptance is more related to general vaccine acceptance and trust in the FDA and CDC with the clinical trials. The biggest fear among the other 12% was of the long term side effects that have not been studied at this point (Lenselink, et al., 2008).

In another study in England, on parental attitudes towards introduction of the vaccine in school programmes, most (97%) of the parents read an information sheet and 20% of them attended an information session. A majority of the parents felt that the information session was helpful in hearing other opinions, new issues, and found the discussions useful and enjoyable. Only 26% of parents from the information session felt that their decision was not influenced by the meeting. After the information sheet and session, it was found the 60% of the parents accepted the vaccine

for their daughters. Parents who refused were mainly concerned about short-term and long-term side effects, need for a booster, and compatibility with other vaccines (Stretch, et al., 2008).

A Canadian study by Lenehan et al (2008) revealed that even though women were not quite knowledgeable about the HPV vaccine, they still understood the importance of cervical cancer screening. 69.4% of them either agreed or strongly agreed with the fact that the HPV vaccine and regular Pap screening were not mutually exclusive and 81.6% of women agreed or strongly agreed that they would still go for their regular Pap tests even after they have been vaccinated. In China, a study showed that majority (84%) of the women were willing to be vaccinated primarily due to the fear of being infected with the HPV virus and contracting genital warts. Of the females who had daughters, 86.4% were prepared to allow their daughters to get a shot of the vaccine. This was in spite of the fact that only 51.1% of metropolitan women and 41.6% of rural women knew that HPV was related to cervical cancer (Li et al., 2009).

In 2009 when HPV vaccine was licensed in Botswana, a cross-sectional survey among 376 women randomly selected at the general medicine and HIV clinics in Gaborone, the capital, was conducted. Even though only 9% of respondents knew about HPV vaccine before the survey, 88% admitted they would have their adolescent daughters vaccinated against HPV. Other determinants of acceptability were involvement in the decision to get HPV vaccine, availability of the vaccine, and perception of the severity of HPV-related diseases (Di Angi, et al., 2011).

2.3 Practices

Practices related to cervical cancer have to do with screening, HPV vaccination and habits such as smoking, prolonged use of birth control pills, multiple sexual partners and unsafe sex.

The vast difference in the incidence of and mortality associated with cervical cancer is evident in the fact that only 5% of women in Africa have had a Pap smear, while close to 75% of women in developed countries have participated in some type of screening (Tsu & Levin, 2008).

Practice towards screening for cervical carcinoma is poor, even in people who are knowledgeable about disease and the vital role screening plays in its prevention. In developed countries far more women go for screening compared to developing countries. Yu & Rymer (1998) reported in a survey in London, England, that 80.5% of women had had at least one Pap smear and 71.5% did so regularly; every 3-5 years. They studied 650 women aged 15 to 78 years from 2 hospitals selected by a random process.

A research was done in Accra, Ghana to assess the determinants of whether a woman got a Pap smear or not and whether those who had attended a clinic recently were more likely to access screening services than those who hadn't. 25 (2.1%) out of a total of 1193 women, surveyed, had been screened for cervical cancer even though 171 (14.3%) had visited OPD clinic for either a gynaecological consultation or a regular check up recently. High educational level, high socioeconomic status and a history of recent postmenopausal or intermenstrual bleeding significantly increased the chances of a woman getting a Pap smear (Adanu et al., 2010). However, in a group of South African women from a higher social and educational background studied, 87% of them had not been screened in spite of the fact that they were knowledgeable and well informed about cervical screening and where the services were available. Even more shocking was the fact that majority of them lived close to a health facility that either offered or could potentially provide screening services (Wellensiek et al., 2002). In another South African study, 440 students with an average age of 20 years completed a self-administered questionnaire.

Only three students were married and yet 63% of the students were sexually active. Of these, (77.3%) had had sex 12 months prior to the study. The average age of sexual debut was 18 years. 20.6% of them had multiple sexual partners. 4.7% never used condoms whereas 42.5% always used condoms (Hocque et al., 2013).

A cross-sectional study of 524 women aged between 16 and 78 years in Kinshasa, capital of the Democratic Republic of Congo, was conducted using a standardized questionnaire. Although majority (84%) of women knew about cancer of the cervix, only 9% had been screened (AliRissai et al., 2014). A similar study in Nigeria, where 144 women were surveyed, found that only 5.7% of respondents had previously undergone a Pap smear (Udigwe et al., 2006).

287 female students of a university in the Malaysian city of Selangor were surveyed using a KAP study. The study also explored barriers to Pap smears. Only 6% of the participants had done a Pap smear even though most of the respondents were adequately informed and knowledgeable about the factors that predisposed women to cervical cancer. Most of the respondents reported multiple sexual partners as a risk factor (77.5%), while the least number cited infection with HPV as a risk factor (51.2%). The commonest barrier against cervical cancer screening was the fact that undergoing a Pap smear might make them unduly worried (95.8%). The least cited barrier by respondents was lack of support and encouragement from their spouses (8.8%) (AlNaggar et al., 2010).

A study in India, where deaths due to cervical cancer is among the highest in the world, was carried out to explore the factors responsible for the extremely low participation in prevention and screening. The study also looked at factors associated with the acceptance of vaccination and Pap smear. 36% and 15% of them had heard of HPV and cervical cancer respectively. Only 5% of these women had undergone a Pap smear and 4% of them felt they were at risk contracting HPV. 46% of the respondents were willing to be vaccinated, but only 21% were prepared to undergo a Pap smear. The general knowledge of the respondents with regards to HPV and cervical cancer was deemed to be low. This study found out that a low level of perceived risk among women and the cost of screening were the commonest barriers

(Montgomery et al., 2014).

2.4 Barriers against cervical cancer screening

These are related to all the issues that account for the less than desired levels of uptake of screening.

These barriers can be physical, economic, psychological or otherwise.

Nene et al (2006) conducted a randomised control trial to identify the factors associated with cervical screening, follow-up to treatment, efficacy and cost effectiveness. They realised that cervical screening programmes that were successful in advanced countries did not necessarily work for third world countries like ours. This was largely attributable to barriers like poor knowledge related to the disease, unfamiliar ideas regarding prevention, poverty, poor service quality and lack of spousal and family support.

In developing countries, there are numerous health challenges all competing for the meagre resources. The result is that diseases that are more common, more visible and attract more international attention take priority over cancer screening. These present additional barriers to screening as governments are constrained in their efforts and planning (Egilman et al., 2011). Governments in most third world countries lack the necessary financial resources to invest in facilities, training personnel and providing services to ensure successful implementation screening programmes. Denny et al (2006) identified these as significant barriers in their study.

In Peru, Winkler and his colleagues discovered that attitudes, perceptions and beliefs about cervical screening and poor supportive systems were major barriers to cervical cancer screening. Their study also revealed that lack of privacy in health facilities, incurteous health personnel, expensive nature of screening and the apprehension associated with what the test may reveal were responsible for the failure of screening programmes in Peru where the incidence of the disease is very high (Winkler et al., 2006).

A qualitative study that looked at the experiences of women regarding the barriers and facilitators for cervical screening was carried out in Iran. The general theme identified was the low level of

knowledge about cervical cancer. Besides this, majority of the participants had negative beliefs about cancer prevention; these included lack of free time to do the test, cost of screening and the fact that they had no symptoms. The facilitating factors provided by the participants were cues to action, motivation from a health care provider, and perceived threat of the disease (Akbari et al, 2010). A similar study, this time, with Latino women between the ages of 18 and 61 from the US-Mexico border was done with a guide developed from the Health Belief Model. They used focus groups that formed part of a larger study aimed at coming out with interventions for this minority group. Most of them had heard about cancer of the cervix and screening. Participants were aware of benefits to be derived from screening, namely, early detection of the cancer and feeling good about taking good care of themselves. Barriers against screening were embarrassment, fear of a positive result and pain associated with the procedure.

Systemic barriers included the sex of the health worker and insensitive practitioners (Byrd et al, 2007).

To explore barriers to cervical cancer screening uptake in England, 580 women were recruited in a population-based survey. They were between the ages of 26 and 64. 85% of them were up-to-date with screening and the rest had defaulted. 2.6% who had never been screened. Barriers identified included the following; 29% thought the procedure was embarrassing, a fifth of them intended to get it done but were procrastinating, 14% were concerned about the pain involved and 12% were worried about what the test might reveal (Waller et al., 2009).

A study in Japan by Ito et al (2014) revealed that 40% of participants were not compliant with existing screening schedules. The following barriers were noted; embarrassment (79%), inaccessibility (56%), fear of a positive result (52%) and ignorance about the screening procedure (46%). Only 44% of mothers studied thought their daughters were at risk of developing the disease.

The respondents' sources of information included: medical practitioners

(97%), the media both print and electronic (89%), the government (79%), the worldwide web (78%) and friends (62%).

In British Columbia, Canada, a study to ascertain a long held suspicion that the incidence of advanced cervical cancer was higher in Chinese women than in Caucasians, concluded that the cervical screening rates in the former was about 20% below the average figure in the province. Researchers identified numerous barriers that prevented Chinese women from accessing cervical cancer screening services. These women were not adequately informed about preventive health care. This was compounded by language and cultural barriers. Chinese women were very sensitive about the gender of the person who was going to take the smear. They also found the idea of a male family doctor performing a pelvic examination or Pap smear extremely uncomfortable. They addressed these concerns by setting up Asian Women's Health Clinics. These clinics provided them with an alternative means of getting their Pap smear done (Hislop et al., 2004).

450 women were studied in the south-eastern Nigerian town, Onitsha. Barriers against screening identified included cost (51.58%), lack of awareness (15.84%), lack of facility (15.84%), didn't think it was necessary (11.76%), distance (2.94%), no reason (2.04%). 83.11% of these women admitted that they would undergo screening if it was made affordable and available. Only 4 of them claimed that a relation of theirs had been diagnosed with cervical cancer. 76.22% said they had no idea whether a relative had suffered from cervical cancer (Nwozar & Oragudosi, 2013).

2.5 Barriers against HPV vaccination

HPV is the commonest sexually transmitted disease worldwide. An individual's chances of contracting this infection in their lifetime is approximated to be about 80%, while half of women acquire an HPV infection after a couple of years of becoming sexually active (Lenselink et al., 2008).

Prophylactic vaccines against HPV have been introduced in several countries to prevent cancer of cervix, the commonest cause of cancer mortalities among women in Africa and second commonest globally. In developing countries where screening services are virtually nonexistent or limited, HPV vaccines will most likely have a profound impact on the future burden of cancer of the cervix. In the past, research into the challenges with regards to vaccination of girls has focused solely on evidence gathered from developed countries. Epidemiological data is vital in identifying populations that predisposed to cervical cancer but it is necessary to understand the knowledge and attitudes with regards to HPV and cervical cancer prevention among races and ethnic groups and sub-groups within these categories. This is critical because the success of any measure to be implemented will depend on it. Any targeted and educational efforts will only be effective if this is understood. Differences in HPV vaccination among populations may arise from a number of barriers including inaccessibility to healthcare, sociocultural beliefs and lack of awareness of the options available (Levi et al., 2009).

A systematic review of appropriate literature aimed at describing the barriers and challenges to the implementation of HPV vaccination in low and middle-income nations was conducted in 2013. Literature published between 2006 and 2012 from five major databases were reviewed. Three important barriers to the implementation of a successful HPV vaccination programme were identified: These were sociocultural, health systems and political. The success and more importantly the sustainability of HPV vaccination programmes in low and middle-income nations will depend to a large extent on these key three barriers. These barriers must be addressed if any such programme is to succeed. Researches done in developed countries identified socio-cultural factors as the most significant barriers for vaccine roll-out however there is ample evidence to suggest that the problems for poorer countries were much greater than those in advanced countries especially with getting to girls for three doses in places where school enrolment is low. The major

barriers to the implementation of HPV vaccination programmes in third world countries are financial and political. Numerous pilot projects that have been successful in terms of acceptability and coverage. Important lessons should be learnt from these projects and replicated elsewhere through documentation and sharing (Wiggle et al., 2013).

Vermandere et al (2014) in their study in Eldoret, Kenya revealed that even though there was a generally high acceptance for the HPV vaccine i.e. 88.1%, only 31.1% of the women said that their daughters had received the vaccine shot at follow-up and 17.7% of the respondents declined the vaccine. An interesting revelation was the fact that 51.2% of them wanted the vaccine for their daughters but were prevented by practical barriers such as access, availability and cost. Being knowledgeable about the programme and aware of cervical cancer was independently associated with uptake of vaccination. There were major concerns about the adverse effects of the vaccine even with women whose daughters had gotten the shot. Women whose spouses or partners disapproved of the vaccine were less likely to accept it and women actually said at follow-up that they had faced such opposition from their partners.

In the USA, Latino women have been known to have a greater chance of developing cervical cancer and dying from it. A study was conducted in 2014, eight years after the introduction of the HPV vaccine, to identify barriers to the vaccine among Latino women. 296 randomly selected women in a Midwestern US city participated in this study. Barriers identified included recommendation from health care provider, issues with side effects, perceived severity of HPV, concern that daughters would become promiscuous after vaccination and whether other parents had vaccinated their girls. Concern about daughters becoming promiscuous was the only factor associated with vaccine uptake. The findings suggested that equipping providers with the skills to impress upon Latino women that the risk of severe adverse effects is low, serious effects of persistent HPV and sexuality issues concerning promiscuity are unfounded, might

increase vaccine uptake (Lechuga, et al., 2014).

A quantitative study about HPV in Italy analysed a total of 1,738 questionnaires administered to parents. 80% of families feared adverse events, 76% said they lacked confidence in the new vaccine, 65% of them were worried about incongruous information received from health care professionals and just over half of these parents (54%), reported that they didn't have enough information about the HPV vaccine. Majority of the respondents regarded doctors, specifically paediatricians and gynaecologist, their most useful source of information (79% and 61% respectively), and yet only 49% and 31% bothered to consult them (Giambi et al., 2014).

In Canada, a research was carried out to determine the barriers and knowledge of the HPV vaccine among females. This study revealed many interesting statistics surrounding the lack of knowledge about the HPV vaccine. Just over a quarter (26.6%) of the respondents were aware that the HPV vaccination was offered at both family practice and gynaecological settings. The rest of them thought the vaccine could only be gotten at a gynaecologist practice. Three quarters of women had not received the vaccine because they had no idea where to go for it. Only 16.3% of respondents knew that the vaccine was for girls older than 9 years old. The research also showed that advertising companies and agencies responsible for disseminating information on HPV vaccination did not provide the adequate information that parents required to make more informed choices with regards to vaccinating their children (Lenahan, et al., 2008).

CHAPTER 3

3.0 METHODOLOGY

3.1 Research Methods and Design

A descriptive cross sectional study to assess the knowledge, attitudes, practices and barriers related to cervical cancer, screening and HPV vaccination among non-health professionals in the Offinso South Municipality was carried out between July 1, 2015 and September 30, 2015.

This was done through a self-administered questionnaire.

3.2 Data Collection Techniques and Tools

A questionnaire was developed from questionnaires that had been used in previous studies and from various articles and books on information related to cervical cancer, screening and HPV vaccination. It was a self-administered structured questionnaire. The questions were aimed at obtaining information regarding respondents' knowledge, attitudes and practices towards cervical cancer, screening and HPV vaccination. The questions also explored the barriers against cervical cancer screening and HPV vaccination. It also obtained relevant socio-demographic characteristics of the respondents. Five research assistants were trained on the subject in question and data collection procedures; they were also involved in the pretesting of the questionnaire. Randomly selected participants were contacted at their working places and administered with the questionnaires.

The questionnaire was divided into four parts:

3.2.1 Part 1-socio-demographic characteristics of the participants

There were six questions in this part. This included age, level of education, occupation, religion, marital status and parity.

3.2.2 Part 2-knowledge on cervical cancer, screening and HPV vaccination

This part consisted of fifteen questions, twelve of which were meant to enquire about the respondents' knowledge on cervical cancer, screening and HPV vaccination.

3.2.3 Part 3-attitude towards screening for premalignant cervical lesion

A Likert's scale was used to assess attitudes. There were six questions on the scale. The questions were aimed at assessing respondents' views on some facts surrounding cervical cancer in Ghana, cervical screening and HPV vaccination. There was an additional question that sought to find out the respondent's own assessment of their risk of developing cervical cancer.

3.2.4 Part 4-Practices

The six questions in this section sought to find out the respondents' actions towards the preventive measures against cervical cancer, both primary and secondary.

3.2.5 Part 4-Barriers

There were two questions in this last part of the questionnaire. The issues of interest here were the factors that prevented the respondents from cervical cancer screening and HPV vaccination.

3.3 Study Population

The study population consisted of all female non-health professionals residing in the Offinso South municipality. Inclusion criteria were working females with a minimum of Senior High School certificate who had had formal training or further education in their chosen profession and did not work in the health sector. These included Teachers, Bankers, Police women and all other

public and civil service workers. The exclusion criterion was females with the above qualifications but were either retired or out of work.

3.4 Study variables

There were five main variables of interest in this study; four independent and one dependent variables. The independent variables are Knowledge, Attitudes and Barriers against Cervical Screening and HPV Vaccination. The only dependent variable is Practices. These variables, previously defined, were assessed as follows;

3.4.1 Knowledge assessment

Respondents' knowledge on cervical cancer, screening and HPV vaccination was assessed using a points scale. There were multiple choice questions that carried a total of 12 correct responses. Each correct response was given a score of 1 and a wrong response a score of 0. Total points to be scored were 12 and the minimum was 0. On assessment, a modified Bloom's cut off points was used where a score of 80 – 100% of correct responses meant a good knowledge, a score of 50 – 79% put a scorer in a level of satisfactory knowledge and a poor knowledge was for the respondents with a score less than 50% of the correct responses. Therefore the scores with their respective knowledge levels were 9-12, 6-8 and 0-5 for good, satisfactory, poor knowledge respectively.

3.4.2 Attitude assessment

Attitude was assessed by 6 questions using the Likert's scale. The answers to the questions on Likert's scale had responses that ranged from strongly agree, agree, neither agree nor disagree, disagree and strongly disagree. The scoring system used with respects to respondents' responses was as follows: strongly agree scored; 1, agree; 2, neither agree nor disagree; 3, disagree; 4, strongly disagree; 5.

The responses were summed up and a total score was obtained for each respondent. The mean score was 15 and those scored below the mean score had positive attitude and scores above the mean meant negative attitude towards cancer, screening HPV vaccination. The highest score was expected to be 30 and the lowest score to be 6.

3.4.3 Practice assessment

The practice was assessed by looking at the respondents' action towards preventive measures against cervical cancer. Here, the individual practices were considered separately. Primary preventive practices; HPV vaccination, smoking habits and number of sexual partners and Secondary prevention; cervical screening.

3.4.4 Barrier assessment

This was done using barriers reported by similar studies worldwide. Participants were also allowed to state their own barriers where necessary.

3.5 Sampling

3.5.1 Sample size

The sample size was calculated using a formula for a finite population. We assumed that the knowledge of non-health professionals on cervical cancer to be 50%, since we did not have foreknowledge and therefore took the worst case scenario. A 95% confidence level and 5% reliability was used.

The sample size was obtained by the formula

$$n = \frac{z^2 p(1 - p)}{e^2}$$

Where, n = sample size

z = confidence interval, set at 95%

(standard value of 1.96)

p = proportion of population with

characteristic of interest e = margin of error at 5%
(standard value of 0.05)

The minimum sample size was estimated at

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2}$$
$$n = 384$$

Applying the finite population correction factor results in the actual sample size, n, computed using equation below. The number of non-health professionals in the municipality was estimated to be not more than 1000. This was arrived at using data from the municipal office of the Ghana Education Service and tour of the various institutions in the municipality.

$$n = \frac{nN}{n + (N - 1)}$$

Where, n= sample size and N= size of study population

$$n = \frac{384 \times 1000}{384 + 999}$$
$$n = 278$$

An assumption of 10% non response rate works up to 307.

3.5.2 Sampling technique

A multistage sampling technique was employed in the selection of participants for the study. There are 114 basic schools (80 public and 34 private), 3 second cycle schools and a college of education, 7 banks/financial institutions, 5 police posts and 10 other government institutions that included the Municipal Assembly, National Health Insurance, Ghana Education Service, Ministry of Food and Agriculture, Immigration, etc. The first stage of sampling involved selection of institutions to be studied. The institutions were purposively selected. These included 40 basic schools and all the other institutions because of the overwhelming number of basic schools. Only basic schools with

junior high schools were selected to reflect their geographical distribution. For the second stage participants were randomly selected through balloting. A list of all female employees was obtained from the head of the institution and the balloting done. Only up to three-quarters of female employees per institution were randomly selected. A maximum of 7 questionnaires were allowed per institution.

3.6 Pre-testing

The self-administered questionnaire was pre-tested in Afigya Kwabre district, a neighbouring district with similar socio-demographic characteristics as the Offinso South municipality, for validity and reliability. A field test made up of 20 female teachers from 5 purposively sampled Basic schools and a Senior High schools in the district was conducted.

3.7 Data Handling

The data collected was validated by cleaning and then checking for completeness. It was then coded and entered into Microsoft Excel 2007 spreadsheet using double entry method. A third person checked and corrected any discordance.

3.8 Data Analysis

The data was analysed with STATA 12. The analysis results of participants' demographics, independent and outcome variables were summarized using descriptive summary measures: expressed as mean (standard deviation) for continuous variables and percentage for categorical variables. The Chi-square test was used to measure the strength of association between categorical variables. All statistical tests were performed using two-sided tests at the 0.05 level of significance. The p values were reported to three decimal places with values lower than 0.001 reported as <0.001.

3.9 Ethical consideration

The Committee on Human Research, Publication and Ethics of the Kwame Nkrumah University of Science and Technology granted approval for this study. The purpose of the research was explained in detail to the respondents, they were then allowed to make a decision on whether or not to participate in the study. This ensured autonomy. The respondents who agreed to participate gave a verbal consent. The data obtained were treated privately with no name tag on it. This study caused no physical or psychological harm to the participants and they weren't exploited in any way. The respondents were treated with respect and their rights to privacy and confidentiality were observed.

3.10 Limitations of Study

Limitations included the fact that survey results were self-reported and this may have compromised the validity of answers to sensitive questions. Only female non-health professionals were selected so the results cannot be generalized to the population. The study population formed the minority of the population in the municipality.

3.11 Assumptions

The following assumptions were made in this study. The first one is related to the self-report nature of the study. It was assumed that the respondents' responses on the variables that were tested are accurate, truthful and reliable. Another assumption is that the questionnaires were administered properly and that there was no interviewer bias and my background in health and experiences with cervical cancer did not make me biased.

Lastly I assumed that sample size used was representative of the study population.

CHAPTER 4

4.0 RESULTS

4.1 Socio-demographics

A total of 301 women participated in this study. Table 1, below, illustrates the socio-demographic profiles of the respondents. The mean age of the respondents was 31.2 years (SD=6.8) with a range of 38 years (minimum and maximum ages, 20 and 58 years respectively). Majority of these professionals had post-secondary Diploma certificates (65.5%) and 31.9% were Degree holders. Close to 70% were teachers, mostly in basic schools. Respondents were predominantly Christian (96%). There were more single women than married ones; 58.1% and 40.9% respectively. 154 of them had no children; the rest had had between 1 and 4 children. Table 1 on the next page is a compilation of the socio-demographic characteristics of the respondents.

Table 1: Socio-demographic characteristics

Characteristic	Frequency (n)	Percent (%)
Age (years)		
20-29	147	48.4
30-39	126	41.8
40-49	14	4.7
50-59	14	4.7
Education		
Sen. High Sec. School	43	14.3
Diploma	197	65.5
First Degree	59	19.6
Second Degree	2	0.7
Occupation		
Teacher	212	70.5
Banker	21	7.0
Police/Immigration	16	5.3
Public/Civil Servant	29	9.6
Other	17	5.6
Religion		
Christian	289	96.0
Moslem	12	4.0
Marital Status		
Single	173	58.1
Married	123	40.9
Separated	3	1.0
Parity		
None	154	52.2
0-4	141	47.8

SOURCE: FIELD DATA 2015

4.2 Knowledge

Table 2, summarises the responses, participants gave to answers that sought to assess their knowledge about the subject. Majority (85%) of respondents knew about cervical cancer and 70.3% cited News media as their source of information. Only 21.5% had gotten their information from a health worker. 36.2% either did not know or gave a wrong symptom of cervical cancer. An even higher number, 42.2% could not identify a single risk factor for the disease. Only about a third (30%) of the study participants knew about HPV and fewer (23%) knew of its relationship with cervical cancer. 88% of them had no idea what the HPV vaccine was. More than half of the respondents, 56.4%, were aware of the existence of cervical cancer screening. 45.8% and 59.8% were properly informed about the treatment and prevention of cervical cancer respectively.

Based on the correct responses given, the mean knowledge score was 4.94 (SD; 3.28). Only 19.6% of the respondents obtained scores 9 or higher, and thus, considered to have good knowledge about cervical cancer, screening and HPV vaccination. 20.6% and 59.8% of them were regarded as having satisfactory and poor knowledge respectively.

Table 2: Knowledge about cervical cancer, screening and HPV vaccination.

Variable	Frequency (n)	Percent (%)
Do you know about cervical cancer?		
Yes	256	85.0
No	45	15.0
What are the symptoms of cervical cancer?		
Abnormal vaginal bleeding	102	33.9
Abnormal vaginal discharge	24	8.0

Bleeding after intercourse	36	12.0
Bleeding after menopause	6	2.0
Other	4	1.3
Don't know	105	34.9
What are the risk factors for acquiring cervical cancer?		
Multiple sexual partners	9	32.9
Early age at first sexual intercourse	12	4.0
Smoking	9	3.0
Oral contraceptive pills	27	9.0
Don't know	127	42.2
Have you heard about HPV?		
Yes	90	30.0
No	211	70.0
Do you know of any relationship between HPV and C.C?		
Yes	69	23.0
No	232	77.0
Do you know about HPV vaccine?		
Yes	69	12.0
No	265	88.0
Have you heard about cervical cancer screening?		
Yes	168	55.9
No	133	44.1
Is cervical cancer treatable?		
Yes	138	45.8
No	48	16.0
Don't know	115	38.2
Is cervical cancer preventable?		
Yes	180	59.8
No	18	6.0
Don't know	103	34.2

SOURCE: FIELD DATA 2015

4.3 Attitudes

Table 3: Attitude related to cervical cancer, screening and HPV vaccination

Variable	Frequency (n)	Percent (%)
Cervical Cancer is a leading cause of cancer deaths		
Strongly agree	33	11.0
Agree	105	34.9
Neither agree nor disagree	82	27.2
Disagree	75	24.9
Strongly disagree	6	2.0
Everywoman is at risk of developing cervical cancer		
Strongly agree	75	24.9
Agree	141	46.8
Neither agree nor disagree	34	11.3
Disagree	51	16.9
Cervical cancer can be prevented		
Strongly agree	90	29.9
Agree	126	41.9
Neither agree nor disagree	67	22.3
Disagree	12	4.0
Strongly disagree	6	2.0
Cervical cancer can be treated		
Strongly agree	54	18.0
Agree	159	52.8
Neither agree nor disagree	48	16.0
Disagree	31	10.3
Strongly disagree	9	3.0
Every woman should be screened for cervical cancer		
Strongly agree	162	53.8

Agree	111	36.9
Neither agree nor disagree	21	7.0
Disagree	7	2.3
Every girl should be vaccinated against HPV		
Strongly agree	99	32.9
Agree	114	37.9
Neither agree nor disagree	82	27.2
Disagree	6	2.0

SOURCE: FIELD DATA 2015

The attitudes of the respondents are profiled above in Table 3. More than half of the women questioned either agreed or strongly agreed with the fact that cervical cancer is a leading cause of cancer mortality in Ghana. Based on the scores described in Chapter 3, 90% of them were found to have a positive attitude towards the disease, its screening and HPV vaccination. When asked about how they perceived their risk of developing cervical cancer, close to a third of the respondents (31.2%) felt that they were at no risk of developing the disease. Just under half of them (46.8%) however admitted to having a low risk. Over 70% of them however concurred with the fact that every woman was at risk of developing cancer of the cervix.

4.4 Practices

The table below shows the actions taken by the respondents with respect to prevention of cervical cancer.

Table 4: Practices related to prevention of cervical cancer

Variable	Frequency (n)	Percent (%)
Smoking		
Yes	3	1.0
No	298	99.0
Number of sexual partners		
None	73	24.2
Single	216	71.8
Multiple	12	4.0
History of cervical cancer screening		
Yes	6	2.0
No	295	98.0
History of HPV vaccination		
Yes	2	0.7
No	299	99.3

SOURCE: FIELD DATA 2015

Only a minority of the respondents smoked or had multiple sexual partners; 1% and 4% respectively. These practices can be said to be passive preventive measures or behaviours since both habits are risk factors for developing cervical cancer. With regards to active preventive measures, both primary and secondary, a meagre 2% of these professionals questioned had previously undergone cervical cancer screening and less than 1% had been vaccinated against HPV.

4.5 Barriers

Table 5: Barriers against preventive measures for cervical cancer

Variable	Frequency (n)	Percent (%)
Cervical Cancer Screening		
Don't know anything about screening	88	29.6
Don't know where to do it	99	33.3
Screening services not available in my locality	58	19.5
Expensive	21	7.1
Don't think it's necessary	12	4.0
Afraid	10	3.4
Embarrassing	3	1.0
Other	6	2.0
HPV Vaccination		
Don't know anything about HPV vaccination	181	60.3
Don't know where to get it	61	20.3
HPV vaccination services not available in my locality	25	8.3
Expensive	18	6.0
Don't think it's necessary	12	4.0
Other	3	1.0

SOURCE: FIELD DATA 2015

Table 5, above, is a compilation of the respondents' barriers to cervical cancer screening and HPV vaccination. More than half of them had not been screened for cervical cancer because they either didn't know anything about screening or didn't know where to do it (29.6% and 33.3% respectively). The other reasons ranged from embarrassment to non availability of screening services in the municipality. Majority (60.3%) of respondents cited ignorance about HPV vaccination as the reason for not getting the shot. A fair number of them (20.3%) did not know where to get the vaccine.

4.6 Bivariate Analysis of Key Variables using Chi-square

Table 6: Association between Socio-demographic characteristics and Key Variables of the Study; Knowledge, Attitudes, Practices and Barriers (p values).

	Knowledge	Attitudes	Pract.Scr.	Pract.HPV	Barr.Scr	Barr.HPV
Age group	0.002	0.000	0.015	0.992	0.000	0.000
Education	0.128	0.969	0.000	0.253	0.954	0.045
Occupation	0.001	0.758	0.636	0.147	0.022	0.009
Religion	0.218	0.239	0.614	0.772	0.386	0.019
Marital Status	0.005	0.192	0.895	0.959	0.001	0.032
Parity	0.007	0.198	0.913	0.950	0.000	0.012

SOURCE: FIELD DATA 2015

Pract.Scr.; Cervical cancer screening

Pract.HPV; HPV vaccination

Barr.Scr; Barriers against cervical cancer screening

Barr.HPV; Barriers against HPV vaccination

The table above is compilation of the p-values obtained through a bivariate analysis of the sociodemographic characteristics on one hand and the key variables of this study on the other, using Chi square. With a 5% level of significance, p-values less than 0.05 suggest a significant association between the variables in question. The knowledge of the respondents was significantly associated with their age, occupation and marital status. With regards to their attitudes, only their age was significantly associated. The age and educational level of the participants determined whether they had been previously screened or not (p-values; 0.015 and 0.000 respectively). The association between the socio demographics and HPV vaccination was not statistically significant. Age, occupation, marital status were significantly associated with

barriers against screening. Association between HPV vaccination and all the demographic characteristics was statistically significant. This is because all the p-values were below 0.05.

Table 7: Association between Knowledge/Attitudes and Cervical Screening

Cervical Screening :	Yes	No	Total	p-value
Knowledge				
Poor	1	179	180	0.080
Satisfactory	3	59	62	
Good	2	57	59	
Attitudes				
Negative	0	30	30	0.410
Positive	6	265	271	

SOURCE: FIELD DATA 2015

The p-values (>0.05) in the Table 7 above, suggest that the screening habits of the study participants were not significantly associated with neither their knowledge nor attitudes. What they knew, felt or perceived about cervical cancer did not inform what they did with regards to screening.

Table 8: Association between Knowledge/Attitudes and HPV Vaccination

HPV Vaccination :	Yes	No	Total	p-value
Knowledge				
Poor	0	180	180	0.040
Satisfactory	0	62	62	
Good	2	57	59	
Attitudes				
Negative	0	30	30	0.637
Positive	2	269	271	

SOURCE: FIELD DATA 2015

As shown in Table 6, Knowledge was significantly associated with HPV vaccination. Their attitudes was however not significantly associated HPV vaccination.

Table 9: Association between knowledge and attitude

Attitude:	Negative	Positive	Total	p-value
Knowledge				
Poor	25	155	180	0.021
Satisfactory	3	59	62	
Good	2	57	59	

SOURCE: FIELD DATA 2015

The level of knowledge of respondents informed their attitudes towards the disease. This is so because a p-value of 0.021 implies that the association between the two variables was statistically significant.



CHAPTER 5

5.0 DISCUSSION

Cancer of the cervix is the commonest cancer or malignancy in women in Ghana, and yet it is the most preventable cancer known to man. This discordance presents a challenge that requires some looking into. The aim of this study was to investigate how knowledge, attitude and barriers related to cervical cancer, screening and HPV vaccination of respondents affected their practice. The study showed that the professionals surveyed were relatively young with mean age of 31.2 years (SD=6.8). This offers a huge opportunity to effect change in the key variables under study. This is because the average age of cervical cancer patients is much higher in Ghana, 52 years (Nkyekyer, 2000).

Only 19.6% of the professionals questioned were deemed to have adequate knowledge on the subject based on a predetermined scoring criterion. This is in line with various international studies that have consistently shown that knowledge about the cancer among the general population ranged from low to moderate. Researches done by Philips et al., 2003; Hislop et al., 2004; Anya et al., 2005; Denny-Smith et al., 2006 and Moreira et al., 2006 have proven this. In spite of this low general knowledge levels, an impressive 85% of respondents knew about cervical cancer. This is in sharp contrast to the study by Anorlu (2008) in Nigeria where only 15% of women studied had heard about cancer of the cervix. Tebeu (2008) published 28% in a similar study in Cameroon. The figure however compares with the 64% seen in Burkina Faso in the study by Sawadogo et al in 2012. This high level of awareness about the disease could be attributed to educational level of the respondents. They had a minimum of senior high secondary school certificate and were likely to have access to relevant information. This is buttressed by

Owoeye & Ibrahim (2013), in their study of students in a Nigerian university. They found 72% of respondents to be aware of the disease. There is however a major difference among women in developed and developing countries with respect to knowledge and awareness about cervical cancer. This disparity can be attributed to the fact that women in the West are exposed to proper interventions such as existing population-based screening programmes and mass media campaigns against cancer of the cervix. The health system in most developed countries are better organised, citizens are well motivated and sensitised and there is full access to health care services. The role of cultural beliefs and practices in our part of the world has not helped matters in this regard.

Majority of respondents who knew about cervical cancer got their information through the news media. The proliferation of our airwaves coupled with the lack of supervision makes this a scary proposition. The potential for misinformation is frightening. Only 21.5% had gotten their information from a health worker. This is quite instructive as cervical cancer is a major health issue and health workers should be at the forefront of propagating the news.

A little over a third (36.2%) of the study participants either did not know or gave a wrong symptom of cervical cancer. Abnormal vaginal bleeding, and quite rightly so, was the commonest presentation cited by the participants.

A very vital step to combating any disease is for one to be informed about the risk factors of the disease. This is because the avoidance of these risk factors is an important primary preventive measure in the fight against any disease. 42.2% of women studied could not identify a single risk factor for the cervical cancer. This was worse than what Anya et al found in Niger where 22% of respondents could not list any risk factor. This was a study among female health professionals in 2005. Such poor knowledge exhibited by health professionals was quite surprising. A similar survey in Kumasi, Ghana revealed that at least 55% of these women could list a minimum of three risk factors and 58% could provide three or more symptoms of cervical cancer (Adageba et al.,

2011). 55% of the participants knew that the aetiology of cervical cancer had something to do with sexual activity and 33% of them had no idea there was any such connection. These figures from Ghana are obviously more encouraging than those from Niger. The commonest risk factor mentioned in this study was multiple sexual partners.

Only about a third (30%) of the study participants knew about HPV and fewer (23%) knew of its relationship with cancer of the cervix. This was almost identical to a cross-sectional survey conducted in Netherlands among parents that sought to explore their knowledge related to HPV where it was revealed that 29.5% of the parents had heard of HPV and only 14.3% of them were aware that it caused cervical cancer (Lenselink et al., 2008). Even in the United States, where great strides have been made in the fight against cervical cancer, only two fifths of the women knew about HPV and less than half of them were aware of the fact that it caused cancer of the cervix (Lenehan et al., 2008). These figures were much higher than what was found in a crosssection of college women in a Ghanaian university. A mere 7.9% knew about the connection between human papillomavirus and the cancer (Abotchie et al., 2009). This is quite surprising, considering their level of education.

The study also showed that the HPV vaccine was hugely unpopular. Only 12% of the Offinso South professionals studied knew about the HPV vaccine. This compares favourably to what Lenselink and his colleagues revealed in their Dutch study. They found that only 6.2% of parents knew about the HPV vaccine. This was in 2008. An Italian survey in the same year reported a much higher figure. 29.8% of these women knew something about HPV infection, 42.1% had heard about the HPV vaccine and the fact that it can prevent cervical cancer, and 52.6% knew about cervical cancer (Di Giuseppe et al., 2008). 50.3% of midwives in Abidjan, Cote d'Ivoire had heard about the HPV vaccine and its use as a preventive method. Even more impressive was the

fact that 70.8% of them usually recommended it to young girls (Tchounga et al., 2014). These were health professionals in an urban district of the capital and as such, the findings were not surprising. More than half of the respondents, 56.4%, in this survey knew about the existence of cervical cancer screening and its use. This compares favourably with the midwives discussed above, 42.4% of whom were appropriately informed about cervical cancer prevention.

45.8% and 59.8%, respectively, were properly informed about the fact that the cancer was treatable and preventable. Adageba et al, (2011) reported that 75% of health workers in Kumasi said that cervical cancer is a preventable disease. This is to be expected as health workers were more likely to be better informed. It is important to note that more than half of the women in this study were misinformed with regards to the fact that cancer of the cervix is a treatable disease.

The general attitude of the respondents was, by far, the most reassuring finding in this KAP study. 90% of them showed a positive attitude towards the disease and its prevention. This is impressive because 89.6% of women doctors and nurses in a teaching hospital in Bangalore, India, who participated in a KAP study of cervical screening and HPV vaccination and to look at barriers against the acceptance of the Pap smear, had a very favourable attitude towards Pap smear and HPV vaccination (Swanajswanth et al., 2014). Cunningham et al in 2014, confirmed this when they systematically reviewed peer-reviewed literature on factors related to HPV vaccine acceptability. It showed a high acceptability in African countries. The ACCP had, in 2008, reported that women considered screening, regardless of type, highly acceptable. This study was international and spanned Africa, South America and Asia (Bradley et al., 2008).

Perceptions and beliefs about cervical cancer did not seem to vary much between developing and developed countries despite the difference in knowledge levels. In England, 76.2% of women studied thought that cervical cancer was a common disease and 91.7% believed it could be

managed well if it was detected early (Yu & Rymer, 1998). A similarly high percentage of parents in the Netherlands embraced HPV vaccine irrespective of their background. The biggest fear among a few of them was the long term side effects of the vaccine that have not been studied at this point (Lenselink, et al., 2008).

Women's attitude towards the disease changed almost immediately after they were provided with the necessary information as was seen in South Africa (Hocque & Van Haal, 2014). This fact was buttressed by Stretch et al (2008), in a study in England. This goes to prove that attitudes are basically determined by information.

Over 90% of respondents were of the view that every woman should be screened for cervical cancer and more than 70% felt that young girls should be vaccinated against HPV before they become sexually active. This very much reflects what a study by Ezeanochie & Olagbuji (2014), in Nigeria showed where 70% of mothers said they would vaccinate their daughters if they had the opportunity. The rest thought that the vaccine would make their girls promiscuous. This misinformation is easily rectifiable. It is an undeniable fact that correct information engenders positive attitudes but even people with little knowledge can have the right attitudes too. This knowledge-attitude discordance was evident in this study. A similar finding was made in Botswana where even though only 9% of participants knew about the HPV vaccine prior to the study, 88% were prepared to vaccinate their adolescent daughters against HPV (Di Angi et al., 2011). An equally high percentage of Chinese women, 84%, were prepared to vaccinate their daughters. This was in spite of the fact that only 51.1% of metropolitan women and 41.6% of rural women knew that HPV was related to cervical cancer (Li et al., 2009). For a developed country like Canada, a study by Lenehan et al (2008) revealed that even though women were not quite knowledgeable on the HPV vaccine, they still understood the importance of cervical cancer screening. 69.4% of them agreed or strongly agreed with receiving the vaccine shot in spite of the need to continue regular

Pap screening and 81.6% agreed or strongly agreed that they would continue to be screened regularly even after they have been vaccinated.

It was refreshing to find that almost all the women questioned in this study were non smokers and that only 4% had multiple sexual partners. This is because the two behaviours constitute major risk factors for cervical cancer. In a South African survey, majority of a group of young students claimed they were sexually active even though less than 1% of them had husbands (Hocque et al., 2013). This is a relatively common feature in Africa. Age at first sexual intercourse and multiple sexual partners are major risk factors for acquiring HPV, the aetiological factor for cancer of the cervix.

The fact that only 6 out of the 301 women surveyed had been screened for cervical cancer presents a very worrying situation. Even more disturbing is the fact that all that positive attitude did not translate into good practices. This figure is identical to the 2.1% reported by Adanu et al in 2010 in Accra. This, pretty much, sums up Tsu & Levin's report in 2008 that only 5% of women in Africa had been screened through a Pap smear compared to 75% in the West. 80.5% of women studied in London had had at least one Pap smear as far back as 1998. This study by Yu & Rymer further reported that 71.5% of them did so regularly. Several studies across the African continent paint a similarly gloomy picture. Ali Rissai et al (2014) found out that only 9% of women, in their study in the Democratic Republic of Congo, had been screened. A similar study in done Nigeria revealed that only 5.7% of respondents had previously undergone a Pap smear (Udigwe et al., 2006).

The fact that educational background and social status of respondents did not have any meaningful impact on their health seeking behaviour was quite disturbing. This is a group of female professionals, including diploma and degree holders and yet only 2% of them had ever been screened for cervical cancer. This poor practice among the so called elite was also seen in a group

of South African women (Wellensiek et al., 2002). These low levels with regards to screening were not peculiar to Africa. Studies in Asia revealed similarly low figures. In Malaysia and India surveys reported 6% and 5% respectively (Al-Naggar et al., 2010; Montgomery et al., 2014).

Less than 1% of respondents had taken the HPV vaccine shot. This poor uptake is probably due to the fact that the vaccine is relatively recent intervention compared to the Pap smear which was introduced several decades ago.

Close to two-thirds of the participants claimed they hadn't been screened because they either did not know anything about cervical screening or did not know where to do it. Just under 20% of them cited non availability of screening services in their locality as the reason for not screening.

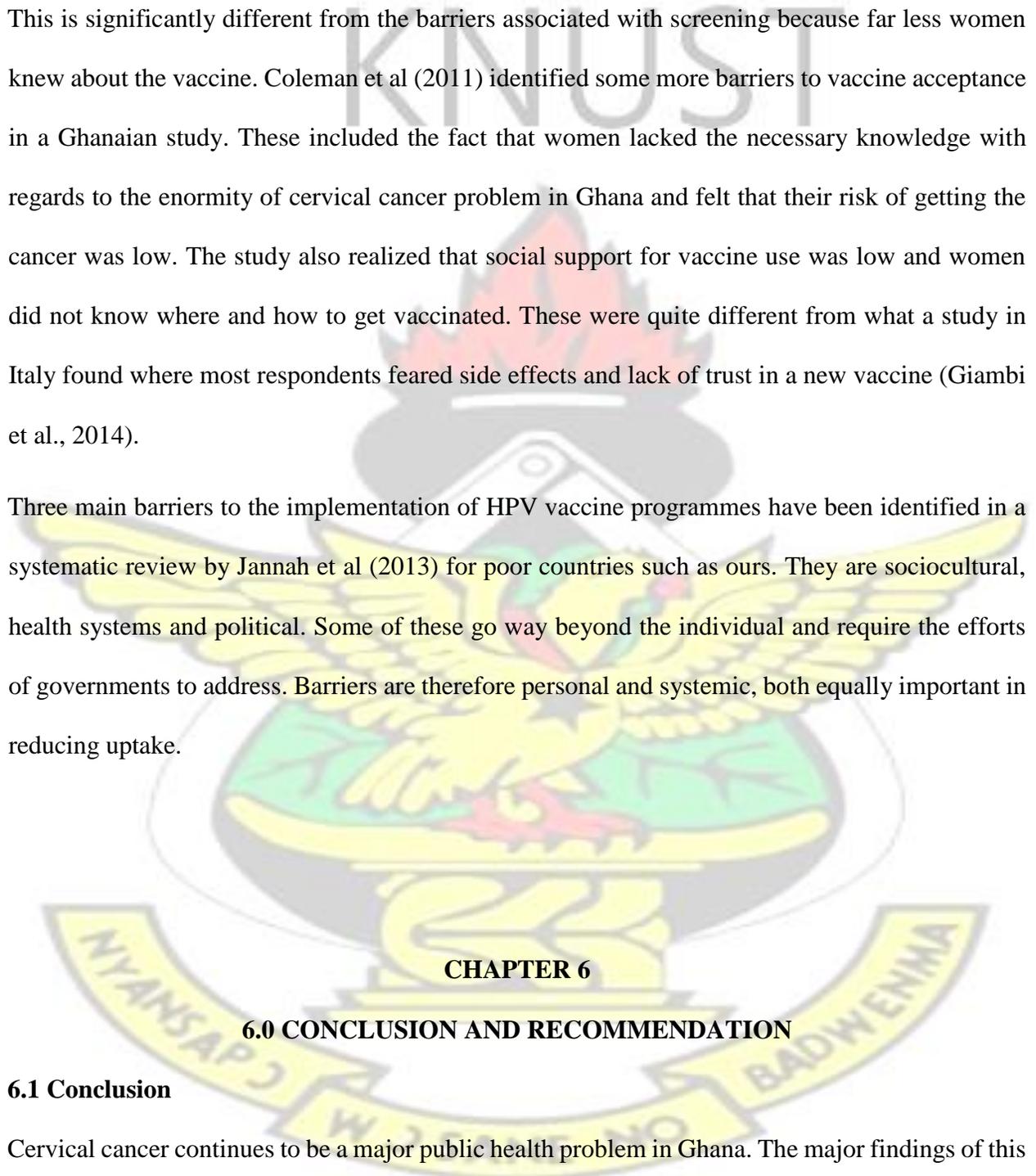
S't Patrick's Hospital, a CHAG institution, that serves as the municipal hospital does not offer such services even though there is a resident gynaecologist. Other barriers identified include cost, necessity, fear and embarrassment. Researchers in Nigeria found similar barriers although in different proportions (Nwozar & Oragudosi, 2013). In Peru, researchers identified additional barriers such as lack of privacy and incurteous staff at facilities (Winkler et al., 2006). A study along the US-Mexico border revealed similar barriers in addition to ones such as the gender of the physician and insensitivity to patient needs (Byrd et al, 2007). These reasons did not vary much in western countries. In England the barriers most women cited were embarrassment

(29%), procrastination ie intending to go but not getting round to it, fear of pain of the procedure (14%) and concern about a possible positive results (12%) (Waller et al., 2009). Chinese women in British Columbia, Canada gave the following as excuses for not getting the Pap smear; being uneducated about the need for preventive health care and language/cultural barriers such as gender of the health worker (Hislop et al., 2000). Addressing these barriers, however small, is a key tool to increasing the coverage of cervical screening.

An astonishingly high percentage of respondents, 60%, had not been vaccinated because they knew nothing about the vaccine. A fifth of them said they did not know where to go for the shot.

This is significantly different from the barriers associated with screening because far less women knew about the vaccine. Coleman et al (2011) identified some more barriers to vaccine acceptance in a Ghanaian study. These included the fact that women lacked the necessary knowledge with regards to the enormity of cervical cancer problem in Ghana and felt that their risk of getting the cancer was low. The study also realized that social support for vaccine use was low and women did not know where and how to get vaccinated. These were quite different from what a study in Italy found where most respondents feared side effects and lack of trust in a new vaccine (Giambi et al., 2014).

Three main barriers to the implementation of HPV vaccine programmes have been identified in a systematic review by Jannah et al (2013) for poor countries such as ours. They are sociocultural, health systems and political. Some of these go way beyond the individual and require the efforts of governments to address. Barriers are therefore personal and systemic, both equally important in reducing uptake.



CHAPTER 6

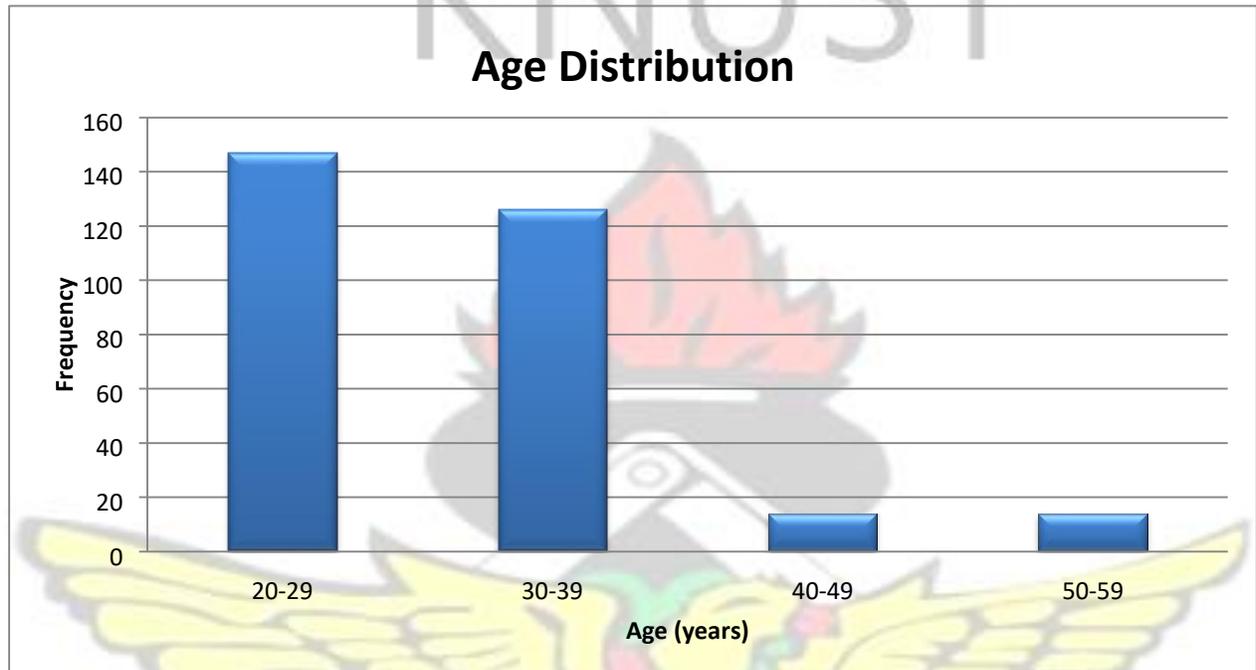
6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Cervical cancer continues to be a major public health problem in Ghana. The major findings of this study had to do with key variables; knowledge, attitude, barriers and practices.

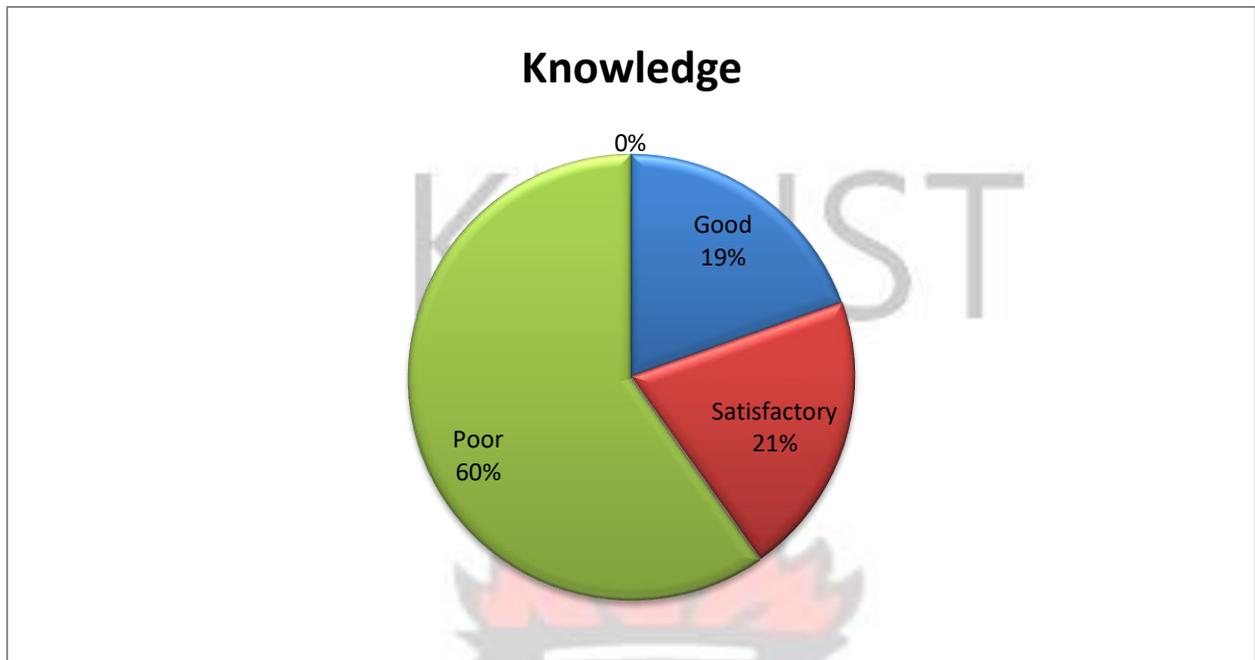
The study population was a relatively young one. The age distribution of the respondents is illustrated in the figure below.

Figure 1: Age distribution of respondents.



The study revealed that the knowledge related to cervical cancer, screening and HPV vaccination is markedly limited. Figure 2 below summarises the knowledge distribution among the respondents.

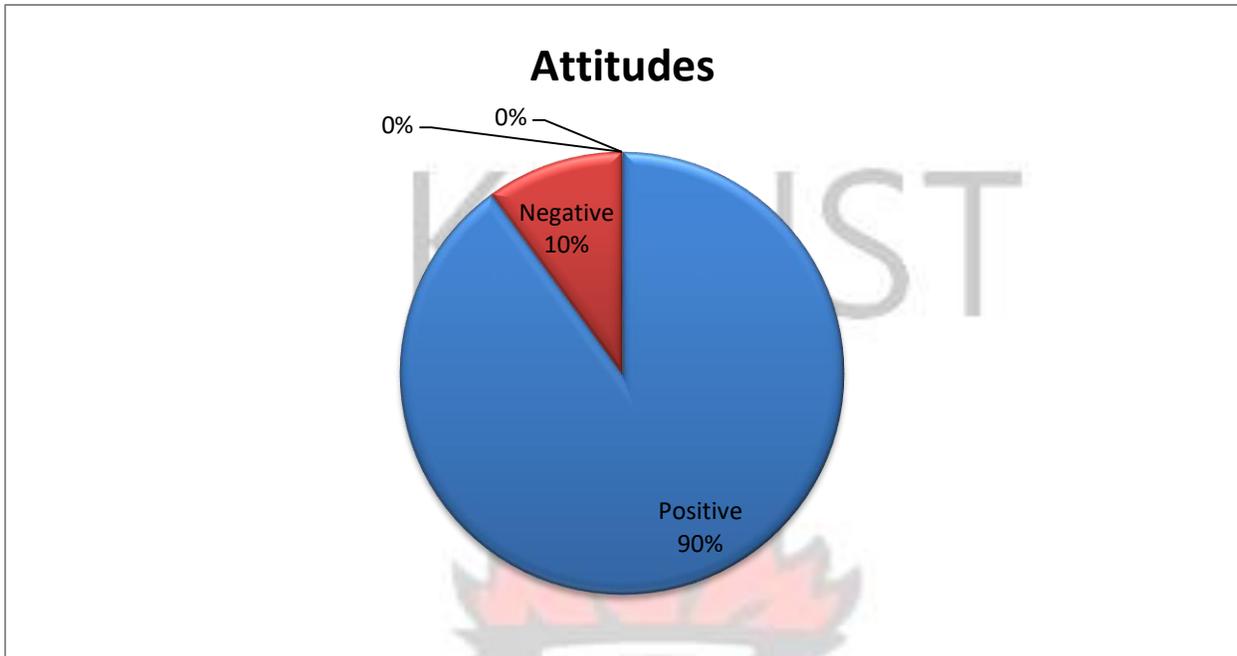
Figure 2: Knowledge of respondents



Participants generally lacked the basic knowledge with regards to symptomatology, risk factors, primary and secondary prevention. The media, print and electronic, has been the main source of information.

Their attitudes was however exceptionally positive. This was evident in the fact that they recognized that cancer of the cervix is major public health problem for all women. They appreciated that it is a preventable and treatable disease. The vital role of screening and HPV vaccination was not lost on them. Their perception of susceptibility was however not as encouraging as their attitude.

Figure 3: Attitudes of respondents



With regards to practices related to cervical cancer, the study proved, beyond any reasonable doubt, that the uptake of cervical screening and HPV vaccination was abysmally low. Only a minority of respondents engaged in smoking or had multiple sexual partners. These are major risk factors that predisposed women to the development of cervical cancer.

Figure 4: Practices of respondents.

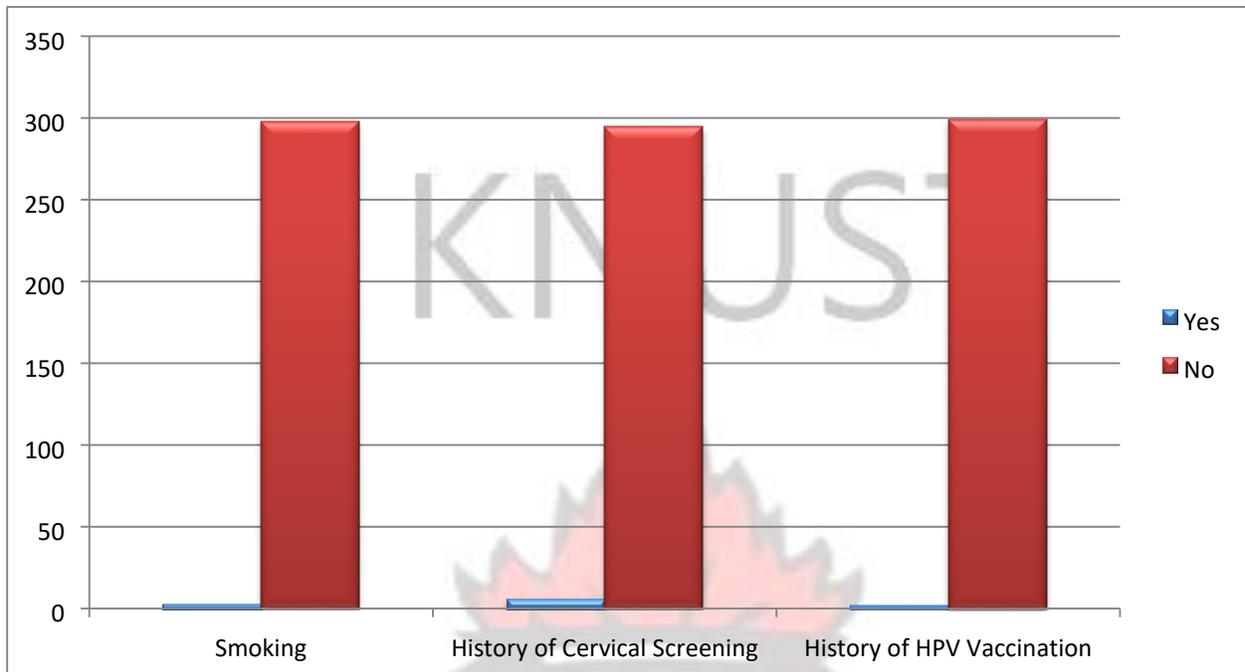
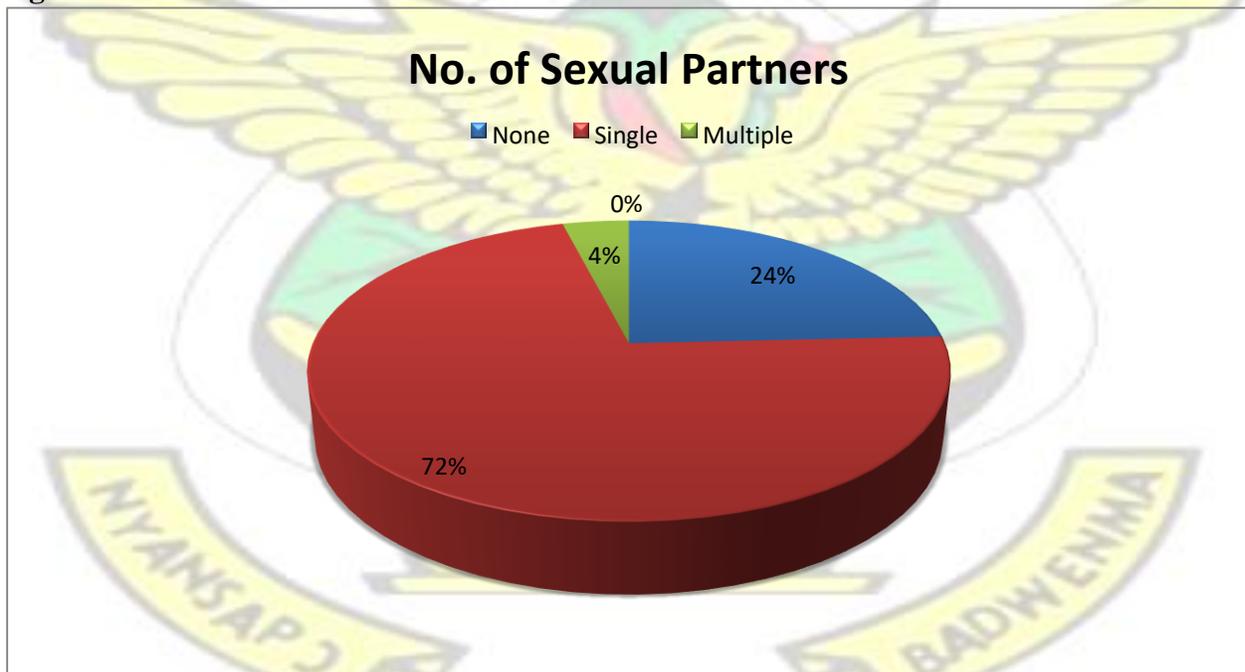


Figure 5: Number of Sexual Partners



The study identified some major barriers against the preventive measures against cancer of cervix.

The figures below illustrate these barriers.

Figure 6: Barriers against Cervical Cancer Screening

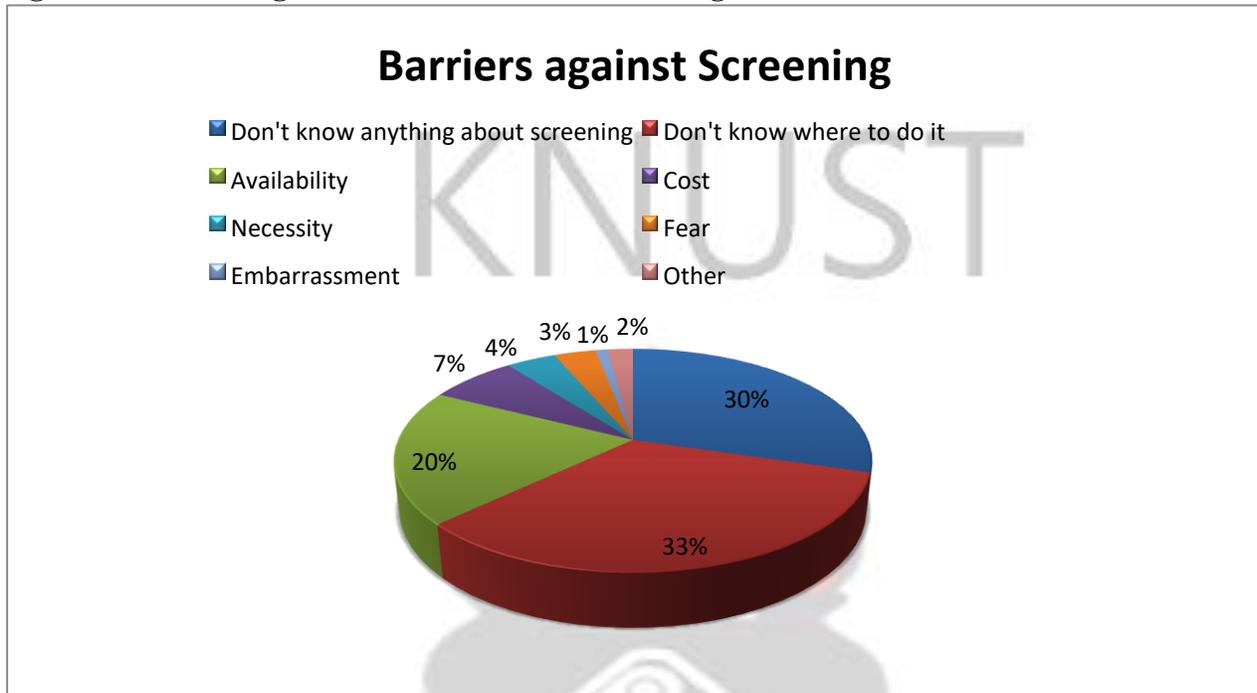
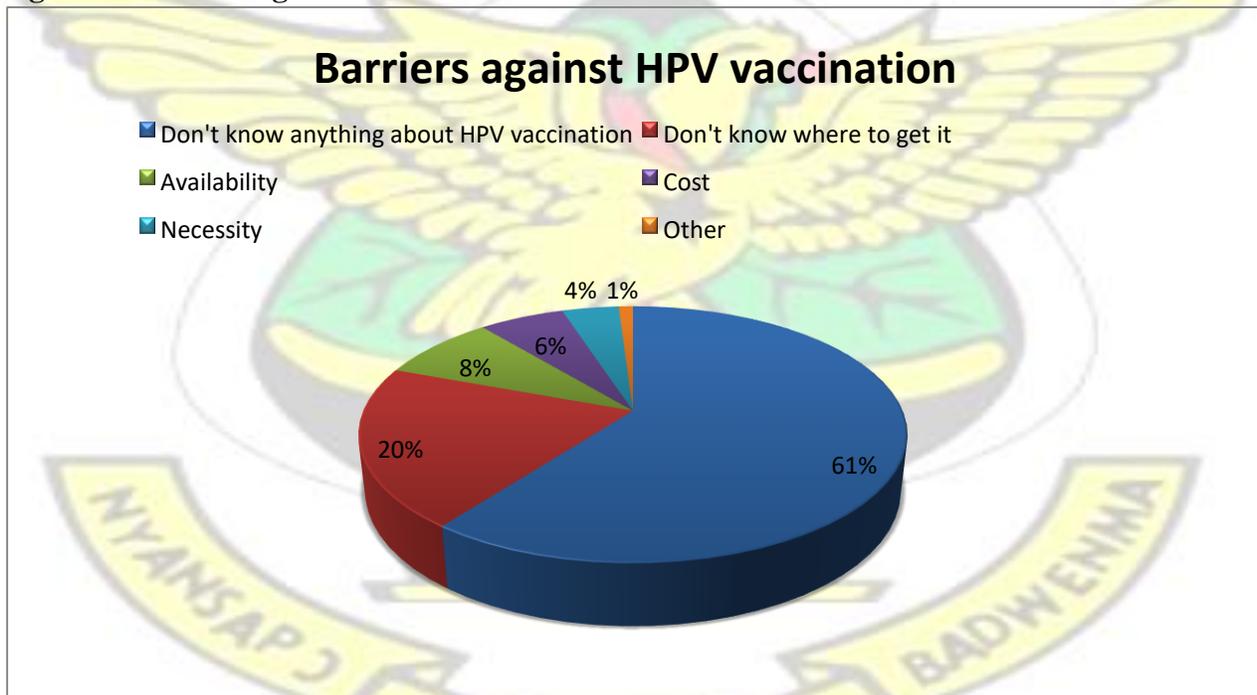


Figure 7: Barriers against HPV Vaccination



An important finding is the fact that knowledge and attitudes were not significantly associated with cervical screening ($p=0.080$ and 0.410 respectively). The association between knowledge and HPV vaccination was statistically significant ($p=0.040$). Attitudes was not significantly associated with

HPV vaccination ($p=0.637$). Knowledge of respondents was significantly associated with their attitudes ($p=0.021$).

The major talking points are;

- (1) There is a profound lack of knowledge and awareness among the study population about cervical cancer, screening and HPV vaccine.
- (2) The participants are however very willing to be screened and accepted the idea of HPV vaccination. These present a huge opportunity for action by governments and health authorities to roll out cervical cancer screening and HPV vaccination programmes.
- (3) There are major barriers on the road to achieving high uptake of preventive measures needed to fight cervical cancer.

6.2 Recommendations

The fight against cervical cancer should be directed at the key variables that affect the disease. Interventions must of necessity be multi pronged and must aim to increase knowledge, impact positively on attitudes and address barriers against cervical screening and HPV vaccination. The fight against cervical cancer can only be won by tackling the lapses and gaps associated with the independent variables; knowledge, attitudes and barriers, to achieve what is desired in the dependent variable; practices.

The first step is to address the problem of poor knowledge .A massive health education campaign should be launched to reach out to all women over the country. This effort should focus on providing proper and adequate information on the disease to the masses, especially women.

Fortunately, attitudes are generally good and positive. Health professionals and facilities, health directorates and Central Government should capitalise on this to increase uptake of screening A special effort should be targeted at removing the numerous barriers that prevent women from accessing screening and vaccination services. The issue of availability of screening and HPV

vaccination services came up strongly in this and other studies. This is vital in the fight against the disease. The ultimate goal of these efforts should be to get women well informed about their susceptibility and to empower them to take responsibility for their own health by actively participating in these preventive measures.

6.2.1 Health Facilities and Professionals: Locally, health professionals in facilities should lead this campaign. There should be a conscious effort by doctors, nurses and health promoters in health facilities to educate all women they come into contact with. Health workers should be sensitised to take up this mantle. Managers of health institution must be committed to this course.

With regards to practices, opportunistic screening should be encouraged to increase screening rates. Women visiting gynaecological clinics are more likely to accept a recommendation for a screening procedure. Healthcare professionals, especially general practitioners, gynaecologists and midwives, should be at the forefront of the campaign to promote cervical cancer screening and HPV vaccination. They should disseminate information that is focused on creating the needed awareness among women about cervical cancer risks, preventive measures and early detection to increase the uptake of screening services and vaccination.

Most districts hospitals in the country do not offer these services and this presents a huge challenge. To tackle this, every district hospital in the country should provide cervical screening and HPV vaccination services. Facilities should make conscious efforts to acquire such services.

6.2.2 Districts, Municipal and Metropolitan health directorates: Directorates must take this campaign a step further by embarking on an active health promotion exercise to get the word out there. Health promotion units of these directorates should target churches, mosques and any identifiable groups in their jurisdictions to create needed awareness.

Health directorates should partner facilities in their catchment area to set up screening services. They should support health facilities by building capacity through training and workshops.

6.2.3 Central Government: Through its agencies such as the Ministries of Health and Education, Ghana Health Service, the government must roll out policies and programmes to make cervical cancer household name such as malaria, tuberculosis and HIV. Mass media should play an important role in this regard; effective television and radio adverts that have worked in other control programmes should be employed. The fact that cancer of cervix is a treatable and preventive disease requires that it should be given the same prominence and visibility as malaria or HIV. The government should adopt a multi-sectoral approach to maximize results. Sectors that are not primarily health-inclined must be brought on board to drive this campaign. VIA and care HPV-DNA which require far less skills, materials and resources to operate, than Pap smear should be promoted especially in the districts where the necessary manpower is lacking.

The government should prioritise cervical cancer like it has done for other diseases like malaria, HIV and tuberculosis. A cervical cancer control programme is long overdue. The Ministry of Health and Ghana Health Service should roll out a comprehensive Cervical Cancer Screening Programme for women. HPV vaccination programme should be incorporated into School Health Programmes. Government should do well to source funds to implement these programmes. A cervical cancer awareness day or week should be instituted just as is done for other diseases of public health importance.

Mobile outreach clinics with integrated screening services offering VIA followed by immediate treatment of abnormal findings, such as by cryotherapy, in a screen-and-treat approach, could form a strategy to address the issues of access hindered by long distance and travel time and also the limited infrastructure available for a screening program based on cervical cytology (Pap testing). This is a proven and workable intervention. Health facilities, Directorates and Government should seriously consider it.

It is important to point out that any intervention to combat cervical cancer, or any disease for that matter, should be community based, culturally sensitive and done using locally understood messages to increase awareness of the disease. This is to ensure that a significant proportion of women of the appropriate age are reached. The intervention should motivate the target population and most importantly, make the services widely available. Finally, a proper monitoring and evaluation mechanism should, as a matter of principle, be in place to assess the intervention.

REFERENCES

- Abotchie, P.N. & Shokar, N.K. (2009). Cervical cancer screening among college students in Ghana: knowledge and health beliefs. *International Journal of Gynaecological Cancers*, 19 (3), 412.

- Adageba, K.R., Danso, K.A., Ankobe, F.K., Kolbilla, D.Z. & Opoku, P. (2011). Knowledge of cervical cancer and patronage of cervical cancer screening services among female health workers in Kumasi, Ghana. *African Journal Haematological Oncology*, 2(1), 157-161.
- Adanu, R.M.K., Seffah, J.D., Duda, R., Darko, R., Hill, A. & Anarfi, J. (2010). Clinic visits and cervical cancer screening in Accra. *Ghana Medical Journal*, 44(2).
- Afriyie K. (2004). Ministry of Health. *Ghana Health Sector's 2004 Annual Program of Work*. Accra.
- Akbari, F., Shakibazadeh, E., Pourreza, A. & Tavafian, S.S. (2010). Barriers and Facilitating Factors for Cervical Cancer Screening: a Qualitative Study from Iran. *Iran Journal of Cancer Prevention*, 3(4), 178-84.
- Al Naggar, R.A., Low, W.Y. & Mid-Isa, Z. (2010). Knowledge and Barriers towards Cervical Cancer Screening among women in Malaysia. *Asian Pacific Journal of Cancer Prevention*, 11,867-873.
- Ali-Risasi, C., Mulumba, P., Verdonck, K., Broeck, D.V. & Praet, M. (2014). Knowledge, attitude and practice about cancer of the uterine cervix among women living in Kinshasa, the Democratic Republic of Congo. *BMC Women's Health*, 14, 30.
- Anorlu, R.I. (2008). Cervical cancer: the sub-Saharan African perspective. *Reproductive Health Matters*, 16(32), 41-9.
- Anya, S.E., Oshi, D.C. & Nwosu, S.O., (2005). Knowledge, attitude, and practice of female health professionals regarding cervical cancer and Pap smear. *Nigerian Journal of Medicine*, 14 (3), 283-6.

Arbyn, M. (2010). European guidelines for quality assurance in cervical cancer screening.

Annals of Oncology. Available from

<http://www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pmcentrez&artid=2826099>.

[Accessed on 18th August, 2015].

Arbyn, M., Castellsagué, X., de Sanjosé, S., Bruni, L., Saraiya, M., Bray, F. & Ferlay, J.

(2011). Worldwide burden of cervical cancer in 2008. *Annals of Oncology*, 22, 2675-2686.

Ayinde, O.A., Omigbodun, A.O. & Ilesanmi, A.O. (2004). Awareness of cervical cancer,

Papanicolaou's smear and its utilisation among female undergraduates in Ibadan.

African Journal of Reproductive Health, 8, 68-80.

Becker-Dreps, S., Otieno, W. A., Brewer, N. T., Agot, K. & Smith, J. S. (2010). HPV vaccine acceptability among Kenyan women. *Vaccine*, 28, 4864-4867.

Bosch, F. X., Burchell, A N., Schiffman, M. (2008). Epidemiology and Natural History of HPV infection and type-specific implications in cervical neoplasia. *Vaccine*, 26, K11-16.

Bradley, J., Coffey, P., Arrossi, S., Agurto, I., Bingham, A., Dzuba, & White, S. (2006).

Women's perspectives on screening and treatment in developing countries: Experiences with new technologies and services delivery strategies. *Women's Health*, 43 (3), 103-

121.

Brewer, N.T. & Fazekas, K.I. (2007). Predictors of HPV vaccine acceptability: A theoryinformed, systematic review. *Preventive Medicine*, 45(2-3), 107-114.

Byrd, T.L., Chavez, R., & Wilson, K.M. (2007). Barriers and facilitators of cervical cancer screening among Hispanic women. *Ethnicity & Disease*, 17, 129–134.

Centres for Disease Control and Prevention (2008). HPV Vaccine - Questions & Answers for the Public. Available from: <http://web.archive.org/web/20080306064618/http://www.cdc.gov/vaccines/vpdvac/hpv/hpv-vacsafe-effic.htm>

[Accessed on 20th August, 2015].

Chesson, H.W., Ekwueme, D.U., Saraiya, M., Dunne, E.F. & Markowitz, L.E. (2014). The estimated impact of human papillomavirus vaccine coverage on the lifetime cervical cancer burden among girls currently aged 12 years and younger in the United States.

Sexually Transmitted Diseases, 41(11), 656-9.

Coleman, M.A., Levison, J., Sangi-Haghpeykar, H. (2011). HPV vaccine acceptability in Ghana, West Africa. *Vaccine*, 29, 3945-3950.

Cunningham, M.S., Davison, C., & Aronson, K.J. (2014). HPV vaccine acceptability in Africa. A systematic review. *Preventive Medicine*, 24(69), 274-279.

Denny, L.A., Franceschi, S., de Sanjosé, S., et al (2012). Human Papillomavirus, Human Immunodeficiency Virus and Immunosuppression. *Vaccine*, 30, 168-74.

Denny, L., Quinn, M. & Sankaranarayanan, R. (2006). Screening for cervical cancer in Developing Countries. *Science Direct*, 24, 71-77.

Denny, L. (2008). Prevention of cervical cancer. *Reproductive Health Matters*, 16(32), 18-31.

- Denny-Smith, T., Bairan, A. & Page, M.C. (2006). A survey of female nursing students' knowledge, health beliefs, perceptions of risk, and risk behaviours regarding human papillomavirus and cervical cancer. *Journal of American Academy of Nurse Practitioners*, 18, 62-9.
- DiAngi, Y.T., Panozzo, C.A., Ramogola-Masire, D., Steenhoff, A.P. & Brewer, N.T. (2011). A Cross-Sectional Study of HPV Vaccine Acceptability in Gaborone, Botswana. *Public Library of Science*, 6(10), e25481.
- Di Giuseppe, G., Abbate, R., Liguori, G., Albano, L. & Angelillo, I.F. (2008). Human papillomavirus and vaccination: knowledge, attitudes, and behavioural intention in adolescents and young women in Italy. *British Journal of Cancer*, 99(2), 225-229.
- Duda, R.B., Chen, G.L., Hill, A.G., Darko, R., Adanu, R.M.K. & Seffah, J. (2005). Screening for cervical cancer still not included as routine health care for women. *International Journal of Tropical Medicine*, 1(1), 1-6.
- Ebu, N.I., Mupepi, S, Siakwa, M.P., Carolyn, M. & Sampelle, C.M. (2015). Knowledge, practice, and barriers toward cervical cancer screening in Elmina, Southern Ghana. *International Journal of Women's Health*, 7, 31-39.
- Egilman, D., Bird, T., Mora, F. & Druar. N. (2011). Get AIDS and Survive? The “perverse” effects of aid. *International Journal of Occupational and Environmental Health*, 17(4), 364-382.

- Ezeanochie, M.C., & Olagbuji, B.N. (2014). Human papilloma virus vaccine: determinants of acceptability by mothers for adolescents in Nigeria. *African Journal of Reproductive Health*. 18(3), 154-8.
- Ferlay, J., Shin, H.R., Bray, F., Forman, D., Mathers, C. & Parkin, D.M. (2010). Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *International Journal of Cancer*, 127, 2893-2917.
- Ferlay, J., Bray, F., Pisani, P. & Parkin, D. (2004). *Cancer Incidence, Mortality and Prevalence worldwide*, Lyon, France: IARC Press.
- Fort, V.K., Makin, S.M., Siegler, A.J., Ault, K. & Rocha, R. (2011). Barriers to cervical cancer screening in Mulanje, Malawi: a qualitative study. *Patient Preferred Adherence*, 5, 125-131.
- Giambi, C., D'Ancona, F., Del Manso, M., De Mei, B., Giovanelli, I., Cattaneo, C., Possenti, V. & Delclich, S., (2014). Exploring reasons for non vaccination against Human Papillomavirus in Italy. *BMC Infectious Diseases*; 14; 545
- Ghana Health Service. (2013). *Non-communicable Disease Control Programme: Strategies for Cervical Cancer Prevention in Ghana: Planning Meeting and Training of Health Staff for HPV Demo Vaccination in Ghana*. Cape Coast, Ghana: *Ghana Health Service*.
- Global Health Group. (2012) *Integrating Cervical Cancer Screening into HIV Services in Sub-Saharan Africa: Policy brief*. San Francisco, CA: *Global Health Group*. [Online] Available from: <http://globalhealthsciences.ucsf.edu/sites/default/files/content/ghg/e2piintegrating-cervical-cancer.pdf>.

[Accessed: August15, 2015].

GLOBOCAN (2008). Cancer Incidence and Mortality worldwide.

Available from [http:// globocan.iarc.fr](http://globocan.iarc.fr).

Hislop, T.G., Teh, C. & Lai, A. (2004). Pap screening and knowledge of risk factors for cervical cancer in Chinese women in British Columbia, Canada. *Ethnicity & Health*, 9, 267-81.

Hoque, M.E. & Van Hal, G. (2014). Acceptability of Human Papillomavirus Vaccine: A Survey among Master of Business Administration Students in KwaZulu-Natal, South Africa. *BioMedical Research International*. Volume, Article ID 257807, 6 pages.

Hoque, M.E., Ghuman, S., & Van Hal, G. (2013). Human Papillomavirus Vaccination Acceptability among Female University Students in South Africa. *Asian Pacific Journal of Cancer Prevention*, 14 (8), 4865.

Ito, T., Takenoshita, R., Narumoto, I.L., Plegue, M., Sen, A., Crabtree, B.F. & Fetters, M.D. (2014). A community based intervention in middle schools to improve HPV vaccination and Cervical Cancer screening in Japan. *Asia Pacific Family Medicine*, 18; 13(1); 13.

Jain, N., Euler, G. L., Shefer, A., Lu, P., Yankey, D. & Markowitz, L. (2009). Human Papillomavirus (HPV) awareness and vaccination initiation among women in the United States, National Immunization Survey-Adult 2007. *Prevention Medicine*, 48(5), 426-431.

Jemal, A., Bray, F., Center, M.M., Ferlay, J. & Ward E. (2011). Global cancer statistics. *CA Cancer Journal for Clinicians*, 61, 69-90.

- Kidanto, H.L., Kilewo, C.D. & Moshiro, C (2002). Cancer of the cervix: knowledge and attitudes of female patients admitted at Muhimbili National Hospital, Dar es Salaam, *East African Medical Journal*, 79, 467-69.
- Lechuga, J., Vera-Cala, L. & Martinez-Donate, A. (2014). HPV Vaccine Awareness, Barriers, Intentions, and Uptake in Latina Women. *Journal of Immigrant and Minority Health*, (11), 29.
- Lenehan, J. G., Leonard, K. C., Nandra, S., Isaacs, C. R., Mathew, A. & Fisher, W. A.(2008). Women's knowledge, attitudes, and intentions concerning Human Papillomavirus vaccination: findings of a waiting room survey of Obstetrics & Gynaecology Outpatients. *Journal of Obstetrics and Gynaecology Canada*, 30(6), 489-499.
- Lenselink, C. H., Gerrits, M. M., Melchers, W. J., Massuger, L. F., van Hamont, D., & Bekkers, R. L. (2008). Parental acceptance of Human Papillomavirus vaccines. *European Journal of Obstetrics and Gynecology and Reproductive Biology*, 137(1), 103-107.
- Levi, S., Downs, Jr., Scarinsi, I., Einstein, M.H., Coliins, Y. & Flowers, L. (2009). Overcoming barriers to HPV vaccination in high risk population in the US. *Gynaecological Oncology*, 117 ; 486-490.
- Li, J., Li, L. K., Ma, J. F., Wei, L. H., Niyazi, M. & Li, C. Q. (2009). Knowledge and Attitudes about human papillomavirus(HPV) and HPV vaccines among women living in metropolitan and rural regions of China. *Vaccine*, 27(8), 1210-1215.
- Maine, D., Hurlburt, S. & Greeson, D. (2011). Cervical cancer prevention in the 21st century: Cost is not the only issue. *American Journal of Public Health*, 101 (9), 1549 -1555.

Mayhew, S. & Adjei, S. (2004). Sexual and reproductive health: challenges for priority setting in Ghana's health reforms. *Health Policy and Planning*, 19(1), 50-61.

Ministry of Health, (2011). National Strategy for Cancer Control in Ghana, 2012 -2016. *Chapter 3*, 20.

Montgomery, M.P., Dune, T., Shetty, P.K. & Shetty, A.K. (2014). Knowledge and Acceptability of Human Papillomavirus Vaccination and Cervical Cancer Screening among Women in Karnataka, India. *Journal of Cancer Education*, (10), 31. [Epub ahead of print].

Miller, A.B., Sankaranarayanan, R., Bosch, F.X. & Sepulveda C. (2003). Can screening for cervical cancer be improved, especially in developing countries? *International Journal of Cancer*, 107(3), 337-340.

Moreira, E.D., Oliveira, B.G. & Ferraz, F.M. (2006). Knowledge and attitudes about human papillomavirus, Pap smears, and cervical cancer among young women in Brazil. *International Journal of Gynaecological Cancer*, 16, 599-603.

Murthy, P., Li, E., Azzam, H., Narasimhadevara, A. & Yezzo, M. (2010). Cervical Cancer Mortality: A Preventable Tragedy. In: Murthy PaS C., editor. *Women's Global Health and Human Rights*. Sudbury: Jones and Bartlett Publishers.

Musmar, S.G. (2004). Pattern and factors affecting Pap smear test in Nablus, a retrospective study. *Middle East Journal of Family Medicine*, 4(4).

Mutyaba, T., Mmiro, F. & Weiderpass, E. (2006). Knowledge, attitude and practices on cervical cancer screening among the medical workers of Mulago hospital, Uganda.

BMC Medical Education, 6, 13.

National Institutes of Health. (1996). Cervical Cancer. *NIH Consensus Statement*, 14(1).

Nene, B., Jayant, K., Arrossi, S., Shastri, S., Budukh, A., Hingmire, S. & Sankaranarayanan,

R. (2006). Determination of women's participation in cervical cancer screening trial, Maharashtra, India. *Bulletin of the World Health Organization*, 85, 264-272.

Neilson, A., & Jones, R.K. (1998). Women's lay knowledge of cervical cancer/cervical screening: accounting for non-attendance at cervical screening clinics. *Journal of Advanced Nursing*, 28(3), 571-575.

Nkyekyer K. (2000). Pattern of gynaecological cancers in Ghana. *East African Medical Journal*, 77(10), 534-8.

Nobbenhius, M., Helmerhorst, T., van den Brule, A., et al (2001). Cytological regression and clearance of high-risk human papillomavirus in women with abnormal cervical smear. *Lancet*, 358, 1782-3.

Nwozor, C.M., Oragudosi, A.L. (2013). Awareness and Uptake of Cervical Cancer Screening among Women in Onitsha, South-East, Nigeria Greener. *Journal of Medical Sciences*, 3(8), 283-288.

O'Brien M, Ferlay J, Centre M, Parkin DM. (2012). Cancer burden in Africa and opportunities for prevention. *Cancer*, 118, 4372-4384.

Ogunbowale, T. & Lawoyin, T. O. (2008). Cervical cancer risk factors and predictors of cervical dysplasia among women in south-west Nigeria. *Australian Journal of Rural Health*, 16, 338-342.

Owoeye, I.O.G. & Ibrahim, I.A. (2013). Knowledge and Attitudes towards Cervical Cancer Screening among female students and staff in a tertiary institution in a the Niger Delta.

International Journal of Medical and Biomedical Research, 2 (11).

Parkin, D.M. & Bray, F. (2006). The burden of HPV-related cancers. *Vaccine*, 24(Suppl 3):S3/11-25.

Parkin, D.M., Freddie, B., Ferlay, J. & Paola, P. (2002). Global Cancer Statistics, CA. *Cancer Journal of Clinicians*, 55, 74-108.

Perlman, S., Wamai, R.G., Bain, P.A., Welty, T., Welty, E., Ogembo, J.V. (2014) Knowledge and Awareness of HPV Vaccine and Acceptability to Vaccinate in Sub-Saharan Africa: A Systematic Review. *Public Library of Science*, 9(3), e90912.

Philips, Z., Johnson, S. & Avis, M. (2003). Human papillomavirus and the value of screening: young women's knowledge of cervical cancer. *Health Education Research Theory & Practice*, 18, 318-28.

Reichenbach, L. (2002). The politics of priority setting for reproductive health: breast and cervical cancer in Ghana. *Reproductive Health Matters*, 10(20):47-58.

Sankaranarayanan, R. (2006). Overview of cervical cancer in the developing world. FIGO 6th Annual Report on the Results of Treatment in Gynaecological Cancer. *International Journal of Gynaecology and Obstetrics*, 95 (1), 205-10.

Saslow, D., Solomon, D., Lawson, H. W. (2012). American Cancer Society, American Society for Colposcopy and Cervical Pathology and American Society for Clinical Pathology. Screening guidelines for prevention and early detection cervical cancer. *Cancer Journal for Clinicians*, 62(3), 147-172.

- Sawadogo, B., Gitta, S.N., Rutebemberwa, E., Sawadogo, M. & Meda, N. (2014). Knowledge and beliefs on cervical cancer and practices on cervical cancer screening among women aged 20 to 50 years in Ouagadougou, Burkina Faso. *The Pan African Medical Journal*, 23(18), 175.
- Schiffman, M., Castle, P.E., Jeronimo, J., et al (2007). Human papillomavirus and cervical cancer. *Lancet*, 370, 890-907.
- Shekhar,S., Sharma,C., Thakur,S.& Raina,N.(2013)Cervicalcancer screening: knowledge, attitude and practices among nursing staff in a tertiary level teaching institution of rural India. *Asian Pacific Journal of Cancer Prevention*, 14(6), 3641-5.
- Smith, J.S., Lindsay, L., Hoots, B., et al (2007). Human papillomavirus type distribution in invasive cervical cancer and high-grade cervical lesions: a meta-analysis update. *International Journal of Cancer*, 121,621-32.
- Stretch, R., Roberts, S. A., McCann, R., Baxter, D., Chambers, G., Kitchener, H. (2008). Parental attitudes and information needs in an adolescent HPV vaccination programme. *British Journal of Cancer*, 99(11), 1908-1911.
- Sudenga, S.L., Rositch, A.F., Otieno, W.A., & Smith, J.S. (2013). Knowledge, attitudes, practices, and perceived risk of cervical cancer among Kenyan women: brief report. *International Journal of Gynaecological Cancer*, 23(5), 895-9.
- Swapnajaswanth, M., Suman, G., Suryanarayana, S.P. & Murthy, N.S. (2014). Perception and practices on screening and vaccination for carcinoma cervix among female healthcare professional in tertiary care hospitals in Bangalore, India. *Asian Pacific Journal of Cancer Prevention*, 15(15), 6095-8.

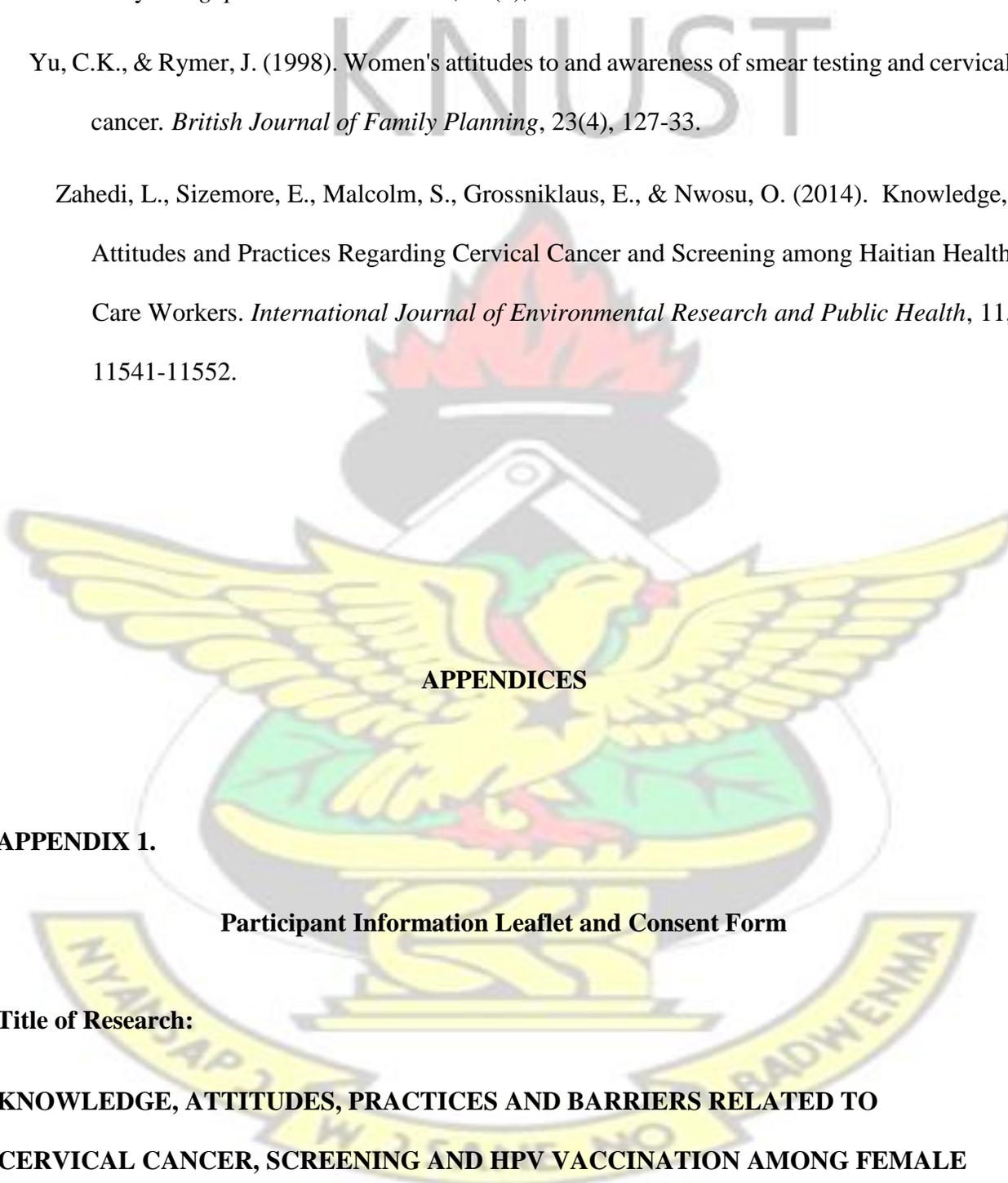
- Sylla, B.S. & Wild, C.P. (2012). A million Africans a year dying from cancer by 2030: what can cancer research and control offer to the continent? *International Journal of Cancer* 2012, 130,245-250.
- Tchonga, B.K., Jacquet, A., Coffie, P.A., Horo, A., Sauvaget, C., Adoubil, I., Guie, P., Dabis, F., Sasco, A.J. & Ekouevi, P.K. (2014). Cervical cancer prevention reproductive health services; Knowledge, Attitudes and Practices of midwives in Cote d'Ivoire, West Africa. *BMC Health Services Res.*, 14; 165 doi; 10: 1186/ 1472-6963.
- Tebeu, P.M., Major, A.L., & Rapiti, E., (2008). The attitude and knowledge of cervical cancer by Cameroonian women; a clinical survey conducted in Maroua, the capital of Far North Province of Cameroon. *International Journal of Gynaecological Cancer*, 18(4), 761-5.
- Tsu, V. D., & Levin, C. E. (2008). Making the case for cervical cancer prevention: what about equity? *Reproductive Health Matters*, 16(32), 104-112.
- Udigwe, G.O. (2006). Knowledge, attitude and practice of cervical cancer screening (Pap smear) among female nurses in Nnewi, South Eastern Nigeria. *Nigerian Journal of Clinical Practice*, 9(1), 40-3.
- U.S. Cancer Statistics Working Group. *United States Cancer Statistics: 1999–2011 Incidence and Mortality Web-based Report*. Atlanta.
- Vermandere, H., Naanyu, V., Mabeya, H., Vanden Broeck, D., Michielsen, K., & Degomme, O. (2014). Determinants of Acceptance and Subsequent Uptake of HPV vaccine in a Cohort in Eldoret, Kenya. *Public Library of Science*, 9 (10), e109353.

- Waller, J., Bartszell, M., Marlow, L., & Wardle, J. (2009). Barrier to Cervical Cancer screening attendance in England; a population based study. *Journal of Medical Screening*, 16(4); 199-204.
- Walsh, C. D., Gera, A., Shah, M., Sharma, A., Powell, J. E. & Wilson, S. (2008). Public knowledge and attitudes towards Human Papilloma Virus (HPV) vaccination. *BMC Public Health*, 8, 368.
- Wellensiek, N., Moodley, M., & Nkwanyana, N. (2002). Knowledge of cervical cancer screening and use of cervical screening facilities among women from various socioeconomic backgrounds in Durban, Kwazulu Natal, South Africa. *International Journal of Gynaecological Cancer*, 12(4), 376-82.
- WHO/ICO, (2007). Information Centre on HPV and Cervical Cancer (HPV Information Centre). *Summary report on HPV and cervical cancer statistics in Ghana*.
- WHO/ICO, (2010). Information Centre on HPV and Related Cancers. Summary report update. (3rd ed.). Retrieved from:
http://apps.who.int/hpvcentre/statistics/dynamic/ico/country_pdf/XWX.pdf?CFID=5632389&CFTOKEN=42806949
- Wiggle J., Coast, E. & Watson-Jones, D. (2013). HPV Vaccine implementation in Low and Middle Income Countries; Health System experiences and Prospects. *Vaccines*, 31; 3811-3817.
- Winkler, J., Bingham, A., Coffey, P. & Handwerker, W. P. (2000). Women participation in a cervical cancer screening programme in Northern Peru. *Oxford Journal of Medicine*, 23(1), 10-24.

Wong, L.P., Wong, Y.L. & Low, W.Y. (2009). Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a Pap smear: a Qualitative study. *Singapore Medical Journal*, 50(1), 49-53.

Yu, C.K., & Rymer, J. (1998). Women's attitudes to and awareness of smear testing and cervical cancer. *British Journal of Family Planning*, 23(4), 127-33.

Zahedi, L., Sizemore, E., Malcolm, S., Grossniklaus, E., & Nwosu, O. (2014). Knowledge, Attitudes and Practices Regarding Cervical Cancer and Screening among Haitian Health Care Workers. *International Journal of Environmental Research and Public Health*, 11, 11541-11552.



APPENDICES

APPENDIX 1.

Participant Information Leaflet and Consent Form

Title of Research:

**KNOWLEDGE, ATTITUDES, PRACTICES AND BARRIERS RELATED TO
CERVICAL CANCER, SCREENING AND HPV VACCINATION AMONG FEMALE
NON-HEALTH PROFESSIONALS IN THE OFFINSO SOUTH MUNICIPALITY.**

Name(s) and affiliation(s) of researcher(s): Dr. Fred Kwesi Buadu of the School of Public Health (SPH), Kwame Nkrumah University of Science and Technology (KNUST), Kumasi This information sheet explains the research study you are being asked to join. Please listen carefully as I read it to you, and take as much time as you need. You may ask questions at any time about anything you do not understand. You are a volunteer. You can choose not to take part in this study, and if you join, you may quit at any time. You will not lose anything if you decide to quit the study.

This study aims to assess the knowledge, attitudes and practices of female non-health professionals with regards to cervical cancer, screening and HPV vaccination. It will also identify any barriers to cervical cancer screening and HPV vaccination. It is being conducted by Fred Kwesi Buadu of SPH, KNUST, Kumasi.

You are being asked to take part in this study because you are a female non-health professional who resides in the Offinso South municipality.

You may find some of the questions difficult to answer. You do not have to answer any question you do not want to answer.

We will not record your name on any of the study documents. You can fill the questionnaire in your own convenient time.

The information that you provide during the interview will be kept private and there will be nothing to link the information you provide to you. The only people who will have access to information you provide during the interview are members of the research team. We will not share the information you provide with anyone outside of the research team.

There is no direct benefit to you for being in the study; but the information you provide will go a long way to address gaps in cervical cancer awareness and improve access to cervical cancer screening HPV vaccination.

Do you have any questions?

If you have any questions about the study, please contact Fred Kwesi Buadu on 0243139491

If you have any concerns about the conduct of this study, your welfare, or your rights as a participant, you may also contact: The Chairman of the Committee on Human Research and Publication and Ethics, Kumasi. Tel: 03220 63248 or 020 545 37 85

APPENDIX 2.

SCHOOL OF PUBLIC HEALTH

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

**TOPIC: KNOWLEDGE, ATTITUDES, PRACTICES AND BARRIERS RELATED TO
CERVICAL CANCER, SCREENING AND HPV VACCINATION AMONG FEMALE
NON-HEALTH PROFESSIONALS IN THE OFFINSO SOUTH MUNICIPALITY**

Questionnaire

Demographical characteristics;

- 1) Age;
- 2) Education;

1. Senior High School Certificate []

2. 1st degree []

3. 2nd degree []

4. Other (specify).....

3) Occupation;

4) Religion; 1. Christian [] 2. Moslem [] 3. Traditional [] 4. Other (specify).....

5) Marital status; 1. Single [] 2. Married [] 3. Separated [] 4. Divorced []

6) Parity (No. of children); 1. None [] 2. 1-4 [] 3. More than 5 []

Knowledge on cervical cancer

7) Do you know about cervical cancer? 1. Yes [] 2. No [] 8)

How did you hear about cervical cancer?

1. Health worker []

2. News media []

3. Relations []

4. Other (specify).....

9) What are the symptoms of cervical cancer?

1. Abnormal vaginal bleeding []

2. Abnormal vaginal discharge []

3. Bleeding after intercourse []

4. Bleeding after menopause []

5. Don't know []

6. Other (specify)

10) What are the risk factors for acquiring cervical cancer?

1. Multiple sexual partners []

2. Early age at first sexual intercourse []

3. Smoking []
4. Oral contraceptives []
5. HIV infection []
6. Don't know []
7. Other (specify)

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11) Have you heard about Human Papilloma Virus (HPV)? 1. Yes [] 2. No [] **12)**
If yes, how is it acquired?

1. Sexually transmitted []
2. Close contact []
3. Airborne []
4. Don't know []
5. Other (specify)

13) Do you know of any relationship between HPV and cervical cancer? 1. Yes [] 2. No []

14) Do you know about HPV vaccine? 1. Yes [] 2. No []

15) Have you heard about cervical cancer screening? 1. Yes [] 2. No []

16) If yes, do you know of any cervical cancer screening method? 1. Yes [] 2. No []

17) Is cervical cancer treatable? 1. Yes [] 2. No [] 3. Don't know []

18) Is cervical cancer preventable? 1. Yes [] 2.No [] 3. Don't know []

Attitudes

19) Cervical cancer is a leading cause of cancer deaths in Ghana

1. Strongly agree []
2. Agree []
3. Neither agree nor disagree []
4. Disagree []
5. Strongly disagree []

20) Every woman is at risk of developing cervical cancer.

1. Strongly agree []
2. Agree []
3. Neither agree nor disagree []
4. Disagree []
5. Strongly disagree []

21) How would classify yourself with regards to your risk of developing cervical cancer?

1. No risk []
2. Low risk []
3. Moderate risk []
4. High risk []

22) Cervical cancer can be prevented.

1. Strongly agree []
2. Agree []
3. Neither agree nor disagree []
4. Disagree []
5. Strongly disagree []

23) Cervical cancer can be treated.

1. Strongly agree []
2. Agree []
3. Neither agree nor disagree []
4. Disagree []
5. Strongly disagree []

24) Every woman should be screened for cervical cancer.

1. Strongly agree []
2. Agree []
3. Neither agree nor disagree []
4. Disagree []
5. Strongly disagree []

25) Every girl should be vaccinated against HPV before she becomes sexually active.

1. Strongly agree []
2. Agree []

3. Neither agree nor disagree []
4. Disagree []
5. Strongly disagree []

Practices

26) Do you smoke? 1. Yes [] 2. No []

27) How many sexual partners do you have? 1. None [] 2. Single [] 3. Multiple []

28) Have you ever been screened for cervical cancer? 1. Yes [] 2. No []

29) If yes, how many times have been screened?

1. Once []
2. Twice []
3. Thrice []
4. Other (specify)

30) When was your last screening?

1. Within the last 3 years []
2. More than 3 years ago []

31) Have you received HPV vaccination? 1. Yes [] 2. No []

Barriers

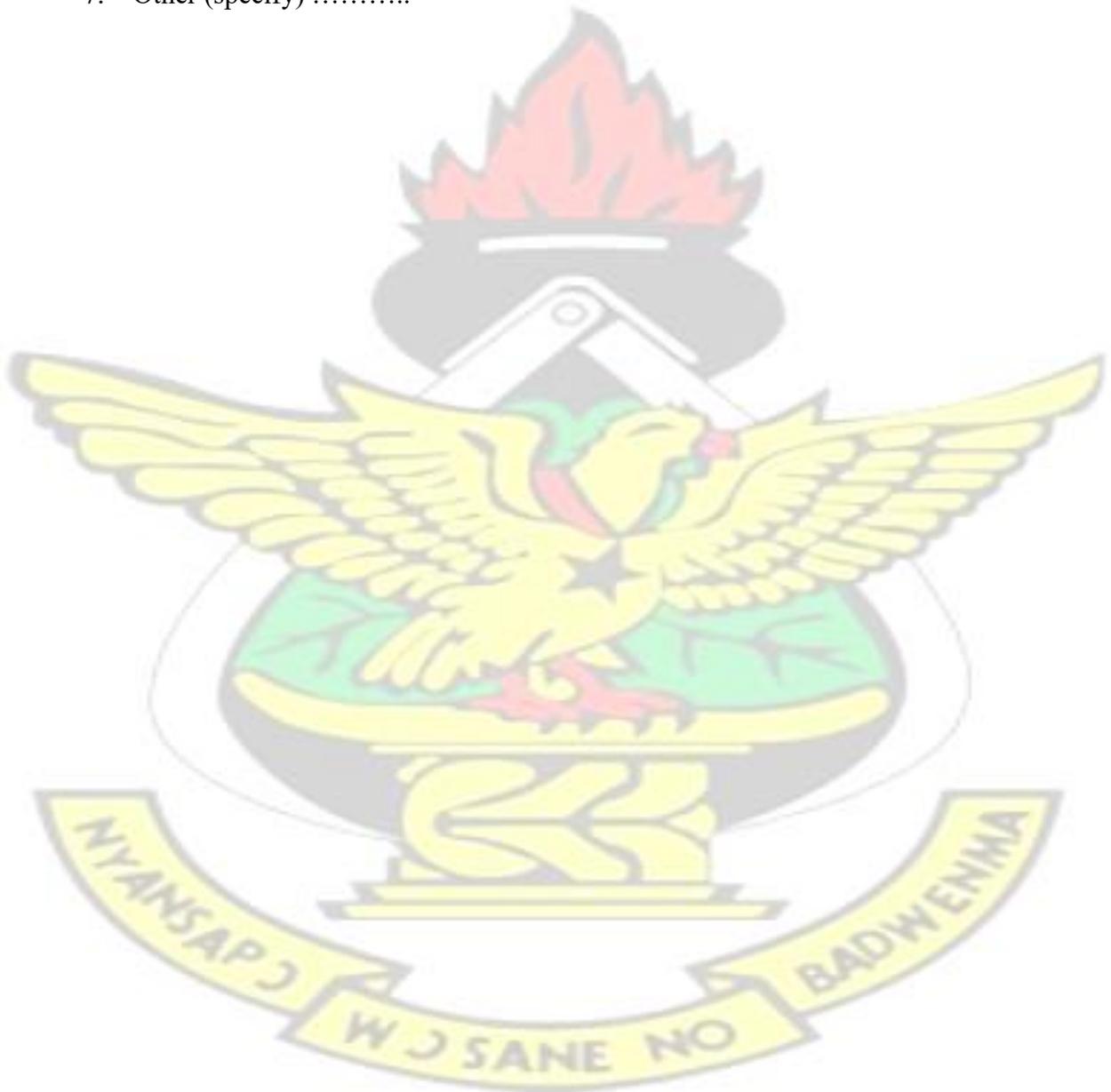
32) Why have you not been screened for cervical cancer?

1. Don't know anything about screening []
2. Don't know where to do it
3. Screening services not available in my locality []
4. Expensive []
5. Don't think it's necessary []
6. Afraid []
7. Embarrassing []
8. Other (specify).....

33) Why have you not been vaccinated against HPV

1. Don't know anything about HPV vaccination []
2. Don't know where to get it []
3. Vaccination services not available in my locality []
4. Expensive []
5. Don't think it's necessary []
6. Afraid []
7. Other (specify)

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COLLEGE OF HEALTH SCIENCES

SCHOOL OF MEDICAL SCIENCES / KOMFO ANOKYE TEACHING HOSPITAL
COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS



Our Ref: CHRPE/AP/272/15

9th July, 2015.

Dr. Fred Kwesi Buadu
School of Public Health
KNUST-KUMASI.

Dear Sir,

LETTER OF APPROVAL

Protocol Title: "Knowledge, Attitudes, Practices and Barriers Related to Cervical Cancer, Screening and Human Papilloma Virus (HPV) Vaccination among Female Non-Health Professionals in the Offinso South Municipality."

Proposed Site: Offinso South Municipality.

Sponsor: Principal Investigator.

Your submission to the Committee on Human Research, Publications and Ethics on the above named protocol refers.

The Committee reviewed the following documents:

- A notification letter of 20th May, 2015 from the Offinso Municipal Health Directorate (study site) indicating approval for the conduct of the study in the Municipality.
- A Completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Protocol.
- Questionnaire.

The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, renewable annually thereafter. The Committee may however, suspend or withdraw ethical approval at any time if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Thank you Sir, for your application.

Yours faithfully,

Rev. Prof. John Appiah-Poku
Honorary Secretary
FOR: CHAIRMAN

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