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KNOWLEDGE, ATTITUDE AND HEALTH BELIEFS OF CERVICAL CANCER AMONG WOMEN IN AJUMAKO, EYAN, ESSIAM DISTRICT IN THE CENTRAL REGION OF GHANA

SAMPSON NAA, CHARLOTTE

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BY

SAMPSON NAA, CHARLOTTE

Thesis submitted to the School of Nursing and Midwifery, University of Cape Coast, College of Health and Allied Sciences, in partial fulfillment of the requirement for the award of Master of Nursing Degree.

MARCH 2018

DECLARATION

Candidate's Declare

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature …… Date ……

Sampson, Naa Charlotte

Supervisors' Declaration

I hereby declare that the preparation of the thesis was supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature…….Date……..

Dr. Funmilayo Adeniyi Okanlawon

Co-supervisor's Signature……... Date……

Dr. Mate Siakwa

ABSTRACT

Cervical cancer is the second most common cancer prevalence among women worldwide with half a million cases each year. Cervical cancer incidence rate in Ghana is among the highest in the world.Low knowledge level, poor attitude and health beliefs are known to account for thelow level of cervical cancer screening in the Ghana.The study set out to explore the knowledge, attitude and health beliefs of cervical cancer and its screening among women in Ajumako-Enyan-Essiam district. A questionnaire was used to collect data from 240 women aged 18 to 60 from eight selected towns in the district. The study found a significant association between women's level of knowledge on cervical cancer and practice of cervical cancer screening. There was also a significant association between women's knowledge, health beliefs (34.2%) and practice of cervical cancer screening. In terms of attitude, the study found the respondents have positive attitude(44.3%) towards cervical cancer screening. Most of the respondents were of the view that they will be satisfied after having a pap smear. Majority (88.8%) of the respondents reported that regular Pap smear gave them a sense of control. Most respondents (79.6%) believed that cervical cancer test should be done on regularly basis. It is recommended that women should be educated on cervical cancer and screening because the formal education of women influence screening uptake.

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DEDICATION

This is dedicated with gratitude to my lovely little princess.

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LIST OF ACRONYMS

PAP	:	Papanicolau smear test
ASCUS	:	Atypical Squamous Cells of Undetermined Significance
HPV	:	Human Papilloma Virus
ACCP	:	Alliance for cervical cancer prevention
NHIS	:	National Health Insurance Scheme
LG	:	Low Grade
HG	:	High Grade
SILs	:	Squamous Intraepithelial Lesions
STIs	:	Sexually Transmitted Infections
HIV	:	Human Immune Virus
AIDS	:	Acquired Immune Deficiency Syndrome
VIA	:	Visual Inspection with Acetic Acid
STDs	:	Sexually Transmitted Diseases
KATH	:	KomfoAnokye Teaching Hospital
WHO	:	World Health Organization
UK	:	United Kingdom
IRB	:	Institutional Review Board

CHAPTER ONE

INTRODUCTION

Background to the study

Cervical cancer is the second most common cancer among women worldwide. About half a million new cases are recorded worldwide each year. Most of the cases occur in developing countries where victimsreport late when only palliative treatment can be given. Cancer is responsible for about 51 million deaths annually. About 83% of the cases occur in developing countries, representing 15% of all female-related cancers. Cervical cancer accounts for 8.5% of the death most in developing countries (Adanu, Seffah, Duda, Darko, Hill, & Anarfi,2010).

Cervical cancer is the leading cause of cancer-related death among women in Ghana and West Africa (Williams & Amoateng, 2012,). The World Health Organization (WHO) predicts that by the year 2025, 5000 new cases of cervical cancer and 3,361 cervical cancer deaths will occur annually in Ghana. Althoughthere is no formal cancer registry in Ghana, the International Agency for Research on Cancer has estimated that in 2008, 30,038 Ghanaian women developed cervical cancer and more than 2,006 Ghanaian women died because of cervical cancer (Williams & Amoateng, 2012). Despite the staggering statistics, cervical cancer prevention is not commonly promoted in Ghana.

An estimated 95% of women in developing countries have never been screened for cervical cancer (WHO, 2007) and only 2.1% of Ghanaian women have ever had a pap smear (Adanu etal., 2010). Diseases such as malaria, tuberculosis, HIV/AIDS, and most recently, breast cancer receive majority of health promotion resources. Cervical cancer has several unique characteristics

that make prevention through screening and the treatment of pre-cancerous stages relatively less complex. The cause of virtually all cervical cancer cases is known to be the persistent infection with a restricted set of human papilloma viruses (HPVs).

Cervical cancer also exhibits an identifiable pre-cancerous condition and the time window from dysplasia to carcinoma is long (approximately 10 years on average). Several screening methods to detect pre-cancer and cancer are available, and can be performed safely and inexpensively in an outpatient setting. These methods include, but are not limited to, visual inspection with acetic acid (VIA) and careHPV. In addition to being used throughout many resource-limited countries around the world, these methods are also effective at treating pre-cancerous findings, thus, further decreasing the burden of disease.

Cervical cancer is therefore largely preventable by effective screening programs. A considerable reduction in cervical cancer incidence and deaths has been achieved in developed nations with systematic cytological smear screening programs. These tools (Pap Test and Visual Inspection with Acetic acid (VIA)) are available in both public and private hospitals throughout the country.

In Ghana, some public hospitals offer free cervical cancer screening. Additionally, the bivalent HPVvaccines have licensed for use in Ghana and are available in a few public hospitals in the country. Despite this, world health survey indicates that cervical cancer screening rates in urban and rural areas in Ghana are extremely low (3.2% and 2.2% respectively). The results of previous studies indicate that lack of knowledge among Ghanaian women as

well as their attitude and beliefs may be a barrier to cervical cancer screening(Ebu,Siakwa&Sampselle, 2014). Pap smears are available only at a few locations, and most women lack knowledge of their availability or purpose. Studies conducted in African countries like Uganda, Botswana and Nigeria as well as Thailand and India by Wilson (2002) showed that women have limited knowledge and a negative attitude towards cervical cancer and pap smear screening which contributed to their non-participation in screening programs and for some, even though they were screened, they donot present themselves for follow-up for further healthcare once an abnormality isdetected in their smear results. Fortunately, measures that offer unprecedented opportunities for preventing cervical cancer are now given much attention: efficient, low-cost screening approaches suitable for low-resource areas and vaccines that are efficacious in preventing the infections and pre-cancerous changes that can lead to cervical cancer.However, the absence of organized screening programs in Ghana and other developing countries explain why presentation in late stages with resultant poor prognosis is common.

For the screening methods to be fully utilized, women need to be aware of the availability of the methods, to have knowledge of the disease and screening methods. These will enhance uptake of the screening for pre-malignant lesions and hence reduction of morbidities and mortalities resulting from cervical cancer especially in Sub-Saharan Africa. Demographic factors such as age, education, ethnicity, and socio-psychological factors such as social class, personality, embarrassment, fear and lack of health insurance have been recognised to influence screening uptake. Additionally, structural factors such as beliefs, attitude and knowledge about cervical cancer and the

smear test have been documented as determinants of an individual's participation in cancer screening (Maait, 2002). Another reason for poor uptake in the cervical screening programme is attributed to the lack of communication between healthcare workers and patients regarding availability and benefits of the screening (Maait, 2002).

Problem Statement

Globally, cervical cancer is the third most common cancer among women.In 2008 there were an estimated 529,000 new cases and 275,000 deaths occur (Zahedi etal., 2014). WHO also pointed out that, cervical cancer is the second most frequent cancer among women; however, eighty five percent of cervical cancer deaths occur in low and middle-incomecountries and this has been a global burden experienced by these countries (WHO, 2013). In the WHO African region, 75,000 new cases were recorded in the same year and 50,000 women died of the disease.

It was also recorded that cervical cancer is the most common cancer in women accounting for 13% of all female cancers with global mortality incidence ratio at 52%. Globally, 270,000 women die of cervical cancer each year and nearly 90% of these women live in the developing world(WHO, 2013). The majority of cervical cancer deaths occur in women who were never screened or treated, as well as those who had an early sexual debut, and a history of multiple sexual partners. If detected early cervical cancer is usually curable. This is becausethe cause of virtually all cervical cancer cases is known to be the persistent infection with a restricted set of human papilloma viruses (HPVs). Cervical cancer also exhibits an identifiable pre-cancerous condition and the time window from dysplasia to carcinoma is long

(approximately 10 years on average). In addition, several screening methods being used throughout many resource-limited countries around the worldare also effective at treating pre-cancerous findings, thus further decreasing the burden of disease. However, despite these, cervical cancer still remains a problem and a public health concern.

This is attributed to the poor knowledge, attitude and health beliefs of women on cervical cancer as indicated by espoused by Nakalevu (2009). This is a view held by Ebu,Siakwa and Sampselle (2014) that the health belief of women as well as their knowledge and attitude may be a barrier to cervical cancer screening. In developed countries, screening has proved to reduce the incidence of this malignancy effectively but screening coverage is still low in developing countries like Ghana, ranging from 2.0% to 20.2% in the urban areas and 0.4% to 14.0% in rural areas.

Cervical cancer remains a major public health problem in developing countries, especially in Africa of which Ghana forms part where women continue to be diagnosed with and die from this preventable disease despitethe time window from dysplasia to carcinoma being long (approximately 10 years on average).This plausibly indicates that Ghanaian women have little or no knowledgeabout cervical cancer and this has been confirmed by previous studies indicating that lack of knowledge among Ghanaian women as well as their attitude and beliefs may be a barrier to cervical cancer screening(Ebu,Siakwa&Sampselle, 2014). Again, Ebu,Siakwa and Sampselle (2014) observed that, the inhabitants of the municipality (Elmina) firmly believe that cervical cancer is a curse by the gods and as such they did not believe it can be prevented or cured when noticed early. Their knowledge base

on cervical cancer was very low hence their poor attitude towards screening uptake. In this regard, delving more into cervical cancer will broaden their understanding and clear some of the health beliefs that societies or communities firmly hold on to thereby preventing them from utilizing screening programs. Furthermore, it has been reported that understanding health behaviors in the cultural context is paramount if the health status of high risk group is to be improved (Wilson, 2002).

It is for this reason that the study sets out to explore the knowledge base as well as attitude and health beliefs of cervical cancer among women in the Ajumako-Enyan-Essiam District of the central region of Ghana.

Purpose of the Study

The purpose of the study is to explore the knowledge, attitude and health beliefs about cervical cancer and screening among women in Ajumako-Enyan-Essiam District.

Objectives of the Study

The study aimed to:

1. Determine the level of knowledge on cervical cancer among women.
2. Assess women's attitude and practice towards screening for cervical cancer.
3. Identify the health beliefs of women on cervical cancer screening.
4. Determine the factors that influenceswomen's participation in the cervical cancer screening.

Research Questions

1. What is the extent of knowledge of cervical cancer amongwomen?
2. What is the relationship between knowledge and screening uptake among women?
3. What is the attitude of women towards Pap smear test
4. What factors influence women's participation in screening?

Research Hypothesis

The study sets the following hypothesis to be tested at 5% significant level.

1. H_0: There is no significant relationship between women's level of knowledge on cervical cancer and cervical cancer screening.

   H_1: There is a significant relationship between women's level of knowledge on cervical cancer and cervical cancer screening.
2. H_0: There is no significant relationship between women's health knowledge and cervical cancer screening.

   H_1: There is no significant relationship between women's health knowledge and cervical cancer screening.

Significance of the Study

In some parts of Ghana, Kumasi, and Accra for instance, cervical screening programs have been successful in securing participation of a high proportion of targeted women and have seen a fall in mortality ratesof those suffering from cervical cancer (Williams, 2012). However, data from the World Health Survey indicate that cervical cancer screening rates in urban and rural areas in Ghana are extremely low (3.2% and 2.2% respectively). The results of previous studies on knowledge indicate that lack of knowledge about

cervical cancer among Ghanaians may be a barrier to cervical cancer screening (Ebu,Siakwa&Sampselle, 2014; Nakalevu, 2009).

The research will help reinforce knowledge and create awareness of cervical cancer and the importance of screening uptake. It will also inform policymakerson the need toenact or implement policies to facilitate uptake of cervical smear by women.

Furthermore, learning that takes place in medical, nursing, and midwifery schools may eventually integrate training in skills necessary for cervical cancer prevention.It will also help generate the interest of other researchersto conduct research into this area to add to the existing stock of knowledge.

Delimitation of the Study

In order for the researcher to accomplish the study, a sample of women from the Ajumako-Enyan-Essiam (AEE), one of the seventeen (17) districts in the Central Region of Ghana were used. The study involved 240 respondents who were selected purposively but with liberty to withdraw or participate freely. Moreover, the study used structured questionnaire and interview as the only way of collecting the data.

Organization of the Study

The study has five chapters. The first chapter includes background of the study, background of the organization, statement of problems, objective of the study, basic research questions, significance of the study, delimitation of the study, and organization of the study. The second chapter deals with the review of literature and empirical studies on the attitudes, knowledge and beliefs of women on cervical cancer in general. Chapter three is the

methodology section which encompassesresearch design, study population and period, sampling and sampling technique, pre-testing, data collection, ethical considerations and data management and analysis of the study. Chapter four contains analysis, discussion and results and the last chapter deals with the conclusions drawn and recommendations that originate from the analysis.

Chapter Summary

This chapter basically provided an introduction of the study. It captured the background, problem statement, research questions and hypotheses, significance of the study, the purpose of the study, delimitationof the study as well as the organization of the study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter provides a comprehensive overview of both theoretical and empirical literature on knowledge, attitude and health beliefs of cervical cancer and its screening among women in the perspective of the world in general, Africa, Sub-Sahara Africa and Ghana.

Guiding Theoretical framework

The health belief model was used to develop interventions to promote specific health behaviors and health change program. It is hypothesized in the health belief model that individuals will engage in behaviors that guard against or suppress conditions of ill health if they consider themselves to be at risk for a certain disease and if they belief it to be a serious one (Wilson, 2002). In addition, the individual must trust that actions he or she takes will be advantageous in decreasing the development of the disease or its severity. Moreover, according to Maiman and Becker (as cited Wilson, 2002) the individuals must believe that they are capable of taking these actions and the benefits of the actions must outweigh the risks. Lastly, a provoking event, or cues to action, may be needed before an individual adopts a health behavior.

The unique health needs of women in rural Ghana have received inadequate attention. Cultural beliefs, values, and customs have a direct influence on health behaviors, and therefore cultural consideration is essential if effective screening programs are to be developed and implemented. Models have been created to predict and explain behaviors and health beliefs of individuals. One such model, the health belief model (HBM) has been used to

explain health behaviors related to the utilization of screening programs by Burak and Meyer (as cited Wilson, 2002). The health belief model is an appropriate framework for exploring the attitudes towards cervical cancer screening. Also, its use may provide a guide for nurses that will direct their approach when caring for rural Ghanaian women.

Cancer of the cervix

Cervical cancer starts when cells on the surface of a woman's cervix acquire abnormal changes and begin to grow out of proportion, forming a mass in the cervix. Unlike normal cells which divide and grow in an organized fashion, malignant cancer cells continue to divide until they form a growth or tumor. The part of the cervix that is closest to the uterine body is known as the endocervix and the part of the cervix that next to the vagina is called the ectocervix. Majority of the cervical cancer changes begins in the junction where the endocervix and ectocervix meet.

Cervical cancer can often be cured when it's found early. It is usually found at a very early stage through a Pap test (lister hospital and fertility center).According to Bilson(2015),cervical cancer is divided into early and advanced stages. In early cervical cancer the abnormal cells are still confined to the cervix. In advanced cancer the abnormal cells spread beyond the cervix and may involve the vagina, uterus, bladder, rectum, lungs and brain. Whilst about 95% of early cervical cancer is curable, advanced cancer is not and eventually leads to death. Most cervical cancers develop slowly in the lining of the cervix as pre-cancerous changes known as cervical dysplasia which potentially develop into cancer if not treated early, but some dysplasia cells

may not be malignant and can disappear without treatment. Cervical cancer is an important public health problem for adult women in developing countries.

Cervical cancer is fully preventable and curableat low cost and at low risk, when screening to facilitate the timely detection of early precursor lesions in asymptomatic women is available together with appropriate diagnosis, treatment and follow-up" (Lewis, 2004). The burden of cervical cancer is quite low in the developed countries of the world. The situation is quite the reverse in developing countries where it constitutes a major health problem(Ntekim, 2012). While the incidence is decreasing in the former, it is on the increase in the later. This is a source of great concern considering the fact that cervical cancer is preventable and curable at low cost with currently available methods.

Sub-Sahara Africa is the region with the highest incidence of cervical cancer in the world with concomitant high mortality affecting women at their prime. There are no screening programs for early detection of pre-cancerous lesions within the countries of Sub-Sahara Africa. Most screening activities are done as pilot or research projects which are discontinued on completion. South Africa is the only country in the region with a national cytology based screening program since 2001 but then coverage remains poor and the impact on invasive cervical cancer is unknown (Ntekim, 2012). The onset of HIV/AIDS epidemic that is highest in the sub-region has elevated the problem of cervical cancer to a serious level

Cervical cancer is the leading cause of death of cancer among women in developing countries, where it causes about 190,000 deaths each year. Rates of the disease are highest in Central America, Sub-Saharan Africa, and Melanesia by Parkin (cited in Sherris, 2001). The incidence of cervical cancer

in Sub-Saharan Africa is among the highest worldwide, with the available age-standardised rates ranging from 19.9 per 100,000 in Ibadan, Nigeriato 35.7 per 100,000 in Bamako, Mali, to 41.7 per 100,000 in Kyadondo, Uganda (Parkin*et al*2003). Ferley *et al.* (2002) reported that the top ten causes of cancer mortality in descending order in females in Ghana were cervix, breast, liver, hematopoietic organs, stomach, colorectal, ovary, bladder, with pancreas and Kaposis sarcoma tied for the ninth and tenth positions.

One retrospective study conducted by Nk*ye*kyer (2000) described cervical cancer prevalence rate of 1.6% among Ghanaian women admitted into the gynaecologic unit of Korle Bu Teaching Hospital. It further asserted that cases of gynaecological cancers seen in a 52-month period revealed cervical cancer as the most common, constituting about 57.8% of gynaecological cancers in the hospital. Williams and Amoateng (2012) also reported that cervical cancer is the leading cause of cancer death among women in Ghana. The cervical cancer incidence rate in Ghana is among the highest in the world. The rates have been increasing in contrast to the decreasing cervical cancer incidence and mortality rates in developed countries.

Although, there is no formal cancer registry in Ghana, the international Agency for research on cancer has estimated that in 2008, 30,038 Ghanaian women developed cervical cancer and more than 2,006 Ghanaian women died because of cervical cancer (Williams & Amoateng, 2012). Cervical cancer has several unique characteristics that make prevention through screening and thetreatment of pre-cancerous stages relatively straightforward. The cause of virtually all cervicalcancer cases is known to be the persistent infection with a restricted set of human papillomaviruses (HPVs).

Cervical cancer also exhibits an identifiable pre-cancerous condition and the time window from dysplasia to carcinoma is long (approximately 10 years on average). Several screening methods to detect pre-cancer and cancer are available, and can be performed safely and inexpensively in an outpatient setting. These methods include, but are not limited to, visual inspection with acetic acid (VIA), and careHPV. In addition to being used throughout many resource-limited countries around the world, these methods are also effective at treating pre-cancerous findings, thus further decreasing the burden of disease. Primary prevention through vaccination against the prevalent carcinogenic HPV types, HPV-16 and HPV-18, is also possible, but is significantly more expensive.

Risk Factors for Cervical Cancer

According to the NHS, the exact cause of cervical cancer is not known. However, it is known. Some types of Human Papillomavirus, in particular HPV 16 and HPV 18, are found in over 99 per cent of cervical cancers. These are known as 'high risk' types. Other types (e.g. HPV 6 and HPV 11) cause genital warts. Those which cause genital warts do not place a woman at increased risk of developing cervical cancer. Other types of HPV appear to be harmless.

The majority of sexually active women will come into contact with high risk HPV types at some time in their life. In most women, their bodies' own immune system will get rid of the infection without them ever knowing it was there. Only a minority who are positive for high risk HPV types will develop cervical abnormalities (CIN) which could develop into cervical cancer if left untreated.

Women who are immunosuppressed (for example, those who are taking immunosuppressive drugs after an organ transplant or women who are HIV positive) may be at increased risk of developing cervical cancer.Women who smoke are about twice as likely to develop cervical cancer as non-smokers. This may be because smoking is associated with high risk health behaviors or because it suppresses the immune system allowing the persistence of high risk HPV infection. Stopping smoking appears to help clinical abnormalities to return to normal. Not every woman infected with HPV will develop cervical cancer, however, research indicates that women with HPV who smoke, have used birth control pills for more than 5 years, or have a weakened immune system have a greater chance of developing cervical cancer (Cracchiolo & Leitao, 2006).Using a condom offers only very limited protection from transmission of HPV.In 2014, the Center for disease control and prevention stated that long term use of oral contraceptives increases the risk of developing cervical cancer but the benefits of taking oral contraceptives far outweigh the risks for the majority of women.

Women with a late first pregnancy have a lower risk of developing cervical cancer than those with an early pregnancy. The risk rises with the number of pregnancies. According to Nkyekyer(2000), pregnancy also protects against ovarian cancer. However, multiparity is associated with increased risk of development of cervical carcinoma. Thus, the emerging interest of using supplementary HPV testing within the screening program as a means of improving its overall accuracy but the psychosocial implications of an HPV diagnosis remained to be established. These risks are more of a behavioral pattern. The risk of developing cervical cancer in the developing

world before age 65 is 1.5% (Tishelman,Forss, Sachs, Lundgren, Widmark, & Törnberg, 1999).

One retrospective study conducted by Nk*ye*kyer in 2000 described cervical cancer prevalence rate of 1.6% among Ghanaian women admitted into the gynaecologic unit of Korle Bu Teaching Hospital. It further asserted that cases of gynecological cancers seen in a 52-month period revealed cervical cancer as the most common, constituting about 57.8% of gynecological cancers in the Korle Bu Teaching Hospital.

Age and parity are known to affect the incidence of gynaecological cancers. Endometrial carcinoma is reported to be predominantly a disease of ageing, postmenopausal women, and the peak incidence being in the 58-60 years group. It occurs later in reproductive life than carcinoma of the cervix which is seen commonly in premenopausal or perimenopausal women. Women of high parity have relatively low risk of developing endometrial cancer.

More so, some risk factors for cancer are modifiable factors such as tobacco use, unhealthy diet, infectious agents like human papilloma virus, hepatitis B virus, helicobacter pylori bacterium, ultra violet radiation, physical inactivity, occupational exposures, food contaminants e.g. aflatoxin, ionizing radiation, and obesity. Non-modifiable risk factors include ageing, ethnicity, heredity, sex, immune suppression and reproductive factors have also been recognized.

According to the American Cancer Society (2006), about 1.9 million (17.8%) of the cases of cancer worldwide were caused by infections and about 1.4 million (73.7%) of these occur in developing countries (Mackay etal.,

2006). There were estimated 11 million new cancer diagnoses and 7 million cancer deaths throughout the world in 2002. Moreover, the numbers of new cancer cases and cancer-related deaths are expected to rise to 16 million and 10 million respectively by 2020 with close to 70% of the deaths in expected to occur in developing nations (UICC World Cancer Congress, 2006). Estimated cancer incidence in Africa is 70/100,000-100/100,000 population. The commonest cancer in men is Kaposi sarcoma (15.5%) with cervical cancer representing 22.2% of all cancers among women. Most cases are reported at advanced stages when curative measures may be unsuccessful (Ngoma, 2006).

HPV Infection and Cervical Neoplasia

HPV has been implicated in the development of virtually all cervical cancers, and HPV DNA is detected in 100% of invasive squamous cervical cancers classified into high-, intermediate-, and low-risk types based on their association with invasive cancer. Types 16 and 18 are considered high-risk (oncogenic) types and are associated with aggressive forms of cervical cancers. Conversely, infection with low-risk HPV subtypes is unlikely to progress to invasive cancer.

HPV infection is the most common sexually transmitted disease, with reported prevalence rates of 19–46%. The major risk factor for HPV infection is sexual behavior, including early age at onset of sexual activity, multiple sexual partners, failure to use barrier methods of contraception, and co-infection with other sexually transmitted diseases, particularly HIV. The prevalence of HPV declines positivity with increasing age, and persistent infection after age 30 is usually associated with oncogenic types of HPV.

HPV infection disrupts the four-phased cell cycle during which cellular replication occurs. Chromosomal DNA is replicated during the S (synthesis) phase. In the M (mitosis) phase, the separation of duplicated DNA takes place. These two phases are separated by gap phases G_1 and G_2. Cells that are not dividing exit the cell cycle during the G_1 phase and reside in a quiescent state or G_0. To replicate, HPV must induce DNA synthesis in host cells in the quiescent phase and move them into an activated G_1 phase. The HPV oncogenes, *E6* and *E7*, stimulate cell proliferation by interfering with the functions of the regulatory retinoblastoma protein and the tumor suppressor protein. These cells undergo non-stop proliferation, eventually leading to premalignant changes and malignant transformation (Gardner, 2003).

The progression of cellular changes that take place in HPV-infected cells has been described previously. The vast majority of HPV infections are transient because the host's immune response rapidly eliminates the virus. However, women with chronic HPV infection tend to develop cervical abnormalities that progress from mild abnormalities to invasive cancer in susceptible cells of the transformation zone of the cervix. The aggressive forms of HPV can dramatically shorten time intervals between infection and neoplasia from years to months. According to Garner (2003), aggressive forms of HPV infection might also bypass the stages of progression so that invasive cancer arises.

Determinants of risk for persistent infection and progression to invasive disease are not fully understood. Persistence of infection appears to be related to HPV type and concurrent infection with multiple viral types. As mentioned above, although prevalence of HPV infection is much lower among

women over age 30, HPV infections at older ages tend to involve the oncogenic subtypes.

Furthermore, HPV infection with lower viral load is more likely to persist in older women, suggesting reduced capability to clear the infection. Additionally, these older women are at increased risk for subsequent cervical dysplasia and cancer. Reactivation of latent infection can also occur in women ages 55 and older. Another cofactor for cervical dysplasia and cancer is HIV infection, which disproportionately affects minority populations in the United States and elsewhere. AIDS induces profound immunosuppression and increased susceptibility to HPV persistenceas well as more rapid progression to invasive cervical cancer at younger ages.AmongHIV-positive women,40% also have cervical dysplasia. Environmental factors, particularly tobacco use, may also be important for persistence and progression of cervical dysplasia. Smoking has proven to be associated with both cervical dysplasia and invasive cancer and is reported to increase the risk of HPV-associated malignant transformation. Smoking has also been reported as an independent risk factor for cervical cancer mortality within 5 years after diagnosis. Other studies suggest that micronutrient deficiency may contribute to progression of HPV-induced changes in the cervical epithelium.

The role of inherited susceptibility to cervical cancer is uncertain. Goodman *et al (201l)* reported that the CYP1A1 Msp polymorphism may predispose to premalignant cervical lesions. After controlling for HPV type, certain HLA alleles have been associated with an increased risk of cervical cancer among Caucasian and African-American women. A study of 128 Latina women in New Mexico with high-grade dysplasia identified two HLA

haplotypes associated with HPV-16 infection and other haplotypes that plausiblyguard against HPV type 16-associated cervical dysplasia.

Epidemiology of cervical cancer

Global Perspective

Cervical cancer is one of the most common cancers affecting women worldwide. An estimated 500,000 new cases and 250,000 deaths occur worldwide annually with vast majority (80%) of these in developing countries (Gharoro &Ikeanyi, 2006). Globally, with 528 000 new cases every year, cervical cancer is the second most common cancer affecting women worldwide, after breast, followed by colorectal, and lung cancers(WHO, 2013

According to the World Health Organization (2015), three quarters of cervical cancer cases occur in developing countries worldwide where programs for screening and treatment are seriously deficient. In Sub-Saharan Africa, 34.8 new cases of cervical cancer are diagnosed per 100 000 women annually, and 22.5 per 100 000 women die from the disease. These figures compare with 6.6 and 2.5 per 100 000 women, respectively, in North America (WHO, 2013). Cervical cancer is an important public health problem for adult women in developing countries in South and Central America, Sub-Saharan Africa, and South–East Asia. Based on WHO's 1997 estimates, the overall prevalence is 3,955,000 cases with 425,000 new cases diagnosed each year, 80% of which are in developing countries, and 19,5000 deaths worldwide each year (WHO, 1997).

The incidence of cervical cancer in Sub-Saharan Africa is among the highest worldwide, with the available age-standardised rates ranging from 19.9 per 100,000 in Ibadan, Nigeria, (Parkin, *et al.,* 2003) to 35.7 per 100,000

in Bamako, Mali, to 41.7 per 100,000 in Kyadondo, Uganda (Parkin, 2002). Ferleyet al. (2002), reported that the top ten causes of cancer mortality in chronological order in females in Ghana were cervix, breast, liver, hematopoietic organs, stomach, colorectal, ovary, bladder, with pancreas and Kaposis sarcoma tied for the ninth and tenth positions.

The drastic differences can be explained by lack of access to effective screening and to services that facilitate early detection and treatment. Despite the positive factors of Pap smear in America, every year, about 14,000 American women are diagnosed of cervical cancer and about 3,900 do not survive it (Nakalevu 2009). This showed that even though great strides against cervical cancer have been achieved in America, it still proves fatal for many women. In Australia, cervical cancer is the 6th most common cancer in women where it contributes to about 350 deaths in a year. About 150,000 smears are taken each year in Ireland opportunistically in a variety of locations, particularly in GPs, Maternal Health Clinics, Genitourinary Medical Clinics and Community Clinics (Nakalevu, 2009). In Nigeria and Uganda, as in other developing countries, cervical cancer is the most common cancer in women with an estimated incidence of 30 per 100,000 women. Over 805 of patients diagnosed with cervical cancer in Mulago Hospital in Uganda present with advanced disease.

Women of low socio-economic status may be less likely to have been screened and there is also evidence of ethnic-minority women, particularly those of Asian origin, are less likely to participate in screening programs. In Nigeria, research has shown that the incidence of cervical cancer is on the increase and that almost 85% of those diagnosed with the disease die (11.5 per

100,000) almost thrice the rate in developed countries (Odetola, 2011). In Zimbabwe, females as young as 15 years old continue to die from the disease, and studies indicate that cervical cancer continues to grow in the country. For example, in 1995, cervical cancer ranked number one, accounting for about 25% of all cancer mortality. In 2003, cervical cancer accounted for 27.3% of all cancer deaths and an increaseof 2.3% in less than 10 years in a population whose growth rate has been compromised by the HIV/AIDS pandemic(Mupepi, Sampselle & Johnson 2011).

WestAfrica and Sub-Sahara Africa

The number of new cases per year is half million and 80–90% of these cases are seen in developing countries. The number of the cases defined in 2000 in the world was 471.000 and the number of the deaths from this disease was 288.000(WHO, 2002; 2004). The frequency of cervical cancer in developing countries is higher than in developed countries because there are not effective screening programs to ascertain and cure the lesions predisposing to cancer before they turn into invasive cancer in developing countries (WHO, 2002, ACCP, 2004).

In a study conducted by Nkyekyer (2000), most reports from Sub-Saharan Africa choriocarcinoma is more common than endometrial carcinoma in this series the latter is slightly more common. Vulval carcinoma has been the least common, while vaginal carcinoma has been very rare. The world health Organization, stated that, in every dark blue country, the rate of new cases is over 30.2 per 100,000 women per year. By comparison, the rate in the United States is about 8.1 per 100,000 women per year. Of the 20 nations with the highest incidence of cervical cancer, 16 are in Sub-Saharan Africa. (Some

researchers note there are vast gaps in this cancer data and say the true prevalence "remains largely unknown").

A 2015 report from the Sub-Saharan African Cervical Cancer Working Group, a body of physicians, epidemiologists and cancer researchers, described the key reasons accounting for the disease.Screening is sorely lacking. The group found a "lack of widespread services, delays in receiving results, lack of the high-quality laboratories needed for cytology based screening and absence of adequate centers for the evaluation and treatment of identified patients."Dealing with cervical cancer exposes the many cracks in the health care systems across the region.

Richard Wamai, assistant professor of public health at Northeastern University, said the countries of Sub-Saharan Africa are ill equipped for this challenge. "Detection will require expanding the health service system, which requires investments in infrastructure," Wamai said. "That calls for prioritization which is difficult to do because of competing health demands. Cancer in general is, to me, the most worrying of all other diseases for the continent. There is very little preparation and in many cases policy makers are not yet awoken to this impending tsunami. Public health experts also say vaccination programs are essential. Some strains of human papillomavirus (HPV) can lead to cervical cancer and some of those strains can be blocked by vaccines. But just as Sub-Saharan countries lack the infrastructure for screening, they also lack a system for vaccinating young women.

Speaking at a January 2016 event in Washington, Deborah Birx, U.S. Special Representative for Global Health Diplomacy, gave a bleak summary of the status of health care in Sub-Saharan Africa(Biden, 2016). There is no

systematic health care for girls between the time they turn 5 and the time they get pregnant," Birx said. That age range would be key for any vaccination program. On top of that core challenge, Meyerson said the price tag for vaccines puts them out of reach. Many African countries find that the HPV vaccination cost is too high to have broad coverage," Meyerson said. (Biden, 2016)

Sociodemographic Characteristics of Women with Cervical Cancer

Women who develop cervical cancer are usually from socially disadvantaged populations (Brinton, 1992). Studies have also confirmed that race influences the incidence of cervical cancer with rates for Africans, Americans and Hispanics in the USA being twice as high than those for white or oriental Americans (Brinton, 1992). The disease has a higher rate among indigenous populations, for example in New Zealand among Pacific women and women from Maori backgrounds, and in Indian populations in Brazil and Columbia (Panagiota, 2000). Aboriginal Australians are pegged at nine times more likely to die from cervical cancer. In Western Australia, the incidence and mortality from the disease are four and eight timesrespectively higher that the rates for non-Aboriginal women as stated by Mak & Straton (1997), and cited in Panagiota(2000).

Cervical cancer has been observed to be high among women who have married early, while it is lower among women from specific religious groups like Catholic nuns, the Amish, and Mormons(Brinton, 1992). Seventy per cent of cases of cervical cancer and 90% of deaths occur in women over 40 years (Panagiota, 2000). A recent study in 24 USAStates for the period 1984-1993 revealed that increased mortality from cervical cancer was observed among

maids, cleaners, waitresses, and nursing aides, and among several manufacturing occupations, such as machine operators, printers, and textile machine operators. The study showed that the highest risk for the disease was seen among actors and directors, artists and performers and African American farmers (Potishman, 1996). There is evidence that women who develop cervical cancer have not been adequately screened in the years prior to diagnosis (Panagiota 2000). Women who do not normally get screenedare older, less-educated, emanate from non-English speaking backgrounds, are from low socioeconomic background, and above all,are recent migrants belonging to indigenous groups (Brinton, 1992).

Excess occurrences of cervical cancer, at least in African-American, are largely restricted to older women who tend to have lower screening rates (Panagiota, 2000). The National Health Interview Survey found that nearly one-half of women ages 50–64 years did not obtain a Pap smear in the previous 3 years. Interestingly, the distribution of cervical cancer incidence in different ethnic populations exhibits different patterns by age group. For example, in the age group 55–69 years, Vietnamese women have the highest incidence, with a rate more than three times higher than Korean women, the second ranked group. In this age group, Hispanic women have the third highest incidence, followed by African-American women. Among women ages 30–54 years, however, Vietnamese women have the highest incidence rate, followed by Hispanic, and then African-American women. In the National Breast and Cervical Cancer Early Detection Program study of low-income women, only 60% of 312,858 women reported ever having had a Pap smear (Panagiota,2000).

Cervical cancer screening, morbidity and mortality rates show large gaps between urban and rural populations. Using data of the Savannah River Regional Health Information System (Panagiota, 2000). found the highest cervical cancer rates among rural African-American women over age 45 years. It has been shown that preventive care in primary care practices is often more difficult to deliver in rural societies as compared to urban medical practices, contributing to lower screening rates. Furthermore, on average, rural women tend to be older, poorer, and less educated and, therefore, less frequently screened. These patients tend to spend less time with their physicians and more time traveling to their healthcare providers.

Several studies have reported that medically uninsured women have lower cancer screening rates and often present at later stages of disease. Compared with health maintenance organization-insured women, uninsured women tend to have later stages of cervical cancer diagnosis. Among Medicare patients with cervical cancer, those enrolled in health maintenance organizations are less likely than fee-for-service enrollees to be diagnosed with late-stage diseases. In addition, it was found that the strongest predictors of cancer screening were having private health insurance and frequent use of medical services.

Panagiot(2000)found that incidence of cervical cancer is inversely related to socioeconomic status among all four racial/ethnic groups: Caucasian, African, American, Asian/Pacific Islander and Hispanic. It was reported in this study that poor and working-class Caucasian women had a cervical cancer incidence that was four times higher than in professional women of the same race. For several common forms of cancer, incidence rates

varied more by socioeconomic status than by race or ethnicity. Munoz*et al* (1992) also reported that socioeconomic status is inversely associated with cervical cancer incidence.

Minority of the women with low socioeconomic status tend to have co morbid diseases that contribute to poorer treatment outcomes for cervical cancer. One study of late-stage cervical cancer reported that Pap smear screening decreased with increasing numbers of comorbid conditions. Lower Pap smear screening rates translate into later stage at diagnosis and poorer outcomes. Comorbid diseases also contribute to suboptimal cervical cancer treatment. In fact, a study of racial differences in radiation therapy outcomes for cervical cancer found that the presence of comorbid conditions was associated with reduced cancer-free survival.

Similarly, Panagiota (2000), reported that African-American and low-income patients with government-funded insurance tended to have lower performance status and receive lower radiation doses for cervical cancer than higher income Caucasian patients. Other studies found that low hemoglobin levels tend to be a significant predictor of poor treatment outcome; specifically, radiation therapy is less effective in anemic patients who are more likely to be from minority and underserved populations.

Access to quality healthcare service is often compromised among minority, rural, and other underserved populations. These populations have barriers to well-organized, quality Pap smear screening services, and often present with late-stage disease. Surprisingly, African-Americans in some areas of the United States have higher screening Pap smear rates but are still diagnosed in later stages of disease and have higher mortality than Caucasians.

One possible explanation for this is inadequate systems for follow-up of abnormal Pap smears. Reliability of Pap smear interpretation in many laboratories is another factor. Potischman (1996), reported that New York City pathology labs were so overwhelmed with large volumes of work in the 1980s that some Pap smears were not read. Pap smears are performed in other geographic areas without an infrastructure for notification and follow-up of abnormal results. Equally concerning is the fact that studies have found that 27–70% of women with biopsy-proven high-grade dysplasia are lost to follow-up, thus delaying therapy. In addition, minority and underserved populations are frequently faced with limited availability of treatment options and may not have access to expert medical care. Panagiota (2000) examined clinical determinants of survival in an inner-city hospital and described the use of marginally adequate radiotherapy equipment.

Case management studies of ovarian and endometrial cancer have also shown that African-Americans have substantially poorer survival rates when compared with their Caucasian counterparts. African-Americans were treated less frequently and aggressively and were less likely to receive state-of-the-art therapy. Studies of ovarian and other cancers have shown similar findings, indicating that lower survival rates among African-Americans may be partly attributed to failure to receive standard of care.

The Murray (1993) studied on racial differences in radiation therapy for cervical cancer reported that fewer African-Americans received intracavitary radiation than Caucasian patients. Reasons for not receiving this treatment modality differed between African-American and Caucasian patients. Among African-American patients, patient refusals, comorbid

conditions, and technical problems (poor geometry, inability to place tandem) were found, whereas Caucasians excluded from intracavity radiotherapy tended to have extrapelvic disease progression. This study did not indicate why technical problems were more common among African-American patients, and no explanations were given for refusal of intracavitary radiation by 11% of African-American patients. Comorbid conditions protracted therapy more often amongAfrican-Americans than Caucasians, whereas poor compliance led to treatment interruptions in 28% of Caucasian patients and 10% of African-Americans. Race was not a significant predictor of disease-free survival or cause-specific survival in multivariate analysis. Among African-American patients, poorer outcome was associated with lower hemoglobin levels at presentation and during treatment, comorbid disease, and low socioeconomic status.

Cervical Cancer Screening

Pap Smears

It has been stated that the chance to live for the women with pre-invasive lesions ascertained in an early period by Pap smear test is 100%. Coming from the background of this, it is necessary to raise awareness of women about having a regular Pap smear test in order to prevent cervical cancer or cure it through early diagnosis (Twinn, Shiu &Holroyd, 2002). The technique which is recommended by the WTO to be used in cervical cancer screening programs is Pap smear test (WHO, 2002; 2004).

Moreover, many studies which were realized have shown that the most appropriate method to be used for cervical cancer screening is Pap smear test. Yet, international studies show that women do not have sufficient knowledge

about cervical cancer risk factors and Pap smear (Ideström, Milsom, & Andersson-Ellström,2002; Pearlman, Clark, Rakowski, & Ehrich,1999; Waller,McCaffery, Forrest, & Wardle,2004). Cervical cancer screening in many hospitals in Accra, the capital of Ghana is done by Papanicolau (Pap) smear and visual inspection of the cervix with acetic acid (VIA)(Adanu, 2010). Cervical cancer screening procedures are able to detect pre-malignant lesions of the cervix which can be treated and so prevent progress to cervical cancer. Pre-malignant cervical lesions are generally asymptomatic, hence the need for cervical cancer screening programs that target healthy women.

It has been observed with many studies that the knowledge level of the women increased through health education given to them about the prevention from cervical cancer and they had a Pap smear test or were eager to have it in the post-education period (Mcavoy &Raza, 1991; Ansell et al., 1994; Kelly et al., 1996). The Pap smear is the screening test conducted to women where the cells of the cervix are smeared onto a slide and transported to the laboratory for cytology examination (Nakalevu, 2009). The purpose of this screening test is to detect the early pre-cancerous lesions and treat them accordingly before they can develop into invasive cervical cancer. Pap smear is one of the best test a woman can take (Nkalevu, 2009). Among the reproductive tract malignancies, cervical cancer is the only one that is almost totally preventable by the detection through regular cytological screening and treatment of its pre-cancerous lesions. Every woman should be screened at every opportunity of contact with a health professional, at first ante-natal clinic visit, family planning clinics, STI clinics and gynecological clinics.

For women who are sexually active, annual screening from age 18 to 35 years is strongly advised; thereafter, every 3 to 5 years provided the test results remain negative. For the cytological test or Pap smear test to be reliable and effective at a minimum, it requires trained providers, a reliable cytology laboratory, continuous access to high quality equipment and supplies, proven record keeping system and effective referral mechanisms for diagnosis and treatment (Gharoro & Ikeanyi, 2006). Cytological screening (the Papanicolaou smear or Pap smear) has been one of the most successful public health measures available for cancer prevention.Cervical cancer screening is widely available in developed countries and in most cases lesions are detected at the pre-cancer or early cancerous stage.Benefits of cervical cancer screening programs in developed countries have been well documented. For instance, according to Wright (2011), Denmark recorded a 25% decline in mortality following 40% coverage.In Norway, 5% coverage achieved a 10% fall in mortality.However, deaths from cervical cancer are still high in Nigeria and there is also a low level of awareness about cervical cancer and screening for cervical abnormalities.

Cervical Cancer Treatment

Treatment of cervical cancer is dependent on the stage of the disease, age and medical state of the patient, tumor characteristics, patients' preferences and resources within the health sector of each country. Options can be monotherapy or combined; they range from conisation of the cervix, simple hysterectomy with or without lymphadenectomy, radical hysterectomy with pelvic lymphadenectomy, pelvic exenteration, chemotherapy, radiotherapy, to

palliative chemotherapy. Treatment at an early stage has the best prognosis with the highest cure rates (Nketim, 2012).

Treatment of pre-invasive cervical cancer. It may not be too wrong to say that there are apparently more cases of invasive cancer than pre-invasive cancer; this is mainly because there are very few facilities for screening and very poor access to the screening services. Because so few women are ever screened, not many cases of pre-cancerous lesions are diagnosed or detected. Colposcopy is available only in very few centers. Hysterectomy and cone biopsy are the usual treatment modalities for pre-cancerous lesions, as the equipment and expertise for large loop excision of the transformation zone (LLETZ), also known as loop electrosurgical excision (LEEP), are scarce.

Treatment of invasive cervical cancer continues to be a major challenge in many Sub-Saharan African countries, due to the lack of surgical facilities, skilled providers and radiotherapy services. Management of women with invasive cervical cancer requires a multidisciplinary approach, including: gynecologists, radiation oncologists, medical oncologists, pathologists, medical physicists, technicians, nurses and counselors. These specialists are lacking in many places across the continent, and where they exist they tend to work in isolation rather than in teams. There are few cases that present in the operable stage of the disease. In Lagos, Nigeria, less than 10% of cases are operable at the time of presentation. Some of the few who do present early may not have surgery as there are very few certified gynecologists who perform radical gynecological cancer surgery. Follow-up after surgery is often very poor as some patients who believe they have been cured never come back. Others just cannot afford the cost of transportation back to urban

centersfor follow-up (Gardner, 2003). For patients who present late, radiotherapy becomes the preferred treatment.

Unfortunately, only a few receive this treatment due to the paucity of resources and very advanced disease at presentation. In Harare, Zimbabwe, Chirenje et al. (2001) found that that among 70% of patients, radiotherapy was the most commonly used treatment modality, as many of the cases presented with stage 2B and above. Radiotherapy is not available in many places in Sub Sahara Africa. In 1997, radiotherapy was not available in 32 African countries. (Levin et al.,1997). In 2003, 15 countries in Africa did not have a single radiotherapy machine. Nigeria, the most populous country in Africa, had only five radiotherapy centers as at 2009: four government-owned and one privately owned. The WHO recommends 0.4 radiotherapy machines per million of population. Nigeria's five machines to 140 million people translates to 0.04 per million, well below WHO's recommendation. In contrast, in the United States, there are 12 machines per million people. (Nketim, 2012). Besides few machines, those that exist do not function most of the time because the resources for their proper maintenance and repair do not are not available. In addition, there is a shortage of trained staff such as radiotherapists and medical physicists, as well as essential materials.

Supportive treatment

Pain is the most common presenting symptom in many cancer patients in Africa because of late presentation. In a survey of terminally ill patients in five countries in Africa – Uganda, Ethiopia, Tanzania, Zimbabwe and Botswana – the greatest need expressed by the patients was pain relief (Ntekim, 2012). In another study comparing the concerns of terminally ill patients in a developed

country (Scotland) and an African country (Kenya), it was found that the main concern of the Scottish patients was the emotional pain of facing death, while for their counterparts in Kenya, it was physical pain and financial worries. Unfortunately, there is inadequate availability of pain-relieving medications, especially opioids. Only 11 out of 47 African countries use morphine for chronic pain and of these 11, the amount consumed is small(Murray et al 2003). Oral morphine is not available to very many cancer patients in Sub-Saharan Africa.

Insufficient funds due to low priority accordedpalliative care by governments, regulatory and pricing obstacles, ignorance, and false beliefs are responsible. In some instances, where drugs are available to patients, sustainability of pain relief is hampered by poverty, as many cannot afford the cost of the drugs. Poverty, poor infrastructure, lack of health care workers adequately trained in palliative care and poor priority accorded to palliative care by African governments are all obstacles to effective palliative care in Sub-Sahara Africa. There are very few hospitals to take care of terminally ill patients. However, countries like South Africa, Uganda, Kenya, Tanzania, Nigeria and Zimbabwe have made some progress in palliative care. Uganda is the first African country to follow the WHO guidelines on palliative care.

It has made oral morphine freely available to districts that have specialist palliative care nurses or clinical officers, and has promoted morphine use down to the villages. Laws have also been passed to allow trained nurses, especially those in the rural areas, where there are very few or no doctors, to prescribe morphine. Cancer is believed in certain cultures to be a punishment from the gods, and terminally ill patients often seek help from

traditional healers and spiritual leaders. A good model for palliative care in Africa should therefore integrate the culture, beliefs and traditions of the people. Some countries are making efforts in this directive by incorporating traditional healers into mainstream medicine. However, a feasible, accessible, and effective palliative care is yet to be developed in Sub-Sahara Africa. (Merriman & Kaur, 2005).

Adverse Cervical Cancer Outcomes

In 1993, African-American women were twice as likely as Caucasian women to be diagnosed with cervical cancer and were two to three times more likely to die from their disease. More recent American Cancer Society data indicate that African-American women continue to have higher cervical cancer incidence and mortality rates. During the 1940s to 1980s, the incidence of cervical cancer in African-Americans declined with increased Pap smear screening. However, cervical cancer still accounts for 25% of cancer deaths in African-American women from certain urban populations.

Although incidence rates among Caucasian women plateau after age 40, cervical cancer incidence continues to rise with age among African-American women. Five-year survival rates among affected African-American women decreased from 64 to 59% between 1974 and 1994, whereas the corresponding survival rates among Caucasian women increased from 70 to 72% (Gardner, 2003).

Hispanics, Native Americans, and many Asian American groups also have higher cervical cancer mortality rates than Caucasians. Native Americans have the poorest cancer survival of any group in the United States, and

preventable cancers are among the leading causes of death among Vietnamese American.

At first glance, race appears to be an important determinant of both cervical cancer incidence and mortality. Panagiota (2000)reported race to be an independent predictor of cervical cancer survival. However, the effect of race on cancer outcome diminishes after accounting for socioeconomic status, comorbidity, and other factors. In fact, the National Health Interview Survey showed that income and education are better predictors of screening uptake than race and ethnicity. A study of African-American and Caucasian patients from an inner-city hospital in Philadelphia found that racial differences in gynecologic cancer survival were attributable to differences in stage at presentation, socioeconomic status, and health insurance status. Stage-for-stage, there were no differences in survival among African-American and Caucasian women.

In a study of military patients by Farley(2001), race was not an independent predictor of survival among patients with cervical carcinoma treated in an equal-access, unbiased, nonracial environment.Non-English-speaking immigrant women face language and cultural barriers to Pap smear screening, including modesty, fatalism, and prohibitions against pelvic examination by male practitioners. Cultural factors can also contribute to mistrust of medical care providers, contributing to low screening rates. Furthermore, lack of culturally sensitive screening and treatment environments are barriers to early cancer detection among immigrant population. The BACCIS study found low rates of Pap smear screening among non-English-

speaking Latina and Chinese women, a finding that is generalizable to other immigrant populations.

Women'sKnowledge on Cervical Cancer

It has been noted that some women lack the knowledge about Pap smear tests and its indications. Many women do not have a clear understanding of the meaning of an abnormal smear or theconcept of pre-cancerous changes and many believe that the purpose of the Pap smear test isto detect cancer. Assessments of knowledge or awareness among the general population revealed that individuals are often ignorant of cervical cancer and its identification as a sexually transmitted disease. According to Nakalevu (2009), it has been seen that 10% of women in Queensland and 13% in Victoria with cervical cancer had a previous abnormality which was not treated. He also stated that a study conducted in Ireland showed that 55% of low risk and 45% of high risk women correctly identified the purpose of Pap smear screening, that is to detect pre-cancerous lesions but high-risk women are less likely to voluntarily present for screening so majority of them have their cervical screening opportunistically. Such groups need to be specifically targeted in awareness campaigns for cervical screenings. Socio-economic groupings are the strongest predictor of knowledge and uptake of cervical smears. Women need full information about treatment if they are to be fully protected. Findings from research investigating HPV-related knowledge among college women have indicated that the vast majority had never even heard of HPV (Fernandez-Esquer et al, 2000).

Preliminary analysis among university-aged female in Nigeria revealed that women who had received a Pap test were more knowledgeable about

cervical health than those that had not (Paula, 2003). In a study conducted in Zimbabwe by Mupepi etal (2011), of the 514 participants, 81% had no previous knowledge of cervical screening tests. In a study done by Dr Donta in maternity homes in Mumbai, only 4.5% of 18-49 years aged wives had heard of Pap smear screening, but none of their male partners had heard of it. Likewise, although 31.9% of 30-39 years aged wives had heard of cervical cancer only 4.5% of husbands had ever heard of it.Dr. Donta said that lower levels of awareness on cervical cancer and Pap smear screening is an important barrier to cancer control (Modern Ghana, 2014).

Studies conducted on college women by Vail-Smith and White (2006), indicate that more than four-fifths of the respondents reported no awareness of cervical cancer or its specific signs, symptoms or risk factors. Several studies, including a study of college women conducted by Baer, Allen and Braun (2000), confirmed that the majority of college-level students are ignorant about cervical infection, the modes of transmission, and its prevalence in society. The limited knowledge may include other factors such as cultural norms of secrecy, providers not informing the public and policy-makers, limited attention to cervical cancer, lack of knowledge regarding preventative health services, especially, women's preventive health might implore the need to expand these services where most women can get access and clinicians in these settings need to use their patient time opportunities to provide preventative health services to women. On the other hand, the widespread lack of knowledge on cervicalcancer, may serve as a barrier to accessing preventive cervical cancer screening, although research on the relationship between knowledge of the disease and adherence to screening guidelines has been

contradictory. For example, some studies have found that heightened knowledge of cervical cancer may lead to increased anxiety, which could make it less likely to adhere to screening regimes (Lobell *et al,* 1998).

However, other studies conducted in Estonia attributed reasons for non-participation to other causes such as recent visit to a gynecologist (42.3%), fear to give a Pap-smear (14.3%), long appointment queues (12.9%) and unsuitable reception hours (11.8%) other than increased knowledge level (Kivistik etal, 2011). They alsoreported increased knowledge as positively associated with higher levels of screening. A study conducted in Botswana revealed limited knowledge among women of low socioeconomic status and the reasons for the limited knowledge included cultural norms of secrecy, providers not informing the public and policymakers limited attention to cervical cancer (Nakalevu, 2009). Lack of knowledge regarding preventative health services, especially, women's preventative health might implore the need to expand these services in the emergency department where most women access.

The World Health Organization (WHO) recommends the involvement of doctors, nurses, midwives and all available health agents in cervical cancer prevention. However, the first step of this strategy is to ensure that health agents and women have appropriate knowledge and attitude about cervical cancer so that together, they could play a sustainable role in the prevention of the disease. Knowledge of the disease is crucial so that become people aware and through motivation they can have positive attitude towards screening for premalignant cervical lesions.

Awareness and Knowledge of Women with Cervical Cancer

Cervical cancer is yet to be recognized as a serious public health problem in Sub-Saharan Africa. In Sub-Sahara Africa, priority is given to infectious diseases such as malaria, tuberculosis, leprosy, diarrheal diseases, acute respiratory infections and HIV/AIDS all of which have preventive and management strategies.

Several studies have pointed to poor knowledge of cervical cancer in Africa, which cuts across different literacy levels one of the critical health problems requiring special attention. Among 500 attendees of a maternal and child health clinic in Lagos-Nigeria, only 4.3% were found to be aware of cervical cancer (Anorlu et al., 2004). In 2004, also in Lagos-Nigeria, 81.7% of 139 patients with advanced cervical cancer had never heard of cervical cancer before, and 20%, 30% and 10% respectively thought the symptoms they had were due to resumption of lower genital infection and irregular menses. Almost all the women (98%) believed that their advanced disease was curable, 12% thought it was not a serious disease and only 9% understood that it was cancer and therefore serious by Nketim, 2012) as cited by Ajayi et al. (1998). Similar studies in Kenya and Tanzania also reported very poor knowledge of the disease in patients.

Poor knowledge is not limited to patients alone, as health care workers who are supposed to be better informed do not have good knowledge of the disease either. In Lagos, Nigeria, delay by primary health care providers in referring cases of cervical cancer was found to be an important cause of women presenting with late stage disease. It took a mean of 9.35 ± 12.9 months for primary health care providers to diagnose and refer women with

cervical cancer to a tertiary hospital for management (Anorlu et al., 2004). In a study on cervical cancer awareness and HPV vaccine acceptance among 375 female university students in Northern Nigeria, a total of 133 participants knew of HPV (35.5%), 202 (53.9%) had heard of cervical carcinoma and 277 (74.0%) were willing to accept HPV vaccination. (Ilyasu et al., 2010). Abochie and colleague (2009) conducted a cross-sectional survey among college students aged 18 years and above, attending a large university in Accra, Ghana. A sample of 157 students was selected to study knowledge and beliefs about cervical cancer screening. In general, respondents seemed to understand that cervical cancer screening had benefits. Over 64 percent believed that the test could find cervical changes before they became cancerous while 78.5% thought those changes could be easily cured.

According to Nketim (2012), among the perceived barriers to screening, the most prevalent perceived barrier was that only half of respondents believed that the purpose of cervical cancer was to diagnose cancer, the second commonest reported barrier (40.6%) was the belief that their partner would not allow them to obtain cervical cancer screening. The following barriers were also pronounced, cost (23.2%), not knowing where to go (24.3%), and belief that everyone would think they were sexually active (24.6%). Encouragingly, few believed that a pap-test would be painful (9.4%). While more than 68% perceived that young women were susceptible to cervical cancer, a lower percentage (52.5%) believed that they themselves were at risk of cervical cancer. About three-quarters of the respondents(73%), believed that cervical cancer was a serious disease that would make a woman's

life difficult and about 62% of students also believed that there were effective cures for cervical cancer.

In general, a low percentage screening received by women cues from their social environment by way of knowing peers who had screened or from a healthcare worker‘s recommendation. Six out of the fifteen respondents who had received at least one recommendation from a healthcare worker to get cervical screening, scheduled and obtained one. The subset reporting having received a health care worker recommendation but that reported not having the test, indicated the following reasons; they could not afford it, they did not know where to get screening, they had no time to schedule and obtain screening and they felt it was embarrassing to expose themselves for screening. About one-third reported ever having heard a mass media discussion on cervical cancer while a one-fifth have at least once listened to a discussion on cervical cancer at a church or other social gathering. About half also stated that they would be willing to obtain the cheaper alternative cervical cancer screening using visual inspection and mild acetic acid, if a doctor recommended it. Overall, there was good awareness of the issues related to screeningalthough there were specific gaps in knowledge about risk factors and screening intervals(Nketim, 2012). For instance, it was found that although the relationship between sex and cervical cancer was known, less was known about other risk factors like their partner's prior sexual experiences and very little was known about the link between HPV and cervical cancer.

Women’sAttitude towards Cervical Cancer and Screening

Health belief model states that women will participate in screening if they believe they are at risk and will benefit from the test. Components of this

model include perceived susceptibility, severity, and benefits balanced with perceived barriers to the behavior contemplated. Most theories about health-protective behavior assume that people act to protect themselves against risk. Thus, people may decide to be screened because they feel vulnerable to cancer. In contrast, feelings of invulnerability could lead to reduced motivation to engage in cancer screening. Health belief model suggests that women who are more likely to undergo cervical smear are those who perceived themselves as vulnerable to cervical cancer, believe in the efficacy of the test, perceive the procedure as not painful and receive a professional recommendation (Rosenstock et al., 1988). The model also incorporates cues to action as important elements in eliciting or maintaining patterns of behavior. Cues to action are external events that prompt a desire to make a health change.

They can be anything from a blood pressure from being present at a health fair, to seeing a condom poster on a train, to a professional recommendation on cervical cancer screening as well as having a relative die of cervical cancer. The construct of self-efficacy has been added to the model and in recent years, self-efficacy has been found to be one of the most important factors in an individual's ability to successfully negotiate uptake of Pap smear.Murray, and McMillan (1993) conducted a study to examine the role of the health belief model in predicting women's cancer screening behavior; the results suggest that the best predictor of attending for cervical smears was having a lower fear of the consequences of the investigation (barriers).The authors concluded that health promotion aimed at increasing

attendance for cervical smears should reduce the anxiety felt among many women about the possible consequences of the investigation.

A study in UK showed that some women consider Pap smear test unnecessary while considering themselves not to be at risk of developing cervical cancer.Additionally, they expressed feelings of embarrassment and/or pain. The receipt of anabnormal result and referral for colposcopy causes high levels of distress, especially fear.Many women are frightened of medical procedures and believe that the abnormal smear is indicative of cancer and that their reproductive ability will be threatened. The resultinganxiety can have severe effect on day to day functioning leading to depressed mood,decreased libido, and lowself-esteem with feeling of less attractive, tarnished, defiled or contaminated and dirty. A Boston study on an adolescent group showed that most adolescents perceived their health concerns as concerns about STI, pregnancy, breast cancer, abnormal Pap smear or cervical cancer and smoking.

Differentials exist in access to and having a Pap smear test in the Ghanaian population. At the national level, having health insurance, education, rural residence and low-income status predicted the use of medical services and preventive screening examinations such as Pap smear (Cohen, 1991). Other predictors of receiving Pap smear tests include gender of provider (Wee, *et al*., 2001), patient barriers such as cost, lack of knowledge on risks and benefits, inconvenience, and health care system orientation, such as focusing on illness and disease than on prevention (Mandelson & Thompson, 1998).

In relation to cervical cancer screening, some studies found access to healthcare as a predictor of Pap smear screening and other preventive health

services, specifically, having health insurance and more frequent visit to family planning unit facilitate the use of preventive screening services for women (Martin *et al.,* 1996). Even though higher accessibility may not necessarily lead to higher utilization of health services (Nothnagle *et al*, 2000), it is anticipated that for fatal events such as invasive cervical cancer, increased accessibility to healthcare will enhance utilization of preventive screening services. Other studies have also found that socio-demographic characteristics associated with noncompliance with recommended guidelines for cervical cancer screening include older age, unmarried status, and rural residence (Dubay *et al,* 2001). Martin *et al.* (1996) concluded from their examination of trends in Pap-test screening in 1987 and 1992 using data from the National Health Interview Survey (NHIS) Cancer Control Supplements that older women aged 65 years or older, widows, and never-married women were less likely to have a Pap screening test. However, studies have demonstrated that individuals at greatest risk for pre-cancerous cervical disease are least likely to engage in regular Pap smears and recommended diagnostic procedures (Miller, *et al.,* 1997).

Findings from research carried out in Jordan byAmarin *et al (*2000). suggested that women who had delivered children were significantly more likely to have received a Pap smear than women who had no children.In 2002, Ojiyi *et al.*documented in a study involving 450 women that only 2.4% respondents had ever had a cervical cytology performed on them. In a similar study in Maroua, Cameroon,Tebeu *et al*. (2007) found out that only 8.3% of 171 respondents had undergone a preventative screening test and that 28% of the respondent had prior knowledge of cervical cancer, compared with 72%

women who were uninformed about cervical cancer. The results revealed that the uniformed group tended to be single mothers, illiterate, housewives, and those who had their first child before the age of 20**.**

Understanding factors influencing the uptake rate in screening programs can provide opportunities to increase the attendance rate. Known risk factors for cervical cancer are inversely related to participation in screening programs; the incidence and mortality rates of cervical cancer among unscreened women are higher (Anhet al., 2003). The Pap smear uptake among groups of women varies with socio-demographic. For instance, low uptake rates have been associated with women who are older or "less well educated", who have a lower socio-economic background or health insurance, or who reside in rural locations (Klug, 2005). Barriers to access of Pap smear surveillance have been identified and have been the subject of numerous reviews. A number of studies have identified factors including fatalism, fear, hopelessness regarding a diagnosis of cancer, and embarrassment for the screening process as particularly prevalent among specific cultural groups (Fernandez-Esquer *et al.,* 2000). The cost of screening has been shown to repeatedly predict lower rates of screening across a variety of populations, however if the financial barriers are controlled, the rates of utilization often become more comparable (Ramirez, 1997).

Research on participation in mammography shows that normative beliefs of others affect screening uptake (Allen, 1998). Women whose relatives encourage them to participate in a screening are more likely to participate. The relatively low uptake rate is even more problematic because women with low uptake rate less often follow the path from initial

participation to provision of preventive healthcare than those with an objectively lower risk. In addition to the above, a study conducted in Sweden to attendees (those who had a pap smear within the last 3 years) and non-attendees (those who did not have a pap smear in the last 3 years), the analyzed result showed that non-attendees did not evaluate the satisfactory benefits as high, did not perceive cervical cancer as severe and did not feel as anxious about pap smear as did attendees. The Australian Institute of Health Report entitled "Cervical cancer screening in Australia –Options for Change" found that 15% of Australian women have never had a pap smear test; around 50% have had a pap smear test within past 2 years and 60% within the past 3 yearsbut many groups of women who should be tested have not been taking advantage of thescreening program. These include older women, women of low socio-economic status,women in rural areas, women from non-English speaking backgrounds and Aboriginalwomen,

The findings from the review of literature indicate the need for more information by women of all ages. Cervical screening services that are provided by appropriately trained health professionals and workers may increase the acceptability and accessibility of cervical cancer screening. Healthcare providers are in a position to provide such information because they are in contact with women in a variety of settings. For example, the healthcare provider may meet a woman while she is obtaining prenatal or contraceptive care or when she brings a child for immunizations. Any of these times is ideal to discuss with the woman the need for routine gynecologic care. Healthcare providers can use any contact with women to teach them how to help protect them from cervical cancer. In the nutshell, health education

should be offered to improve awareness of both the public and health professionals of the benefits and limitations of cervical screening programs. Health education programs regarding cancer screening must be clear, brief and respectful of local culture, and use a variety of media. Recruitment strategies for cervical screening programs must be culturally sensitive and specific, aiming for the whole populations and promoting screening in previously under-screened women. Healthcare providers must work to decrease the barriers within healthcare and social systems that discourage or prevent women from attending cervical screening programs(Fernandez-Esquer *et al.*, 2000).

Ghanaian Women's Attitudesto Cervical Cancer Screening

Statistics from a seven-year period spanning from 2001-2008 indicate a total client population of 16,289 were screened in the Cervicare Unit of Ridge Hospital. A total of 1,287(7.9%) were VIA (Visual inspection with acetic acid) positive and 15,002 (92.1%) were VIA negative. A total referral of 417 (2.6%) clients were made and comprised 25 (1.9%) VIA positive and 372 (2.5%) VIA negative cases. Out of 1,289 VIA positive client referred, follow-up was made on 457 (35.5%), the total cancer cases reported were 93 (7.2%). From these statistics, it can be concluded that cervical cancer incidence is low in the client population seen in the Ridge Hospital within a seven-year period. However, report from Korle-Bu and Komfo Anokye Teaching Hospitals, the two major referral hospitals with a radiotherapy centers in the country reported high incidence of cervical cancer. This may in part, be due to referral of all suspected cervical cancer cases from all over the country including Ridge Hospital and some neighboring West African countries to these two health

facilities, whereas Ridge Hospital focus on client population in the Greater Accra Region and surrounding regions.

The nurses in the Cervicare Unit appear to typically serve as the initial interface with client and are often responsible for such screening tasks as taking down medical and sexual histories. The nurses indicated that they are frequently responsible for contacting and communicating results from tests (e.g., abnormal Pap smears) to patients and scheduling follow-up appointments. However, this may not always be the case as the total number of patients followed up was 457 (35.5%) and out of a total of 1,289 clients referred from the facility within the seven-year period. The nurses noted the importance of establishing a comfortable rapport with their client when addressing both HPV and STD (Sexually Transmitted Diseases) related issues. Client privacy is a priority to ensure adequate communication on client sexual life, other risk factors, cervical cancer and STD related issues (Ridge Hospital, Cervicare Unit, Cummulative Report for 2001-2008).

Beliefs of Women with Cervical Cancer

There are differences in the traditional, social, political and spiritual beliefs and thus findings from studies of one tribe cannot be used or applied to explain the behaviors' or practices of another. However, these groups have many similarities and therefore reviewing beliefs in a general sense may aid healthcare providers to begin to understand their beliefs. Beliefs about health and cancers have altered predictors of adherence among white womenwith abnormal pap smears but these were not applicable to other groups because healthbeliefs can vary by ethnicity. In some studies, Latinos and women of

Asian descent endorsed more misconceptions about cancer and fatalistic beliefs(Allen, 1998).

Analysis of data from a study conducted in Netherlands showed that woman's beliefs about cervical screening and attendance are the best predictors of screening uptake, even whendemographic and organizational aspects are taken into account. The major findings in the study in Nigeria to female health workers showed that their Pap smear utilization was very low and there was a wide gap between their personal knowledge and uptake of pap test. This was unexpected as this population of women is required to be better informed about the high risk factors of developing cervical cancer. The behavior of these female health workers appears to be predicted by complex socio-cultural beliefs where women hardly reveal their personal medical details especially in a polygamous setting and superstition and inappropriate belief were the commonest excuse for not having a Pap smear test. It is obvious that health beliefs, knowledge and attitudes of individual women are very important predictors of utilization of preventive Pap smear screening. Also, a person may believe that their potential cancer is due to their behavior or lifestyle and may therefore not seek help for fear of being labeled or judged(Allen, 1998).

In addition to those studies discussed above, Seow *et al*. (1995) attempted to identify the cognitive barriers to screening activity through a study based in Singapore. The study found that, overall, the belief of personal susceptibility to cancer was low and that a substantial proportion of women held the attitude that cancer could not be prevented. These two factors in combination would obviously have an impact on screening uptake and led

Seow *et al* (1995) to suggest that the means through which uptake can be increased are culturally specific and must deal with widely-held beliefs and attitudes. The degree of traditionality of woman living in Ajumako-Eyan-Essiam may influence her decision to whether or not participates in cervical cancer screening programs.

Cervical cancer prevention

Cervical cancer has been preventable since the introduction of the Pap smear in 1941(Gardner, 2003). In developed countries, Pap smear programs have reduced cervical cancer deaths by 70%. Microscopic examination of cells from the cervix can identify the progression of pre-cancerous changes. Development of cervical cancer in the majority of women occurs over many years, so these pre-cancerous changes can be observed, followed, and treated.

In the United States, standard of care for the evaluation of Pap smear abnormalities is colposcopy (examination of the cervix under magnification). The cervix is treated with acetic acid to visualize abnormal cells, and colposcopically directed cervical biopsies are performed. On the basis of biopsy results, low-grade abnormalities are followed for progression, whereas high-grade lesions and cancers are treated. Well-organized follow-up systems are critical for patients with dysplasia who are at risk for developing invasive cancer.

The role of HPV testing in the management of cervical disease is controversial. Because of the high prevalence of HPV infection in the absence of cervical disease, routine screening for HPV is not currently recommended. The ASCUS/LSIL Triage Study trial suggested that testing for cancer-associated HPV DNA can be used for women with Pap smears showing

atypical squamous cells of undetermined significance. Additionally, HPV vaccines are under development, including vaccines for prophylaxis of HPV-free women, as well as therapeutic vaccines for infected women with cervical abnormalities.

Prevention of cervical cancer can be achieved in one of two ways: preventing infection initially or detecting the precursors and providing treatment. The former method is called primary prevention. In the primary prevention of cervical cancer, some of the risk factors such as risky sexual behaviours that can lead to human papillomavirus (HPV) or human immunodeficiency virus (HIV) infection, oral contraceptives, smoking and poor nutrition can be avoided or changed, but some cannot. By modifying the avoidable risks, women can reduce their chances of getting cervical cancer. This can be accomplished by avoiding exposure to the virus through abstinence from early sexual activity. Health education to promote the use of condoms for sexual intercourse, especially in young women, sexual partner reduction and negotiated safer sexual strategies have been recommended as a necessary approach to limit the spread of HPV (Lovejoy, 1994). Another mode of primary prevention is vaccination against HPV.

Secondary prevention such as screening women for pre-cancerous conditions will remain a necessary component of any comprehensive cancer control program. In cervical cancer, pre-invasive cancer is curable 70% to 90% of the time with early detection and proper treatment (Bedard, *et al*. 2000). Watkins and associates (2002) stated that between 20-60% of all cervical cancer deaths could be avoided by improving screening programs.

Effective screening participation is important to prevent cancer incidence and recurrence and to maintain health for the growing number of Ghanaian women. In Ghana, there is no comprehensive policy documents to guide the program. Currently, cytology smears are provided on demand in antenatal, postnatal, gynaecology, and family planning clinics in Korle Bu Teaching Hospital, Komfo Anokye Teaching Hospital (KATH), Ridge Hospital and Amassaman Hospital. Nevertheless, observations indicate that there is no significant change in behaviour and practice of cervical smear among Ghanaian women (Adanu etal, 2002).

Successful cervical screening programs are known to depend on the participation of an informed target population. In Ghana, registered nurses are the most visible, frontline personnel providing health education to patients and the general population. Health education involves not only providing relevant information, but also facilitating health-related behavior change. This could be achieved through emulating good health practices, positive attitudes towards screening by the nurses as their attitudes and actions are predictors of societal health behavior. The goal of health education is to help individuals and communities achieve through their own initiative, optimum state of health. The nurse can use the health belief model as a next step in formulating an action plan that meets the needs and capabilities of each person in making healthy behavior change.

Effectiveness of Cervical Cancer Screening

To be effective, a cervical cancer prevention program must include a package of education, screening, and pre-cancer treatment services that reach the majority of women at risk of the disease (WHO, 2004). Mass screening

programmes in which women have cervical smear tests at least once every three to five years have proven to be effective in reducing cervical cancer morbidity and mortality rates (Saslow, 2002). The factors that determine the success of cervical cancer screening are coverage of the population at risk through organised screening and quality assurance in the collection and interpretation of cervical smears.

Essential elements for a successful cytology screening programme are summarized as follows (WHO, 2004). Previous studies conducted in Mexico have shown that a woman's knowledge about cervical cancer and about the Pap's benefits, a history of using contraceptives, a previous history of gynecological symptoms, being less than 65 years of age, having had fewer than five pregnancies, being literate, a women's partner's support for them attending gynecological examinations have all been associated with the highest levels of cervical cancer screening:

1. Training of health care professionals including smear-takers, cytotechnologists, cytopathologists and colposcopists.
2. An agreed decision on the priority age group to be screened.
3. Adequately taken and fixed smears.
4. High quality laboratory services.
5. A mechanism to inform women of the test results in an understandable form.
6. A mechanism to ensure that women with an abnormal test result attend for management and treatment.
7. An accepted definition of an abnormality to be treated.
8. A mechanism to follow-up treated women.

9. A decision on the frequency of subsequent screens.
10. A mechanism to invite women with negative smears for subsequent smears.

Challenges to Screening

The results of routine Pap smear screening in the industrialized world have been impressive, and the procedure has contributed to 70% to 80% reduction of cervical cancer incidence in developed countries since the 1960s (Mahlck, 1994). Even in industrialized countries, however, the level of success can vary. For example, in the United States where an overall decline in the number of cervical cancer cases has occurred, rates nonetheless remain high in impoverished areas. Lack of similar success in developing countries is largely attributable to limited resources such as supplies, trained personnel, equipment, quality control, health care infrastructure, and effective follow-up procedures. As noted earlier, screening programs in developing countries either do not exist or are ineffective. One estimate is that about 75% of women in industrialized countries have been screened within the preceding 5 years. By contrast, studies in India and Kenya found that only 1% of participants had ever undergone any screening, despite numerous efforts to improve screening programs (PATH, 2000). Compounding the problem is that, both women and health care workers often lack information about cervical disease and cost-effective ways to prevent it.

CHAPTER THREE

METHODOLOGY

Introduction

This chapter presents the various procedure and methods for achieving the objectives of the study. It encompasses the study design, population of the study, sample and sampling data analysis, pre-testing, data collection, ethical considerations and data management and analysis and ethical consideration regarding the study.

Study Setting

The research was conducted in the Ajumako-Enyan-Essiam district in the Central Region of Ghana. Ajumako-Enyan-Essiam (AEE) is one of the seventeen (17) districts in the Central Region of Ghana. It is rural and covers an estimated land area of 541.3 square kilometers. The Agona district forms the boundary on the West, the East by Mfantsiman district, on the south by Asikuma-Odoben-Brakwa District and to the North by Gomoa District (AEEDA, 2006). It has a projected population of 138,046 of which 73,628 are females (Ghana Demographic Survey, 2010). It is made up of 169 communities.

Ajumako is the district capital and is about 40 kilometres from the Cape Coast Metropolis. Akans predominantly inhabit AEE district. There are however few migrant Ewes, Gas, Krobos and people from the northern sector of Ghana. The major religion is Christianity and African traditional Religion. The most widely spoken Ghanaian language is Fante. It has a district hospital located in the district capital, health centers and clinics as well as CHIPS compound that have been spread within the district.

Study Design

Quantitative cross-sectional design which is descriptive in nature was used to gather data on the knowledge, attitude and health beliefs of cervical cancer and its screening amongwomen. Quantitativedesign offers an in-depth explanation of the phenomenon and suppresses the use of subjective information.

Study Population

For the purpose of this study, women between the ages of 18 and 64years who are present in the locality at the time of the study were used as the population for the study. The study excluded pregnant women and women within the age group who have history of cervical cancer. It also excluded women who lack understanding due to mental alterations. Majority of the women includes those in the working population.

Study Period

The study was organized between the periods of December to March. It was difficult to assemble all the women within the study period due to their work schedule which results in some of them dropping out. The researcher together with the research assistants visited each sampled town within the hours of 7: 30am – 3:30pm during the day to administer the questionnaire.For those who were not around at the said time, the researcher with the assistants visited the towns within the hours of 6:30 to 7: 30am in other to capture them. The data collection took a period of ten days. Again, the period at which the study was organized gave every woman the opportunity to have a fair idea of cervical cancer. This is because it was a period of immunization and therefore

mass education of public health conditions of which cervical cancer is part was ongoing.

Sampling and Sampling Method

This study employed probability sampling method. In determining the sample size of this study, the following sample procedures were adopted.

First, the 169 towns in the district were stratified into four main groups, using the boundaries in the district thus Northern, Southern, Eastern and Western parts (AEEDA, 2006). After the district was stratified, two towns were selected from each stratum making a total of eight witha simple random sampling technique usingballot method. Convenience sampling procedureswereadopted to select participants. The total sample size that was selected for the study was based on the statistical formula by Glenn (1992).

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

Where;

n is the sample size,

N is the population size,

e is the level of precision

From the statistical formula stated above, the ideal sample size will be determined for the study**.**

Therefore N=Sample size

N=73,628 representing female population in the district

e=level of precision read 0.07

So $n = \frac{73,628}{1+73,628(0.07)^2}$

Therefore n= 73,628

1+73628(0.0049)

n=73628

360.8

n=204.

The sample size was increased to 240 to compensate for non-response. Therefore,240, and each town had an approximately 30 participants.Hence,30 participants were sampled from each town.

Pre-Testing

The data collection instruments (questionnaire) were pre-tested for validity and reliability. Fifty participants from Breman Asikuma, the district capital of Asikuma-Odoben-Brakwa District were sampled for pre-testing. This was done to test whether the questionnaire was able to measure the variables of interest. Lastly, it was used to check whether the questions are clear and suited to the understanding of the respondents. Pre-testing gave a chronbach alpha of 0.784. Almost all questions showed internal consistency and validity. However, three questions were modified to elicit desired information from participants. These questions were 8, 11 and 15. These questions were then adjusted to reflect the pilot study.

Data Collection Procedure

A self-administered questionnaire was developed on knowledge, attitude and health beliefs. The instrument was designed and discussed with the supervisor. The questions aim to gather information regarding participant's knowledge on screening for cervical carcinoma, attitude and health beliefs

towards screening for cervical cancer. Three research assistants were trained on data collection procedures.

The questionnaire was divided into four parts. The first part of the questionnaire was aimed at gathering details of a participant's social, economic and demographic characteristics. The second part of the questionnaire attempted to assess the level of knowledge of participants on cervical cancer and screening. The third part asked questions relating to attitude and was constructed in line with the Health Belief Model (HBM). The final part of the questionnaire focused on the health belief of respondentsand this described the various health beliefs of respondents

The respondentscompleted the questionnaires which were administered to them by the researcher and his assistants. The questionnaires were explained and respondents were given time to answer that same day. The questionnaires were enclosed in a self- addressed envelope including a cover letter and a pen as an incentive to enhance maximum participation in the research. Respondents were allowed to seal theenvelops after completion of questionnaires to ensure outmost confidentiality. To ensure retrieval of responses, the researchassistants went around ensuring that respondents fill the questionnaires after the principal investigator had finished distributing the questionnaires and explaining. The researcher and assistants collected the questionnaire after being administered and filled from respondents.

Ethical Considerations

An approval was obtained from the Institutional Review Board of the University of Cape Coast before commencing data collection. The researcher also sought an informed consent from the district assembly and from the

various traditional rulers and opinion leaders of each town which was sampled. Each respondent signed a consent form after a detailed explanation was givento ensure the right of self-determination and autonomy. The data obtained were treated privately with no name tag on it. The study caused no physical or psychological harm to the participants and was not exploited in any way. The respondents were treated with respect and their rights to privacy andconfidentiality were observed through anonymity.Respondents were informed that if the data were to be used for secondary analysis, ethical approval would be obtained.

Data Management and Analysis

Data analysis is applying a series of statistical tests and procedures in a specific stepwise progression in order to examine a dataset. Since the information that was retrieved from respondents was of varied characteristics, Statistical Package for Social Sciences (SPSS) version 20 was employed to process the data and to generate descriptive statistics such as frequencies, percentage, mean, mode, and standard deviation. This tool was used for direct entry, coding and checking of the data. Upon completion of the questionnaires, the forms werechecked for completeness. Names on the questionnaires were omitted and identity was kept confidential. Data waskept in a locked cupboard which only the researcher had access.

Chapter Summary

This chapter basically presented the study design, population of the study, sample and sampling data analysis, pre-testing, data collection, ethical considerations and data management and analysis and ethical consideration regarding the study.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This section presents the results of the study in tables and charts. The results are presented in accordance with the order of the study objectives.

Demographic Characteristics of Respondents

As part of the general background information of the respondents, the study provided a tabular presentation as seen in Table 1 below. The demographic characteristics entailed the age group, marital status, educational level, ethnic group as well as the religion of the respondents

Table 1: Demographic Characteristics of Respondents

Variable	Frequency	Percentage(%)
Age group (years)		
18-20	3	1.3
21-30	100	41.7
31-40	95	39.6
41-50	22	9.1
51 and above	20	8.2
Marital status		
Married	124	51.7
Never married	84	35.0
Informal union	16	6.7
Divorced/separated	7	2.9
Widow	9	3.8
Ethnic group		
Fante	116	48.3
Ewe	33	13.8
Ashanti	60	25.0

Table 1 Continued

Ga	30	12.0
Others	1	0.9
Religion		
Traditional	7	2.9
Christianity	214	89.2
Islam	19	7.9
Total	240	100
Level of education		
No formal education	20	8.3
Primary/JHS	24	10.0
SHS	128	53.3
Tertiary	58	24.2
Others	10	4.2
Occupation		
Work for pay	88	36.7
Farmers	7	2.9
Self employed	27	11.3
Students	111	46.3
Domestic duties	7	2.9
Unemployed	0	0.0
Retired	0	0.0
Total	240	100

Source: Field Survey, (2017)

In this study, 240 women in the Ajumako-Enyan-Essiam district were used. A little more than two (2) out of every five (41.7%) of the respondents were within the age of 21 to 30 years, 39.6 percent were in 31 to 40 years old. However, 8.2 percent were aged from 51 to 60 years. In terms of marital status, more than half (51.7%) of the women were married while 2.9 percent

were divorced or separated. Most (48.3%) of the women involved in this study were Fantes while 12.9 percent were Gas. Almost all (89.2%) the women employed for the study were Christians while 2.9 percent were Traditional worshipers.

More than half (53.3%) of the women had secondary level education while 24.2 percent had tertiary level education. Most women 46.3 percent in this study were students in tertiary institutions, 36.7 percent are working for pay. None of the respondents was unemployed or retired.

Moreover, Figure 1 shows the number of children born to the women contacted for the study.

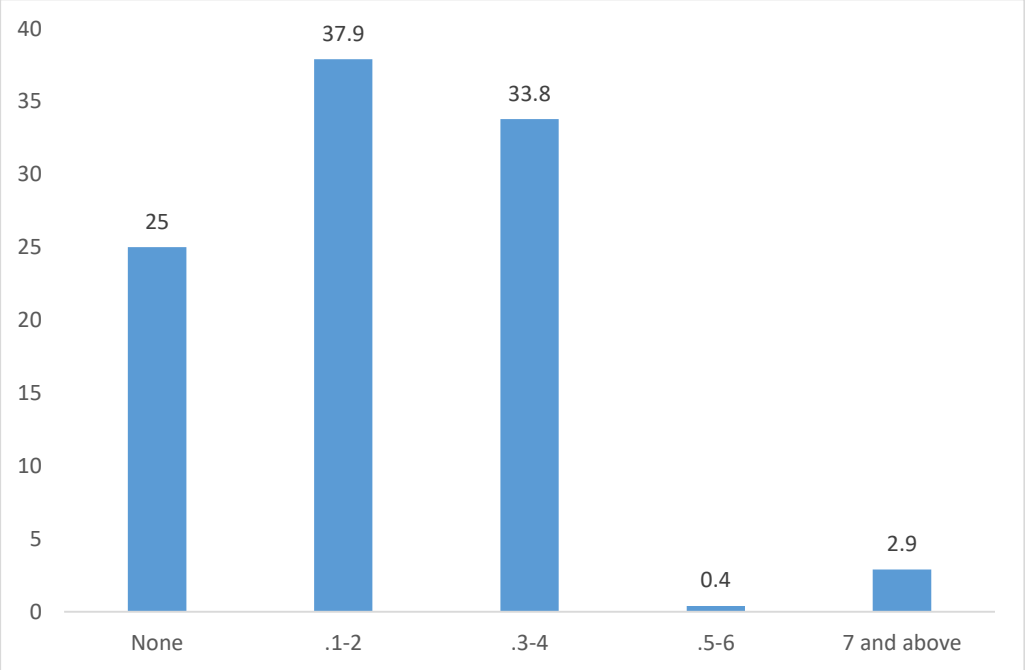

Figure 1: Number of Children Born to the Women

Most of the women 37.9 percent had one-to-two children, 33.8 percent had three-to-four children. However, 25 percent of the women had no child. This observation was vital for the study as it provided the researcher a whole array of women who are likely to be affected by cervical cancer.

Knowledge on Cervical Cancer and Pap Smear Test

Table 2 presented the level of knowledge of the women contacted for the study on cervical cancer and Pap Smear Test. A summary of the overall information is presented in Table 2.

Table2*: Level of Knowledge of Women on Cervical Cancer*

Knowledge on cervical cancer	Frequency	Percentage
Ever heard of cervical cancer		
Yes	168	70.0
No	72	30.0
Source of information on Cervical Cancer		
Books, Journals, Newspapers	76	31.7
Electronic media	61	25.4
Other health workers	47	19.6
Previous knowledge from school	56	23.3
Cervical cancer is/or cervical cancer		
Cervical cancer	58	24.2
Cancer of the ovaries	14	5.8
Cancer of the vagina	147	61.3
Cancer of the tubes	9	3.8
Don't know	12	5.0
Signs and symptoms		
Thin watery vaginal discharge	28	11.7
Occasional bloody spotting	93	38.8
Post-menopausal bleeding	33	13.8
Foul smelling discharge	33	13.8
Pelvic, flank lower back and abdominal pain	41	17.1
No signs and symptoms	0	0.0
Don’t know	12	5.0
Risk factors of cervical Cancer		
Early sexual intercourse	26	10.8
Multiple sexual partners	143	59.6
Multiparty	33	13.8
Low socio-economic status	3	1.3
Human papilloma virus infection	35	14.6

Table 2 Continued

Pap smear is		
A known clinical test for early detection of cervical cancer	233	97.1
A test carried out to detect uterine fibroid	6	2.5
A test carried out to detect ovarian cancer	1	0.4
A test carried out to detect cancer of the womb	0	0.0
Total	**240**	**100**

Source: Field Survey, 2017

In Table 2, majority of the respondents, 70 percent, reported that they have heard of cervical cancer. Most (31.7%) respondents reported books, journals, newspapers as their primary source of information on cervical cancer, 25.3 percent primarily source information on cervical cancer from electronic media and 28 percent got information on cervical cancer from two or more sources of information. Also, 23.3 percent reported that they acquired the information from school. Most (61.3%) women in the study reported that cervical cancer is cancer of the vagina while 24.2 percent reported it as cervical cancer. A small number of the respondents (5%) did not know what cervical cancer was.

In terms of signs and symptoms, 38.8 percent of women reported on occasional bloody spotting, 17.1 percent pelvic, flank, lower back and abdominal pain. Multiple sexual partners were the most prevalent risk factor in this study as reported by 59.6 percent of the women while 1.3 percent reported on low socio-economic status. Another, 14.6 percent of the women were of the view that human papilloma virus infection was a risk factor. Almost all (97.1%) the women in this study knew that a pap smear is a known clinical test for early detection of cervical cancer.

Cervical Cancer Prevalence (Awareness)

Figure 2 provides the summary of the extent of Awareness of the prevalence cervical cancer in the study setting as per the information provided by the respondents.

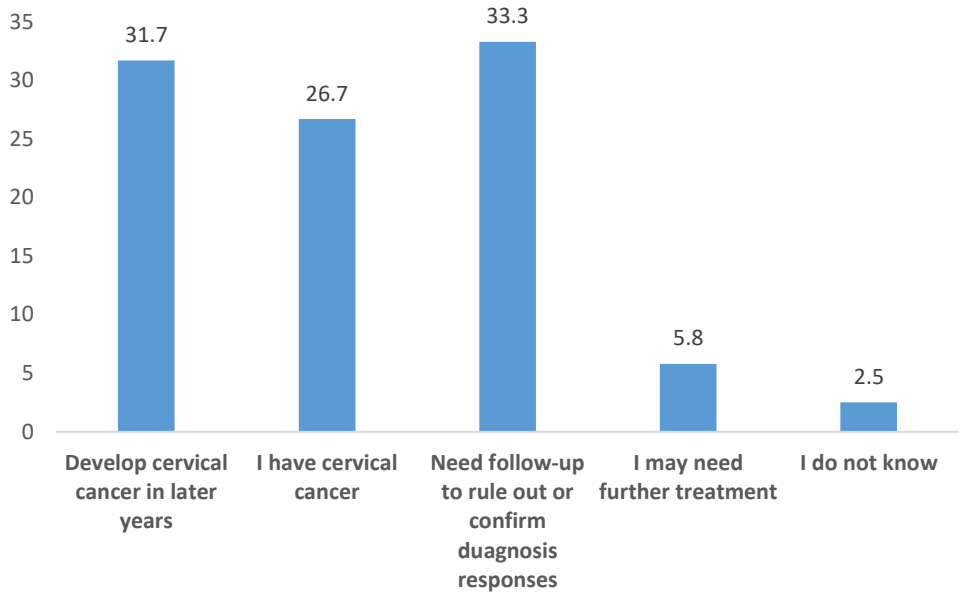

*Figure 2:*Awareness of the prevalence cervical cancer

Source: Field Survey, 2017

In Figure 2, respondents reported on several meanings of abnormal pap smear. A third percent of the respondents reported that abnormal pap smear meant one can develop cervical cancer in later years or one needs a follow up to rule out or confirm the diagnosis of cervical cancer. However, 2.5 percent of the respondents did not know what abnormal test means.

Respondents' Perception of Abnormal Pap Smear

The study also sort to provide the extent of perception of the respondents on Abnormal Pap smear. Among others, the researcher quizzed the respondents whether they have ever heard of Pap smear test, what normal smear results

means, who performs Pap Smear, and at what stage are women likely to have cervical cancer. The responses were provided in the Table 3 below.

Table3*: Level of Knowledge of Women on Cervical Cancer and Pap Smear*

Knowledge on cervical cancer	Frequency	Percentage(%)
Ever heard of Pap smear test		
Yes	178	74.0
No	62	36.0
Normal smear results means		
Low risk of developing disease	114	47.5
No risk of developing disease	60	25.0
I don't need to have any further smear tests	28	11.7
I don't know	38	15.8
Follow-up for normal smear results		
6 months	140	58.3
2 months	55	22.9
One year	8	3.3
Three years	0	0.0
I don't know	37	15.4
Women who take contraceptives are at risk		
Yes	122	50.8
No	92	38.3
Don't know	26	10.8
Who performs Pap smear		
Nurse	28	11.7
General practitioner	30	12.5
Gynecologist	182	75.9
At what stage are women likely to have cervical cancer		
18-25	78	32.5
26-35	59	24.6
36-60	49	20.4
Not more than 70	12	5.0
Don't Know	42	17.5
Total	**240**	**100**

Source: Field Survey, 2017

From Table 3, majority (74%) of the respondents reported that they have heard of Pap smear test. Less than half (47.5%) of the women surveyed reported that a normal cervical cancer test means low risk of developing the disease while 25 percent reported normal smear results means no risk of developing the disease. It must however be noted that 15.8 percent did not know what a normal test meant. A little more than half (58.3%) of the respondents reported that follow-up must be done in 6 months while 22.9 percent reported 2 months. However, 15.4 percent did not know when it was appropriate for women to go for follow-ups. Approximately half (50.8%) of the respondents reported women who take hormonal contraceptives are at increased risk of getting cervical cancer while 10.8% did not know whether taking hormonal contraceptives increases the risk of contracting cervical cancer or not.

Majority (75.9%) of the respondents in the study were of the view that Pap smear is performed by gynecologists. More than half (69.2%) of the respondents agreed that cervical cancer is the number one cause of cancer death among women in Ghana. On the other hand, 7.9 percent reported that they did not know whether or not cervical cancer is the number one cause of cancer death among women in Ghana. In this study, most respondents (32.5%) reported that women are likely to have cervical cancer at age 18 to 25 years while 24.6 percent reported 26 to 35 years. Another 17.5 percent of the women did not know the age at which women were likely to have cervical cancer.

Knowledge of Cervical Cancer

This study used exploratory Principal Component Analyses (PCA) to construct a summary indicator of knowledge on cervical cancer and Pap smear by using various indicators shown in the adopted questionnaire.

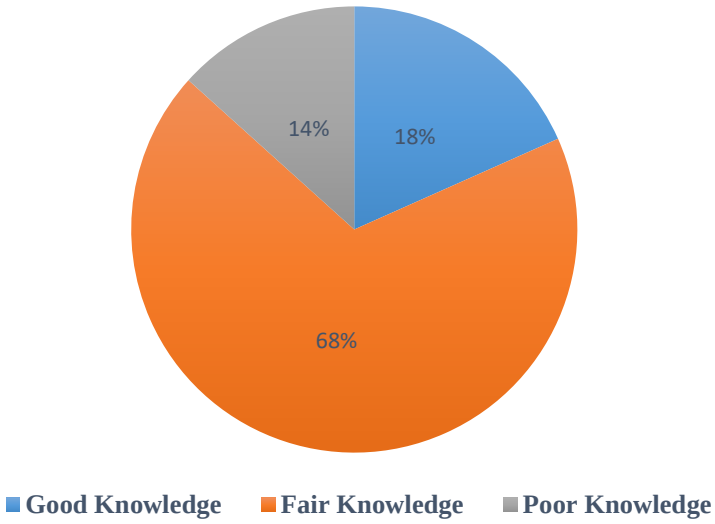

*Figure 3:*Level of Knowledge of Women on Cervical Cancer

Source: Field Survey, 2017

Level of knowledge on cervical cancer was based on indicators (shown in Tables 2 and 3; each indicator was assigned a weight (factor score) generated through principal component analysis, and the resulting asset scores standardized in relation to a normal distribution with the mean of zero and standard deviation of one. The score distribution was used as basis for categorizing the level of knowledge women have on cervical cancer as poor, fair and good. The resultant level of knowledge on cervical cancer index was used to examine the levels of knowledge participants have on cervical cancer. In Figure 3, less than 20 percent of the women in the study had good knowledge on cervical cancer while 13.3 percent had poor knowledge on cervical cancer.

Level of Knowledge on Cervical Cancer Screening

Table 4 presents the level of knowledge of respondents on cervical cancer screening. The respondents were asked to reveal their level of cervical cancer

on three thematic themes: Good Knowledge, Fair Knowledge, and Poor knowledge.

Table4*: Level of knowledge on cervical cancer screening*

Knowledge on screening (pap smear)	**Frequency**	**Percent**
Good Knowledge	13	5.4
Fair Knowledge	180	75
Poor	47	19.6
Total	**240**	**100**

Source: Field Survey, 2017

From Table 4, it was evident that Few (5.4%) of the respondents had good knowledge on cervical screening while 19.6 percent had poor knowledge. Majority of the respondents, 75%, had a knowledge on cervical cancer that was regarded as fair. This is not surprising coming from the background of the educational level of the respondents.

Association Between Demographic Characteristics and Level of Knowledge on Cervical Cancer

The researcher conducted a Chi-Square test to ascertain the association between demographic characteristics and level of knowledge on cervical cancer of the respondents. To accept the claim that any of the demographic characteristic has an influence on knowledge of cervical cancer, the chronbach alpha was used to give a clearer stance as compared to the Chi-Square. Table 5 presents a summary of the various demographic characteristics and their respective association with the respondents' level of cervical cancer knowledge.

Table5*: Demographic Characteristics and Level of Knowledge on Cervical Cancer*

Characteristics	Level of knowledge on Cervical Cancer			χ^2	p-value
	Good n(%)	Fair n(%)	Poor n(%)		
Age group (years)					
18-20	1 (2.3)	2 (1.2)	0(0.0)	1.638	0.957
21-30	24 (54.5)	97 (59.1)	20 (62.5)		
31-40	19 (43.2)	64 (39.0)	12 (37.5)		
41-50	0 (0.0)	1 (0.6)	0 (0.0)		
Marital status					
Married	21 (47.7)	82 (50.0)	21 (65.6)	7.454	0.489
Single	14 (31.8)	63 (38.4)	7 (21.9)		
Living with a partner	4 (9.1)	9 (5.5)	3 (9.4)		
Divorced/separated	2 (4.5)	5 (3.0)	0 (0.0)		
Widow	3 (6.8)	5 (3.0)	1 (3.1)		
Ethnicity					
Fante	20 (45.5)	76 (46.3)	20 (62.5)	10.692	0.227
Ewe	7 (15.9)	24 (14.6)	2 (6.2)		
Ashanti	13 (29.5)	37 (22.6)	10 (31.2)		
Ga	4 (9.1)	26 (15.9)	0 (0.0)		
Others	0 (0.0)	1 (0.6)	0 (0.0)		
Religion					
Traditional	2 (4.5)	5 (3.0)	0 (0.0)	4.224	0.377
Christianity	39 (88.6)	148 (90.2)	27 (84.4)		
Islam	3 (6.8)	11 (6.7)	5 (15.6)		
Level of education					
No formal education	4 (9.1)	15 (9.1)	1 (3.1)	4.327	0.835
Primary	4 (9.1)	16 (9.8)	4 (12.5)		
JHS/SHS	21 (47.7)	86 (52.4)	21 (65.6)		
Tertiary	13 (29.)	40 (24.4)	5 (15.6)		
Others	2 (4.5)	7 (4.3)	1 (3.1)		
Occupation					
Work for pay	14 (31.8)	57 (34.8)	17 (53.1)	10.363	0.241
Plantingfor consumption	0 (0.0)	7 (4.3)	0 (0.0)		
Self employed	4 (9.1)	18 (11.0)	5 (15.6)		
Student	24 (54.5)	77 (47.0)	10 (31.2)		
Domestic duties	2 (4.5)	5 (3.0)	0 (0.0)		
Total	**44(18.3)**	**164(68.3)**	**32(13.3)**		

Source: Field Survey, 2017

In Table 5 there was no significant association between demographic characteristics (age group, marital status, ethnicity, educational level, occupation and religion) and level of knowledge on cervical cancer. With the p-values associated with age group, marital status, ethnicity, educational level, occupation and religion greater than $p>0.05$, it is evident that demographic characteristics do not have influence on the respondents' knowledge on cervical cancer. The result is in contrast with Brinton (1992) who argued that Women who develop cervical cancer are usually from socially disadvantaged populations Also there is the argument that he disease has a higher rate among indigenous populations, for example in New Zealand among Pacific women and women from Maori backgrounds, and in Indian populations in Brazil and Columbia (Panagiota, 2000).

Demographic Characteristics and Level of Knowledge on Cervical Cancer Screening

Again, the researcher conducted a Chi-Square test to ascertain the association between demographic characteristics and level of knowledge on cervical cancer screening of the respondents. In order to accept the claim that any of the demographic characteristic has an influence on knowledge of cervical cancer screening, the chronbach alpha was used to offer a clearer stance as compared to the Chi-Square. Table 6 presents a summary of the various demographic characteristics and their respective association with the respondents' level of cervical cancer screening.

Table6*: Demographic Characteristics and Level of Knowledge on Cervical Cancer Screening*

Characteristics	Level of Knowledge on Cervical Cancer Screening				
	Good n(%)	Fair n(%)	Poor n(%)	χ^2	p-value
Age group (years)					
18-20	0 (0.0)	3 (1.7)	0 (0.0)	3.109	0.795
21-30	6 (46.2)	109 (60.6)	26 (55.3)		
31-40	7 (53.8)	67 (37.2)	21 (44.7)		
41-50	0 (0.0)	1 (0.6)	0 (0.0)		
Marital status					
Married	7 (53.8)	91 (50.6)	26 (55.3)	15.079	0.058
Single	3 (23.1)	66 (36.7)	15 (31.9)		
Living with a partner	2 (15.4)	14 (7.8)	0 (0.0)		
Divorced/separated	0 (0.0)	6 (3.3)	1 (2.1)		
Widow	1 (7.7)	3 (1.7)	5 (10.6)		
Ethnicity					
Fante	4 (30.8)	90 (50.0)	22 (46.8)	9.655	0.297
Ewe	0 (0.0)	28 (15.6)	5 (10.6)		
Ashanti	7 (53.8)	41 (22.8)	12 (25.5)		
Ga	2 (15.4)	20 (11.1)	8 (17.0)		
Others	0 (0.0)	1 (0.6)	0 (0.0)		
Religion					
Traditional	0 (0.0)	6 (3.3)	1 (2.1)	1.172	0.883
Christianity	12 (92.3)	161 (89.4)	41 (87.2)		
Islam	1 (7.7)	13 (7.2)	5 (10.6)		
Level of education					
No formal education	3 (23.1)	14 (7.8)	3 (6.4)	8.633	0.374
Primary	1 (7.7)	14 (7.8)	9 (19.1)		
JHS/SHS	6 (46.2)	98 (54.4)	24 (51.1)		
Tertiary	2 (15.4)	46 (25.6)	10 (21.3)		
Others	1 (7.7)	8 (4.4)	1 (2.1)		
Occupation					
Work for pay	4 (30.8)	69 (38.3)	15 (31.9)	7.499	0.484
Farming	0 (0.0)	7 (3.9)	0 (0.0)		
Self employed	0 (0.0)	21 (11.7)	6 (12.8)		
Student	9 (69.2)	77 (42.8)	25 (53.2)		
Domestic duties	0 (0.0)	6 (3.3)	1 (2.1)		
Total	**13(5.4)**	**180(75)**	**47(19.6)**		

Source: Field Survey, 2017

Table 6 shows association between marital status and level of knowledge of women on cervical cancer screening. There was no significant association

between women demographic characteristics and level of knowledge on cervical cancer screening. That is with associated p-values of demographic characteristics greater than 5 percent, it is evident that demographic characteristics do not have influence on the respondents' knowledge on cervical cancer screening.

Respondents' Attitude Towards Cervical Cancer Screening

Tables 7 and 8 presents the attitudes and beliefs of the respondents towards cervical cancer screening respectively. The respondents were quizzed on several issues. The various probes and the corresponding responses have been summarized in the Tables 7 and 8 below.

Table7*: Respondents' attitude towards cervical cancer screening*

Attitudes	Yes	No	Don't Know	Total
Are you interested in participating in screening	237 (98.8)	3 (1.3)	0 (0.0)	240 (100)
Will you encourage other women to participate	240 (100.0)	0 (0.0)	0 (0.0)	240 (100)
Does the thought of cancer scare you	174 (72.5)	66 (27.5)	0 (0.0)	240 (100)
Do you think you are susceptible to cervical cancer	67 (27.9)	158 (65.8)	15 (6.3)	240 (100)
Do you feel Cervical cancer test is important to you	199 (82.9)	20 (8.3)	21 (8.8)	240 (100)

Source: Field Survey, 2017

Table8*: Respondents' health belief towards cervical cancer screening*

Health Beliefs	Yes	No	Don't Know	Total
Do you belief cervical cancer screening can be helpful	48 (20.0)	162 (67.5)	0 (0.0)	240 (100)
Religion has something against cervical screening	23 (9.6)	217 (90.4)	0 (0.0)	240 (100)
Your culture forbids cervical screening	232 (96.7)	8 (3.3)	0 (0.0)	240 (100)
Do you feel Cervical cancer test is important to you	199 (82.9)	20 (8.3)	21 (8.8)	240 (100)

Source: Field Survey, 2017

Most (67.5%) respondents reported that cervical cancer screening cannot be helpful. Ninety-eight (98.8%) of the respondents revealed that they were interested in cervical cancer screening. All (100%) of the respondents were of the view that they will encourage other women to participate it in screening. Few (9.6%) reported that their religion has something against cervical cancer screening while 96.7 percent reported that their culture forbids cervical cancer screening. Majority of the respondents, 72.5 percent, reported the thought of cancer scared them though 27.9 percent thought they were susceptible to cervical cancer. 82.9 percent of the respondents felt cervical cancer test is important to them.

Practice of Cervical Cancer Screening

Table 9 presents the frequency in terms of practice of cervical cancer screening based on the discretion of the women contacted for the study. A summary of the overall information is presented below

Table9*: Respondents' Practice of Cervical Cancer Screening*

Practice of cervical cancer screening	Frequency	Percentage
Have you had a Pap smear		
Yes	61	25.4
No	176	73.3
Don't know	3	1.3
How often do you go for Pap smear		
Once in a year	27	11.3
Once every three years	12	5.0
Once every five years	0	0.0
Once every 10 years	6	2.5
Not applicable	195	81.3
Barriers to screening (Pap smear)		
You asked for it	15	6.3
Doctor suggested	12	5.0
Taken routinely	12	5.0
Other reason	6	2.5
Not applicable	195	81.3
Impression about cervical cancer screening		
Good	23	9.6
Bad	189	78.8
None	28	11.7
Total	**240**	**100**

Source: Field Survey, 2017

In Table 9, a quarter 25.4 percent of the respondents have had Pap smear while 1.3 percent could not tell whether they have had it or not. A total of 11.3 percent reported having it once in a year which represents 44.3 percent of those who have had Pap smear. Only 6.3 percent of the respondents reported going for Pap smear themselves and 5 percent were suggested by doctors. Most of the respondents, 65 percent reported that they will prefer to have it in a hospital while 20 percent reported that they will prefer a screening site. Others reported that they have no preference. Majority of the respondents were of the impression that cervical cancer screening is bad. However, 11.7 percent of the respondents could not tell whether it was good or bad.

Respondents' Perception on Accuracy of Pap Smear Screening

Figure 4 presents the overall information on the respondents' perception on the potency of Pap Smear screening.

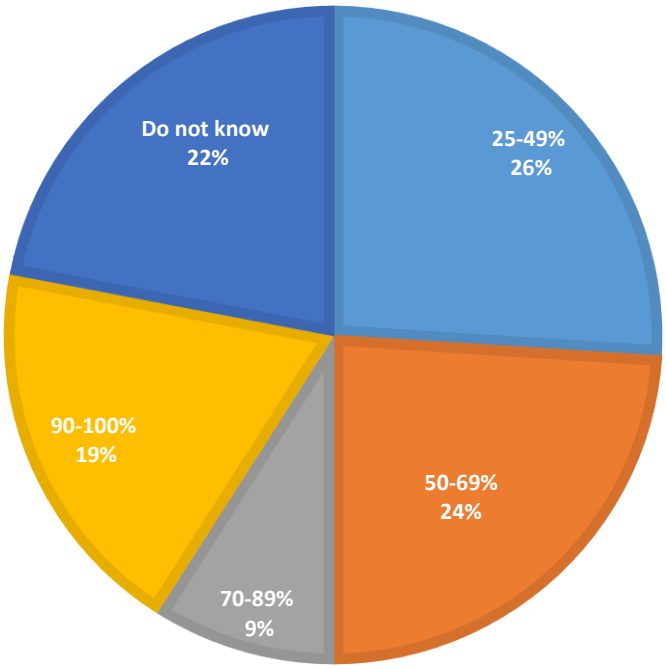

*Figure 4:*Respondents' Perception on Accuracy of Pap Smear Screening

Source: Field Survey, 2017

The respondents were asked to provide their perception on the level of accuracy of cervical cancer test. They were provided with a scale comprising of four options (25-49%; 50-69%; 70-89%; 90-100%). In Figure 5, 22 percent of the respondents did not know the accuracy level of the cervical cancer test. A quarter of the respondents reported 25 to 49 percent and 50 to 69 percent accuracy. However, 19 percent reported 90 to 100 percent accuracy.

Health Knowledge (Beliefs) on Cervical Cancer Screening

The researcher quizzed the respondents on their health beliefs. Among others, the researcher whether or not respondents believe that they could have pre-cancerous lesion, that cervical cancer is public health concern, that they believe cancer can be cured, that they believe cervical cancer is a curse from the gods, and that they belief cervical Pap smear should be done regularly.

Table10*: Health Beliefs on Cervical Cancer*

Health beliefs	Frequency	Percent
Belief that you could have pre-cancerous lesion		
Yes	82	34.2
No	99	41.3
Don't know	59	24.6
Total	240	100
Do you think cervical cancer is public health concern		
Yes	228	95.0
No	12	5.0
Total	240	100
Do you believe cancer can be cured		
Yes	119	49.6
No	112	46.7
Don't know	9	3.8
Total	240	100

Table 10 Continued

What do you believe is the chance of cure for cervical cancer		
Good Chance	119	49.6
Not so good chance	78	32.5
Don't know	43	17.9
Total	240	100
Do you belief cervical cancer is a curse from the gods		
Yes	1	0.4
No	232	96.7
Don't know	7	2.9
Total	240	100
Will be satisfied after having a cervical cancer test		
Yes	217	90.4
No	3	1.3
Don't know	20	8.3
Total	240	100
Does regular test give you a sense of control		
Yes	189	78.8
No	21	8.8
Don't know	30	12.5
Total	240	100
Do you belief cervical Pap smear should be done regularly		
Yes	191	79.6
No	41	17.1
Don't know	8	3.3
Total	**240**	**100**

Source: Field Survey, 2017

Less than half (34.2%) of the respondents were of the belief that they could have precancerous lesions while 24.6 percent did not know whether they did have. Majority (95%) of the respondents were of the perception that cervical cancer is a public health concern. Forty-nine (49.6%) of the respondents were of the view that there is the chance of cure for cervical. Almost half (49.6%) of the respondents believed that there is a good chance cancer can be cured.

Majority of the respondents in this study 96.7 percent reported that cervical canceris not a curse. Majority of the respondents, 90.4 percent were of the view that they will be satisfied after having a pap smear. Majority of the respondents, 88.8 percent reported that regular Pap smear gave them sense of control. Most respondents, 79.6 percent belief Pap smear should be done on regularly basis.

Perception of Respondents on Pap Smear Screening Test

The researcher quizzed the respondents on their health beliefs. Among others, the researcher whether or not respondents agree that it is painful to have a Pap smear, that Pap smear is unpleasant/embarrassing, that being busy and priority of other things prevent cervical cancer, that it is difficult to take time from work, that going for Pap smear check is too expensive.

Table11**:** *Perception*ofRespondents on Cervical Cancer Test

Perception	Agree	Disagree	Don't know	Total
Is it painful to have a Pap smear	88 (36.7)	64 (26.7)	88 (36.7)	240 (100)
Having Pap smear is unpleasant/embarrassing	117 (48.8)	117 (48.8)	6 (2.5)	240 (100)
Being busy and priority of other things prevent	108 (45.0)	123 (51.3)	9 (3.8)	240 (100)
It is difficult to take time from work	101 (42.1)	96 (40.0)	43 (17.9)	240 (100)
Going for Pap smear check is too expensive	137 (57.1)	100 (41.7)	3 (1.3)	240 (100)
I am afraid something wrong will be detected	117 (48.8)	123 (51.3)	0 (0.0)	240 (100)
Do you feel easy talking about cervical cancer	202 (84.2)	38 (15.8)	0 (0.0)	240 (100)

Source: Field Survey, 2017

Thirty-six (36.7%) of the respondents reported that it is painful to have Pap smear. Forty-eight (48.8%) of the respondents reported that having Pap smear was unpleasant/embarrassing. Also, 57 percent of the respondents were of the view that going for Pap smear was afraid something wrong will be detected. Majority (84.2%) reported they feel easy talking about cervical cancer.

Hypothesis Testing (Hypothesis one)

In order to respond to the first hypothesis of no significant relationship between women's level of knowledge and cervical cancer screening. the researcher conducted a Chi-Square test reinforced by the associated chronbach p-values to either accept or reject the claims.

Table12*: Level of Knowledge on Cervical Cancer and Practice of Screening*

	Level of knowledge				
Have had pap smear	Good	Fair	Poor	χ^2	p-value
Yes	11 (25.0)	40 (24.4)	10 (31.2)	6.456	0.036**
No	32 (72.7)	122 (74.4)	22 (68.8)		
Don't know	1 (2.3)	2 (1.2)	0 (0.0)		
Total	**44(18.3)**	**164(68.3)**	**32(13.3)**		

*Note: ** Means 5% level of significance*
Source: Field Survey, 2017

The study found a significant association between women's level of knowledge on cervical cancer and practice of cervical cancer screening. (χ^2=6.456; p=0.036). Women with higher levels of knowledge on cervical cancer were found to readily practice cervical cancer screening

Hypothesis Testing (Hypothesis Two)

Again, in a bid to respond to the second hypothesis of no significant relationship between women's health belief and cervical cancer screening, the researcher once more conducted a Chi-Square test reinforced by the associated chronbach p-values to either accept or reject the claims.

Table13*: Health belief and practice of cervical cancer*

Have ever been screened on cervical cancer	Level of Health belief			χ^2	p-value
	Strong	Moderate	Weak		
Yes	7 (15.9)	36 (22.0)	5 (15.6)	9.261	0.019**
No	29 (65.9)	108 (65.9)	25 (78.1)		
Don't know	8 (18.2)	20 (12.2)	2 (6.2)		
Total	**44(18.3)**	**164(68.3)**	**32(13.3)**		

*Note: ** Means 5% level of significance*

Source: Field Survey, 2017

The study found a significant association between women's health belief and practice of cervical cancer screening. (χ^2 =9.261; p=0.019). Women with more beliefs on cervical cancer were found not to readily practice cervical cancer screening.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

Introduction

The study soughtto explore the knowledge, attitude and health beliefs about cervical cancer and screening among women in Ajumako-Enyan-Essiam District.Specifically, the study was guided by five objectives. This chapter captures the summary of findings that were made from the study. It goes on to provide conclusions made from the study and thereafter give recommendations to various stakeholders in society based on the findings. The chapter ends by giving suggestions for further research.

Demographic Data

This study surveyed 240 women from eight (8) sites. Forty-two percent of the respondents were in age group 21 to 30 years; 39.6 percent were in age group 31 to 40 years. Few of the respondents were in age group 51 to 60 years. This distribution is to be expected as these age groups represent the sexually active age groups. As such they will readily accept to be part of the study. This may have also been influenced by the inclusion criteria. This was also in consistent with Cockburn et al (1990) that seventy per cent of cases of cervical cancer and 90 percent of deaths occur among women over 40 years of age. Other studies have also shown that up to 70 percent of all sexually active women have been infected by HPV, although most of them do not develop cervical cancer (Clifford, 2003). The study also showed that a high educational level, high socioeconomic status and a history over the past month of bleeding significantly increased screening uptake as confirmed 9by Adanu (2010).

More than half of the respondents were married while few were divorced or separated. This may be attributed to the age distributions of the study participant's. It was also reported that cervical cancer has been observed to be high among women who have married early (Holly, 1996). This study therefore supports the fact that there is a relationship between early marriage and cervical cancer. Most respondents were in age groups 21 to 40 years and these represent the fertile age groups.

Most women in this study were Fantes while few were Gas. This is to be expected as the set site is predominantly made of Fantes and Christians. This is shown in the findings of the study as almost all the women in the study were Christians. This was also reported by Briton (1992), that cervical cancer is lower among women from specific religious groups like Catholic nuns, the Amish, and Mormons who are all Christians. This however establishes the fact that there is a relationship between cervical cancer and screening since religion influences cervical cancer and screening. More than half of the women in the study had secondary level education while few had tertiary level education. This seems to suggest that respondents in this study were adequately educated. This is also supported by the fact that most women in this study were students in tertiary institutions, 36.7 percent are working for pay.

However, no one in the current study was unemployed or retired. This distribution is supported by both the education level and age group of the respondents in this study. This was reported by Straton (1994) and Price et al (1996) that Women who do not screen come from low socioeconomic classes, are less educated, are older, come from non-English speaking backgrounds,

are recent migrants and belong to indigenous groups. This study however finds a relationship between educational level and knowledge of cervical cancer and screening uptake since most respondents in this study were educated and therefore had increased knowledge about cervical cancer as demonstrated in the results. This has as well influenced their screening uptake since most of them have undergone Pap test. Most of the women had one-to-two children, 33.8 percent had three-to-four children.

However, few of the women had no child. This distribution may also be attributed to the age distribution of respondents as most of the respondents were in the age group of 21 to 30 years. In addition, the study is also confirmed by other findings from research carried out in Jordan which suggested that women who had delivered children were significantly more likely to have received a Pap smear than women who had no children (Amarin et al., 2000). This study finds close association between parity and cervical cancer since majority of the respondents have given birth.

Knowledge on Cervical Cancer and Pap Smear

In this study, majority of the respondents reported that they have heard of cervical cancer. This finding is of primary importance as knowledge of a health condition influences the attitude and practice of such individuals positively. Having knowledge of a health condition makes easier for such ones to accept and promote policies that have to do with such conditions.

Assessments of knowledge or awareness among the general population revealed that individuals are often ignorant of cervical cancer and its identification as a sexually transmitted disease. According to Nakalevu (2009), it has been seen that 10 percent of women in Queensland and 13 percent in

Victoria with cervical cancer had a previous abnormality which was not treated. Findings from research investigating HPV-related knowledge among college women have indicated that the vast majority had never even heard of HPV (Fernandez-Esquer et al, 2000). Preliminary analysis among university-aged female in Nigeria revealed that women who had received a Pap test were more knowledgeable about cervical health than those that had not (Paula, 2003). In a study conducted in Zimbabwe by Mupepi et al (2011), of the 514 participants, almost all of the women had no previous knowledge of cervical screening tests. This confirms that most women who participated in screening services are those with knowledge of the disease.

Most respondents reported books, journals, newspapers as their primary source, 25.3 percent from electronic media and 28 percent were from two or more of the sources provided. Also, few reported that they acquired the information previously from school. The source of information seems to be skewed towards the educated sources. This may have been influenced by the educational level of respondents in the study. The sources were also diverse and this seems to suggest that using a variety of sources to inform society on health issues is very effective. More than half of the women in the study reported that cervical cancer is cancer of the vagina while 24.2 percent reported it as cancer of the mouth of the uterus however few of the women did not know what cervical cancer was. Not only did respondents in the study have an idea of what cervical cancer was but also had accurate knowledge of the condition. In terms of signs and symptoms, most women reported on occasional bloody spotting, 17.1 percent pelvic, flank lower back and abdominal pain.

Multiple sexual partners were the most prevalent risk factor in this study as reported by 59.6 percent of the women while only few reported on low socio-economic status. Women with many sexual partners, or whose partners have had many partners, are more at risk of developing cervical cancer. This is because their behavior is more likely to expose them to HPV. Assessments of knowledge or awareness among the general population revealed that individuals are often ignorant of cervical cancer and its identification as a sexually transmitted disease (Nakalevu, 2009). However, a woman with only one partner could contract HPV if that partner has previously been in contact with the virus. Studies have shown that up to 70 percent of all sexually active women have been infected by HPV, although most of them do not develop cervical cancer (Clifford, 2003). Most respondents were knowledgeable in the signs and symptoms of cervical cancer as well as its risk factors.

However, few of the women were of the view that human papilloma virus infection was a risk factor. This was not in close association with other studies as Studies conducted on college women by Vail-Smith and White (2006), indicate that more than four fifths of the respondents reported no awareness of cervical cancer or its specific signs, symptoms or risk factors. Several studies, including a study of college women conducted by Baer, Allen and Braun (2000), confirmed that the majority of college-level students are ignorant about cervical infection, the modes of transmission, and its prevalence in society. Respondents' knowledge on HPV was low in this study although majority of them have knowledge about cervical cancer.

However, almost all the women in this study knew what a Pap smear test was. Respondents knowledge on the implication of the test was adequate as a third of the respondents reported that abnormal pap smear meant one can develop cervical cancer in later years or one needs a follow up to rule out or confirm the diagnosis of cervical cancer. A small proportion of the respondents in the study did not know what cervical cancer test was. These respondents must be educated on the various aspects of the disease condition and bring them up to date on new methods of screening and testing. International studies show that women do not have sufficient knowledge about cervical cancer risk factors and Pap smear (Ideström et al., 2002, Pearlman et al., 1999, Waller et al., 2004). It has been observed with many studies that the knowledge level of the women increased through health education given to them about the prevention from cervical cancer and they had a Pap smear test or were eager to have it in the post-education period (Mcavoy and Raza, 1991; Ansell et al., 1994; Kelly et al., 1996). Most respondents in the study have heard of Pap smear test.

There were also mixed opinions on what a normal cervical cancer test was as less than half reported that a normal cervical cancer test meant low risk of developing the disease. Few (15.4%) women did not know when it was appropriate to go for follow-ups. Approximately half of the respondents reported women who take hormonal contraceptives as at increased risk individuals while 10.8% did not know whether they were at increased risk or not. This finding is supported by Center for disease control and prevention (2014), which reported that long term use of oral contraceptives increases the

risk of developing cervical cancer but the benefits of taking oral contraceptives far outweigh the risks for the majority of women.

Majority of the respondents in the study were of the view that Pap smear is performed by gynecologists. More than half of the respondents agree that cervical cancer is the number one cause of cancer death among women in Ghana. In a related study, Ferley *et al.* (2002), reported that the top ten causes of cancer mortality in descending order in females in Ghana were cervix, breast, liver, hematopoietic organs, stomach, colorectal, ovary, bladder, with pancreas and Kaposis sarcoma tied for the ninth and tenth positions. Also, in Nigeria, Uganda as in other developing countries, cervical cancer is the most common cancer in women with an estimated incidence of 30 per 100,000 women (Odetola, 2011).

However, few respondents reported that they did not know. In this study, most respondents reported that women are likely to have cervical cancer at age 18 to 25 years while 24.6 percent reported 26 to 35 percent years. According to Twinn et al. (2002), the chance to live for the women with pre-invasive lesions ascertained in an early period by Pap smear test is 100 percent. For this reason it is necessary to raise awareness of women about having a regular Pap smear test in order to prevent cervical cancer or cure it through early diagnosis. The technique which is recommended by the World Health Organization to be used in cervical cancer screening programs is Pap smear test (WHO, 2002, WHO, 2004). However, few of them did not know the age at which women were likely to have cervical cancer. This study however finds a relationship between age and cervical cancer. The severity of cervical cancer was well understood by 36 percent of the respondents while 21

percent could not tell whether it's less or more severe compared to others. In this study no association was found between demographic characteristics and level of knowledge on cervical cancer.

Attitudes towards Cervical Cancer Screening

In terms of attitude of respondents in this study, a quarter of the respondents have had Pap smear while few could not tell whether they have had it or not. This could have been influenced by their age and educational levels. Some studies have reported a positive association between one's educational level and attitude towards health initiatives. They alsoreported increased knowledge as positively associated with higher levels of screening. A total of 11.3 percent reported having it once in a year which represents 44.3 percent of those who have had cervical cancer test. This finding seems to suggest the failure of positive attitude to translate into good practice. Less than 10 percent of the respondents have gone for Pap smear themselves. Pap smear test is low among respondents in this study. Health belief model suggests that women who are more likely to undergo cervical smear are those who perceived themselves as vulnerable to cervical cancer, believe in the efficacy of the test, perceive the procedure as not painful and receive a professional recommendation (Rosenstock et al., 1988).

However, they preferred having it in a hospital. In spite of all these, majority agreed that cervical cancer was bad. In this study, more than half of the respondents were of the opinion that cervical cancer screening cannot be helpful. This may have negatively impacted on their attitude and practice of the screening. When individuals do not think an intervention (screening) is not helpful, it becomes difficult for them to access it. Differentials exist in access

to and having a Pap smear test in the Ghanaian population. At the national level, having health insurance, education, rural residence and low-income status predicted the use of medical services and preventive screening examinations such as Pap smear (Cohen, 1991). Other predictors of receiving Pap smear tests include gender of provider (Wee, *et al*., 2001), patient barriers such as cost, lack of knowledge on risks and benefits, inconvenience, and health care system orientation, such as focusing on illness and disease than on prevention (Mandelson & Thompson, 1998). However, almost all of them were interested in cervical cancer screening and will encourage other women to participate. This finding seems to be contrary to the earlier finding. Only few reported that their religion has something against cervical cancer screening while majority reported that their culture forbids cervical cancer screening. This finding seems to suggest a greater influence of culture on the health behavior of respondents in this study compared with religion.

Majority of the respondents reported that the thought of cancer scared them though few thought they were susceptible to cervical cancer. Majority of the respondents felt cervical cancer test is important to them. Some studies have found that heightened knowledge of cervical cancer may lead to increased anxiety, which could make it less likely to adhere to screening regimes (Lobell *et al*, 1998). However, other studies conducted in Estonia attributed reasons for non-participation to other causes such a recent visit to a gynecologist (42.3%), fear to give a Pap-smear (14.3%), long appointment queues (12.9%) and unsuitable reception hours (11.8%) other than increased knowledge level (kivistik et al, 2011). Only few of the respondents did not know the accuracy level of the cervical cancer test. A quarter of the

respondents reported 25 to 49 percent and 50 to 69 percent accuracy levels. Another, 19 percent reported 90 to 100 percent accuracy level. Respondents' knowledge on the accuracy of cervical cancer screening is low. This may negatively affect the attitude of respondents towards the screening test.

Health Beliefs on Cervical Cancer Screening

Most respondents were of the belief that they could have precancerous lesions while few did not know whether they did have. This assertion may influence their attitude towards the screen. Respondent who feel they could not have precancerous lesions will not actively involve themselves in most aspects of the disease.

Majority of the respondents were of the perception that cervical cancer is a public health concern. This perception is of primary importance as this will positively influence the attitude of such individuals towards any action to curb this condition. Analysis of data from a study conducted in Netherlands showed that woman's beliefs about cervical screening and attendance are the best predictors of screening uptake, even when demographic and organizational aspects are taken into account Close to half of the respondents believed that there is a good chance cancer can be cured. Majority of the respondents in this study reported that cervical canceris not a curse.

Majority of the respondents were of the view that they will be satisfied after having a pap smear. Most people are worried about the outcome of any clinical test until they have had them. It is only after the results are communicated and it's favorable. Majority of the respondents reported that regular Pap smear gave them sense of control. Most of the respondents belief cervical cancer test should be done on regularly basis. Only 36.7 percent of the

respondents reported that it is painful when plan is impossible. Less than half of the respondents reported that having Pap smear was unpleasant / embarrassing. Also, 57 percent of the respondents were of the view that going for Pap smear was afraid something and will come and will have to be detected. Majority reported they feel easy talking about cervical cancer. Seow et al. (1995) attempted to identify the cognitive barriers to screening activity through a study based in Singapore. The study found that, overall, the belief of personal susceptibility to cancer was low and that a substantial proportion of women held the attitude that cancer could not be prevented.

Conclusion

This study has shown that respondents in the study had a fairly good educational background and this influenced their knowledge, attitude and belief on cervical cancer. In this study, majority of the respondents reported that they have heard of cervical cancer. More than half of the women in the study reported that cervical cancer is cancer of the vagina.

The study revealed that multiple sexual partners were the most prevalent risk factor in this study as reported by most women. Respondents' knowledge on HPV was low in this study. However, almost all the women in this study knew what a pap smear was. Respondents knowledge on the implication of the test was adequate as a third of the respondents reported that abnormal pap smear meant one can develop cervical cancer in later years or one needs a follow up to rule out or confirm the diagnosis of cervical cancer.

Most respondents in the study have heard of cervical cancer test. Approximately half of the respondents reported women who take hormonal contraceptives as at increased risk individuals while 10.8 percent did not know

whether they were at increased risk or not. Majority of the respondents in the study were of the view that Pap smear is performed by gynecologists. More than half of the respondents agree that cervical cancer is the number one cause of cancer death among women in Ghana. Quarters of the respondents have had Pap smear. Less than 10% of the respondents have gone for Pap smear themselves. Only few reported that their religion has something against cervical cancer screening while majority reported that their culture forbids cervical cancer screening.

Majority of the respondents felt cervical cancer test is important to them. Majority of the respondents were of the perception that cervical cancer is a public health concern. Majority of the respondents were of the view that they will be satisfied after having a pap smear. Because majority of women in this study have fairly good educational background, their knowledge base on cervical cancer is high as compared to those with no education. This has again influence their attitude towards screening uptake. In conclusion, educational level of women influences their knowledge on cervical cancer as well as their screening uptake.

Recommendations

The following recommendations are made based on the findings of the study;

1. Given that level of education has little or impact on the awareness and screening for cervical cancer, it is recommended that nurses go extra mile by educating patients (women) on the need for cervical cancer screening and pap smears.
2. As part of social intervention programs by the government of the day, it is recommended that the government through the Ministry of Health

should use the media to educate the public on the dangers of cervical cancer, the need for screening or Pap Smear tests. It thus means that policies to enhance access to cervical screening test must be implemented to ensure wider coverage among women.

3. Coming from the background that a sizeable number of the respondents have poor knowledge on cervical cancer awareness and screening, it is recommended that Non-Governmental Organisations (NGOs) channel resources to sensitizing and funding the cost of cervical cancer.
4. With almost half of the respondents revealing that cervical cannot be cured, it is recommended that efforts to promote cervical cancer screening by health workers should focus on informing women of their susceptibility to cervical cancer and encourage them to appreciate the fact that active and regular screening can detect the pre-cancerous stage, hence enabling early treatment and prevention of cancer development.
5. The government should play a roleof increasing health care budgets. In addition, the government should establish a national cervical cancer awareness campaign through stakeholders in the health fraternity. This could be done by resourcing the various hospitals, clinics, midwifes and nurses to provide expert counselling and teachings on how to prevent or cure the disease.

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APPENDIX A

Your rights as a Participant

This research has been reviewed and approved by the Institutional Review Board of University of Cape Coast (UCCIRB). If you have any questions about your rights as a research participant you can contact the IRB Office between the hours of 8:00 a.m. and 4:30 p.m. through the landlines 0332133172 or email address: irb@ucc.edu.gh .

Participant's signature or thumbprint…… Date……..

Researcher's signature……Date……..

VOLUNTEER AGREEMENT

The above document describing the benefits, risks and procedures for the research title Knowledge, Attitude and Health beliefs of cervical cancer and its screening among women in Ajumako-Enyan-Essiam District has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

_____ _____

Date Name and signature or mark of volunteer

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

_____ _____

Date Name and signature of witness

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

_____ _____

Date Name and Signature of Person Who Obtained Consent

APPENDIX B

QUESTIONNAIRE

This questionnaire is for academic research and designed to find out the knowledge, attitude and health beliefs on cervical cancer screening among women in Ajumako-Eyan-Essiam district**.** Your responses will be treated confidential and all information will be reported as aggregated data. Hence, you are not required to write your name. There are no wrong or right answers. This is just to seek your opinion on the subject. Kindly tick the appropriate spaces provided or write what you think in the open-ended questions. The questionnaire will take approximately 30 minutes at most to be completed. I will be grateful if you can answer all questions to the best of your ability. Thank you.

Researcher code:

Date of interview: 30/06/015

SECTION A:DEMOGRAPHIC DATA

1. Current Age
   a. 18- 20 [ ]
   b. 21-30 [ ]
   c. 31-40 [ ]
   d. 41-50 [ ]
   e. 51-60 [ ]
2. Marital status. *(please tick only one)*
   a. Married. [ ]
   b. Never married [ ]

c. Informal union [ ]

d. Divorced / separated [ ]

e. Widowed [ ]

3. Ethnic group

a. Fante [ ]

b. Ewe [ ]

c. Ashanti [ ]

d. Ga [ ]

4. Religion

a. Traditional [ ]

b. Christianity []

c. Islam. [ ]

d. Others (please specify)……

5. Level of Education

a. Primary school/ JHS. [ ]

b. Senior High School [ ]

c. Tertiary [ ]

d. Others (please specify)…….....

6. Occupation

a. work for pay (please specify)……. [ ]

b. planting and collecting for your own consumption [ ]

c. self employed [ ]

d. student [ ]

e. domestic duties [ ]

f. unemployed [ ]

g. retired [ ]

h. others (please specify) …….. [ ]

7. Number of children (those born to the woman) ……..

a. 1-2 [ ]

b. 3- 4 [ ]

c. 5-6 [ ]

d. 7 and above [ ]

e. Non [ ]

SECTION B:**KNOWLEDGE ON CERVICAL CANCER AND PAP SMEAR(*choose thebest correct answer)***

8. Have you ever heard of cervical cancer?

a. Yes [ ]

b. No [ ]

9. Where did you hear it from? (Tick all that apply) [ ]

b. television and radio [ ]

c. Health workers. [ ]

d. Previous knowledge from school. [ ]

10. What did you hear about it?

a. cancer of the uterus [ ]

b. cervical cancer [ ]

c. cancer of the ovary [ ]

d. cancer of the vagina [ ]

e. cancer of the tubes [ ]

i. don't know [ ]

11. What will a person with cervical cancer show? (Tick all that apply).

a. Thin watery vaginal discharge. [ ]

b. Occasional bloody spotting. [ ]

c. Post menopausal bleeding. [ ]

d. Foul smelling discharge. [ ]

e. Pelvic, flank lower back and abdominal pain. [ ]

f. No signs and symptoms. [ ]

e. Not applicable [ ]

12. Which factors increase the risk of cervical cancer? (Tick all that apply).

a. Early sexual intercourse. [ ]

b. Multiple sexual partners. [ ]

c. Multiparty. [ ]

d. Low socio-economic status. [ ]

e. Human Papilloma Virus infection. [ ]

13. What did you hear about pap smear?

a. A test for early detection of cervical cancer. [ ]

b. A test carried out to detect uterine fibroid [ ]

c. A test carried out to detect cancer of the womb. []

d. A test carried out to detect presence of ectopic [ ]

14. Have you heard of Pap smear

a. Yes [ ]

b. No [ ]

15. A normal test result means.....

a. Low risk of developing disease. [ ]

b. No risk of developing disease. [ ]

c. I don't need to have any further smear tests. [ ]

i. I don't know. [ ]

16. What do you think abnormal test might mean. (Tick all that apply)

a. I can develop cervical cancer in later years. [ ]

b. I have cervical cancer. [ ]

c. I may need follow-up to rule out or confirm the diagnosis of cervical Cancer [ ]

d. I may need further treatment. [ ]

i. I do not know. [ ]

17. If your Pap smear test results showed that you had some cancer changes, when should you go for further follow up?

a) 6 months [ ]
b) 1 year after the test [ ]
c) 2 years after the test [ ]
d) Not sure [ ]

18. Who do you think should perform Pap smear test**?** (Tick all that apply).

a. Nurse. [ ]

b. General practitioner. [ ]

c. Gynaecologist. [ ]

19. Do you think you are at risk of getting cervical cancer?

a. Yes. [ ]

b. No. [ ]

i. Don't know [ ]

20. Do you think women who take hormonal contraceptives are at increased risk for cervical cancer?

a. Yes [ ]

b. No [ ]

i. don't know [ ]

21. What measures can be taken to increase the knowledge of cervical screening among women in the community

……

22. Cervical cancer kills more women than other cancers e.g breast cancer in Ghana today?

a. True [ ]

b. False [ ]

i. Don't know [ ]

23. At what age are women likely to have cervical cancer

a. 18-25 [ ]

b. 26-35 [ ]

c 36- 60 [ ]

d. Not more than 70 [ ]

i. Don't know [ ]

24. How serious is cervical cancer compared to other forms of cancer.

a. More severe than other forms of cancers [ ]

b. Same as the others [ ]

c. Less severe than other forms of cancers [ ]

i. Don't know [ ]

SECTION D: ATTIUDE AND HEALTH BELIEFS ON CERVICAL SCREENING. Please kindly attempt all questions.

25. Have you had a Pap smear?

a. Yes. [ ]

b. No. [ ]

i. don't know [ ]

26. if yes, how often do you go for the test?

1. Once in a year. [ ]

2. Once every three years. [ ]

3. Once every five years [ ]

4. Once every 10 years. [ ]

27. Did you have the cervical cancer test because . . .

a. You asked for it [ ]

b. Your doctor suggested it [ ]

c. It was taken routinely at a post-natal check-up [ ]

d. Because of some other reason [ ]

e. Please specify your reason if any……..

28. Where do you prefer to have your pap smear?

a. hospital [ ]

b. Polyclinic [ ]

c. Organised screening site [ ]

d. It does not matter

29. What is your impression about cervical cancer

a. Good [ ]

b. Bad [ ]

c. Non [ ]

30. Do you belief that cervical cancer screening can be helpful in any way?

a. Yes [ ]

b. No [ ]

i. Don't know [ ]

31. Are you interested in participating in cervical screening?

a. Yes [ ]

b. No [ ]

i. Don't know [ ]

32. Will you like to encourage other women to participate as well?

a. Yes [ ]

b. No [ ]

i. Don't know [ ]

33. Does your religion have anything against cervical screening?

a. Yes [ ]

b. No [ ]

i. Don't know [ ]

34. Does your culture forbid cervical screening?

a. Yes [ ]

b. No [ ]

i. Don't know [ ]

35. Indicate your reason if you have not had a Pap smear

…… ……..

6. Does the thought of cancer scare you?

a. Yes. [ ]

b. No. [ ]

i. Don't know [ ]

37. Do you feel that Pap smear test is particularly important to you?

a. Yes. [ ]

b. No [ ]

i. Don't know [ ]

38. Do you belief that you could have pre-cancerous lesion

a. Yes [ ]

b. No [ ]

i. Don't know [ ]

39. Do you think cervical cancer is a public health concern?

a. Yes [ ]

b. No [ ]

i. Don't know [ ]

40. Do you belief cancer can be cured

a. Yes [ ]

b. No [ ]

c. Don't know [ ]

41. Do you belief cervical canceris a curse from the gods

a. Yes [ ]

b. No [ ]

i. Not sure [ ]

42. Will you be satisfied after having a pap smear test?

a. Yes [ ]

b. No [ ]

i. Not sure [ ]

43. Do you belief pap smear test should be done regularly?

a. Yes [ ]

b. No [ ]

i. Don't know [ ]

44. Is it painful to have a pap smear test?

a. Agree [ ]

b. Disagree [ ]

i. Don't know [ ]

45. Having Pap smear is unpleasant and/ or embarrassing.

a. Agree [ ]

b. Disagree [ ]

46. I'm afraid that something wrong will be detected if i go for pap smear test?

a. Agree [ ]

b. Disagree [ ]

47. Do you feel easy talking about cervical cancer?

a. Yes [ ]

b. No [ ]

48. Comments:.....

APPENDIX C

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 03321-33172/3 / 0207355653/ 0244207814
C/O Directorate of Research, Innovation and Consultancy
E-MAIL: irb@ucc.edu.gh
OUR REF: UCC/IRB/3/30
YOUR REF:

29TH JUNE, 2015

Ms. Charlotte Sampson
School of Nursing and Midwifery
University of Cape Coast

Dear Ms. Sampson,

ETHICAL CLEARANCE – ID NO: (UCCIRB/CHAS/2015/33)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for implementation of your research protocol titled **"knowledge, attitude and health beliefs on cervical cancer among women in Ajumako-Enyan-Essiam Distirct".**

This approval requires that you submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

Please note that any modification of the project must be submitted to the UCCIRB for review and approval before its implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol

Yours faithfully,

.....
Faustina Quainoo (Mrs.)
Administrative Secretary

cc: The Chairman, UCCIRB

.....
ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST
Date:.....