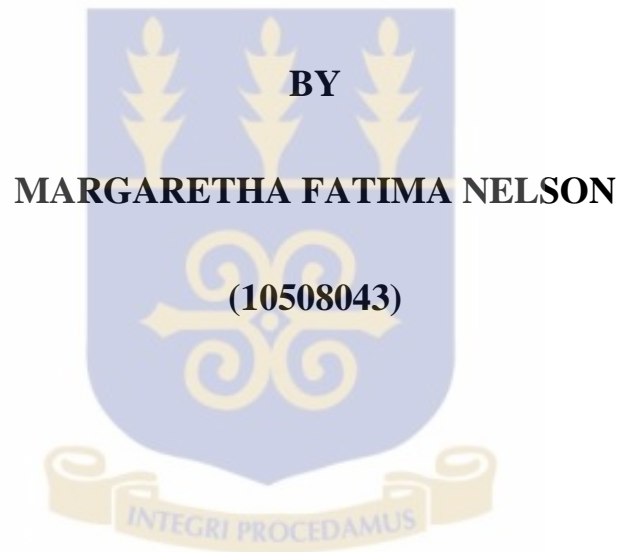


**SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA**

**PERCEPTION OF RISKS OF CERVICAL CANCER AMONG
UNIVERSITY OF GHANA FEMALE STUDENTS**



**THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF
GHANA, LEGON IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF MASTER OF SCIENCE IN
APPLIED HEALTH SOCIAL SCIENCE DEGREE**

JULY 2015

DECLARATION

This dissertation “Perception of Risks of Cervical Cancer among University of Ghana Female Students” consists entirely of my own work which was produced under supervision. Where my work is indebted to those of others, I have duly acknowledged. I hereby declare that, this work has not been accepted in substance for any other degree nor is it concurrently being submitted in candidature of any other degree.

STUDENT: MARGARETHA FATIMA NELSON

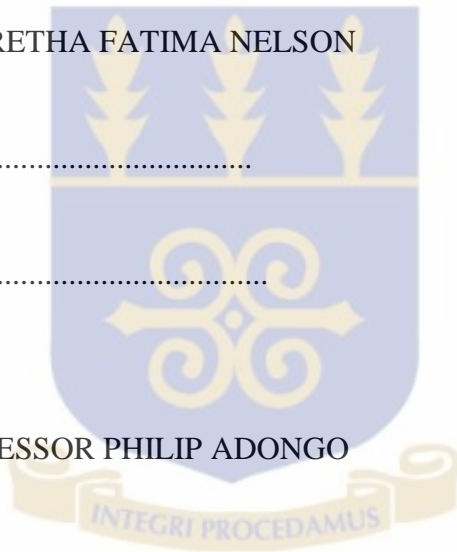
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SUPERVISOR: PROFESSOR PHILIP ADONGO

SIGNATURE.....

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DEDICATION

I dedicate this research to my Late mother Madam Gifty Adoley Pappoe.



ACKNOWLEDGEMENT

I am most grateful to the Almighty God for how far He has brought me in life. I will like to express my profound gratitude to Prof. Phillip Adongo, my supervisor for his guidance and support throughout this research by giving me valuable comments. I would also like to thank all female students of the University of Ghana who participated and made this research a success.



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LIST OF ABBREVIATIONS

HPV:	Human Papillomavirus
STI:	Sexually Transmitted Infection
WHO:	World Health Organization
HBM:	Health Belief Model
ACA:	American Cancer Association
SIL:	Intraepithelial lesion
UG:	University of Ghana

DEFINITION OF TERMS

Cervical cancer

It is a type of cancer that affects the lower portion of the uterus which is called the cervix.

Human Papillomavirus

A type of virus specifically type 16 and 18, that causes cancer of the cervix

Undergraduate students

Students in the University who are pursuing first degree.

Post graduate students

Students in the University who are pursuing higher degree programs

Perceptions

According to Merriam-Webster dictionary, it is the ability to understand or notice something easily and to regard something in a particular way.

Risk Perception

Is the subjective judgment people make about the severity of a risk and may vary from person to person.

Risky Sexual behaviours

For the sake of this study, risky sexual behaviours are behaviours such as having multiple sex partners and not using condom during sexual intercourse.

ABSTRACT

Cervical cancer affects women between ages 15-44 years. Human Papillomavirus types 16 and 18 are the main causes of cervical cancer. Women with active sex life, who do not use condom during sexual intercourse, who have multiple sex partners, women who smoke and prolong use of oral contraceptives are mostly at risk.

This study seeks to understand the perception of risks of cervical cancer among University of Ghana female students. The study was cross-sectional and employed the mixed methods approach. The quantitative aspect involved a systematic random sampling approach of 380 female students to whom questionnaire were administered. The qualitative aspect of the study involved conducting (3) Focus Group Discussion with female students. The quantitative data were analyzed using descriptive statistics in percentages, frequencies, means and standard deviation and a Chi-square was used to test significant association between variables. Qualitative data were obtained from audio-recorded tapes and transcribed verbatim using descriptive content analysis to analyze them.

Although majority of the respondents have adequate knowledge about the fact that cervical cancer affects the cervix of a woman, less than half of the respondents know that cervical cancer is caused by Human Papillomavirus (HPV).

The research also revealed a significant association between respondents' age and their knowledge on whether cervical cancer is the commonest among gynaecological cancers in Ghana at the p-value of $\rho = .04$.

The study concludes that, there exist knowledge gap among female students about cervical cancer. The uneven, inadequate and the lack of factual information female students have about cervical cancer affects their decisions on cervical cancer screening.

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND INFORMATION

Cervical cancer is a type of cancer that affects the cervix of women. In Ghana, about 3,052 new cases of cervical cancer are diagnosed annually and although it is a disease that can be treated about 1,556 die from it. Cervical cancer is the first most frequent female cancer in women and the first most frequent cancer among women between ages 15-44 years (ICO Information on HPV and Cancer 2014). Cervical cancer is an important public health problem. In the United States about 10,000 new cases and 4,000 deaths occur annually, and nearly 250,000 women currently live with the cancer (SEER, 2008).

A World Health Organisation Report on HPV Vaccine Background Paper states that, many high-income countries, and a few middle-income countries, organized cervical cytology screening programs with high population coverage have substantially reduced cervical cancer incidence and mortality. However, even when screening is available, many women are unaware of it and do not access it or cannot afford it (WHO, 2009).

Cervical cancer is one of the most occurring cancer and the leading cause of cancer mortality among women in Ghana (Abotchie & Shokar, 2009). Of all cancers, cervical cancer is the one that utterly reflects global health inequity. Over 80% of the yearly 500,000 new cervical cancer cases and 280,000 cervical cancer deaths worldwide occur in developing countries (Okonofua, 2007). The developing world recorded 80% of 250,000 cancer deaths that occurred in 2005.

Experience in developed countries has shown that well planned, organized screening programs with high coverage can significantly reduce the number of new cases of

cervical cancer and mortality rate associated with it. Unfortunately, majority of women in developing countries still do not get equal access to cervical cancer screening programs. The consequence is that, cervical cancer is not detected until it is too late to be cured which causes death in most cases (WHO, 2006).

According to Okanofua (2007), the highest burden and mortality associated with cervical cancer worldwide is in the Sub-Saharan Africa where a woman has 21% chance of surviving while a woman in the United States has 70% chance of surviving. It has been argued that the majority of cervical cancer as well as the most related deaths occur in low and medium income countries (Akabari et al., 2010).

While the WHO estimates the HPV prevalence in the West African sub-regions, including Ghana at 16.5% of women, a study estimating HPV prevalence among a sample of women attending a gynaecological outpatient clinic in Accra Ghana, realised a crude HPV prevalence of 10.7% (Domfeh et al., 2008). Cervical cancer is strongly associated with HPV, which can be acquired through sexual intercourse (Bekkers et al. 2006). This according to Adanu (2010) implies that, prevention of cervical cancer can be achieved through the same measures recommended for the prevention of Human Immunodeficiency Virus (HIV) and sexually transmitted infections (STIs) since HPV is sexually transmitted.

The lack of knowledge concerning cervical cancer may be related to the fact that women are unaware of the causes, factors that expose a woman to cervical cancer and its prevention (Yaren et al., 2008). Several risks increase a woman's chance of developing cervical cancer. Women without any of these risks rarely develop cervical cancer. (ACA,

2004). This study seeks to ascertain the knowledge and perception of risk of cervical cancer among University of Ghana female students.

1.2 PROBLEM STATEMENT

Cervical cancer remains the second leading cause of cancer deaths after breast cancer accounting for approximately 10% of cancer deaths (Ertem, 2009). Cervical cancer is the fourth most common cancer in women, and the seventh overall, with about 528,000 new cases in 2012. As with liver cancer, a large majority (around 85%) of the global burden occurs in the less developed regions where it accounts for almost 12% of all female cancers. There were an estimated 266,000 deaths from cervical cancer worldwide in 2012, accounting for 7.5% of all female cancer deaths. Almost nine out of ten (87%) cervical cancer deaths occur in the less developed regions (GLOBOCAN, 2012).

Ghana has a population of 6.57 million women aged above 15 years who are at risk of developing cervical cancer. Mortality rate for cervical cancer in Ghana is surprisingly more than 3 times the global cancer mortality rate (27.6/100,000 vs. 7.8/100,000 respectively) (Williams & Amoateng, 2012).

Ghana currently do not have a national cervical cancer screening program that seek to invite women for screening, early detection and treatment. Yet, most screening in the country can be described as opportunistic screening where doctors request the Pap smears or VIA (Visual Inspection with Acetic Acid) from patients who are seen in clinics under cases unrelated to cervical cancer. Despite public education in Ghana on cervical cancer and importance of screening, previous studies have shown very low rates of patronage of cervical cancer screening services. Although it has been proven that the efficiency of regular Pap tests reduced the mortality rate of cervical cancer, its application in the

developing countries and most importantly Ghana is less compared with the developed countries (Adanu et al., 2010).

All attention about cervical cancer has been given to vaccination for HPV to prevent cervical cancer, in spite of the availability of the vaccine, a number of women are not either qualified to receive the vaccine, are uninterested in knowing about the vaccine, or unable to obtain vaccination (Markowitz et al., 2009 & Fang et al., 2007). The lack of knowledge concerning cervical cancer and its importance in relation to a woman's health affects a woman's decisions and activities to relating to early screening and the acceptance of vaccines (Yaren et al., 2008).

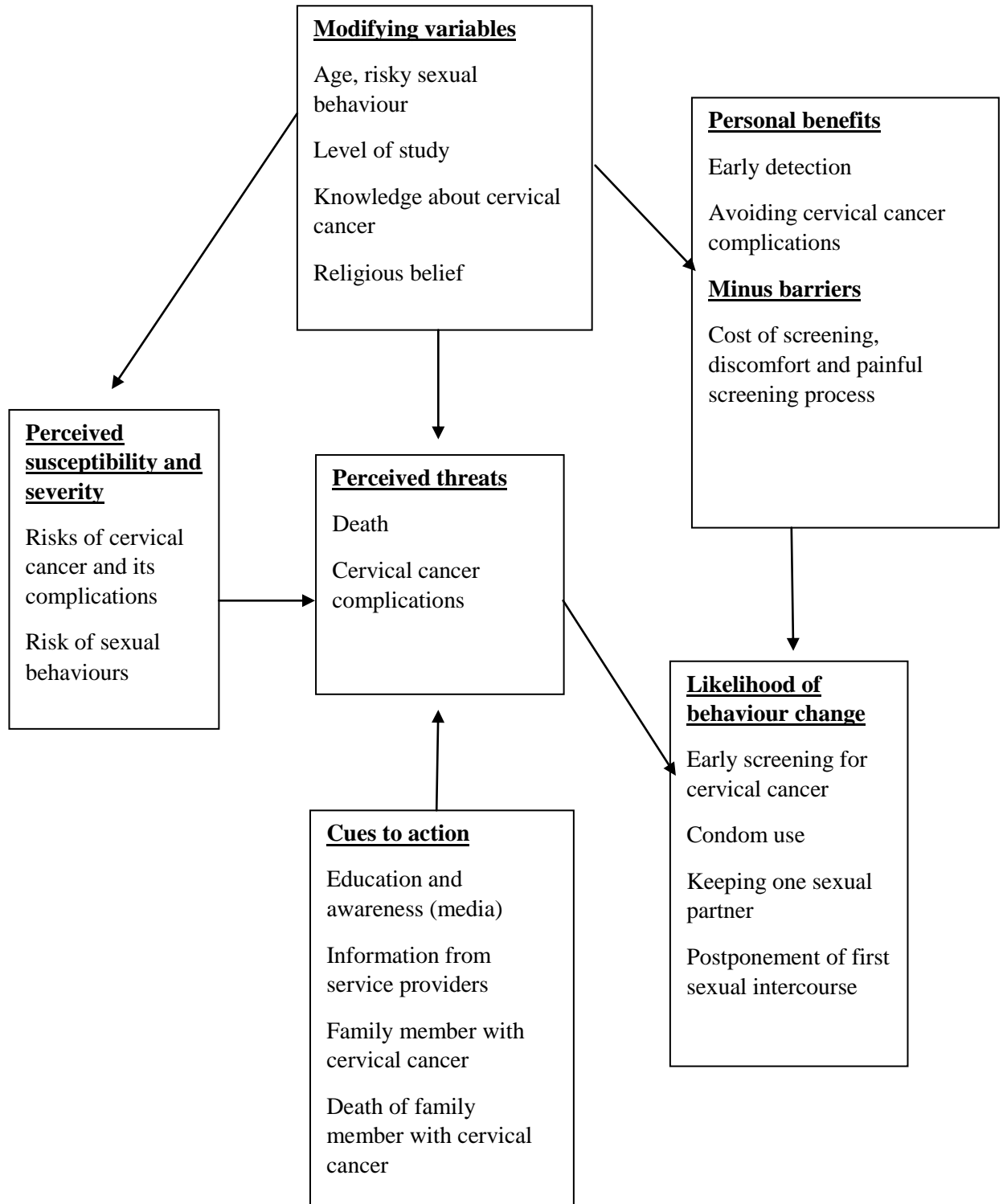
A study among college students in Ghana revealed low levels of knowledge in regards to screening initiatives and the link between HPV and cervical cancer. Also only half of the respondents perceived themselves at risk of cervical cancer (Abotchie et al., 2009). It is surprising to realise low levels of knowledge among students in higher educational levels.

Female students of the university of Ghana falls within the age distribution that exposes women to the risk of cervical cancer and are likely to be involved in risky sexual behaviours that expose them to cervical cancer. There is a need to know how they perceive themselves at risk of cervical cancer so they can make an early informed decision toward screening and early treatment. This will prolong life and reduce mortality rates in Ghana. Currently there is no formal cervical cancer education program on University of Ghana campus or Pap test for female students at the University clinic, hence the need to examine students knowledge and perceptions of risk of cervical cancer.

1.3 CONCEPTUAL FRAMEWORK

The health belief model was adapted to identify modifying variables such as: age, level of study, religious belief, risky sexual behaviours, knowledge on cervical cancer and marital status and how it affects perceptions of risk of cervical cancer. According to the Janz & Becker (1984), human behaviour or action is guided by (1) perceived susceptibility; (2) perceived severity; (3) perceived benefits; (4) perceived barriers; (5) cues to action and (6) self-efficacy. As a general rule, the strength of a person's intention to perform a particular behaviour is based on the level of key concepts in the model. An individual's risk of cervical cancer will depend on her knowledge, perceptions and sexual behaviours that expose them to cervical cancer. Therefore the perceptions of risk of cervical cancer among female students of University of Ghana could be explained and predicted by whether they will change behaviour or not using the HBM.

The conceptual framework consists of five main concepts that are likely to influence perceptions of risk of cervical cancer. An individual will perceive the seriousness of a condition, if she is vulnerable, and consider the obstacles to the action she will want to take before there is likelihood of behaviour change.

Figure 1: HBM**Health Belief Model** (Adapted from Janz & Becker, 1984)

Perceived severity and susceptibility of cervical cancer and its complication (threats), perceived benefits of and perceived barriers to screening, cues to action and modifying variables were adopted. The HBM states that, individuals who perceive themselves as being susceptible to cervical cancer will most likely go for screening and seek early treatment. If they believe they are vulnerable to cervical cancer complication and that it could have negative impact on their lives (perceived threat), adherence to professional advice such as early screening (pap smear), modifying risky sexual behaviours (using condom, keeping one sexual partner) will be beneficial (perceived benefits) in reducing the threats which is perceived severity and susceptibility of cervical cancer and its complications and the difficulties that comes with adherence of health recommendations (perceived barriers) which could be: cost of screening, discomfort and painful screening procedure are outweighed by the benefits.

Cues to action (media, information from service providers, family member living with or dying of cervical cancer) can also lead to perceived threats which will lead to likelihood in behaviour change (adopting behaviours that reduce risks of cervical cancer).

Modifying variables such as age, level of education, religious beliefs, risky sexual behaviours and knowledge about cervical cancer can also have an effect on an individual's fear or complications of cervical cancer, sexual behaviours and the negative impact associated with it (perceived severity).

1.4 JUSTIFICATION

According to the WHO (2005), there were over 500,000 new cases of cervical cancer, of which over 90% were in developing countries. Its contribution to cancer burden is significant across all cultures and economies. Cervical cancer also accounts for over 270,000 deaths worldwide. Majority of the recorded deaths occur in the less developed regions (Imam et al., 2008). A report by the ICO Information Centre on HPV (2014) revealed that, there are 8.19 million women at risk of cervical cancer aged 15 years and above in Ghana.

The key to reducing cervical cancer morbidity and mortality is early screening test for infection with HPV, the primary cause of cervical cancer which is more effective. If women are not educated on cervical cancer and its risk, they won't be able to know if they are at risk or not. The success of every public health program to control and prevent cervical cancer will depend on the level of awareness of the potential beneficiaries about the basic aspects of the disease such as its risk factors. Women in the prime of their lives should be educated on the risks of cervical cancer to enable them modify behaviours that exposes them to cervical cancer. Currently, scanty information is available on the perceptions of risk of cervical cancer.

The findings of this research can provide database for planning effective educational programs on cervical cancer among University of Ghana female students. The findings can also be used to create more awareness on the risk of cervical cancer and offer recommendations particularly to the University of Ghana, in formulating appropriate educational programs on cervical cancer. It will also help female students of the

University of Ghana improve lifestyles and behaviours that make them at risk of cervical cancer through education.

1.5 RESEARCH QUESTIONS

1. What is the level of knowledge among female students on cervical cancer?
2. Do female students perceive themselves as being at risk of cervical cancer?
3. Do female students understand the sexual behaviours that expose them to cervical cancer?

1.6 GENERAL OBJECTIVE

The study aims to assess the perception of risks of cervical cancer among University of Ghana female students.

1.7 SPECIFIC OBJECTIVES

1. To assess the knowledge of cervical cancer among female students.
2. To find out female student's perceptions on the risk of cervical cancer.
3. To ascertain risky sexual behaviours that expose female students to cervical cancer.

CHAPTER TWO

2.0 LITERATURE REVIEW

According to the World Health Organisation, cervical cancer is the second most common cancer among women, with about 500,000 new cases and 250,000 deaths each year worldwide (WHO, 2006). When cervical cancer is detected early can lead to a good prognosis resulting in a decrease in the mortality and health care costs. If left untreated, the individual suffers and there are significant adverse effects on the families and the community (WHO, 2006).

‘Worldwide, cervical carcinoma is one of the most common gynaecologic malignant tumours and a leading cause of death from genital malignancies in women. Although, Pap smear as a screening method has the potential to identify pre-cancerous lesions and could massively reduce the invasive disease in developed countries, developing countries could not significantly lower the rate of cervical cancer among general population through using this screening test’ (Akabari et al., 2010).

2.1 EPIDEMIOLOGY OF CERVICAL CANCER

According to Okanofua (2007), the highest burden and mortality associated with cervical cancer worldwide is in the Sub-Saharan Africa where a woman has 21% chance of surviving while a woman in the United States has 70% chance of surviving. It has been argued that the majority of cervical cancer as well as the most related deaths occur in low and medium income countries (Akbari et al., 2010).

Cervical cancer is the fourth most common for all female cancer and the seventh worldwide with about 527,000 new cases diagnosed in 2012 (8% of female cases & 4% of the total). Its incidence rates are highest in Eastern Africa and lowest in Western Asia

Cervical cancer is also the sixth most common cancer for females in Europe with 58,400 new cases diagnosed in 2012 (4% of female new cases & 2% of the total) (Farley et al., 2012).

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. With about 528,000 cases every year, cervical cancer is most notable in the lower-resource countries of the sub-Saharan Africa (IARC, 2012).

According to the WHO, (2006) cervical cancer the second common cancer with an estimated figure of 19.4% incidence per 100,000 and the second most common type of all cancers affecting women aged 15-44 years in Ghana. According to William & Amoateng (2012), Ghana mortality rates for cervical cancer are three times more than the global cancer mortality rate (27.6/100,000 vs. 7.8/100,000).

2.2 CLINICAL MANIFESTATION, TREATMENT AND MANAGEMENT OF CERVICAL CANCER

Women with early cervical cancers and pre-cancers usually have no symptoms. Unfortunately, symptoms often do not begin until a pre-cancer becomes a true invasive cancer and grows into nearby tissue. When this happens, the most common symptoms are; Abnormal vaginal bleeding at times when not having your periods, such as bleeding after sex (vaginal intercourse), bleeding after menopause, bleeding and spotting between periods, and having longer or heavier (menstrual) periods than usual. Bleeding after douching, or after a pelvic exam is a common symptom of cervical cancer but not pre-cancer. An unusual discharge (sometimes foul) from the vagina and the discharge may

contain some blood and may occur between your periods or after menopause. Pain during sex (vaginal intercourse) can also occur as a sign of cervical cancer (ACS, 2014).

2.2.1 Primary Treatment

Primary treatment of cervical cancer would require the prevention of HPV infection of the genital tract or at least, preventing persistent infection of the cervix with HPV. As the primary method for the transmission of genital HPV is mostly through sexual intercourse possible methods of primary prevention include abstinence, keeping one sexual partner and use of condoms (Munoz et al., 2002). The introduction of the prophylactic vaccine for cervical cancer is a primary treatment of cervical cancer. A report on 13th November, 2013 by media centre states that, Ghana has taken a giant step towards preventing cervical cancer in the country. Young girls between ages 9-13 will benefit from the HPV immunization that will protect them against acquiring the disease. The vaccines were officially launched by the first lady of the Republic of Ghana, Mrs. Lordina Mahama at Dodowa district of Accra and is yet to be implemented.

2.2.2 Secondary Treatment

According to the Cancer Council in Victoria, surgery is a common treatment for cervical cancer treatment. The type of surgery normally depends on the extent of spread of cancer, age and the general wellbeing of the patient. Total and radical hysterectomy is done to remove the uterus when the cancer has spread to the uterus. Also, a woman's ovaries and fallopian tubes might be removed to prevent further spread to other vital organs. Early cervical cancer can be usually treated by surgery or radiotherapy or both (CCV, 2014).

Currently the accepted treatment for cervical cancer prevention program is cytology-based screening employing Papanicolaou staining of cervical swab specimens containing exfoliated cervical cells (the Pap smear). This process enables microscopic detection of cellular changes which is typical of HPV infection and associated with various stages of the development. Women with pre-cancerous or cancerous lesions identified through Pap screening are referred for repeat Pap screening and offered appropriate treatment (Lowndes, 2006).

2.3 KNOWLEDGE ABOUT CERVICAL CANCER

Cervical cancer is a type of cancer that affects the cervix of a woman. Persistent infection with HPV is one of the major causes of cervical cancer. The Papanicolaou (pap) cytology test has proven to be the effective screening tool in identifying the precursor lesion associated with HPV infection. HPV is a virus with more than 100 identified types. Approximately 30 types are sexually transmitted. Low risk HPV types 6 and 11 are responsible for 90% of genital warts cases. High risk HPV types 16 and 18, account for approximately 70% of cervical cancer cases. HPV is one of the commonest sexually transmitted infections in the world. When HPV infections do not resolve themselves, then it has a potential to contribute to cervical cancer. The prevalence of HPV has been found to be highest among persons within the first few years after sexual activity is initiated (Cancer Research UK, 2014).

A study was conducted in the United States to find out what women in the U.S know about Human Papillomavirus and cervical cancer. The study revealed that, knowledge about HPV among U.S women ages 18 to 75 years old was relatively low with only 40% of women reported that they had ever heard of HPV. Among those who had heard of it,

less than half knew that HPV causes cervical cancer. Their findings also suggest that familiarity with HPV does not guarantee accurate knowledge about its link to cervical cancer. Thus, health communication researchers have two tasks when designing messages which is to increase recognition of the name, Human Papillomavirus, and its acronym, and to increase the level of knowledge of the potential consequences of HPV infection (Tiro, Meissner, Kobrin & Chollette, 2007).

A study among Kenyan women to find out the knowledge, attitude, practises and perceived risk of cervical cancer revealed that majority of the respondents got their information on cervical cancer from health workers. When information about certain diseases such as cervical cancer come from health workers, people are more likely to adhere to it than any source hence the health workers must be well educated on such issues for them to be able to educate the public about it very well (Staci et al., 2013).

In a study by Ali et al., (2010) the researchers argued that, the majority of working health professionals are not adequately equipped with the knowledge concerning cervical cancer which is surprising considering the fact that, health professionals are to educate the public. The research was to assess knowledge and awareness about cervical cancer and its prevention among nursing staff in a tertiary care hospital in Karachi Pakistan. The results of the study revealed that, of all the respondents, 1.8% did not know of cervical cancer as a disease and only 23.3% of the total respondents knew about it as the most common cause of gynaecological cancers. This was unexpected knowing that, some health professionals are unaware that cervical cancer is the second leading cause of cancer mortality among women in developing countries and still the leading cause to death due to gynaecological cancers in developing countries. They suggested continuous medical

education program at all levels of the hospital and should be included in their seminars and highlights should be made on the importance of screening. If health professionals are fully educated on cervical cancer, they will be able to properly educate people on cervical cancer and encourage them to screen for early detection.

Another study by Leung & Leung, (2010) among Chinese women in Hong Kong showed that, on general knowledge about cervical cancer, only about one-fifth of the women (19.3%) out of 379 respondents received a full score on general knowledge. In a related qualitative study among women in Nigeria to determine the awareness, perceptions and factors affecting the utilization of cervical cancer screening revealed that, majority of the respondents did not know about cervical cancer (Ndikom & Ofi, 2012).

A study done by Adageba, Danso, Ankobea, Kolbilla & Opoku (2011), to determine knowledge about cervical cancer, and patronage of cervical cancer prevention services among female health workers in Kumasi Ghana. In the study, structured questionnaire containing items on characteristics and knowledge of respondents on risk factors, symptoms and prevention of cervical cancer was administered to a total of 361 female health workers. The majority of respondents 83.9% considered cervical cancer to be a life-threatening condition. 55% of the respondents said the cause of cervical cancer was related to sexual activity whilst 33% of them said cervical cancer and sexual activity were not related. A close look at the result shows that, 55% knew at least three risk factors and 58% knew at least three symptoms of cervical cancer. 75% of the respondents said cervical cancer was a preventable disease but only 11.6% of respondents had ever been screened for cervical cancer. Of all the respondents, 16.1% mentioned Pap smear and 4.4% mentioned VIA as screening tools for cervical cancer. This also indicate that,

majority of the respondents were not aware of the screening tools for cervical cancer although they acknowledge the fact that the disease is life-threatening.

In a related study by Sawadogo, Gitta, Rutebemberwa, Sawadogo & Meda (2014), a cross-sectional survey study was used to examine the knowledge and beliefs on cervical cancer and practices on cervical cancer screening among women aged 20 to 50 years in Ouagadougou, Burkina Faso. A total number of 840 women aged 20 to 50 years were interviewed about their knowledge, beliefs and practices regarding cervical cancer. While 64.2% of participants have heard about cervical cancer, only 8.5% heard about Human Papillomavirus, 69.05% don't know that cervical cancer is preventable. 90.4% of participants were worried to develop cervical cancer, 96.67% would accept to be screened and 11.07% were screened for cervical cancer. From this study, knowledge and belief regarding cervical cancer is low among Ouagadougou women and screening rate is also low.

To assess the knowledge of women about cervical cancer and associated factors among women in Northwest Ethiopia, Getahun, Mazengia, Abuhay & Birhanu, (2013) interviewed a total of 633 women aged 15 years and above using semi-structured questionnaire. Of all the respondents they interviewed, 495 (78.7%) of them had heard about cervical cancer but only 195 (31%) of them were knowledgeable about the disease. The knowledge of women on cervical cancer was found to be poor. They therefore recommended that any education about the disease must include information on risk factors, sign and symptoms of cervical cancer.

Owoeye & Ibrahim (2013), in a study seek to assess the knowledge, level of perception and the attitude of female staff and students of Niger Delta University, Nigeria, towards

cervical cancer screening. Most of the respondents 278 (72%) were aware of cervical cancer, while only 182 (50.6%) were aware of cervical cancer screening. Pap smear was the most popular screening test mentioned by respondents 100 (41.2%), while some respondents (8.5% of staff and 16.3% of students) wrongly believed that blood test is used for cervical cancer screening. There was a significant association between awareness and practice of cervical cancer screening amongst staff and students. The study has shown that awareness of cervical cancer screening was higher amongst students than staff of Niger Delta University. There was an association between awareness and practice of cervical cancer screening amongst respondents. From the study, a greater proportion of the staff respondents had little or no knowledge of cervical cancer screening.

Also, Williams & Amoateng (2012) explored the knowledge and beliefs about cervical cancer screening among men in Kumasi, Ghana. Targets for education interventions were identified including incorrect knowledge about cervical cancer and stigmatizing beliefs about cervical cancer risk factors. Cultural taboos regarding women's health care behaviours were also identified. Several participants indicated that they would be willing to provide spousal support for cervical cancer screening if they knew more about the disease and the screening methods. From the study, men play a significant role in the health behaviours of most Ghanaian women. Cervical cancer education interventions targeting Ghanaian men are needed to correct misconceptions and increase spousal support for cervical cancer screening.

Amelio (2013) conducted a study on predictors of breast and cervical cancer screening in Poland on cancer knowledge and prophylaxis, conducted by the Cancer Oncology

Institute in Warsaw, Poland. Regression was used to identify predictors of mammography and cytology uptake. The study result shows that women's level of cancer knowledge was evenly distributed (49.2% low and 50.8% high scores). However, knowledge on cervical cancer was lower than for breast. Higher knowledge was linked to higher education, better material conditions, cancer diagnosis, or practicing any type of the studied prophylaxis and lower levels of knowledge was associated with being aged, being widowed, and living in village. Similarly, 90.7% knew that cytology allows early detection of cancer and 78.8% have ever undertaken it cytology but only 53.6% had it done every 1-3 years. Up to 4% indicated test unavailability of either test as the reason for non-attendance. The most common barriers included feeling of no need for such test (37.9-44.9%) and lack of referral (28.7%-39.2%). Women with the highest education levels, the ones living in cities above 100,000 inhabitants, or with highest cancer knowledge were the most likely to ever get screened for breast and cervical cancers. The low-screening uptake was assumed to be due to the fact that there was no nationally available screening but only a small proportion reported non-attendance due to unavailability of tests. This suggests that the uptake was driven by other factors (e.g., cancer knowledge, education) than population screening availability.

Beining (2012) examined the role of awareness and knowledge of cervical cancer as a barrier to screening participation among urban women in Tamil Nadu and also further identify the potential impact of increased cervical cancer awareness and knowledge on screening attitude. Mixed methods were used to characterize existing levels of awareness and knowledge of cervical cancer and screening among 207 women from the metropolitan area of Chennai. The results revealed that, majority of women (69.6%) were

not aware of cervical cancer and very few (16.4%) were aware of screening. Demographically, women with secondary levels of education or higher were significantly more likely to have heard of cervical cancer and screening. Women that were aware of cervical cancer screening, most reported receiving information through television (33%) or a healthcare provider (28.6%).

The study further explored changes in associations between awareness, knowledge, perceived susceptibility, and screening attitude. It was observed that vast majority of women were very open to participating in free cervical cancer screening, independent of previous knowledge of cervical cancer. The results also suggest that although lack of awareness appears to be a major barrier to participation in cervical cancer screening, when women are educated on cervical cancer, the information has the potential to change the attitude of a significant proportion (58.3%) of women who were previously unyielding to screening.

Another study done among nurses at a hospital in Tanzania to explore the knowledge of cervical cancer and screening practises revealed a significant association between knowledge levels of causes of cervical cancer and transmission of HPV and age. Knowledge was more adequate among the young nurses ($p = 0.027$) as compared to older ones (Urasa, et al., 2011).

2.4 PERCEPTION OF RISKS OF CERVICAL CANCER

A risk factor is anything that changes your chance of getting a disease such as cervical cancer. Several risk increases a woman's chance of developing cervical cancer. Women without any of these risks rarely develop cervical cancer. Cervical cancer is the second leading cause of cancer deaths worldwide and the tenth leading cause of cancer related

deaths among women in the United States (Ben-Natan, & Adir, 2009). Despite the availability of vaccination, routine screening with Pap smear, and a variety of treatment modalities, it is estimated that over 12,000 women developed cervical cancer and over 4000 women died of cancer in the year 2010 in the United States alone (ACS, 2010).

High-risk types of HPV are now accepted as a necessary though not sufficient etiological agent in the vast majority of cervical cancers (Waller, McCaffery, & Wardle, 2004). For more than a century, the medical profession has known of a link between cervical cancer and sexual activity. Rigoni-Stern published his observations of the low incidence of cervical cancer among nuns as long ago as 1842. But only with the development of tests for HPV has the mechanism for the link been clearly established. HPV is widely acknowledged to be transmitted through sexual contact, which explains the epidemiological association between cervical cancer incidence and number of sexual partners. A range of co-factors is involved in the development of squamous intraepithelial lesions (SIL) and cancer, and current candidates include smoking, immunological factors, the contraceptive pill, having a high number of pregnancies, and other sexually transmitted infections (STIs) like Chlamydia (Waller et al., 2004).

In the UK, the current National Health Service (NHS) screening leaflet mentions behavioural risk factors (having sex at an early age; many sexual partners; not using condoms) but the involvement of a sexually transmitted virus is not made clear (NHS, 2001).

A study among 379 Chinese women in Hong Kong revealed that only 0.3% had a full score on the risk factors. High percentages of women reported they did not know whether some items were risk factors (17.9% to 41.2% for 5 out of the 9 risk factors). The most

commonly identified risk factors were having sex at early age, many different sexual partners and sexually transmitted disease (Leung & Leung, 2010).

A qualitative study done by Wong et al., (2009) revealed that, cervical cancer risk factors were recognized by less than half of the respondents. Some were able to site risk factors such as having multiple sexual partners, having a partner who had multiple sexual partners and genetic inheritance. However, all the respondents were unfamiliar with HPV infection as a risk of cervical cancer.

In another study on knowledge and perception of the risk of cervical cancer on screening behaviour among mainland Chinese women revealed that, respondents rated their risk for cervical cancer to be low and the researchers related it to the lack of factual knowledge about the disease and its risk factors (Can et al., 2012).

2.5 BEHAVIORS THAT EXPOSES A PERSON TO CERVICAL CANCER

Research suggests that intrinsic factors influence women's cervical screening rates and this has been reported consistently among different populations including Caucasian, Asian, and Latino-American women (Oscarson et al., 2008; Eaker et al., 2001; McMullin et al., 2005). Basic factors include women's knowledge, beliefs, and attitudes towards cervical cancer. There are some demographic factors such as having lower socioeconomic status, not being married that are associated with elevated risk (Cotton et al., 2007; Selvin et al., 2003). There are many of the reported risk factors for cervical cancer are linked to sexual behaviours and likely represent exposure risks to HPV, and HPV fulfils all of the recognized criteria for cervical cancer causality. They include having early commencement of sexual intercourse, having multiple sexual partners and having sexual partner(s) with multiple partners. Some sexually transmitted infections or

infrequent screening for cervical cancer and tobacco use represent other independent risk factors (Castellsagne et al., 2002). According to (Saules et al., 2007) many women do not perceive themselves at risk of cervical cancer.

WHO estimates HPV prevalence in the West African sub-regions, including Ghana at 16.5%. For instance, a study estimating HPV prevalence among a sample of women attending a gynaecological outpatient clinic in Accra Ghana found a crude HPV prevalence of 10.7% (Domfeh et al., 2008). Cervical cancer is strongly associated with Human Papillomavirus, which can be acquired through sexual intercourse (Bekkers et al., 2006). This according to Adanu (2010) implies that, prevention of cervical cancer can be achieved through the same measures recommended for the prevention of HIV and sexually transmitted infections (STIs) and cervical cancer screening. HPV is a very common, largely sexually transmitted infection of the genital tract, which in the majority of cases is transient, asymptomatic and clinically insignificant. In a minority of women, however, the infection becomes persistent and may lead to the development of high-grade cervical cancer invasive cancer (Denny, 2014).

Also, adding to the markers of risky sexual behaviours, including age at first sexual intercourse and number of sexual partners, other relevant co-factors include infection with other STIs, particularly *Chlamydia trachomatis* and herpes simplex virus type 2 (HSV-2), smoking, socio-economic status, diet and hormonal factors, including parity and oral contraceptive use. In addition, young age at marriage, parity, low socio-economic status and poor health-seeking behaviour are more prevalent in developing countries (Lowndes, 2006).

A study among nurses in the rural areas of Turkey showed that although nurses were aware of cervical cancer and its risk factors, they indulge in behaviours that expose them to the disease. Of the 97 nurses, 69.1% (67) reported smoking, 72.2% (70) reported early age at first sexual intercourse, 81.4% (79) reported multiple sexual partners and 87.6% (85) reported history of sexually transmitted disease were risk factors of cervical cancer. Forty-five (46.4%) nurses knew all the risk factors of cervical cancer. Fourteen percent of the nurses believed that they had a higher risk in development of cervical cancer. But the nurses did not know the Pap test should be done three years after first sexual life and if tests were normal, it should be repeated 2-3 years (Ertem, 2009).

In a qualitative study among Malaysian women, respondent associated masturbation with cervical cancer foods such as canned foods, preserved eggs, deep fried eggs which might trigger cervical cancer. None of the respondents mentioned smoking, early onset of sexual activity or parity as a risk of cervical cancer (Wong et al., 2009). Another study in Britain also revealed that, when all risk factors relating to sexual activity or sexually transmitted infections were grouped together, 41.4% of people were found to have mentioned at least one of them. HPV was only mentioned explicitly by 0.6% of respondents and only 8.5% linked cervical cancer with a named or unnamed sexually transmitted infection (Waller et al., 2004).

CHAPTER THREE

3.0 METHODS

This chapter covers the methodological approach to the study. The section also covers the sampling design, data collection procedures, methods of data analysis as well as ethical issues.

3.1 STUDY DESIGN

The study was a mixed method cross sectional study which was done to examine the perception of risks of cervical cancer among University of Ghana female students.

3.2 STUDY AREA

University of Ghana campus lies at an altitude of between 90 and 100 meters above sea level and about 13 kilometres north-east of Accra in the Ga-East district. Its main gate is on the Accra-Madina road, the University Avenue extends to Commonwealth Hall on the Legon hill. Along this avenue are halls of residence, departments, lecture theatres and laboratories and a mid-way open space. The University has an international library called the Balme library. (named after Mr. David Mowbray Balme, the first principal of the University). On the summit of the Legon hill is the Convocation group of buildings which houses the University's administration offices, the great hall with a seating capacity of 1,500 and a Tower donated by the Government of Ghana in 1957 to commemorate Ghana's independence. The southern side of the campus houses residential accommodations for staff, the University Basic Schools, the Noguchi Memorial Institute for Medical Research, School of Public Health, a sports stadium, a night market, super market and students' hostels. The northern side is more of teaching departments, lecture theatres and laboratories. Across the Accra-Madina road from the main University gate is

a police station, a University hospital and housing for junior staff of the University. The University of Ghana is the oldest and largest of the six public Universities in Ghana. The University has a hospital that serves both students and people outside the University community.

Currently the university has a student population of about 35,683 with a male/female ratio of about 3:2. This number includes about 4,437 students at the Accra city campus and about 4,532 undertaking their studies by the Distance Mode. There are about 3,196 post-graduate students and about 3,596 students on the modular sandwich programs with a total amount of 4,340 resident female students.

3.3 VARIABLES

The dependent variable is perception of risks of cervical cancer and the independent variables include age, year of study, religion, knowledge about cervical cancer and risky sexual behaviours.

3.4 STUDY POPULATION

The study population for this research were female undergraduate and post graduate students pursuing full time programs in University of Ghana on the Legon campus. This study was restricted to female students only as they are susceptible to cervical cancer.

Respondents were from the four traditional halls and two graduate hostels with the exception of commonwealth hall which is limited to male students.

3.5 SAMPLE SIZE

The sample size was calculated using Cochran's formula based on the following assumptions;

The sample size calculation

The formula $n = \frac{(Z)^2 P(1-p)}{d^2}$

d^2

Where $Z =$ confidence interval of 95% (1.96)

$p =$ the prevalence of perceptions of risk of cervical cancer among female University students and

$d =$ standard error

Using a confidence interval of 95%, the margin of error is 5%

Therefore;

$N = \frac{(1.96)^2 \times 0.5(1-0.5)}{(0.05)^2}$

$(0.05)^2$

$n = 380$

1. A total number of 4340 resident female students
2. Also assuming that 50% of University students have sufficient knowledge about cervical cancer, a sample of 380 female students was selected at a 95% confidence interval and 5% reliability.

3.6 SAMPLING PROCEDURE

Respondents were chosen from the four traditional halls of the University which include Legon Hall, Akuafu Hall, Mensah Sabah Hall, Volta Hall and two graduate hostels all from the female sections. Systemic random sampling was used to select respondents from

each hall. In all halls, selected female students occupied about 450 rooms. For all halls a sample of 75 rooms were selected to ensure respondents will not be from only one floor or an annex of a hall.

Sample interval was obtained from the total number of rooms (450) and was divided by the number of rooms in the sample (75) to obtain 6. Based on this figure, every sixth room was selected. The first room was randomly selected at the starting point.

Three focus group discussions were held to explore female students' perceptions and knowledge of risk of cervical cancer and grouped into 16-20, 21-25, 26 and above. Focus group participants were selected purposively from each hall. Female students who were available and met the age range of the study were interviewed. Each focus group consisted of 6-12 female students.

3.7 DATA COLLECTION INSTRUMENTS

Introductory letters were taken from the school of Public Health and permission letters from the students' services unit of the University of Ghana to be able to carry on the research with the students. Data was collected quantitatively and qualitatively using structured questionnaires and focus group guide.

The questionnaires were based on the objectives of the study and also previous study from literature available on the topic was added. Focus group discussions were used to explore more on perceptions of risk of cervical cancer. All focus group discussions were recorded, with the consent of respondents using an audio recorder and were transcribed verbatim.

3.8 QUALITY CONTROL

The reliability of the tool was ascertained. The participants completed the questionnaires independently. The data was checked to determine the distributions, and for outliers before the analyses were conducted. There were no outliers, and the distributions were not skewed.

3.9 DATA ANALYSIS

Each questionnaire was given a code for purpose of data entry. Data was entered into and analyzed using the Statistical Package for Social Science (SPSS) version 21 software and stored with password. Data was entered twice and cleaned to rule out errors. The quantitative data was analyzed using descriptive statistics in percentages, frequencies, means and standard deviation and a Chi-square was used to test significant association between variables. Qualitative data was obtained from audio-recorded tapes and transcribed verbatim using descriptive content analysis to analyze them.

3.10 ETHICAL CONSIDERATION

Letters of approval was sought from the Ghana Health Service Ethical Review Board and the School of Public Health. Letters were sent to the head of students' services from the University of Ghana. The objectives, benefits and details of the study were clearly explained to the participants. There was no risk to the study as the participants rather gained some knowledge about cervical cancer. Letter of consent were given to them to sign before they were enrolled in the study.

Participants were also told about their rights to withdraw from the study without any coercion as the study is voluntary. Participants' identities remained anonymous to ensure confidentiality. Identities were not disclosed at any point of the study. Data collected

were password protected, stored on a computer and backed on an external hard drive. Hardcopies were locked up in cabinets with limited access to only the principal investigator and supervisor of the study.

The research was self-sponsored and there was no form of compensation for participants of the research. This was to ensure that responses from the participants would not be bias on account of hope of remuneration.

3.11 PRETESTING

The data collection tools were pretested among female students at the University of Professional studies in Accra to enable correction of the procedure. The following were evaluated during the pre-test:

Reliability of the questionnaire

Average time needed to complete each questionnaire

Sequence of questions and their clarity

Evaluating the success of training of research assistant

CHAPTER FOUR

4.0 RESULTS

INTRODUCTION

This chapter presents the findings from the quantitative and qualitative data collected using both survey questionnaires and Focus Group Discussions. The quantitative data was analysed using the software Statistical Package for Social Sciences (version 20.00) and descriptive statistics such as the frequency, percentages, means and standard deviations were used to summarise the data. Inferential statistics such Chi Square was used to test for significant associations among variables. Qualitative data was audio-recorded and transcribed verbatim.

4.1 DEMOGRAPHIC CHARACTERISTICS

The descriptive statistics in table 1 shows that majority (97.90%) of respondents were single whiles (2.10%) were married. For the respondents' academic level, there were 77 level 100 students representing (20.30%), 102 level 200 students representing (26.80%), 107 level 300 students representing (28.80%), 69 level 400 students representing (18.20%) while there were 25 postgraduate students representing (6.60%) of the total sample for the study. This shows that the sample is relatively and fairly distributed across the various academic levels. Majority (92.10%) of the respondents were Christians followed by Muslims who constituted (7.40%) while 1 person each representing (0.30%) reported being African Traditionalist and Other religions. The analysis also revealed that the respondents had a mean age of 21.22years with a standard deviation of 2.28years. Thus, more than 95% of the total samples were between the ages of 16 and 25years.

Table 1: Summary of Demographic Characteristics of the respondents in the study

VARIABLES	FREQUENCY	PERCENTAGE (%)
<u>MARITAL STATUS</u>		
Single	372	97.90
Married	8	2.10
<u>ACADEMIC LEVEL</u>		
100	77	20.30
200	102	26.80
300	107	28.80
400	69	18.20
Postgraduate	25	6.60
<u>RELIGION</u>		
Christianity	350	92.10
Islam	28	7.40
African Traditional	1	.30
Others	1	.30
<u>RESIDENTIAL STATUS</u>		
Resident	380	100
<u>AGE</u>		
16-20years	145	38.20
21-25years	219	57.60
26years and Above	16	4.20

4.2 PERCEIVED KNOWLEDGE, RISKS AND BEHAVIOURAL PRACTICES AMONG FEMALE UNIVERSITY STUDENTS

Table 2 shows female student's level of knowledge on the causes, signs and symptoms, diagnosis, prevention and treatment of cervical cancer. Although majority of the respondents have adequate knowledge about the fact that cervical cancer affects the cervix of a woman (93.90%), only (24.50%) know that cervical cancer is caused by Human Papillomavirus and (26.30%) are aware the virus is sexually transmitted. More than half of the respondents (67.40%) believe the cause of cervical cancer can be

spiritual. Out of 380 respondents, only (36.30%) knew Pap smear could be used to diagnose cervical cancer. The other (63.70%) gave answers such as X-ray, abdominal scan and blood test as ways to diagnose cervical cancer. Table 2 depicts the uneven and inadequate information on knowledge of cervical cancer among female students.

Table 2: Summary of Cervical Cancer Knowledge among Female University Students

STATEMENTS	CORRECT
CAUSAL KNOWLEDGE	FREQ. (%)
cervical cancer affects women	367(96.60%)
cervical cancer occurs in the cervix	375(93.90%)
Cervical cancer is the commonest among gynaecological cancers in Ghana	231(60.80%)
cervical cancer is an infection	284(74.70%)
HPV causes cervical cancer	147(38.70%)
Human Papillomavirus is the main cause of cervical cancer	93(24.50%)
Using condom during sex can reduce the risk of cervical cancer	110(28.90%)
HPV is sexually transmitted	100(26.30%)
HPV infection can be spiritual	256(67.40%)
KNOWLEDGE OF SYMPTOMS AND DIAGNOSIS	
Diagnosing cervical cancer	138(36.30%)
Regular screening can reduce the risk of cervical cancer	246(64.70%)
Signs and symptoms of cervical cancer	112(29.50%)
KNOWLEDGE OF TREATMENT AND PREVENTION	
cervical cancer can be treated	231(60.80%)
Cervical cancer can kill	299(78.70%)
Treatment for cervical cancer is available in the hospital	307(80.80%)
cervical cancer has a cure	59(15.50%)
Going for HPV vaccine can prevent cervical cancer	119(31.30%)

4.3 CERVICAL CANCER KNOWLEDGE

From the focus group discussion it emerged that most of the participants in the focus groups has an idea about what cervical cancer is in terms of who it affects. That is, most of the participants shared the view that it is a disorder among females and it affects their cervix. Some responses from some of the participants are as follow:

“I know it’s the cancer of the cervix” (level 100, 19 years)

“It is a disorder that affects the cervix of females and cause them to bleed” (level 300, 23 years)

“I know cervical cancer affects only woman and it’s peculiar to their cervix” (post graduate, 27 years)

“Me I know it affects your vagina” (all laughing) (level 200, 20 years)

These illustrations demonstrate that the respondents have some knowledge about cervical cancer but this knowledge is not in-depth as some of their ideas of cervical cancer are superficial. However, some of the participants further discussed the testing method, curability and preventability of the illness in an attempt to share their knowledge. For instance, some participants asserted that:

“I know it can’t be cured but it can be controlled” (post graduate, 27 years)

“I know they can use Pap smear to test for cervical cancer” (level 400, 25 years)

“I also know it can be prevented and also by the use of vaccination” (level 300, 23 years)

Thus, the participants in the focus group displayed some knowledge on the curability of cervical cancer.

4.4 PERCEIVED CAUSES, SIGNS AND SYMPTOMS OF CERVICAL CANCER

To understand the perceived causes of cervical cancer, participants from the focus group discussion revealed varied causes of cervical cancer. According to the participants, the most dominant cause of cervical cancer is multiple sexual partners. Some also mentioned unprotected sex, spiritual factors and bacterial infection.

For the multiple partners, majority of the participants from the focus groups mentioned it as the major cause of cervical cancer. The responses of some of the respondents to illustrate their view on the causes of cervical cancer relating to multiple sexual partners and unprotected sex are below;

“If you have unprotected sex, maybe a fluid from the guy can cause cervical cancer”

(level 100, 19 years)

“Multiple sex partners” (post graduate, 28 years)

“Unprotected sex intercourse” (level 400, 23 years)

However, some of the respondents believe the causes of cervical cancer are spiritual. For instance, a respondent says that:

“Me I think its spiritual” (post graduate, 27 years)

Some of the participants believed that cervical cancer could be due to unhygienic practices and bacterial infections. A participant states below:

“If you don’t take care of your vagina well and you sleep around, I think you can get cervical cancer” (level 400, 22 years)

“It is caused by infection like bacteria” (level 200, 20 years)

The participants from the focus group discussions listed some symptoms that reflect the general symptoms and signs of cervical cancer but do not cover all the possible signs and symptoms. For instance;

“Pain during sexual intercourse” (level 100, 20 years)

“Bad odour form the vagina” (level 400, 23 years)

“I think painful urination” (level 300, 25 years)

“Bleeding” (post graduate, 30 years)

However, some of the participants were not sure of the symptoms. For instance,

“Me I don’t know of any” (post graduate, 27 years)

“Maybe you can’t eat well” (level 200, 20 years)

4.5 PERCEIVED TREATMENT AND PREVENTION OF CERVICAL CANCER

To explore the views of students regarding the curability or preventability of cervical, most of the participants believe that it can be cured using a combination of methods such

as chemotherapy, faith/spirituality, medication and personal hygiene. However, the reliance on faith and spirituality dominated the responses across the groups as can be seen from the transcripts below;

“Since it’s a cancer, I think chemotherapy can treat it and I think it can be cured spiritually too. And that is on issues of faith” (post graduate, 27 years)

“I think with cancer fasting and prayer will do” (level 400, 25years)

“I friend of mine had cervical cancer and she went to a pastor and was cured” (level 100, 20 years)

“By use of medications” (level 300, 21 years)

“Using mild soaps to wash the vagina” (level 300, 25 years)

“Regular check-ups” (post graduate, 29 years)

“By having protected sex” (post graduate, 27 years)

These responses from the participants suggested that the female students have varied perceptions about the available treatment and preventive methods for cervical cancer. However, one participant noted that she doesn’t think anything can be done about cervical cancer. She illustrated this point by saying that;

“I have not heard of any treatment for cervical cancer” (post graduate, 30 years)

4.6 PERCEIVED CERVICAL CANCER RISKS AMONG FEMALE

UNIVERSITY STUDENTS

Table 3 is a summary of the perceived risks of cervical cancer among female students. It is clear that the respondents do not have adequate information about the relationship between sexual activity and cervical cancer as 176 (46.20%) out of 380 respondents said they do not know if being sexually active puts a woman at risk of cervical cancer.

Also, more than half of the respondents (59.50%) do not know if HPV infection increases the risk of cervical cancer. Furthermore, more than half of the respondents also said cervical cancer does not affect young women (66.10%). The media as shown in the table has been the popular source of information about cervical cancer (67.30%) whiles the 6.60% got their information from the clinic and 10.50% from health centres which is surprising because the clinic and health centres are supposed to educate young women on cervical cancer.

Table 3: Perceived Cervical Cancer Risks among Female University Students

STATEMENTS	FREQUENCY	PERCENTAGES
A woman's risk/chance of developing cervical cancer increases as she grows older		
Yes	200	52.60%
No	36	9.50%
Don't Know	144	37.90%
Being sexually active puts a woman at a greater risk of cervical cancer		
Yes	157	41.30%
No	47	12.40%
Don't Know	176	46.30%
HPV infection increases cervical cancer risk		
Yes	132	34.70%
No	22	5.80%
Don't Know	226	59.50%
Higher risk of cervical cancer		
Smoking		
Stress	43	11.30%
Multiple partners	15	3.90%
Family history/genetics	162	42.60%
Early age at first coitus	41	10.80%
Don't know	21	5.50%
	98	25.80%
Recommended age for a woman to start screening for cervical cancer		
20-25years	206	54.20%
26-30years	47	12.40%
31-35years	19	5.0%
After 35years	33	8.70%
Don't Know	75	19.70%
Cervical cancer affects only women with children		
Agree	18	4.70%
Disagree	279	73.40%
Don't know	83	21.90%
Cervical cancer affect young women		
Yes	58	15.20%
No	251	66.10%
Don't Know	71	18.70%

Perceived Cervical Cancer Risks among Female University Students cont'd

I am at risk of cervical cancer		
Yes	114	30.0%
No	138	36.30%
Don't Know	128	33.70%
Cervical cancer can make a woman's life very difficult		
Yes	273	71.80%
No	13	3.50%
Don't Know	94	24.70%
a woman can die of cervical cancer		
Yes	330	86.80%
No	7	1.90%
Don't Know	43	11.30%
Information on cervical cancer?		
Media	256	67.30%
Health worker	40	10.50%
Clinic	25	6.60%
Friends	22	5.80%
Family	14	3.70%
Others	23	6.10%

4.7 RISKY SEXUAL BEHAVIOURS AMONG FEMALE UNIVERSITY STUDENTS

To determine the sexual behaviours that expose female students to cervical cancer, the following results were obtained and summarised in the Table 4 .

The table shows some of the practices that could predispose females to the development of cervical cancer. From the analysis, majority of the respondents (53.40%) reported that they have no partners while (46.60%) reported that they have partners. This means that these (46.60%) may under pressure from their partners for sexual activities that may put them at risk for developing cervical cancer. To further probe whether respondents have ever had sexual intercourse, the results showed that (25.80%) respondents have had sexual intercourse while (72.40%) respondents reported to have not had any sexual

intercourse and (7%) respondents did not provide information on whether they have had sexual intercourse before or not.

It was further noticed from the results that (16.10%) respondents out of the total sample have had 1 sexual partner in life, (7.60%) respondents have had between 2 and 3 sexual partners in their lives while (3.2%) respondents have had more than 3 sexual partners in life and majority of the respondents (73.20%) reported that they have had no sexual partners in life. To determine whether respondents use condom during sexual intercourse, (6.10%) respondents reported to have been using condom, (5.30%) respondents reported not using condom at all while (13.70%) respondents reported that they do not always use condom. To further determine the frequency of condom use among the sample, it was observed that only (2.40%) of the respondents use condoms every time, (5.50%) respondents reported using condom most of the time, (10.50%) respondents reported using condoms once in a while (3.70%) respondents reported never using condom during sexual intercourse. The percentages of the frequency of condom use is very significant as majority of sexually active female students do not use condoms all the time which is likely to predispose them to cervical cancer and other serious sexually transmitted diseases

Table 4: Summary of Risky Sexual Behaviours among Female University Students

STATEMENTS	FREQUENCY	PERCENTAGES
I have a partner		
Yes	177	46.60%
No	203	53.40%
Sexual intercourse		
Yes	98	25.80%
No	275	72.40%
N/A	7	1.90%
Number of sexual partners in life		
1 partner	61	16.10%
2-3 partners	29	7.60%
More than 3 partners	12	3.20%
N/A	278	73.20%
Condom during sexual intercourse		
Yes	23	6.10%
No	20	5.30%
Not always	52	13.70%
N/A	285	74.90%
Frequency of condom use with partners		
Every time	9	2.40%
Most of the time	21	5.50%
Once in a while	40	10.50%
Never	14	3.70%
N/A	296	77.90%

4.8 PERCEIVED SEXUAL BEHAVIOURAL RISK FACTORS FOR CERVICAL CANCER

I further sought to examine the perceived sexual behavioural risk factors for cervical cancer among the students by asking them what sexual behaviours they think can make a woman at risk of cervical cancer. The responses were varied but much emphasis was on having unprotected sex with multiple partners. For instance, some responses regarding unprotected sex as a risk factor are as follow;

“Having unprotected sex and multiple sexual partnerships” (Post graduate, 29 years)

“I think early sex and unprotected sex” (Level 400, 25 years)

“Having unprotected sex and scratching of the vagina which can lead to infections and bleeding” (Level 200, 20 years)

Some of the participants actually believed that oral sex, inserting of fingers into the vagina, sex at an early age, use of some chemicals in washing the vagina and several partners could predispose an individual to the development of cervical cancer.

“I think oral sex can cause cervical cancer. There are some bacteria in our mouth so when it comes into contact with the vagina, it can infect the vagina and cause cervical cancer” (Post graduate, 30 years)

“When you insert your finger in your vagina and your fingers are dirty, you can contract cervical cancer?” (Level 100, 19 years)

“Having sex with a high risk partner which is someone who is 10 years older than you”
(level 400, 23 years)

“Several sex partners” (Level 200, 19 years)

“Using Dettol and strong soaps to wash your vagina when you bath” (Level 300, 22 years). Yet some participants believed that having sex with animals predispose the individual to developing cervical cancer. A respondent stated that;

“Having sex with animals” (Post graduate, 27 years)

However, some of the risk factors mentioned by the participants are not accurate as these practices have not been found to predispose females to developing cervical cancer. Examples of these erroneous perceptions of sexual risk factors include inserting of fingers into the vagina, sleeping with animals, using Dettol to wash the vagina, sleeping with someone who is 10 years older and sharing toilet facilities with an infected person. Thus, there is a knowledge gap regarding the perception of sexual risk factors for developing cervical cancer among female university students sampled for the study.

4.9 RELATIONSHIP BETWEEN RESPONDENTS' AGE AND CERVICAL CANCER KNOWLEGDE

To determine whether significant association exists between age of respondents and causal cervical cancer knowledge, a Chi Square test was used and the results are summarised in the Table 5. Results from the Chi square shows that there was no significant association between respondents' age and their knowledge on who can get cervical cancer at the .05 level of significance, $\chi^2(2, N = 380) = .42, \rho = .81$. It was also found that there was no significant association between respondents' age and their knowledge on which part of the body cervical cancer occurs at the .05 level of significance, $\chi^2(2, N = 380) = 1.01, \rho = .60$. However, there was a significant association between respondents' age and their knowledge on whether cervical cancer is the commonest among gynaecological cancers in Ghana at the .05 alpha level, $\chi^2(2, N = 380) = 6.30, \rho = .04$ with respondents between the ages of 21 and 25years recording more correct responses than any other age categories.

There was no significant association between respondents' age and their knowledge on what causes cervical cancer at the .05 level of significance, $\chi^2(2, N = 380) = 1.59, \rho = .45$. A significant association exists between respondents' age and their knowledge on the micro-organism which causes the infection at the .05 level of significance, $\chi^2(2, N = 380) = 7.99, \rho = .02$ with respondents between the ages of 16 and 20years reporting more wrong answers than expected. A statistically significant association was found between respondents' age and their knowledge on whether Human Papillomavirus is the main cause of cervical cancer at the .05 level of significance, $\chi^2(2, N = 380) = 6.7, \rho = .03$ with younger females between the ages of 16 and 20years reporting more wrong answers than expected. It was also observed from Table 5 above that there was no significant association between respondents' age and their knowledge on whether using condom during sex can reduce the risk of cervical cancer at the .05 level of significance, $\chi^2(2, N = 380) = 3.04, \rho = .22$. However, a significant association was found between respondents' age and their knowledge on whether HPV is sexually transmitted at the .05 level of significance, $\chi^2(2, N = 380) = 5.40, \rho = .05$ with younger females between the ages of 16 and 20years reporting more wrong answers than expected. Finally, it was found from the analysis that there was no significant association between respondents' age and their knowledge on whether the cause of HPV infection be spiritual at the .05 level of significance, $\chi^2(2, N = 380) = 2.91, \rho = .08$. Therefore, a significant association exists between respondents' age and four causal items but no significant association with other five causal items.

Table 5: Summary of the Association between Age of Respondents and Causal Cervical Cancer Knowledge

STATEMENTS	16-20yrs	21-25yrs	≥26yrs	χ^2	P
Cervical cancer affects women				.42	.81
Wrong	5	7	1		
Correct	140	212	15		
Cervical cancer is cancer of the cervix				1.01	.60
Wrong	11	11	1		
Correct	134	208	15		
Cervical cancer is the commonest among gynaecological cancers in Ghana				6.30	.04
Wrong	53	85	11		
Correct	92	134	5		
Causes of cervical cancer				1.59	.45
Wrong	39	55	2		
Correct	106	164	14		
Micro-organism that causes the Cervical cancer				7.99	.02
Wrong	101	125	7		
Correct	44	94	9		
Human Papillomavirus is the main cause of cervical cancer				6.7	.03
Wrong	120	155	12		
Correct	25	64	4		
Using condom during sex can reduce the risk of cervical cancer				3.04	.22
Wrong	110	148	12		
Correct	35	71	4		
HPV is sexually transmitted				5.40	.05
Wrong	117	152	11		
Correct	28	67	5		
Cause of HPV infection is spiritual				2.91	.08
Wrong	53	69	1		
Correct	91	150	15		

4.10 ASSOCIATION BETWEEN AGE OF RESPONDENTS AND CERVICAL CANCER KNOWLEDGE OF SYMPTOMS AND DIAGNOSIS

To examine the association between respondents' age and their knowledge about cervical cancer symptoms and diagnosis, the Chi Square test was used and the results are summarised in table 6. From the table, it was observed that there is no significant association between respondents' age and their knowledge on how can cervical cancer be diagnosed at the .05 level of significance, $\chi^2(2, N = 380) = 1.27, \rho = .53$. There was also no significant association between respondents' age and their knowledge on whether regular screening can reduce the risk of cervical cancer at the .05 level of significance, $\chi^2(2, N = 380) = 4.23, \rho = .12$. It was finally observed that no significant association exists between respondents' age and their knowledge on the signs and symptoms of cervical cancer at the .05 level of significance, $\chi^2(2, N = 380) = 1.77, \rho = .41$. Thus, there is no significant association between age of respondents and their knowledge about the symptoms and diagnosis of cervical cancer.

Table 6: Summary of Association between age of respondents and cervical cancer knowledge of symptoms and diagnosis

STATEMENTS	16-20yrs	21-25yrs	≥26yrs	χ^2	P
Ways of diagnosing cervical cancer				1.27	.53
Wrong	97	136	9		
Correct	48	83	7		
Regular screening reduce the risk of cervical cancer				4.23	.12
Wrong	42	85	7		
Correct	103	134	9		
Signs and symptoms of cervical cancer				1.77	.41
Wrong					
Correct	108	149	11		
	37	70	5		

4.11 ASSOCIATION BETWEEN AGE OF RESPONDENTS AND CAUSAL CERVICAL CANCER KNOWLEDGE OF TREATMENT AND PREVENTION

Analysis of the results from Table 7 shows that a significant association exists between age of respondents and their knowledge on whether cervical cancer can be treated at the .05 level of significance, $\chi^2(2, N = 380) = 6.34, \rho = .03$. However, no statistically significant association was found between age of respondents and their knowledge on whether they think cervical cancer can kill at the .05 level of significance, $\chi^2(2, N = 380) = 2.47, \rho = .29$. No significant association was found between age of respondents and their knowledge on whether treatment for cervical cancer is available in the hospital at the .05 level of significance, $\chi^2(2, N = 380) = 4.06, \rho = .45$. There was also no significant between age of respondents and their knowledge on whether cervical cancer has a cure at the .05 level of significance, $\chi^2(2, N = 380) = 4.05, \rho = .13$. Finally, no significant association was found between age of respondents and their knowledge on whether

Going for HPV vaccine can prevent cervical cancer at the .05 level of significance, $\chi^2(2, N = 380) = 1.16, \rho = .56$. Therefore, there is no significant association between the ages of respondents and their knowledge on their cervical cancer treatment and prevention

Table 7: Summary of Association between age of respondents and causal cervical cancer knowledge of treatment and prevention

STATEMENTS	16-20yrs	21-25yrs	≥ 26 yrs	χ^2	P
cervical cancer can be treated				6.34	.03
Wrong	46	94	8		
Correct	99	125	8		
Cervical cancer can kill				2.47	.29
Wrong	37	41	3		
Correct	103	178	13		
Treatment for cervical cancer is available in the hospital				4.06	.45
Wrong	28	45	0		
Correct	117	174	16		
Cervical cancer has a cure				4.05	.13
Wrong	129	178	14		
Correct	16	41	2		
Going for HPV vaccine can prevent cervical cancer				1.16	.56
Wrong	104	147	10		
Correct	41	72	6		

CHAPTER FIVE

5.0 DISCUSSION

INTRODUCTION

This chapter discusses the results of the study and it examines female students' knowledge about cervical cancer, perceived risks of cervical cancer, risky sexual behaviours and the association between age and cervical cancer knowledge.

5.1 CERVICAL CANCER KNOWLEDGE AMONG FEMALE STUDENTS

The results from the quantitative analysis showed that the respondents displayed uneven cervical cancer knowledge. That is, while more than half of the respondents in the study had good causal knowledge about who can get cervical cancer and which part of the body cervical cancer occurs, on the other hand, less than half of the respondents in the study had good knowledge on causes of cervical cancer such as which micro-organism causes the infection. Only 24.50% reported HPV as the main cause of cervical cancer. Findings from this study are congruent with previous works by Tiro, Meissner, Kobrin, and Chollette, (2007) who found among US women between the ages of 18 and 75 years old that their cervical cancer knowledge was relatively low with only 40% of women reporting that they had ever heard of HPV. Similar results were also reported by Leung and Leung (2010) among Chinese women in Hong Kong which revealed that, general knowledge on cervical cancer was very low with only about one-fifth of the women (19.3%) respondents received a full score on general knowledge and also in a study by Ali et al., (2010) where the researchers argued that, the majority of the respondents who

were working health professionals were not adequately equipped with the knowledge concerning cervical cancer.

More than half of the respondents in this study acknowledged the fact that cervical cancer is the most common gynaecological cancer. This result surprisingly did not concur with the results of a study by Ali et al., (2010) among nursing staff in a tertiary hospital in Pakistan which revealed only 23.3% of the respondents knew cervical cancer as the most common gynaecological disease.

Also in a related study by Sawadogo, Gitta, Rutebemberwa, Sawadogo & Meda (2014), to examine the knowledge and beliefs on cervical cancer and practices on cervical cancer screening among women aged 20 to 50 years in Ouagadougou revealed that, while 64.2% of participants have heard about cervical cancer, only 8.5% have heard about Human Papillomavirus and this confirms the uneven and inadequate information women have about cervical cancer.

The qualitative findings also revealed that, participants in the focus group discussion displayed some level of causal knowledge with some obviously not accurate in the light of scientific literature. Even though some have heard of cervical cancer, they hold some myths about the disease. For instance, the assertion that cervical cancer is caused by spiritual forces are not true and some of the participants do not seem to know the actual causes of the illness. Some respondents attributed cervical cancer to poor hygiene. This shows that there is a knowledge gap in terms of the causal factors of cervical cancer among the female students which needs public health attention targeted at increasing their knowledge on the causes of cervical cancer. The findings from this study is contrary to a

qualitative study done by Ndikom & Ofi, (2012) which revealed that, most of the respondents stated that they have not heard of cervical cancer at all and it was the first time they have heard of cervical cancer but were aware of the prevalence of breast cancer.

Additionally it was found from the study that, the respondents' knowledge on the diagnosis of cervical cancer was relatively poor as less than half of the respondents got the questions on how can cervical cancer be diagnosed correct. That is, most of the respondents did not know how the disease can be diagnosed in terms of the test to be taken. This is not healthy for the respondents as their age range is the recommended age for cervical cancer screening. This supports the findings of a study by Adageba, Danso, Ankobea, Kolbilla & Opoku (2011), to determine knowledge about cervical cancer, and patronage of cervical cancer prevention services among female health workers in Kumasi Ghana. A close look at the results revealed that, of all the respondents, only 16.1% mentioned Pap smear and 4.4% mentioned VIA as screening tools for cervical cancer. The results showed lack of knowledge in the area of diagnosing cervical cancer.

It was also found from this study that the respondents' knowledge on the signs and symptoms of cervical cancer was also relatively poor as less than half of the respondents got the questions on signs and symptoms of cervical cancer correct. Participants of the focus group discussion were also not certain about the signs and symptoms of the disease. This is particularly a disturbing situation as lack of knowledge about the signs and symptoms may lead to late reporting of cases of possible cervical cancer resulting in fatalities.

A reverse of this results was found in the same study done by Adageba, Danso, Ankobea, Kolbilla & Opoku (2011), to determine knowledge about cervical cancer, and patronage of cervical cancer prevention services among female health workers in Kumasi which revealed that, majority of the respondents' (55%) knew at least three risk factors and more than half (58%) knew at least three symptoms of cervical cancer.

From the present study, it was realised that only 10.50% of the respondents got their information on cervical cancer from health workers with majority coming from the media. And since some information from the media may not have trusted sources, people turn to believe any information including incorrect ones. This was in reverse in a study done by Staci et al., (2013) among Kenyan women. From their study, it was realised that majority of the respondents had received their information on cervical cancer from health workers.

Generally, knowledge levels were low and the few who have some level of knowledge were inadequate and with some untrue information. This can be due to lack of information from reliable sources such as hospitals and health professionals.

5.2 PERCEIVED RISKS OF CERVICAL CANCER AMONG FEMALE STUDENT

The results from the present study revealed that overall, less than half of the respondents saw themselves at risk of cervical cancer which shows a low risk perception among female students. This finding concurs with a similar study done among mainland Chinese women by Can et al., (2012) to examine the knowledge and perception of the risk of cervical cancer on screening behaviour. It was realised that, the respondents rated their risk perception for cervical cancer to be low. Also a similar result was found in a study by

Saules et al., (2007) which revealed that, many women do not perceive themselves at risk of cervical cancer. The researchers related finding to the lack of factual knowledge about the disease and its risk factors.

It was also observed that, most of the respondents thought having multiple sexual partners could put an individual at risk of developing cervical cancer. The respondents also thought that having unprotected sex and early sex could predispose women to developing cervical cancer. These results were similar to studies by Leung & Leung, (2010), Wong et al., (2009), which revealed that although less than half of the respondents recognised risk factors of cervical cancer and risk perception was low, the most commonly identified risk factors were having sex at early age, many different sexual partners and sexually transmitted disease. The results suggest that the respondents in this present study were aware of some risk factors but also misidentified some factors as risk factors which require health education.

From the qualitative analysis, some of the respondents believed that inserting objects to individuals' vagina and sleeping with animals could predispose an individual to developing cervical cancer. It was also observed that some of the respondents thought that the use of antiseptics such as Dettol could be a risk factor for developing cervical cancer. These myths about the risks factors of cervical cancer were also similar to a qualitative study to assess the level of knowledge and awareness of cervical cancer screening among Malaysian women by Wong et al., (2009). The respondents associated masturbation with cervical cancer. Foods such as canned foods, preserved eggs and deep fried eggs were mentioned as triggers of cervical cancer.

However, it was observed from this study that more than half of respondents believed that a woman's risk/chance of developing cervical cancer increases as she grows older and 41.3% believed that being sexually active puts a woman at a greater risk of cervical cancer. This finding is similar to a study done to find out the beliefs about risk factors of cervical cancer among a British population by Waller et al., (2004). The study revealed that, when all risk factors relating to sexual activity or sexually transmitted infections were grouped together, 41.4% of people were found to have mentioned at least one of them.

The low risk perception can lead these young women to engage in practices that will put them at risk for developing cervical cancer. These erroneous perceptions could be due to the relatively low cervical cancer knowledge exhibited by the respondents in this study.

5.3 RISKY SEXUAL BEHAVIOURS AMONG FEMALE STUDENTS

The knowledge and perceptions of an individual about a particular disease are found to significantly influence the individual's attitudes and behaviours. Thus, when risky sexual behaviours were examined among the respondents, it was observed that 46.60% of the respondents have partners and this could be an avenue for initiation of sexual contacts as there are pressures from all corners within and outside of a relationship. It was also found that 25.80% of the respondents have had sexual intercourse in their lives which could predispose them to developing cervical cancer as some of the intercourse may involve no use of protection. Further analysis of their sexual practices revealed that 16.10% of the respondents have had 1 sexual partner in life, 7.60% of the respondents have had between

2 and 3 sexual partners in their lives while 3.2% of the respondents have had more than 3 sexual partners in life.

Similar results were found from a study to assess the awareness of cervical cancer risk factors and screening behaviour among nurses in Turkey by Ertem, (2009). It was realised that, 72.2% of the respondents reported early age at first sexual intercourse while 81.4% of the respondents reported multiple sexual partners which are high risk factors for developing cervical cancer. The results confirmed that even among health workers, there are high risk sexual behaviours and therefore, it is very crucial to equip students with knowledge regarding their unsafe sexual practices.

Results from this study showed that more than a quarter of the respondents have sexual partners which means that they engage in sexual activities which are some of the risk factors for developing cervical cancer and therefore requires public attention on the need for the use of protection, faithfulness and abstinence if possible. This is because HPV is acquired through sexual intercourse Bekkers et al., (2006). Also, according to Adanu, (2010), prevention of cervical cancer can be achieved through the same measures recommended for the prevention of HIV and sexually transmitted infections (STIs) and cervical cancer screening.

5.4 ASSOCIATION BETWEEN AGE OF RESPONDENTS AND CERVICAL CANCER KNOWLEDGE

Most of the studies reviewed concentrated on the knowledge and the perceptions about cervical cancer with not much attentions paid to how respondents' demographic characteristics such as age influence their knowledge. A Chi-Square was used to determine whether there was an association between age and cervical cancer knowledge. It was found from the results that there was no significant association between respondents' age and their knowledge on who can get cervical cancer, there is no significant association between respondents' age and their knowledge on which part of the body cervical cancer occurs. There is also no significant association between respondents' age and their knowledge on what causes cervical cancer, no significant association between respondents' age and their knowledge on whether using condom during sex can reduce the risk of cervical cancer, and there is no significant association between respondents' age and their knowledge on whether the cause of HPV infection is spiritual. This means that knowledge on general causal items of cervical cancer and age do not relate significantly. This is due to the fact that these items were general knowledge.

However, on the specific factual causal knowledge items, respondents who are younger between the ages of 16 and 20years got most of the items wrong compared to older respondents. This suggests that as women mature in age, their knowledge about reproductive health issues increase. This is because a significant association was found between respondents' age and their knowledge on whether cervical cancer is the commonest among gynaecological cancers in Ghana ($p=.04$).

There was a reverse in a similar study done among nurses at a regional hospital in Tanzania where there was a significant association between knowledge levels of causes of cervical cancer, transmission of HPV and age. Knowledge was more adequate among the young nurses ($p = 0.027$) than the older ones Urasa et al., (2011).

A significant association exists between respondents' age and their knowledge on the micro-organism which causes the infection, a significant association was found between respondents' age and their knowledge on whether Human Papillomavirus is the main cause of cervical cancer and finally, a significant association was found between respondents' age and their knowledge on whether HPV is sexually transmitted.

In terms of the association between respondents' age and their cervical cancer knowledge of symptoms and diagnosis, it was found that there is no significant association between respondents' age and their knowledge on how can cervical cancer be diagnosed, no significant association between respondents' age and their knowledge on whether regular screening can reduce the risk of cervical cancer and no significant association exists between respondents' age and their knowledge on the signs and symptoms of cervical cancer. Thus, age of respondents did not significantly influence respondents' cervical cancer knowledge of symptoms and diagnosis. This is because most of the respondents in the study had poor knowledge on the items. This finding is inconsistent with that of Amelio, (2013) which revealed that lower cervical cancer knowledge was associated with higher age.

From the qualitative text, it was realised that respondents were able to mention some risk factors of cervical cancer. Similar results were also found by Wong et al., (2009) which

revealed that, some respondents were able to site risk factors such as having multiple sexual partners, having a partner who had multiple sexual partners and genetic inheritance.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

This chapter gives the general overview of the research, limitations faced during the study as well as recommendations for future research in this area of study. From the study, some key findings realised include;

1. An uneven and inadequate factual knowledge about cervical cancer. Although some female students were able to answer some questions regarding knowledge about cervical cancer, majority were unable to give correct answers. While some have heard of cervical cancer, they had no idea of the risk factors of cervical cancer or the fact that HPV is the main cause of cervical cancer.
2. It was also realised that, there was a low risk perception of cervical cancer as majority of the students considered themselves as not at risk. Although most of the female students had partners, some engage in sexual activity, some also have more than one sexual partners and some having early sex, it did not change their risk perception. This means, they involve in risky sexual behaviours that can expose them to cervical cancer. This is due to the fact that, they are unaware about all the risk factors of cervical cancer. Also, a few were able to mention some risk factors but others also related cervical cancer to spiritual causes which are all myths and have no scientific proof.
3. The findings of this study also revealed a significant association between age and respondents' knowledge on the causes of cervical cancer. It was realised that, knowledge levels were high among older respondents' as compared to younger

respondents. This can be related to the fact that, female students become more aware and concerned about their reproductive system as they grow older.

6.1 CONCLUSIONS

From the discussions generated by this study, it can be concluded that female students do not have adequate knowledge about cervical cancer, do not perceive themselves at risk of cervical cancer and involve in risky sexual behaviours that can expose them to cervical cancer.

Also from the discussions, although female students of the University of Ghana have heard of cervical cancer, knowledge about treatments, signs and symptoms and prevention is uneven and inadequate. Majority of the students do not know about HPV and are unaware that it is sexually transmitted. Although not up to a half of the students are sexually active, the others who have partners can come under pressure by their partners or from their peers to engage in sexual activity.

The female students fall within the age range which requires women to screen for cervical cancer yet, they have little knowledge about cervical cancer which is a barrier to screening. It is unfortunate that, although students spend more time in school, they are not educated on important health issues such as cervical cancer in their schools. Most of the schools like the University of Ghana have clinics in the school but female students do not benefit so much from them.

This finding explains why instead of health workers, the media is a popular source of information and are doing well in educating by providing information about cervical cancer through their various mediums. Most of the students heard of cervical cancer from

the media. And it is also a reason why most of the female students do not have factual information about cervical cancer since some media channels do not have valid source of information.

6.2 LIMITATIONS OF THE STUDY

Majority of the respondents felt uncomfortable when they were filling out the questionnaire and thought issues about sex and number of sexual partners were more personal and would not like to share with others although they knew their names were not attached to it. Also, during the focus group discussion, participants felt reluctant to talk about sexual behaviours and gave short answers and will not say anything even when probed.

6.3 RECOMMENDATIONS

Based on the findings, discussions and results on the perception of risks of cervical cancer among University of Ghana female students the following recommendations are given to help increase the level of knowledge of cervical cancer, make female students aware of their risky sexual behaviours that expose them to cervical cancer and to help increase their risk perception which will influence their screening behaviour.

1. From the study it was realised that, although majority of the respondents' have heard of cervical cancer, less than half are aware it is caused by HPV virus which is sexually transmitted. For this reason, health educators have work to do when crafting cervical cancer messages. There is a need for health educators to increase recognition of Human Papillomavirus and its acronym (HPV) and to increase the level of knowledge of it's to link cervical cancer. Appropriate and adequate dissemination of information is required.

2. Also, there is a need to educate female students about the link cervical cancer have with sexual activities such as postponement of early sexual life, condom use, keeping one sexual partner and also be educated on the need for early screening. There is a need to educate on cervical cancer alongside education on HIV/AIDS.
3. The University clinic in collaboration with the health ministry must ensure in-depth education on cervical cancer to all female students by organising seminars at least twice a semester. This can help to increase the level of knowledge about cervical cancer and eliminate the knowledge gap which serves as a barrier. Also there should be a free or subsidised compulsory screening for all female students of the University of Ghana and also encourage female students to screen for cervical cancer and provide the necessary resources needed to ensure the screening services are available in the University hospital.
4. The study made it clear that, the media are a popular source of information about cervical cancer. The health centres and clinics are supposed to be our popular source of information but scored low on giving information about cervical cancer. All health organizations must educate the general public on cervical cancer using both electronic and print media. They must organise seminars for women groups, schools and churches across the country to educate and spread the news about cervical cancer to all. This can be made possible in collaboration with those who matter in the health ministry and with help from Non-Governmental organisations such as the World Health Organisations, the American Cancer Association etc.

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APPENDICES**APPENDIX I****CONSENT FROM**

NAME OF RESEACHER: MARGARETHA FATIMA NELSON

CONTACT DETAILS: MEGLRXS_19@YAHOO.COM

MOBILE NUMBER: 0549916404

Dear Student,

I am student from the school of Public Health of the University of Ghana. I am conducting a survey titled 'Perception of Risks of Cervical Cancer among University of Ghana female students' as part of academic requirements.

I will like to seek your permission to ask you some personal questions. Your name will not be asked and any details you give will not be used against you in any way.

You are not obliged to answer any question you are uncomfortable with but however ask you to please answer the questions to the best of your ability. Some questions might arise uncomfortable and upsetting feelings please bear with me since it is only meant for the purpose of this survey.

You are free to withdraw from the survey anytime without further persuasions. I can also say that, when you successfully finish with the process, you stand a chance of learning about cervical cancer and you will be contributing to the body of knowledge available to

help increase awareness of cervical cancer in Ghana. You are allowed to ask any question before, during and at the end of the process.

Please sign below to show your willingness to participate in the survey. Thank you for your consent and co-operation

RESPONDENT AGREEMENT:

The above document describing the benefits and procedures for the research titled **“Perception of risks of cervical cancer among University of Ghana female students”** has been read and explained to me. I have been given the opportunity to ask any questions about the research and answered to my satisfaction. I agree to participate as a volunteer.

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

Date

Name and Signature of respondent

Contact for additional information

If you have any further questions about your rights as a participant, you can contact the administrator of Ghana health service ethical review committee Hannah Frimpong 0243235225.

APPENDIX II**SCHOOL OF PUBLIC HEALTH UNIVERSITY OF GHANA, LEGON****STUDY QUESTIONNAIRE****PERCEPTION OF RISKS OF CERVICAL CANCER AMONG UNIVERSITY OF
GHANA FEMALE STUDENTS**

CODE..... DATE.....

Please tick or circle the appropriate answer.**SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS**

1. Age.....
2. Marital Status
 - (a) Married []
 - (b) Single []
 - (c) Divorced/Separated []
 - (d) Widowed []
3. Academic Level
 - (a) Level 100 []
 - (b) Level 200 []
 - (c) Level 300 []
 - (e) Level 400 []
 - (f) Post-graduate []

4. Religious Affiliation
 - (a) Christianity []
 - (b) Islam []
 - (c) African Traditional []
 - (d) Others []
5. Residency status
 - (a) Resident []
 - (b) Non-Resident []

SECTION B: KNOWLEDGE ABOUT CERVICAL CANCER

6. Who can get cervical cancer?
 - a) Men []
 - b) Women []
 - c) Both a & b []
 - d) Don't know []
7. Which part of the body does cervical cancer occur?
 - a) Cervix []
 - b) Abdomen []
 - c) Bladder []
 - d) Uterus []
8. Cervical cancer is the commonest amongst gynaecological cancers in Ghana
 - a) Yes []

b) No []

c) Don't know []

9. What is the cause of cervical cancer? Multiple responses allowed

a) Genetics []

b) Infection []

c) Environment []

d) Don't know []

10. Which micro-organism causes the infection?

a) Virus []

b) Bacteria []

c) Parasite []

d) Don't know []

11. Can cervical cancer be treated?

a) Yes []

b) No []

c) Don't know []

12. Do you think cervical cancer can kill?

a) Yes []

b) No []

c) Don't know []

13. How can cervical cancer be diagnosed?

a) Blood test []

- b) Pap smear (test) []
- c) X-ray of the abdomen []
- d) Don't know []

14. Regular screening can reduce the risk of cervical cancer

- a) Yes []
- b) No []
- c) Don't know []

15. What are the signs and symptoms of cervical cancer? Multiple answers allowed

- a) Abnormal menstrual bleeding []
- b) Pain in the entire body []
- c) bleeding between menstrual period []
- d) Itching of the vagina []
- e) foul vaginal discharge []
- f) Don't Know []

16. Human Papillomavirus (HPV) is the main cause of cervical cancer

- a) True []
- b) False []
- c) Don't know []

17. Using condom during sex can reduce risks of cervical cancer

- a) Yes []
- b) No []
- c) Don't know []

18. HPV is sexually transmitted

- a) Yes []
- b) No []
- c) Don't know []

19. Can the cause of HPV infection be spiritual?

- a) Yes []
- b) No []
- c) Don't know []

20. Treatment for cervical cancer is available in the hospital

- a) Yes []
- b) No []
- c) Don't know []

21. Does cervical cancer have a cure?

- a) Yes []
- b) No []
- c) Don't know []

22. Going for the human Papillomavirus vaccine can prevent cervical cancer.

- a) Yes []
- b) No []
- c) Don't know []

SECTION C: PERCEPTION OF RISKS OF CERVICAL CANCER

23. A woman's risk/chance of developing cervical cancer increases as she grows older
- (a) Yes []
 - (b) No []
 - (c) don't know []
24. Being sexually active (having sex) puts a woman at greater risk of cervical cancer
- (a) Yes []
 - (b) No []
 - (c) Don't know []
25. Human Papillomavirus (HPV) infection increases cervical cancer risk
- (a) Yes []
 - (b) No []
 - (c) Don't know []
26. Which of the following do you think might put a woman at higher risk of cervical cancer? Multiple answers allowed
- (a) Smoking []
 - (b) Stress []
 - (c) Multiple sex partners []
 - (d) Family history/Genetics []
 - (e) Early age at first coitus (sex) []

(f) Don't Know []

27. What is the recommended age for a woman to start screening for cervical cancer?

(a) 20-25 []

(b) 26-30 []

(c) 31-35 []

(d) After 35 []

(e) Don't know []

28. Cervical cancer affects only women with children

(a) Agree []

(b) Disagree []

(c) Don't know []

29. Does cervical cancer affect young women?

(a) No []

(b) Yes []

(c) Don't know []

30. I am at risk of cervical cancer

(a) Yes []

(b) No []

(c) Don't know []

31. Cervical cancer makes a woman's life very difficult

(a) Yes []

(b) No []

(c) Don't know []

32. Can a woman die of untreated cervical cancer?

(a) Yes []

(b) No []

(c) Don't know []

33. Where did you hear of cervical cancer?

(a) Media []

(b) Health worker []

(c) Clinic []

(d) Friends []

(e) Family []

(f) Others []

**SECTION D: SEXUAL BEHAVIOURS THAT EXPOSE AN INDIVIDUAL TO
CERVICAL CANCER**

34. Do you have a partner?

(a) Yes []

(b) No []

35. Have you ever had sexual intercourse?

(a) Yes []

(b) No []

36. Age at which you had your first sexual intercourse.....

37. Number of sexual partners in life:

(a) 1 []

(b) 2- 3 []

(c) More than 3 []

38. Do you use condom during sexual intercourse?

(a) Yes []

(b) No []

(c) Not Always []

(d) Not Applicable []

39. How often do you and your partner use condom?

(a) Every time []

(b) Most of the time []

(c) Once in a while []

(d) Never []

(e) Not Applicable []

APPENDIX III**FOCUS GROUP DISCUSSION CONSENT FORM**

Date of FGD;...../...../2015

NAME OF CONDUCTOR	
NUMBER OF FGD	
PLACE HELD	

INTRODUCTION

My name is Margaretha Fatima Nelson from the school of Public health. I am conducting a research titled ‘Perception of Risks of cervical Cancer among University of Ghana female students. This is for academic purpose only and results from this study will enable policy makers in planning and implementing awareness of cervical cancer in Ghana. Information generated from this discussion will not be used against you in anyway. You can withdraw from the process at any point in time without any persuasions. I however encourage you to actively participate in this discussion. You are allowed at ask questions before the discussions. The discussion will last between 45-1hour.

Notes will be taken during the discussion as well as tape recording.

You are free to participate or not.

Do you agree to participate? Yes/No

I fully understand the rules of this discussion. Yes/No

Please sign here Date.....

FOCUS GROUP DISCUSSION GUIDE

KNOWLEDGE ABOUT CERVICAL CANCER

1. Can you mention some of the gynaecological infections in Ghana?
2. What are the common causes of cervical cancer?

Probes: Is it caused by a virus? Have you heard of Human Papillomavirus?

3. What do you know about cervical cancer?
4. What do you think are the causes of cervical cancer?

Probes: Is it caused by a virus, bacteria, fungus.....?

5. What are some of the signs and symptoms of cervical cancer?
6. How can cervical cancer be treated?

Probes: spiritual treatment, traditional or orthodox?

7. How can you prevent cervical cancer?

Probes: Regular Screening, use of protection during intercourse, prayers.....

PERCEPTIONS OF RISK OF CERVICAL CANCER

8. At what age do you think it is appropriate for a woman to screen for cervical cancer?
9. Why is it important for women to undergo periodic cervical cancer screening?

**SEXUAL BEHAVIOURS THAT EXPOSE AN INDIVIDUAL TO CERVICAL
CANCER**

10. Is there any relationship between sex and cervical cancer?

Probe: Use of protection during intercourse, unprotected intercourse

11. What behaviours do you think can make a woman at risk of cervical cancer?

Probe: Multiple sexual partners, early sexual life.

12. How can such behaviours be prevented?

THANK YOU FOR PARTICIPATING

GHANA HEALTH SERVICE ETHICAL REVIEW COMMITTEE

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



*My Ref: GHS-ERC: 3
Your Ref. No.*

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Mannah.

25th March, 2015

Margaretha Fatima Nelson
School of Public Health
University of Ghana
Legon, Accra

ETHICAL APPROVAL - ID NO: GHS-ERC: 14/02/15

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

"Perceptions of Risk of Cervical Cancer among University of Ghana Female Students"

This approval requires that you inform the Ethical Review Committee (ERC) when the study begins and provide Mid-term reports of the study to the Ethical Review Committee (ERC) for continuous review. The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Please note that any modification without ERC approval is rendered invalid.

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

You are requested to submit a final report on the study to assure the ERC that the project was implemented as per approved protocol. You are also to inform the ERC and your sponsor before any publication of the research findings.