

**FACTORS AFFECTING THE UTILISATION OF CERVICAL CANCER SCREENING  
AMONG WOMEN ATTENDING HEALTH SERVICES IN THE KUMASI  
METROPOLIS OF GHANA**

**Student Name: Mercy Kokuro**

Thesis presented in partial fulfilment of the requirements  
for the degree of Master of Nursing Science  
in the Faculty of Medicine and Health Sciences  
Stellenbosch University

The image shows the crest of Stellenbosch University, which is a shield with various symbols, topped with a helmet and crest, and surrounded by a banner. The crest is positioned behind the text of the thesis statement.

**Supervisor: Mrs Estelle Smuts**

**March 2017**

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## **ABSTRACT**

### **Title**

Factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana

### **Background**

Cervical cancer is the second-most frequently diagnosed and the fourth commonest cause of cancer death among women worldwide. Almost 70% of the global burden occurs in areas of lower development. Incidence and mortality rates of cervical cancer among women in Ghana are of the highest in the world. According to the Ghana Health Service, 16% of cancer mortality is attributed to cervical cancer. It has also been predicted by the World Health Organization that by the year 2025, 5 000 new cases of cervical cancer and 3 361 cervical cancer deaths will occur annually in Ghana.

### **Purpose**

This study aimed to determine factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana.

### **Methods**

A correlational cross-sectional quantitative study design was used. The target population was women of 18 years and above seeking reproductive health services in the Kumasi metropolis during the study period. A total of 369 participants were selected using a multistage sampling technique. Initially, two of the four hospitals were randomly selected. Subsequently, a systematic sampling technique was used in selecting participants to participate in the study. Data was collected using a researcher-designed questionnaire consisting of 38 closed-ended and open-ended questions. The questionnaire was printed in English and in the Twi language. A pilot study was conducted using 20% of the daily average attendance (200) in the four hospitals in the Kumasi metropolis. Ethical approval to conduct the study was obtained from the Health Research Ethical Committee at Stellenbosch University, as well as consent from the institutions under study. Informed consent was obtained from all the participants.

Data was analysed using Statistical Package for Social Science (SPSS) Version 23.0 and findings are presented using descriptive and inferential statistics with 0.05 as the significance threshold.

## Results

Of the 369 participants, 58% were between the ages of 18 and 30 years, 46.1% were single, and 27.9% and 27.1% had primary and tertiary levels as their highest levels of education respectively. Of the participants, 67.5% were employed, 29.3% had only one child followed by 24.1% who had two children. Of the participants, 75.1% had adequate knowledge on cervical cancer with a mean knowledge score of  $7.70 \pm 2.13$  with range, 2–11 and about 88% had a good perception of cervical cancer and cervical cancer screening. The majority ( $n=300$ ; 81.3%) had never been screened while 69 (18.7%) had been screened before. Of the 69 (18.7%), 17.3% had been screened only once and 1.4% had been screened twice. The majority of participants were not sure whether cervical screening was painful (46.6%) or expensive (32%), and 41.2% strongly agreed that their partners would not want them to have cervical cancer screening. The study found a significant relationship between socio-demographic characteristics and knowledge, perception and the utilisation of cervical cancer screening respectively. Age significantly affected knowledge level ( $p=0.022$ ). Marital status significantly affected knowledge ( $p<0.001$ ) and cervical cancer screening utilisation ( $p=0.040$ ). Education significantly affected participants' knowledge levels on cervical cancer and cervical screening ( $p=0.001$ ) and cervical cancer screening utilisation ( $p=0.003$ ). Work status significantly affected the utilisation of cervical cancer screening by participants ( $p=0.006$ ).

## Conclusion

Even though participants had adequate knowledge and positive perception, cervical cancer screening services were not utilised by the participating women. Fear of the screening procedure being painful and expensive may have been part of the reason for the low utilisation of cervical cancer screening. Therefore, all-inclusive health education on the benefits of cervical cancer screening for both women and men should be a priority for stakeholders and all health organisations.

**Keywords:** Cervical cancer, cervical screening, utilisation, women, perception, knowledge level

## OPSOMMING

### Titel

Faktore wat 'n invloed het op die benutting van siftingstoetse vir servikale kanker deur vroue wat gesondheidsdienste in die Kumasi-metropool in Ghana bywoon.

### Agtergrond

Servikale kanker is die kanker wat die derde meeste gediagnoseer word en dit is ook die vierde algemeenste oorsaak van sterfte weens kanker by vroue wêreldwyd. Nagenoeg 70% van die wêreldwye las kom voor in gebiede van laer ontwikkeling. Voorkoms en mortaliteit van servikale kanker by vroue in Ghana is van die hoogste ter wêreld. Volgens die Ghanese gesondheidsdienste word 16% van kankermortaliteit aan servikale kanker toegeskryf (Ghana Health Service, 2011). Daar word ook deur die Wêreldgesondheidsorganisasie voorspel dat daar teen die jaar 2025 jaarliks 5 000 nuwe gevalle van servikale kanker en 3 361 sterftes weens servikale kanker in Ghana sal voorkom.

### Doel

Hierdie studie het beoog om faktore te bepaal wat 'n invloed het op die benutting van siftingstoetse vir die vroeë diagnose van servikale kanker by vroue wat gesondheidsdienste in die Kumasi-metropool in Ghana bywoon.

### Metodes

'n Korrelasionele deursnee- kwantitatiewe navorsingsontwerp is gebruik. Die teikenbevolking was vroue van 18-jarige ouderdom en ouer in die Kumasi-metropool wat reproduktiewe gesondheidsdienste gedurende die navorsingstydperk bygewoon het. 'n Totaal van 369 deelnemers is geselekteer met behulp van 'n meerstadium-steekproefnemingstegniek. Aanvanklik is twee van die vier hospitale lukraak geselekteer. Later is 'n sistematiese steekproefnemingstegniek gebruik by die seleksie van deelnemers wat ingestem het om aan die navorsing deel te neem. Data is ingesamel met behulp van 'n vraelys bestaande uit 40 geslote en oop vrae wat deur die navorser ontwerp is. Die vraelys is in Engels en in Twi-taal gedruk. 'n Loodsstudie is met behulp van 20 deelnemers onderneem. Etiese goedkeuring om die studie te doen was vanaf die Etiese Komitee vir Gesondheidsnavorsing by Stellenbosch Universiteit, asook toestemming van die instellings ter ondersoek

verkry. Ingeligte toestemming is van al die deelnemers verkry. Data is geanaliseer deur van SPSS (Statistical Package for Social Science) weergawe 23.0 gebruik te maak en bevindinge word aangebied met behulp van beskrywende en afgeleide statistieke met 0.05 as die beduidendheidsdrempel.

## **Resultate**

Uit die 369 deelnemers was 58% tussen die ouderdomme 18 en 30 jaar, 46.1% was enkel, en 27.9% en 27.1% het primêre en tersiêre vlakke onderskeidelik as hulle hoogste onderwyspeil gehad. Van die deelnemers het 67.5% 'n werk gehad, 29.3% het slegs een kind gehad, gevolg deur 24.1% wat twee kinders gehad het. Van die deelnemers het 75.1% voldoende kennis van servikale kanker gehad met 'n gemiddelde kennistelling van  $7.70 \pm 2.13$  (2–11), en ongeveer 88% het 'n goeie begrip van servikale kanker en sifting vir servikale kanker gehad. Die meerderheid (300; 81.3%) het nooit voorheen 'n siftingstoets ondergaan nie, en 69 (18.7%) het al tevore 'n siftingstoets ondergaan. Van dié 69 (18.7%) het 17.3% slegs een siftingstoets ondergaan en 1.4% twee toets. Die meerderheid deelnemers was nie seker of die servikale siftingstoets pynlik (46.6%) of duur (32%) is nie, en 41.2% het beslis saamgestem dat hulle maats nie sal wil hê dat hulle 'n siftingstoets vir servikale kanker ondergaan nie. Die studie het bevind daar 'n beduidende verhouding tussen sosio-demografiese eienskappe en kennis, begrip en die gebruik van siftingstoetse vir servikale kanker bestaan. Ouderdom het 'n beduidende invloed op die vlakke van kennis gehad ( $p=0.022$ ). Huwelikstatus het 'n beduidende invloed op kennis ( $p<0.001$ ) en die gebruik van siftingstoetsing vir servikale kanker ( $p=0.040$ ) gehad. Opvoeding het 'n beduidende invloed op deelnemers se kennisvlakke ten opsigte van servikale kanker en sifting vir servikale kanker ( $p=0.001$ ) en die gebruik van siftingstoetse vir servikale kanker ( $p=0.003$ ) gehad. Werkstatus het 'n beduidende invloed op die gebruik van siftingstoetsing vir servikale kanker deur deelnemers ( $p=0.006$ ) getoon.

## **Gevolgtrekking**

Selfs al was die kennisvlakke en begripsvlakke aansienlik, is siftingstoetsdienste vir servikale kanker nie deur die deelnemende vroue gebruik nie. Die belangrikste rede vir die onderbenutting was 'n gebrek aan instemming deur hulle mans. Daarbenewens was vrees dat die siftingsprosedure pynlik en duur kan wees waarskynlik ook deel van die rede vir die lae gebruik van siftingstoetsing vir servikale

kanker. Allesomvattende gesondheidsopvoeding oor die voordele van siftingstoetsing vir servikale kanker vir beide vroue en mans behoort dus vir belanghebbendes en alle gesondheidsorganisasies 'n prioriteit te wees.

**Sleutelwoorde:** Servikale kanker, servikale sifting, benutting, vroue, begrip, kennisvlak

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## OPERATIONAL DEFINITIONS

For the purpose of the study, the following terminologies were defined as;

**Knowledge:** According to Cambridge Advanced Learner's Dictionary (2008: 46) knowledge is the state of knowing about or being familiar with something. In this study, knowledge meant being conversant with cervical cancer and cervical cancer smear screening.

**Perception:** According to Cambridge Advanced Learner's Dictionary (2008:155), perception is a belief or opinion, often held by many people and based on how things seem. In this study perception was referred to as women's views and thoughts influencing the uptake of cervical screening services.

**Cervical screening utilization:** Cervical screening utilisation is the number of times women undertake cervical cancer screening (Ndikom & Ofi, 2012: 9-11). In this study cervical screening utilisation is the proportion of women who have undergone cervical cancer screening before.

**Cervical cancer:** Cervical cancer is a cancerous tumour of the cervix uteri where by cervical cells are not normal and begin to multiply without control, forming tumours (Kumar, Abbas, Abul, Fausto, & Mitchell, 2007: 718-721).

**Women:** In this study women referred to all adult females aged 18 years and above who were attending reproductive health services in the the Kumasi metropolis of Ghana.

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## ABBREVIATIONS

A	agree
D	disagree
df	degree of freedom
FIGO	International Federation of Gynecology and Obstetrics
HPV	Human papilloma virus
ICC	Invasive cervical cancer
IQR	interquartile rage
N	neutral
OPD	Out-patient department
Pap test	Papanicolou test
SA	strongly agree
SD	strongly disagree
sd	standard deviation
VIA	visual inspection with acetic acid
WHO	World Health Organisation

## **CHAPTER ONE: FOUNDATION OF THE STUDY**

### **1.1 Background and rationale**

Cervical cancer occurs when abnormal cells on the cervix grow uncontrollably resulting in a cauliflower appearance that bleeds easily upon contact (Smeltzer, Bare, Hinkle, & Cheever, 2010: 1457). It is the second-most frequently diagnosed and the fourth commonest cause of cancer death among women worldwide. Almost 70% of the global burden occurs in areas of lower socio-economic levels (Bray, Ren, Masuyer & Ferlay, 2013: 1133-1145).

Current evidence shows that cervical screening is associated with reduced incidence of cervical cancer and consequent mortality (Peirson, Fitzpatrick-Lewsi, Ciliska & Warren, 2013: 35). Nevertheless, the effectiveness of screening is dependent on availability and accessibility of such services so as to detect abnormal smears for subsequent treatment. Even though cervical cancer is preventable (Juckett & Hartman-Adams, 2010: 1209-1214; Luciani, Jauregui, Kieny & Andrus, 2009: 795-807), its prevention is rarely promoted in Ghana (Lingwood et al., 2008: 393-403; Patra, 2010: 344-345). Moreover, the rate of cervical cancer screening in the urban (3.2%) and rural (2.2%) areas in Ghana is extremely low (WHO information center for HPV, 2007: np). Based on this premise, cervical cancer screening was introduced as a routine screening test for eligible women in all government hospitals in Ghana in 2008 free of charge by the Ministry of Health, with the aim of decreasing mortality and morbidity resulting from cervical cancer.

The factors that affect women's decisions and participation in cervical cancer screening are well documented in the literature (Lyimo & Bera, 2012: 22; Wongwatcharanukul, Promthet, Bradshaw, Jirapornkuln & Tungsrihong, 2014: 3753-3756; Udigwe, 2006: 40-43; Winkler, Bingham, Coffey & Penn-Handwerker, 2008: 10-24). Some of these factors include perceived benefits of screening, accessibility and availability of services, fear of unknown outcomes of screening, comfort and privacy in health centres, attitude of health-care professionals, and cost of services amongst others (Agurto, Sandoval, De La Rosa & Guardado, 2006: 81-86). While many of these studies have been conducted in developed countries,

relatively few such studies have occurred in developing countries (Pollack, Balkin, Edouard, Cutts & Broutet. 2007: 57-63).

In Elmina, Ghana, a study reported that only three (0.8%) of 392 participants had undergone screening for cervical cancer (Ebu et al., 2015: 31-39). Also, another study done in Ghana revealed only 12% of 140 women had ever been screened for cervical cancer (Abotchie & Shokar, 2009: 412-416). A study done in Accra, Ghana, reported the screening utilisation to be as low as 25 (2.1%) of 1193 women who participated in the study.

Research studies on cervical screening are limited in Ghana (Abotchie & Shokar, 2009: 412-416). Moreover, the researchers in previous studies focused on socio-demographic factors that affect cervical cancer screening (Adanu, Seffah, Duda, Darko, Hill & Anarfi, 2010: 59-63.), cost of screening (Quentin, Adu-Sarkodie, Terris-Prestholt, Legood, Opoku & Mayaud, 2011: 379-389); and the population groups were nurses, health workers and university students (Abotchie & Shokar, 2009: 412-416). To the best of the current researcher's knowledge, no research has exclusively studied the socio-demographic factors, knowledge on cervical cancer and perceptions on cervical cancer screening in Ghana..

## **1.2 Significance of the problem**

Incidence and mortality rates of cervical cancer among women in Ghana are of the highest in the world (Lingwood, Boyle, Milburn, Ngoma, McCaffrey, Kerr & Kerr, 2008: 398-403). According to the Ghana Health Service (2011: np), 16% of cancer mortality is attributed to cervical cancer. It has also been predicted by the World Health Organization (2007: np) that by the year 2025, 5000 new cases of cervical cancer and 3361 cervical cancer deaths will occur yearly in Ghana.

The benefits of cervical screening are that it will lead to early detection and management of cervical cancers so that related mortalities can be minimised. Unfortunately, the utilisation of cervical cancer screening services is low in Ghana and this poses difficulties in the early detection and management of cases (Adanu, Seffah, Duda, Darko, Hill & Anarfi, 2010: 59-63). Hence this study sought to identify the factors that affect the utilisation of cervical cancer screening among women seeking health services at selected hospitals in the Kumasi metropolis of Ghana.

### **1.3 Research problem**

The utilisation of cervical cancer screening services is important in reducing the cervical cancer rate in Ghana. Despite its being free, the few studies done in Ghana have reported low utilisation of this screening (Williams & Amoateng, 2012: 147-151; Adanu, Seffah, Duda, Darko, Hill & Anarfi, 2010: 59-63; Abotchie & Shokar, 2009: 412-416; Ebu, Mupepi, Siakwa & Sampselles, 2015: 31-39). For example, Ebu et al. (2015: 31-39) report that of the 392 respondents, 384 (97.7%) had never heard of cervical cancer screening and only 3 (0.8%) had undergone screening for cervical cancer. From the researcher's clinical experience as a nurse manager at Kumasi South Hospital in the Kumasi metropolis, it was realised that only 4% of the average daily attendance of 200 women seeking reproductive health services attended the screening centre despite not having been screened before. Again, 40% of women diagnosed with cancer from June 2014 to June 2015, were diagnosed with cervical cancer (Ashanti regional statistical unit, 2015: np).

If most women are aware that cervical cancer is a dangerous disease, the reasons why they do not seek preventive measures such as cervical cancer screening to prevent such a serious disease especially in less developed countries such as Ghana needs to be addressed especially as the screening service is provided at no or little cost.

With this high incidence of cervical cancer and the low utilisation of the screening services, the study undertook to determine the factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis in Ghana. Utilisation as defined by the researcher is the proportion of women who have been screened before.

### **1.4. Research question**

A research question depicts the problem that is to be assessed in a study (Lobiondo-wood & Haber, 2010: 28). In this study, the researcher wished to find answers to this question: "What are the factors affecting the utilisation of cervical cancer screening among women attending health services in Kumasi metropolis of Ghana?"

## **1.5 Research aim**

This study aimed to determine factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana.

## **1.6 Research objectives**

The objectives of the study were to

1. describe socio-demographic characteristics of women attending health services in the Kumasi Metropolis.
2. determine the level of knowledge on cervical cancer and cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana.
3. determine the perceptions of women attending health services in the Kumasi metropolis of Ghana on cervical cancer and cervical cancer screening.
4. determine cervical cancer screening utilisation amongst women in the Kumasi metropolis of Ghana
5. determine the relationships between socio-demographic factors and level of knowledge, perceptions and utilisation of cervical cancer screening services.

## **1.7 Conceptual framework**

According to Burns, Grove & Gray (2011: 238), a framework is an intelligent, rational structure of meaning such as a part of a theory that directs the study progress and helps the researcher to relate the results to nursing's body of knowledge.

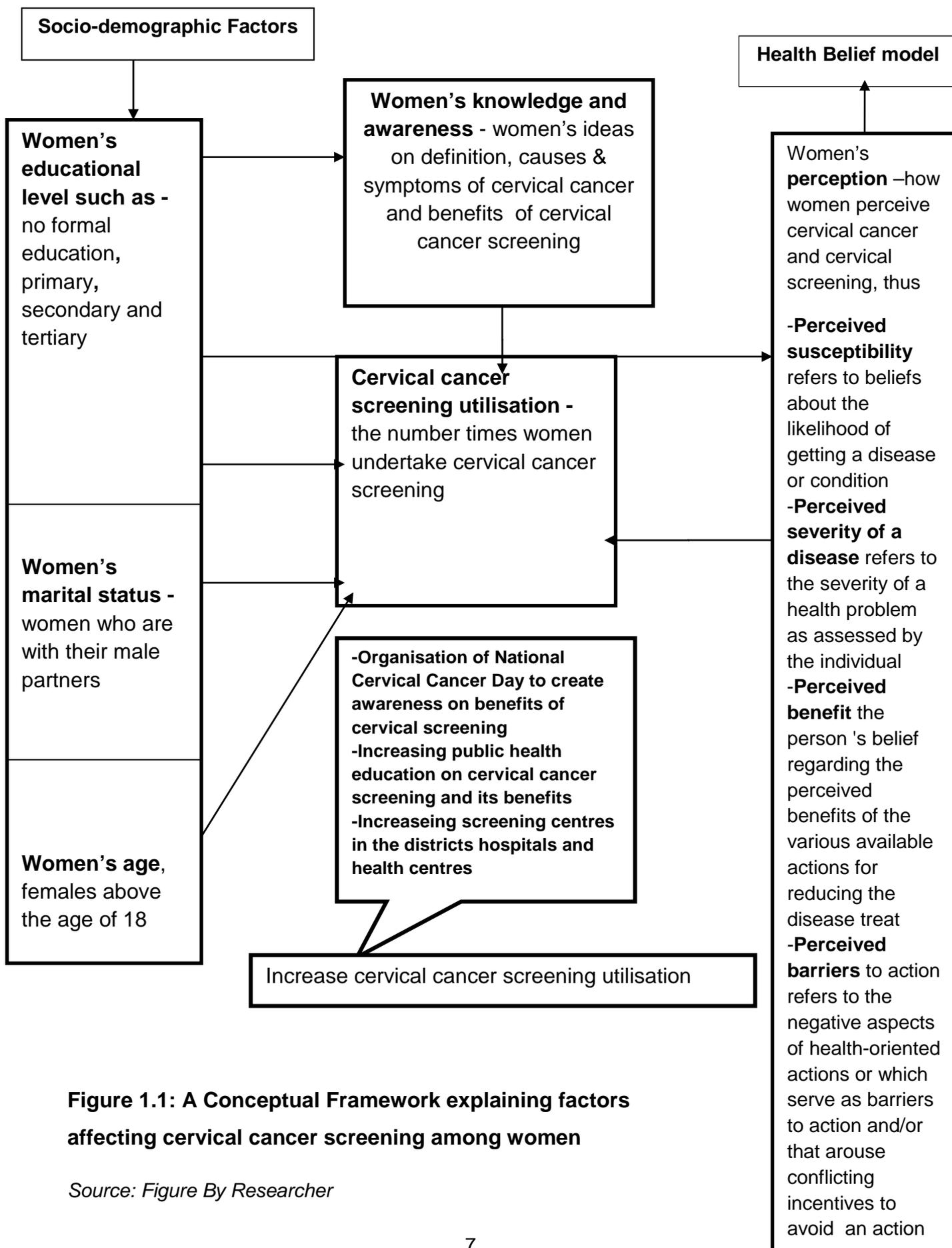
Cervical cancer is among the causes of death among women in Ghana. Cervical cancer screening aids in early detection of cervical changes so that cervical cancer can be prevented or treated (Agurto , Sandoval, De La Rosa & Guardado, 2006: 81-86 ; Adanu, Seffah, Duda, Darko, Hill & Anarfi, 2010: 59-63 ; Hoque & Hoque, 2009: 21-24). These screening services are provided at little or no cost. However, the utilisation rate of cervical cancer screening services is very low. Factors such as women's knowledge, women's perception and socio-demographic factors such as women's educational level, women's marital status and women's ages were found in

literature to influence women's decisions to get screened for cervical cancer (Agurto , Sandoval, De La Rosa & Guardado, 2006: 81-86 ; Adanu, Seffah, Duda, Darko, Hill & Anarfi, 2010: 59-63 ; Hoque & Hoque, 2009: 21-24) .

Awareness of the factors that affect the utilisation of cervical cancer screening among women may help in getting more women to get screened and hence, reduce the incidence of cervical cancer. Also, organisation of National Cervical Cancer Day to create awareness of cervical cancer screening and its benefits, increasing public health education on cervical cancer screening and increasing number of screening centres in both the district hospitals and health centres in Ghana will help increase the utilisation of cervical cancer screening services. The conceptual framework aims to describe socio-demographic factors such as women's age, marital status and educational level. Also, four concepts, namely 'perceived susceptibility', 'perceived severity', 'perceived benefits' and 'perceived barriers' from the Health Belief Model are used in the discussion of women's perception. The Health belief model was originally developed in the 1950s by a social psychologist in the U.S public Health Service to explain the widespread failure of people to participate in programs to prevent and detect disease. Later, the model was extended to study peoples' responses to symptoms and their behaviors in response to diagnosed illness, specially adherence to medical regimens (Glanz, Rimer, Viswanath, 2008: 45-66). This model aims to explain preventive health behaviors rather than behaviors in time of illness (Ben-Natan & Adir, 2009: 433-441). Major health behaviors emphasized by the Health Belief Model focus on prevention exposure of diseases at their asymptomatic stage (Glanz et al., 2008: 45-66). The Health Belief Model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control disease conditions. Thus, this model assumes that health behaviors are motivated by five elements of perceived susceptibility, perceived seriousness, perceived benefits and perceived barriers to behavior, cues to action and most recently factor of perceived self-efficacy (Champion & Skinner, 2008: 45-66). The researcher has chosen this model because it provides a better understanding of the theoretically complex relationships between health beliefs and factors influencing a health behavior.

The Health Belief Model has been used extensively to determine relationship between health beliefs and screening behaviors as well as to inform interventions. In this section, for the purpose of the study, four elements of the model: Perceived susceptibility, perceived seriousness, perceived benefits and perceived barriers to behaviour were used in the discussion of the perception of women on cervical cancer and cervical cancer screening and the application of these elements in the area of cervical cancer screening behavior is discussed extensively under the literature review.

A graphical presentation of the conceptual framework of factors affecting the utilisation of cervical cancer screening and the use of the health belief model in explaining how women perceive cervical cancer and cervical cancer screening is shown below:



**Figure 1.1: A Conceptual Framework explaining factors affecting cervical cancer screening among women**

Source: Figure By Researcher

## **1.8 Significance of the study**

The study is significant because of benefits that will be derived from the findings, which will help various stakeholders involved in the health delivery system. The study will assist nurses and other healthcare workers to know reasons why most women are not willing to be screened for cervical cancer. This information could help caregivers position themselves to find solutions to the issues which create controversies and misunderstanding among women encountered in the health settings.

The study will also assist nurses to promote the welfare of women seeking health care in health facilities in Ghana. The increased awareness of factors affecting cervical cancer screening utilisation as highlighted in this study will assist nurses and other health-care workers to determine positive and suitable therapeutic strategies that will help in involving most, if not all, of their clients to use the screening services. The findings of the study will also help inform Ghanaian policy and decision makers to formulate policies that will ensure that women gain adequate knowledge on cervical cancer and cervical screening, and also make screening services available at all hospitals, clinics and health centres.

Furthermore, the study will help the Nursing and Midwifery Council of Ghana to improve the topics in seminars and conferences as most of the nurses and midwives in the country are females. This could also assist other educational and health institutions, especially those engaged in health education, health research and health training programmes to plan and include these factors in their health programmes. The study, when conducted, will add to the body of knowledge regarding factors affecting the utilisation of cervical cancer screening among women in Ghana. It will also assist incoming researchers by serving as a reference for future and further research.

## **1.9 Research methodology**

The research methodology used will be briefly discussed here with a more detailed discussion in Chapter Three.

### **1.9.1 Research design**

A correlational cross-sectional quantitative study design was used. The design was quantitative because there was numerical presentation of data. Furthermore, the design was used because it describes participant's knowledge, perception and utilisation of cervical cancer screening and to determine the relationship between the variables. The data was also taken at one point at a time with one month, thus, two weeks each for the two selected hospitals.

### **1.9.2 Study setting**

The study was conducted in the Kumasi metropolis of Ghana. It was conducted in two of the hospitals, namely Kumasi South hospital and North Suntreso hospital. The hospital setting was selected as a larger number of women seeking reproductive health services could be accessed in the hospitals.

### **1.9.3 Population and sampling**

Women attending reproductive health services in the Kumasi metropolis of Ghana served as the study population for the study. The sampling method used was a multistage sampling method. Kumasi metropolis has four public hospitals. Of the four hospital, two hospitals namely, Kumasi South Hospital and North Suntreso Hospital were randomly selected. Women of age 18 years and above were selected using systematic sampling. The researcher consulted a biostatistician and the sample size was obtained. Using the Snedecor and Cochran's formula, Charan and Biswas (2013: 121-126) developed a formula for cross-sectional studies with qualitative variables. This formula,  $n = Z^2 * P(1-P) / d^2$  was used to determine the sample size, after which 10 % refusal rate was added to finally get the sample size of 369.

### **1.9.4 Data collection tool**

A researcher-designed questionnaire consisting of closed-ended and open-ended questions on factors affecting the utilisation of cervical cancer screening among women was used as the data collection instrument. The questionnaire was developed based on the study objectives, the relevant literature from different sources and expert opinion from an obstetrician and a gynaecologist, one midwife

and one public health nurse. Furthermore, it was based on the participant's feedback from the pilot study.

### **1.9.5 Pilot study**

A pilot study was conducted before the initiation of the main study to ensure that the questionnaire was valid and to determine whether the study was suitable. The pilot study was conducted at a hospital in Kumasi metropolis which is similar to the two hospitals that will be selected for the study. The sampling technique used was multistage. Initially, random sampling was used to select the hospital to be used. Manhyia hospital was randomly selected after which systematic sampling was used to select the participants to participate. The pilot study was conducted at a hospital in Kumasi metropolis which performs similar activities to the two hospitals were selected for the proposed study. Multi-stage sampling technique was used for the pilot study. Initially, Manhyia hospital was selected using random sampling amongst the four government hospitals in the Kumasi metropolis. After, systematic sampling was used to select the participants for the pilot study. Statistics from the four hospitals in the Kumasi metropolis indicated an average daily attendance of 200 from January to June, 2015 (Ashanti regional statistical unit, 2015: np). In order to get a sample size that will represent the total population in the two hospitals, the researcher decided to use 10% each of the average daily attendance of women. The sample size was obtained using the combination of the 10% of average daily attendance of women seeking reproductive health services from each of the two selected hospitals. Forty participants were given the same questionnaire designed to be used for the study. The pilot study was done to test whether the questions were clear to the participants. Results of the pilot study were not included in the study. The English version (Appendix four) and the Twi version (Appendix five) of the questionnaires were used. Thirty of the forty participants answered the English version of the questionnaire on their own and ten answered the Twi version with the help of the researcher. All the questions were answered. Positive results were given, hence no modifications or changes were made to the questions.

### **1.9.6 Validity**

The validity of the instrument was measured in two ways. Firstly, content validity was ensured by focusing the questions enclosed in the questionnaire on possible factors that will affect women's decision and willingness to get screened.

Construct validity was assessed by an obstetricians and a gynaecologists, one midwife and one public health nurse who are experts in the field of cervical cancer. Also, the supervisor and statistician were consulted to review the questionnaire, and a pilot study was conducted. Participants involved in the pilot study were asked to give feedback on any difficulties they encountered in responding to the questions/questionnaire.

### **1.9.7 Reliability**

Cronbach's alpha test was carried out to determine the appropriateness of the Likert scale items before the final compilation of the questions. After entering the data in the SPSS software, Cronbach's alpha test of reliability was run to assess the inter-item reliability coefficient so as to aid in the retention of questions. Cronbach's alpha of 0.80 was obtained which made the validated likert scale items appropriate for data collection.

### **1.9.8 Data collection**

A researcher-designed questionnaire was used to collect the data in March, 2016, in the Kumasi metropolis. Data was collected within four weeks. The researcher used two weeks to collect data in each hospital.

### **1.9.9 Data analysis**

The data collected from the questionnaires were collated and analysed with the assistance of a qualified statistician from the Centre for Statistical Consultation at Stellenbosch University using the SPSS statistical software, version 23. Descriptive and inferential analyses, including frequencies and percentages, mean, standard deviation, median, interquartile range and the Pearson chi-square tests were applied in the analysis of the data obtained.

## **1.10 Ethical considerations**

The study was approved by the Health Research Ethics Committee of Stellenbosch University; reference number, S15/10/229 ( Appendix one). The researcher abided by the ethics statement throughout the study. Institutional permission was sought from Kumasi Metro Health Directorate, Ghana Health Service (Appendix two). Research involving human subjects will always be guided by good clinical practice and human rights principles to ensure protection of participants. The researcher abided by the following ethical principles.

### **1.10.1 Beneficence and non-maleficence**

There was no direct personal benefit linked to participation in this study. However, this study assisted the researchers, policy makers and health professionals to identify the factors that influence cervical cancer screening, which could aid in future planning, policy making and care provision for the benefit of society at large. Moreover, the research study did not pose any potential physical or emotional harm to the participants.

### **1.10.2 Confidentiality, privacy and anonymity**

The researcher maintained confidentiality, privacy and anonymity throughout the study. The researcher made sure that information gathered was not accessible to those not directly involved in the study. The questionnaire was delivered by hand to each participant in a sealed envelope. Anonymity was ensured by advising participants not to provide their names and addresses on the questionnaire given. Anonymity of participants will also ensure privacy. Under no circumstances were the respondents deceived. Correct information was given to participants concerning the study. The researcher therefore did not mislead the participants in any manner.

Data collected was made accessible to only the researcher, the statistician and supervisor. The researcher will still keep all questionnaires under lock and key for not less than 5 years after data analysis. Publication of the results after successful completion of the study will be done accurately and correctly based on the scientific evidence of the study.

### **1.10.3 Justice**

Justice was ensured by explaining in the participant information leaflet and declaration of participant consent form (Appendix three) that there would be no financial benefits if the participants chose to participate in the study. Deception of respondents was avoided by providing the respondent with correct information regarding the study, for example the aim of the study. The researcher therefore did not mislead the subject in any manner.

### **1.10.4 Informed consent**

The participants were made aware that partaking in the study was entirely voluntary and no one would be obliged to partake in the study. This was ensured by respondent's willingness to sign the participant information leaflet and declaration of participant consent form (Appendix three) after the researcher had explained what the study was about and the participant's responsibilities. Participants who could not read and write were also assisted to thumbprint on the form willingly after the same explanation had been given.

### **1.10.5 Autonomy**

The respondents' right to autonomy was respected, with them being notified that they can refuse to participate in, or withdraw, from the study at any time with no coercion.

### **1.10.6 Emotional support/ counselling**

Participants were made aware that if in the course of the process they became emotional, the study process would be discontinued for emotional support to be given. The answering of the questionnaire will only be continued only if they were emotionally stable.

## **1.11 Duration of the study**

The timeframe for the study is explained in Table 1.10.

**Table 1.10: Study timeframe**

<b>Year</b>	<b>Month</b>	<b>Activity</b>
2015	November	Ethical approval from HREC, Stellenbosch University
2015	November	Provincial / institutional permission
2015	December	Pilot study
2016	March	Data collection
2016	June-July	Data analysis
2016	July- August	Writing of thesis with continuous review by supervisor
2016	August	Technical and grammar editing
2016	September	Submission of thesis

### 1.12 Chapter outline

The thesis contains the following five chapters:

**Chapter one:** which focuses on the background of the study and contains an introduction, the significance of the problem, the rationale, the problem statement, research question, the aim and specific objectives of the study, the research questions, the conceptual framework, significance of the study, brief discussion of research methodology, ethical considerations, duration of the study, chapter outline and summary of chapter one.

**Chapter two:** which provides a detailed discussion of literature. The literature review of scientific articles and published reports was done.

**Chapter three:** which gives a detailed discussion on research methodology used for the study including the study design, study setting, population, sampling, data collection tool, inclusion and exclusion criteria, pilot study, validity, reliability, data collection process and data analysis.

**Chapter four:** which presents the results of the study using frequency tables and pie and bar charts.

**Chapter five:** which gives a detailed discussion of the study findings, the limitations of the study as well as recommendations and the conclusion.

### **1.13 Summary**

This chapter described the introduction and rationale of the research study. Furthermore, the aim, objectives, a concise summary of the research methodology, ethical considerations, conceptual framework, duration of the study and chapter outline of the study are described.

The next chapter will discuss a widespread review of literature on the topic and related matters of the study.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter presents the conceptualisation and theorisation of the study with regard to the recognised objectives. The chapter discusses review of the literature which was conducted with the aid of databases such as CINAHL, PubMed, Medline and Science Direct. Furthermore, significant literature from other countries beside Ghana was reviewed. The chapter gives a comprehensive overview of literature on the present topic: Factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana.

### **2.2 An overview of cervical cancer**

The cervix is the inferior part of the uterus that opens into the vagina (Kumar, Abbas, Abul, Fausto, & Mitchell, 2007: 718-721). Cervical cancer arises on account of abnormal cell modifications in the tissue layers of the cervix. It may show as a cauliflower-like tumour that bleeds easily on contact (Smeltzer, Bare, Hinkle, & Cheever, 2010: 1457).

The American Cancer Society (2009: 1) revealed that the primary causative agent of cervical cancer is the human papilloma virus (HPV). Furthermore, they stated that, there are over one hundred forms of human papilloma virus. The genital-type HPVs are divided into high, intermediate and low-risk types, in relation to genital tract cancer. High risk types HPV-16, -18, -31, -45 account for more than 90% of cervical carcinoma of which HPV-16 is the most often found (American Cancer Society, 2009: 1). The recognised predisposing factors for cervical cancer include sexual intercourse from a young age, multiple sexual partners, smoking, and immunosuppression (Siegel, Naishadham & Jemal, 2013: 11-30). The major categories of the FIGO classification are as follows:

- Stage 0: Carcinoma in situ. Abnormal cells in the innermost lining of the cervix.
- Stage I: Invasive carcinoma that is strictly confined to the cervix.
- Stage II: Loco-regional spread of the cancer beyond the uterus but not to the pelvic sidewall, or the lower third of the vagina.

- Stage III: Cancerous spread to the pelvic sidewall or the lower third of the vagina, and/or hydronephrosis or a non-functioning kidney that is incident to invasion of the ureter.
- Stage IV: Cancerous spread beyond the true pelvis or into the mucosa of the bladder or rectum.

In the initial phases, cervical cancer has no symptoms but in the final stages, symptoms may include vaginal bleeding, pelvic pain and pain during sexual intercourse (Smeltzer et al., 2010: 1457).

### **2.2.1 Cervical cancer prevalence and incidence**

Cervical cancer is the second most common cancer in women worldwide, the most common among women in sub-Saharan Africa and the most prominent of all cancers in sub-Saharan Africa, with 530,000 cases of cervical cancer and 275,000 deaths from the disease in 2008 globally (Arbyn, Castellsague, De Sanjose, Bruni, Saraiya, Bray & Ferlay, 2011: 2675-2686; Schiffman, Castle, Jeronimo, Rodriguez, & Wacholder, 2007: 890-907). A study estimated that 70,722 new cases of invasive cervical cancer (ICC) occur annually in sub-Saharan Africa and it is responsible for one-quarter of all female cancers (Louie et al., 2009: 1287-1302). It manifests over many years, even decades, in a minority of women with pre-cancer, with a peak or plateau in risk at about 35–55 years of age of symptomatic presentation (Schiffman et al., 2007: 890-907).

It is a concern for both developed and developing countries, but developing countries have a higher incidence of the disease (Arbyn et al., 2011: 2675-2686). A comparative analysis conducted by Jemal, Bray, Center, Ferlay, Ward and Forman ((2011: 69-90) showed that the age-specific rate of cervical cancer incidence per 100,000 people in developing nations (17.8 %) was about twice that of developed nations (9.0 %), and the mortality rate (9.8 %) was three times that of developed countries.

### **2.3 Overview of cervical cancer screening**

Studies in developed countries reported that frequent cervical cancer screening, with a follow-up of abnormalities can considerably decrease the rate of cervical cancer, and therefore the death and morbidity linked with it (Saslow, Boetes & Burke, 2008:

58; Juckett & Hartman-Adams, 2010: 1209-1214; Luciani, Jauregui, Kieny & Andrus, 2009: 795-807). The occurrence of and mortality from cervical cancer is reduced in developed countries because of the provision of resources to prevention initiatives (Saslow et al., 2008: 58). Cervical cancer screening is essential so as to ensure early detection of pre-cancer lesions in order to reduce the occurrence and mortality due to cervical cancer in the population (Adanu et al., 2010: 59-63).

The American Cancer Society (2009: 1) recommends that, every woman who is sexually active, or 21 years of age or more, should have a cervical cancer screening done annually for the first three consecutive years. After three years of a normal Papanicolou smear, the woman can then screen less regularly. For example once every three years if she is classified as being at low risk for cervical cancer. An annual Pap smear should be done if she is classified as being at high risk (Saslow, Boetes & Burke, 2008: 58). Women classified as being at high risk for cervical cancer include persons with human immunodeficiency virus, persons with associated human papilloma virus infection, those with multiple sexual partners, those with a history of other cancers and those with a family history of cervical cancer (Saslow, Boetes & Burke, 2008: 58).

## **2.4 Socio-demographic factors**

Socio-demographics such as age, marital status and educational level were reported in many studies to have an impact on women's choice and readiness to be screened for cervical cancer (Aswathy, Quereshi, Kurian, & Leelamoni, 2012: 205-210; Nene, Jayant, Arrossi, Shastri, Budukh, Hingmire, Sankaranarayanan., 2007: 264-272; Ayinde, Ogunbode, & Adebayo, 2005: 21-24 ).

### **2.4.1 Age**

Two studies in India found that younger women (30-39 years, optimally below 35 years) were more likely to be screened than older women (Aswathy et al., 2012: 205-210; Nene et al., 2007: 264-272; Ayinde, Ogunbode et al., 2005: 21-24). This was corroborated by a study in California, US where being older (odds ratio [OR] = 6.48, 95% confidence interval [CI] = 3.89 - 10.79) was associated with the likelihood of not having been screened for cervical cancer (Leyden, Manos, Geiger, Weinmann, Mouchawar, Bischoff, Yood, Gilbert & Taplin, 2005: 677). A study in Latin America

among women aged 15 and above found that those who knew about cervical cancer were on average younger than those who did not (Hanisch, Gustat, Hagensee, Baena, Salazar, Castro & Sánchez, 2008: 120-126). A study in Ethiopia found higher knowledge of cervical cancer screening among those aged below 34 years; the study also found little increased likelihood of married people having knowledge of cervical cancer screening than single people did (Getahun, Mazengia, Abuhay, & Birhanu, 2013: 2 ). A study in Nigeria found that age had an effect on knowledge and screening for cervical cancer, as the screening and knowledge was higher among those younger than 39 and those who were married (Ayinde et al., 2005: 21-24).

#### **2.4.2 Marital status**

Marital status of women influences their decision and willingness to go for cervical cancer screening. Research by Abdullahi, Copping, Kessel, Luck and Bonell (2009: 680-685) indicated married women had a higher knowledge of cervical cancer risk factors than those who have never been married. Another study also showed that women with male partners who were supportive of cervical screening was a significant predictor of them being screened (Thiel de Bocanegra, Trinh-Shevrin, Herrera & Gany, 2009: 326-333). Also, another study in Kenya reported 85.9% of those screened being married (Mutuma Otieno, Kyei, Ngege, Ndwiga & Gacheri, 2016: 94-99, 2016: 94-98).

In contrast, a study reported that 73.2% (n=256) of respondents who were married reported consent by their husbands as a barrier to uptake of cervical cancer screening (Lyimo & Beran, 2012: 12-22). Hoque and Hoque (2009: 21-23) identified that married women in South Africa were convinced they were not at risk of developing cervical cancer because neither they nor their spouses were involved in promiscuous sexual behaviours, and hence did not need to have a Pap smear test.

#### **2.4.3 Educational level**

Education is one of the factors most frequently associated with knowledge of cervical cancer and screening for it (Utoo, Ngwan & Anzaku, 2013: 2-3). A study in India found that screened women were those who had a higher educational level (Nene et al., 2007: 264-272). Furthermore, they added that lower educational status has not only been found as strongly associated with low knowledge and screening status,

but also served as a barrier to getting screened in the future (Nene et al., 2007: 264-272).

A study conducted in Nigeria reported that women with low levels of education tended not to see the need for cervical cancer screening. Women with a higher level of education tended to be well versed with the risk of not seeking cervical cancer screening (Utoo, Ngwan & Anzaku, 2013: 2-3). Furthermore, a study done in Kenya found that 48% of those who had tertiary education had been screened before (Mutuma, Otieno, Kyei, Ngege, Ndwiga & Gacheri, 2016:94-99). A study by Nunez-Troconis, Vela'squez, Mindiola & Munroe (2008: 333-339) contradicted this study as they reported that low educational levels in a Venezuelan urban area did not negatively influence women's decisions of being screened for cervical cancer.

## **2.5 Knowledge of cervical cancer and cervical cancer screening**

The possession of facts or being aware of something is critical in its effective utilisation (Al-Naggar, 2012: 435-40). Knowledge on cervical cancer and attitude towards screening thereof plays a major role in its prevention or treatment.

Prognosis of cervical cancer can be good if it is detected early (Saslow, Boetes & Burke, 2008: 58). However, early detection of cervical cancer has not been achieved as the knowledge and attitudes of many Appalachian women in West Virginia towards cervical cancer and prevention is low (Lyttle & Stadelman, 2006: A125). According to the WHO (2008: 234-238) women's knowledge of cervical cancer is inadequate and the majority of women in developing countries are not aware of cervical cancer and cervical cancer screening.

A deficit in knowledge has become a factor affecting the utilisation of cervical cancer screening (Al-Naggar, 2012: 435-40). A study in Southeast Nigeria reported that fewer than 40% of 360 women were aware of cervical cancer; 30% and 25% of the same women were aware that cervical cancer could be prevented and had heard of cervical cancer screening respectively (Eze, Umeora, Obuna, Egwuatu & Ejikeme, 2012: 238-243).

Studies in Japan, Malaysia and South Africa revealed that the respondents have little knowledge of cervical cancer and early screening using the Pap smear test, and

were thus unaware that it could save their lives (Wong, Wong, Low, Khoo & Shuib 2009:48-53 ; Hoque & Hoque, 2009: 21-23; Oshima & Maezawa, 2013: 4313-4318). A study in Cameroon found that, notwithstanding the awareness of cervical cancer by 28% of 171 women studied, only a minority of them, 4 of 48 (8.3%), had undergone cervical cancer screening (Tebeu, Major, Rapiti, Petignat, Bouchardy, Sandos, de Bernis, Alli, Mhaweche-Fauceglia, 2007: 761-765). Only 71 of 171 (41.5%) women stated they would have a screening test in the future. The awareness of cervical cancer by women in Cameroon is still inadequate (Tebeu et al., 2007: 761-765).

Moodley (2009: 11-12) among 200 randomly-sampled women in South Africa that 64% of respondents had less knowledge and awareness of cervical cancer and its screening. Another study in Nigeria reported that only 40.8% (n=197) of 483 respondents were aware of cervical cancer. Of these, only 19.7% (n=95) were knowledgeable about pap smear and only 5.2% (n=25) have had a previous pap smear performed (Ayinde et al., 2005: 21-24). Also in Nigeria, a study found the level of awareness of cervical screening was moderate (52.8%), however, only 7.1% had ever had a Pap smear test done (Ezem, 2007: 94-96). The most common reason given by 46% of respondents for not having a Pap smear test was a lack of awareness (Ezem, 2007: 94-96). In contrast, another study conducted in Nigeria reported the level of knowledge of participants on cervical cancer and screening to be 65%, which indicates adequate knowledge (Utoo, Ngwan & Anzaku, 2013: 2-3).

A study in Elmina, Ghana, reported that 93.7% of the respondents had no knowledge of the risk factors for cervical cancer and 92 % had no idea that cervical cancer was preventable. In addition, of the 392 respondents, 384 (97.7%) had never heard of cervical cancer screening (Ebu et al., 2015: 31-39).

## **2.6 Women's perceptions on cervical cancer and cervical screening using the health belief model**

People's impression on a disease or its treatment, influences their actions towards it (Champion & Skinner, 2008: 45-66). Therefore, women's perceptions about cervical cancer will inform the choices to make (Sauvageau, Duval, Lavoie & Quakki, 2007: 304). The Health Belief Model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control disease conditions.

Thus, this model assumes that health behaviours are motivated by five elements: perceived susceptibility, perceived seriousness, perceived benefits and perceived barriers to behaviour, cues to action and perceived self efficacy (Champion & Skinner, 2008: 45-66). This subsection used the components in the Health Belief model to address how women perceive cervical cancer and cervical cancer screening. It will be discussed with regards to perceived severity, perceived benefits, perceived barriers and perceived susceptibility.

### **2.6.1 Perceived severity**

The perceived severity of a disease refers to the severity of a health problem as assessed by the individual (Gebru, Gerbaba & Dirar, 2016: 297). Awareness on the severity of cervical cancer by women influences their need for testing. A survey on the perceived severity of cervical cancer among adult females in Quebec found that 57% of women were afraid of developing cervical cancer sometime in their life, and 93% thought developing cervical cancer had serious consequences (Sauvageau et al., 2007: 303-304). Cervical cancer-related anxiety and perceived seriousness did not vary by age group or level of education (Sauvageau et al., 2007: 304).

A study that compared participants of cervical cancer screening and non-participants of cervical cancer screening programmes found these women equally agreed that cervical cancer was a serious disease (Leyva, Byrd & Tarwater, 2006: 13-24). However, twice the proportion in the participants' group believed that cervical cancer was easily cured when identified early, as opposed to the non-participant group who believed that cervical cancer was not treatable irrespective of time of identification (Leyva et al., 2006: 13-24). A study conducted in Southern Ethiopia reported that about 30.4% out of 660 women had high perceived severity of cervical cancer (Gebru et al, 2016: 297).

### **2.6.2 Perceived benefits**

One of the influential issues in embracing positive health behaviours, according to the health belief model, is gaining benefits from the said behavior (Adanu et al., 2010: 59-63; Hoque & Hoque, 2009: 21-24). The main reason said by forty-one percent (41%) of women who failed to participate in cervical cancer screening programmes, was that they did not see the need for cervical cancer screening

(Bessler et al., 2007: 396-404). The same women who indicated they did not need cervical cancer screening gave a lack of symptoms as their reason (Bessler et al., 2007: 396-404).

A study on knowledge of and attitude towards cervical cancer among female university students in South Africa reported a low level of knowledge about the benefits of cervical cancer screening and only thirty-eight percent (38%) knew that cervical cancer screening was used for detection or prevention of cervical cancer (Hoque, Hoque & Kader, 2008: 113-115). Also, a study carried out in Peru and El Salvador specifically sought to inquire about perceived benefits obtained by women who had had a Pap smear. The response included peace of mind in ninety-seven percent (97%) of cases, particularly if found to be negative for cervical cancer, increased responsibility to self-care since cervical cancer screening could find changes in the cervix before they became cancer in sixty-seven percent (67%) of responses; and increased chances of early detection and therefore cure of cervical cancer in eighty-three percent (83%) of cases (Agurto, Sandoval, De La Rosa & Guardado. 2006: 81-86). In Laos, it was reported that 64% of participants believed that cervical cancer could be prevented by cervical screening (Phonqsavan, Phenqsavanh, Wahlström & Marions, 2010: 821-826).

According to Bessler et al. (2007: 397-404) on factors affecting uptake of cervical cancer screening among clinic attendees in Trelawny, Jamaica, 18% of women who had not had Pap smear test reported that Pap smear test was not necessary as it would only increase a woman's anxiety if found to be suggestive of cervical cancer. Successful cervical cancer screening programmes depend on the participation of an informed target population through programmes that build knowledge and address misconceptions of the screening programs and therefore increase acceptability and thus improve uptake in cervical cancer screening programmes (Bessler et al., 2007: 396-404). The reasons why at-risk groups fail to utilise preventative cervical cancer screening services available at no or little cost, might be due to the fact that they do not see the benefits of the programme.

### **2.6.3 Perceived barriers**

Studies have identified the main barriers to cervical cancer screening as fear of a positive result for cervical cancer, embarrassment, pain, financial constraints,

attitudes of health workers, lack of convenient clinic times, lack of female screeners (Agurto et al., 2006: 81-86 ; Adanu et al. 2010: 59-63; Oshima & Maezawa, 2013: 4313-4318). A study conducted on factors affecting uptake of cervical cancer screening among clinic attendees in Trelawny, Jamaica, found that 42% of the study population feared that their health provider would find cervical cancer if they had a Pap smear test, 46% reported that their major concern was pain associated with the procedure and 24% reported that not receiving the result back was the main reason why they were not interested in cervical cancer screening (Bessler et al., 2007: 396-404).

In comparing women who had a Pap smear test done and those who had never had a Pap smear test done, it was deduced that 82.4% of those who had a Pap smear test felt completely sure that they could discuss, with their healthcare provider, issues regarding Pap smear tests and therefore the provider's attitude was not a barrier. However, 78% of those who never had cervical cancer screening felt they could go for a Pap test done even if they were worried that it would be painful and that they could go for a Pap test done even if they were worried that it would be embarrassing (Leyva et al., 2006: 13-24).

A study in Nigeria revealed that even nurses were afraid of the outcome of cervical cancer screening (Udigwe, 2006: 40-43). Similarly, the main reasons for not having a cervical screening test were fear and feeling healthy therefore thinking that screening was not necessary (Hoque & Hoque, 2009: 21-24). Scanty knowledge of cervical cancer and screening techniques and low recognition of the threat posed by the disease, as well as fear of embarrassment and potential pain led to low uptake of screening services (Oshima & Maezawa, 2013: 4313-4318). Udigwe (2006: 40-43) found that only 5.7% of nurses working in a University Teaching Hospital had ever undergone cervical cancer screening, while 15% had not undergone screening because they were afraid of the outcome; 37.1% had no reason for not undergoing screening and 25% had not undergone cervical screening, because they thought they were not likely candidates for cervical cancer.

Furthermore, fear of the unknown and fear of the outcome discouraged women from seeking cervical cancer screening services (Abdullahi, Copping, Kessel, Luck & Bonell, 2009: 680-685). Previous studies also reported fear of screening outcomes

as one of the factors that prevented the screening (Winkler, Bingham, Coffey & Penn Handwerker, 2008: 10-24; Mutyaba, Mmiro & Weiderpass, 2006: 13-18; Were, Nyaberi, & Buziba & 2011: 58-64).

Another study on knowledge and perception on cervical cancer and Pap smear screening in Botswana found that only 40.0% of study participants had undergone Pap smear tests and the major barriers to obtaining pap smear tests included inadequate knowledge about benefits of Pap smear screening, insufficient information about the Pap smear screening procedure, providers' attitudes, and limited access to physicians (Winkler et al., 2008: 10-24). Cultural norms of secrecy, providers not informing the public, and policy makers' limited attention to cervical cancer are the reasons for limited knowledge. Providers' major challenges that they faced in providing Pap smear tests were found to include: clients' inadequate knowledge of Pap smear screening, providers' inability to see the importance of Pap smear tests, workload and staff shortages (Mutyaba et al., 2006: 13-18).

If these barriers to cervical cancer screening are addressed, the utilisation of cervical cancer screening can improve given that the barriers deter most women from undergoing cervical cancer screenings. Barriers to screening are mostly cost-related as women in developed countries are expected to pay in order to access such services; other barriers were fear of the unknown, embarrassment, denial, lack of time and lack of transportation (Lyttle & Stadelman, 2006: 4-5).

Services are principally available in some secondary and tertiary health facilities at a cost that makes it unreachable and unreasonable to many women in developing countries (Ndikom & Ofi, 2012: 9-11). Moreover, the reluctance to visit gynaecological clinics is assumed to be influenced both by the age and the cultural attitudes of women towards sexuality and modesty (Oshima & Maezawa, 2013: 4313-4318). Lack of trained staff to provide services and education was reported to be another form of barrier to screening according to Hoque and Hoque (2009: 21-24).

In a Zimbabwean study, rural women had limited access to health centres providing cervical cancer screening; where many stated that it was too far to walk (Mupepi, Sampselles & Johnson, 2011: 943-952). Knowledge of the location of the nearest

cancer screening facility promotes its utilisation; as does its proximity (Lyimo & Beran, 2012: 12-22). In Africa, studies found that the most common barriers to providing cervical screening tests were a lack of a clear policy and procedures, and a lack of staff competencies; also, most smears were evaluated in tertiary hospitals and this caused delays in turnaround times of results (Agurto et al., 2006: 81-86; Adanu et al., 2010: 59-63; Oshima & Maezawa, 2013: 4313-4318).

Another important factor which serves as a barrier to uptake of cervical cancer screening by women is consent by their husbands (Lyimo & Beran, 2012: 12-22). The prevalence of cervical cancer has been greatly reduced through successful cervical screening programmes especially in developed countries (Mupepi et al., 2011: 943-952). Most developing countries are still faced with the challenges of implementing such services. Success depends on a number of factors, such as coverage of the target women, excellent follow-up service, early management of pre-cancer lesions and resource availability (Pollack, Balkin, Edouard, Cutts & Broutet, 2007: 57-63).

#### **2.6.4 Percieved susceptibility**

The perceived susceptibility refers to beliefs about the likelihood of getting a disease or condition (Glanz, Rimer, Viswanath, 2008: 45-66). Perceived risk of contracting a disease refers to individuals' subjective perception of their susceptibility to the disease. For example, women must believe there is a possibility of getting cervical cancer before they will be interested in having Pap smear done (Saslow et al., 2008: 53-72). The health belief model predicts that women will be more likely to adhere to the cervical cancer screening recommendation if they felt that they were susceptible to cervical cancer (Glanz et al., 2008: 45-66). A previous study has shown that individuals, who believed they had risk factors for cervical cancer, were more likely to take action to prevent an adverse outcome subsequent to getting the disease (Saslow et al., 2008: 53-72). Many studies reported that most participants reported a feeling of not being at risk for cervical cancer as a reason for utilising cervical cancer screening (Mutya et al., 2006: 13-18; Winkler et al., 2008: 10-24; Ibekwe, Hoque & Ntuli-Ngcobo, 2010: 1021-1027). A common emerging belief about cervical cancer screening in Hispanic women is that it is unnecessary or not needed to prevent cervical cancer. Among this target group a substantial proportion of women

perceived Papanicolaou smears as unnecessary diagnostic procedures, rather than preventative health measures. A study indicated that Hispanic women do not view preventative health, such as cancer prevention, as a priority; as a result, they have an increased risk for diseases because of their curative rather than preventative health practices. In this regard, Hispanic women do not perceive their own vulnerability to cervical cancer and do not see themselves as being at risk.

## **2.7 Cervical cancer screening utilisation**

Utilisation of cervical cancer screening is positively influenced by awareness of cervical cancer and the need for a test; and negatively influenced by barriers such as misconceptions and difficulty in access. Cervical cancer screening utilisation remains low in Sub-Saharan Africa (Louie, De Sanjose & Mayaud, 2009: 1287-1302). Ferlay, Shin, Bray, Forman, Mathers and Parkin (2010: 2893-2917) reported the cervical cancer screening rate in urban and rural areas in Ethiopia to be 1.6% and 0.4% respectively. Mosavel, Christian and Meyer (2009: 114-119) stated in a report that the uptake of cervical cancer screening services was still low in Africa. Similarly, a study reported that even though the level of knowledge, perceived risk, perceived severity and availability of preventative services were high, utilisation of cervical cancer screening services remained significantly low (Gharoro & Ikeanyi, 2006: 1063-1068).

In poorly resourced settings, access to services offering cervical screening is still a challenge and it is estimated that more than 50% of women in developing countries have never undergone a single screening test for cervical abnormalities (Adanu, 2002: 487). A study in Nigeria identified a very low level of uptake of cervical cancer screening, namely only 7.1% had ever undergone a Pap smear test (Ezem, 2007: 94-96).

In South Africa, which is among the countries with the highest rate of screening in sub-Saharan Africa, only 26% of the target population had access to cervical cancer screening and thus reaching the 70% national target coverage remains a challenge (Moodley, 2009: 12). Similarly, a study in South Africa reported that only 18% of 611 women had utilised cervical cancer screening services before (Hoque, Hoque & Kader, 2008: 113-115). Udigwe (2006: 40-43) found that only 5.7% of nurses

working in a University Teaching Hospital in Nigeria had ever undergone cervical cancer screening.

Boonpongmanee (2007: 384-389) reported that cervical cancer screening usage among women significantly depends on their perceptions regarding susceptibility to cervical cancer, their perceptions of the severity of cervical cancers, their perceptions regarding benefits of having a cervical cancer screening, and addressing their perceived barriers to seeking cervical cancer screening. Appropriate implemented cervical cancer screening in most developed countries has proven to reduce the incidence of cervical cancer significantly.

## **2.8 Summary**

In this chapter, an extensive review of literature was done to determine the factors affecting utilisation of cervical cancer screening among women. In the next chapter, the methodology that will be used to achieve this will be discussed.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

Research methodology is the logical study of the approaches and processes for collecting and analysing data in a field of study (Burns & Grove, 2011: 49). Research methodology covers the study design, study area, population, sample size and sampling techniques, data collection instrument and tools, analysis of data and interpretation (Burns & Grove, 2011: 49). The study would discuss in detail the aims and objectives of the study, study setting, study design, population and sampling, data collection tools, pilot study, validity, reliability, data collection, data analysis and a summary of all that had been discussed in this chapter.

### **3.2 Aim and objectives**

#### **3.2.1 Research aim**

This study aimed to determine factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana.

#### **3.2.2 Research objectives**

The study objectives were

1. To describe socio-demographic characteristics of women attending health services in the Kumasi Metropolis.
2. To determine the level of knowledge on cervical cancer and cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana.
3. To determine the perceptions of women attending health services in the Kumasi metropolis of Ghana on cervical cancer and cervical cancer screening.
4. To determine cervical cancer screening utilisation amongst women.

5. To determine the relationships between socio-demographic factors and level of knowledge, perceptions and utilisation of cervical cancer screening services.

### **3.3 Study setting**

The study was conducted in the Kumasi metropolis, the most populous of the 27 districts in the Ashanti Region. Kumasi is situated in the south-central part of Ghana (Kumasi Metropolitan Assembly, 2014 np). During the 2010 population census, population size was 2,035,064 with an annual growth of 4.8%. Considering the annual growth rate of 4.8%, the population of Kumasi was estimated at 2,396,458 in 2013. There are more males (52.2%) than females (47.8%) in this metropolis (Kumasi Metropolitan Assembly, 2014: np). Kumasi metropolis has four sub-districts namely Subin, Asokwa, Bantama and Manhyia and four government hospitals. These are Manhyia Government Hospital, Tafo Government Hospital, Kumasi South Hospital and Suntreso Government Hospital.

Kumasi metropolis is the capital city of the Ashanti Region in Ghana. Kumasi metropolis was chosen for the study as it is among the few cities in Ghana where screening for cervical cancer is performed. Cervical cancer screening is done at the reproductive health departments of all the four district hospitals in the Kumasi metropolis. The screening is done by means a Papanicolou smear test (Pap test) and visual inspection with acetic acid (VIA).

The study was conducted in two of the hospitals in the Kumasi metropolis of Ghana, namely Kumasi South hospital and North Suntreso hospital. The hospital setting was selected as a larger number of women seeking reproductive health services can be accessible in the hospitals.

### **3.4 Research design**

A research design, as defined by De Vos, Strydom, Fouche and Delpont (2011: 143), is the blueprint for maximal regulation of factors that may affect the validity of the study findings. The choice of the design was dependent on the research problem and purpose of the study (Burns & Grove, 2015: 211).

For the purpose of the study, a correlational cross-sectional quantitative design was used. Correlational cross-sectional quantitative design is a type of quantitative design in which data is generated into numerical data, analysed using statistics, relationships are determined between two or more variables and data is collected at a specific point in time (Burns, Grove & Gray, 2011: 264). This decision was based on the aim of the study to identify the participants' socio-demographic characteristics, knowledge, perception and utilisation of cervical cancer screening as well as to determine the relationship among the socio-demographic factors and the knowledge and perception on cervical cancer and cervical cancer screening. Moreover, data/information was collected from participants at a single point in time, namely two weeks in each of the two selected hospitals within four weeks and was analysed and presented using frequencies with percentages, mean, standard deviation, median interquartile and Pearson's chi-square test.

### **3.5 Population and sampling**

A study population refers to individuals that are eligible for inclusion in a specific study (Burns, Grove & Gray, 2011: 290). Women attending reproductive health services in the Kumasi metropolis of Ghana were selected as the study population. The researcher consulted a biostatistician and the sample size of 369 was obtained using the formula developed by Charan and Biswas (2013: 121-126) for cross-sectional studies with qualitative or categorical variables for unknown total population (Refer to Equation 1). The standard normal variate is the appropriate value from a normal distribution for a desired confidence level and the 5% type I error is the level of significance set for a test at 0.05 (Charan & Biswas, 2013: 121-126). The expected knowledge proportion in a population based on the previous study (p) is used when the total target population is unknown. The standard normal variate (Z) of 1.96 was obtained using a 5% type I error and the expected knowledge proportion in a population based on the previous study (P) was 68.4% (Ebu, Mupepi, Siakwa & Sampelle, 2014: 31). The absolute error or precision (d) was also estimated at 5%.

#### **Equation 1**

$$\text{Sample size} = \frac{Z^2 \cdot P(1-P)}{d^2}$$

After the calculation, 10% refusal rate was added to finally achieve the sample size of 369. The researcher used this sample size as it was accurately calculated.

For the purposes of the study, women who were 18 years and above and seeking reproductive health services in OPDs of the two selected hospitals were eligible for inclusion in this study. Statistics from the hospitals indicated an average daily attendance of 200 being the total from all the hospitals from January to June, 2015 (Ashanti regional statistical unit, 2015: np). The 369 participants were selected using a multi-stage sampling technique which is a method of sampling that involves two or more sampling methods carried out in stages (Burns, Grove & Gray, 2011: 302-304). Initially, two of the hospitals were randomly selected from the four hospitals so as to minimise selection bias. Simple random sampling means each hospital had an equal chance of being selected. The names of the four hospitals (Kumasi South Hospital, North Suntreso Hospital, Manhyia Hospital and Tafo hospital) were placed in a sealed opaque envelope and any two were picked. Kumasi South and North Suntreso Hospitals were picked at random. Subsequently, a systematic sampling technique was used in selecting participants who agreed to participate in the study. Systematic sampling is a sampling method which involves selection of elements from an ordered sample frame (Burns, Grove & Gray, 2011: 303-304). Kumasi South and North Suntreso are of the same category when it comes to hospital category in the Kumasi metropolis. Therefore, each of the hospitals was allotted 50 percent of the study sample, making each take 184 participants. That left one participant. The remaining one was randomly selected and added to Kumasi South Hospital making the sample size for Kumasi South 185 and that for North Suntreso 184. Using the average daily attendance of 200 being the total for all the hospitals, the  $k$ th number was calculated as  $k=N/n$  where  $k$  is the sample interval,  $N$  is the population and  $n$  is the sample size. It took two weeks, excluding weekends to collect the data in each hospital. On average, 19 participants were selected for the first week for each hospital. Then, 18 participants were also selected for the second week for both hospitals. With the help of the biostatistician, the  $k$ th number was calculated and every 11<sup>th</sup> woman was selected to participate in the study till the required number for each day was attained. The first women who came to the OPD was randomly selected. Using the first woman as the starting point, every 11<sup>th</sup> woman was selected as the patient came in to the OPD. Patients were selected as they came in because

some of the women would have left if I had waited for all of them to sit down before performing the selection.

### **3.5.1 Inclusion criteria**

- Women who were 18 years and older
- Women who sought reproductive health services at the out-patients' department

### **3.5.2 Exclusion criteria**

- Girls/ women younger than 18 years
- Women who were attending the OPD for reasons other than reproductive health services

## **3.6 Data collection tool**

According to Burns, Grove and Gray (2011: 52), various techniques for measuring study variables exist, such as interviewing, observation, questionnaires or scales. The researcher could use validated scales used in previous studies, or design another tool. A questionnaire was chosen because the study was a quantitative study and a large population was used.

The researcher designed a questionnaire (Appendix four and five) consisting of closed-ended and open-ended questions on factors affecting the utilisation of cervical cancer screening among women, and this was used as the data collection instrument. Due to the non-existence of a validated questionnaire on the issue under investigation, the researcher developed the questionnaire based on the relevant literature from different sources (Udigwe, 2006: 40-43; Ebu et al., 2014: 31-39; Adanu et al., 2010: 60-63), expert opinions from an obstetrician and a gynaecologist, one public health nurse and one midwife. The questionnaire was also developed based on participant's feedback from the pilot study. The questions were written in English (Appendix four) and translated into "Twi language" (Appendix five), the predominant language spoken in the Kumasi metropolis. The questionnaire was clearly typed and organised into four sections, namely sections A, B, C, and D.

Section A focused on socio-demographics such as age, marital status, educational level and work status. Section B was on knowledge of cervical cancer and cervical

cancer screening. Section C focused on women's perception of cervical cancer and cervical cancer screening. Lastly, section D focused on utilisation of cervical cancer screening services. The questionnaire contained 38 questions in all. Questions on socio-demographics, knowledge and utilisation of cervical cancer screening took the form of multiple choice, supply type and alternate response type. Supply type questions that demand the participants provide their own answers and alternate response type takes the form of 'yes' or 'no' answers, or true or false, or the Likert scale type. Likert scale type questions with five options ranging from strongly disagree, disagree, neutral, agree and strongly agree were also used in section C. The estimated time of completion of the questionnaire was 30 minutes. The questions were distributed as socio-demographics (5 questions), participant's knowledge level (12 questions), participant's level of perception (19 questions) and cervical cancer screening utilisation by participant (2 questions).

The knowledge was measured using "yes /no" response type questions. A correct response was allocated a score of 1 while wrong answers were allocated a score of 0. Participants who scored 0-6 questions on knowledge were classified as having inadequate knowledge while those who scored 7 -12 questions were classified as having adequate knowledge. For perception the highest value of 5 was given to 'strongly disagreed' answers and the lowest value of 1 to 'strongly agree'. The questions on perception numbered 19. Therefore, participants who scored from 19 – 57 were classified as having a negative perception and those who scored for 58-95 were classified as having a positive perception. All this was done with the help of a statistician from Stellenbosch university.

### **3.7 Pilot study**

According to Burns and Grove (2009: 38-40), in order to have a good study design, the researcher must conduct a pilot study. The researcher conducted a pilot study before the initiation of the main study to ensure that the questionnaire was suitable and to identify ambiguities and difficult questions. The pilot study was conducted at a hospital in Kumasi metropolis which provides similar reproductive healthservices to the two hospitals were selected for the study. A multi-stage sampling technique was used for the pilot study. Initially, Manhyia hospital was selected using random sampling amongst the four government hospital in the Kumasi metropolis. After,

systematic sampling was used to select the participants for the pilot study. Statistics from the four hospitals in the Kumasi metropolis indicated an average daily attendance of 200 from January to June, 2015 (Ashanti regional statistical unit, 2015: np). In order to get a sample size that will represent the total population in the two hospitals, the researcher decided to use 10% each of the average daily attendance of women. The sample size was obtained using the combination of the 10% of average daily attendance of women seeking reproductive health services from each of the two selected hospitals. Ten percent each from the hospitals made up the sample size for the pilot study to consist of forty participants. Systematic sampling was used to select the forty participants. Forty participants were given the same questionnaire that was designed to be used for the main study. The pilot study was done to test whether the questions were clear to the participants. The data collected for the pilot study was analysed. However, the researcher did not include the results of the pilot study in the study. All questionnaires were answered by the participants. Also, there was no modification or change in the questions since participants reported no difficulty in answering the questionnaire.

### **3.8 Validity and reliability**

#### **3.8.1 Validity**

The validity of the instrument was measured in two ways. Content validity, which was the extent to which an instrument and the items in it denote what the researcher intended to determine (LoBiondo-Wood & Haber, 2010: 288), was ensured by focusing the questions in the questionnaire on possible factors as identified in literature that could affect women's decisions and willingness to undergo cervical cancer screening.

Construct validity; which is the degree to which a test claims to measure an intended construct (LoBiondo-Wood & Haber, 2010: 288-290), was assessed by experts namely an obstetrician and a gynecologist, one midwife and one public Health nurse in the field of cervical cancer. The supervisor and statistician were also consulted to review the questionnaire. Participants involved in the pilot study were asked to give feedback on any difficulties they encountered in responding to the questions/questionnaire.

### **3.8.2 Reliability**

Reliability is referred to as the capacity of an instrument to determine the quality of an idea constantly (LoBiondo-Wood & Haber, 2010: 286). Cronbach's alpha test was carried out to determine the appropriateness of the Likert scale items before the final compilation of the questions. After entering the data in the SPSS software, Cronbach's alpha test of reliability was run to assess the inter-item reliability coefficient so as to aid in the retention of questions. Cronbach's alpha was used to estimate the proportion of variance that was systematic or consistent in a set of test scores. The Cronbach alpha for the set of scores turns out to be 0.80, which meant that the test was 90% reliable, and by extension that it was 20% unreliable. Cronbach's alpha of 0.80 for all validated likert scale items was considered appropriate for data collection.

### **3.9 Data collection**

Data collection was done by the researcher. Information regarding the study was explained to the participants; they were given a consent form to sign based on their willingness to participate in the study. The data was collected at the outpatient department of the two hospitals. The questionnaires were delivered by hand in a sealed envelope to participants. Participants were made aware that they were to select the answers on their own. The researcher explained the instructions concerning the questionnaire to the respondents. The researcher asked the participants whether they were able to complete in the questionnaire on their own or if they needed assistance. Participants who could complete the questionnaire on their own were given the questionnaire in a sealed envelope to ensure confidentiality. Participants were made aware that since they were not residents of the hospital, they were required to fill the questionnaire within forty-five minutes and submit them. Participants who could not read English were given the Twi version of the questionnaire to answer. No translators were used. The researcher completed the questionnaire for participants who needed assistance after participants had understood the translations. The researcher ensured that interpretation of options by participants was done correctly and accurately. The researcher secured a convenient and private place from the various hospitals where the participants sat and completed the questionnaires. Also, participants were served with water and fruit juice as refreshment, since they had to spend time in participating in the study. The

questionnaires were collected after forty-five minutes from participants who were able to complete the questionnaire on their own. Different time allocation was given to those who filled the questionnaire themselves and those who needed assistance in filling in the questionnaire. The reason was that those who completed the questionnaire themselves needed more time to look through their answers and not everybody is able to write quickly. By contrast, the researcher being familiar with the questionnaire, completed the questionnaire for those who could not read and write, based on their chosen answer. This accounted for less time allocated to who could not read or write. Table 3.9 shows the plan for data collection.

**Table 3.9: Data collection**

<b>KUMASI SOUTH HOSPITAL</b>	<b>NORTH SUNTRESO HOSPITAL</b>
<u>Week 1: Monday to Friday:</u> Questionnaires were administered between 8am–12pm. Questionnaires were collected from the literate women after 45 minutes. Thirty minutes were spent to assist each woman who needed assistance to complete the questionnaire.	<u>Week 2: Monday to Friday:</u> Questionnaires were administered between 8am–12pm. Questionnaires were collected from the literate women after 45 minutes. Thirty minutes were spent to assist each woman who needed assistance to complete the questionnaire.
<b>KUMASI SOUTH HOSPITAL</b>	<b>NORTH SUNTRESO HOSPITAL</b>
<u>Week 3: Monday to Friday:</u> Questionnaires were administered between 8am – 12pm. Questionnaires were collected from the literate women after 45 minutes. Thirty minutes were spent to assist each woman who needed assistance to complete the questionnaire.	<u>Week 4: Monday to Friday:</u> Questionnaires were administered between 8am–12pm. Questionnaires were collected from the literate women after 45 minutes. Thirty minutes were spent to assist each woman who needed assistance to complete the questionnaire.

### **3.10 Data analysis**

Analysis of quantitative data is a methodological way in which the researcher transforms data collected into numerical data (Burns, Grove & Gray, 2011: 290). The participants' responses were analysed using descriptive statistics and inferential statistics with the use of the Statistical Package for Social Science (SPSS) Version 23.0. The raw data was entered into the SPSS sheet and the variables well labelled. Analysis was done based on the research objectives.

According to LoBiondo-Wood and Haber (2010: 310) descriptive analysis refers to the procedure to describe and summarise the data and inferential statistics are applied to data to determine significant statistical differences between groups or relationships between variables. Rao and Scott (2012: 221-230) refer to the Chi-square as a statistical distribution and a hypothesis testing procedure that produces a statistic that is approximately distributed as the chi-square distribution. The Pearson Chi-square test is a non-parametric test used to determine statistically significant relationships or differences between categorical data (Campbell, 2007: 3661-3675). Burns, Grove and Gray (2011: 541) refer to the mean as "the value obtained by summing all the scores and dividing the total by the number of scores being summed". The median is defined as "the score at the exact center of the ungrouped frequency distribution" (Burns, Grove & Gray, 2011: 541). Statistical significance is referred to as the extent to which the observed results are likely not be due to chance (Burns, Grove and Gray, 2011: 549). Burns, Grove and Gray (2011: 550-560) and also defined range as the largest value minus the smallest value, interquartile range as the range of values between 50% of the data in the sample lie or 75th percentile minus the 25th percentile and standard deviation as the average distance from the mean.

For the purpose of this study a p-value of ( $p=0.05$ ) was used to determine a statistically significant association between the variables. Categorical variables were presented using frequencies and percentages whereas continuous variables were displaced using means, standard deviations, median, range and interquartile range. The socio-demographic characteristics of participants were analysed using frequencies and the percentages. Pearson's Chi-square was used to examine the relationship between socio-demographic factors and knowledge level, perception and cervical cancer screening utilisation. The researcher consulted a statistician at the bio-statistical unit of Stellenbosch University in order to achieve all of these.

### **3.11 Summary**

This chapter discussed comprehensively the research methodology used in conducting the study. The study setting and reasons for choosing the hospital as the study setting were explained. The study population, consisting of women were discussed and the sampling technique used to determine the 369 sample size was

also explained. The research design, which was correlational cross-sectional quantitative design, was elaborated and reasons for choosing the design given. The aim of the study and study objectives were given. Tools (Appendix four and five) used to collect the data were explained. English and Twi versions of the questionnaire were used. The data collection process was explained in detail and the researcher explained also how validity and reliability were ensured. Lastly, how the data was analysed using frequencies and percentages, mean, median, range and interquartile range was also discussed. The next chapter presents the research findings.

## CHAPTER FOUR: RESULTS

### 4.1 Introduction

This chapter addresses the data analysis and interpretation of the data collected during the research study. De Vos et al. (2011: 249) describe quantitative data analysis as “the way by which data is changed to a numerical form and exposed to statistical analysis”. This study aims to determine factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana.

### 4.2 Socio-demographic data

Participants’ socio-demographic data such as age, marital status, highest educational qualification attained, work status and number of children were analysed as indicated in tables below.

**Table 4.2a Participants’ age (n=369)**

Age of participants	Frequency	Percentage (%)
18-30	214	58.0
31-45	115	31.2
46-60	36	9.7
>60	4	1.1
<i>Mean Age ± sd (Range)</i> 30.85 ± 10.33 (18-64)		

In table 4.2a, analysis of age distribution amongst participants showed that the majority (58%) of the participants was between the ages of 18-30. The mean age and standard deviation of the study participant was found to be 30.85 ± 10.33 (18-64 years). This means the average age is 30.85; between age 30 and 40 and the data is not spread out as the distance from the mean which is the sd is 10.33 with the lowest age being 18 years and the highest age being 64 years

**Table 4.2b: Participants' marital status (n=369)**

<b>Marital status</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Married	149	40.4
Single	170	46.1
Divorced/ Separated	16	4.3
Cohabiting	34	9.2

Table 4.2b showed that n=170 (46.1%) were single and n=149 (40.4%) were married.

**Table 4.2c: Participants' highest level of education (n=369)**

<b>Highest educational level</b>	<b>Frequency</b>	<b>Percentage (%)</b>
None	54	14.6
Primary School	103	27.9
Junior high school	50	13.6
Senior high school	62	16.8
Tertiary	100	27.1

In table 4.2c, the study showed that most participants ended their education at the primary school level, 103 (27.9%) and 100 (27.1%) of the 369 participants had attained tertiary level education (university college or polytechnic or training colleges) accounting for 27.1% of the participants.

**Table 4.2d: Participants' work status (n=369)**

<b>Work status</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Employed	249	67.5
Unemployed	72	19.5
Student	48	13.0

Regarding the work status of the sampled participants, the study showed that 249 (67.5%) out of 369 of participants were employed

**Table 4.2e: Number of children participants had (n=369)**

Variable	Frequency	Percentage (%)
None	58	15.7
1	108	29.3
2	89	24.1
3	54	14.6
4	26	7.0
5	14	3.8
6	12	3.3
7	4	1.1
≥8	4	1.1

In table 4.2e, the majority (n=108) of the participants representing 29.3% had only one child and 89 of the 369 participants (24.1%) had two children. Fifteen point seven percent had no children and the rest had more than two children.

#### **4.3 Participants' knowledge on cervical cancer and cervical cancer screening (n=369)**

Research objective two sought to determine the level of knowledge on cervical cancer and cervical cancer screening amongst women attending health services in the Kumasi metropolis.

**Table 4.3: Knowledge of Cervical cancer**

Knowledge Area	Number(%) Adequate	Number(%) Inadequate
Cervical cancer is a cancerous tumour that affects the cervix	<b>359 (97.3)</b>	<b>10 (2.7)</b>
Being sexually active (having sex) puts a woman at greater risk of cervical cancer	<b>259 (70.2)</b>	<b>110 (29.8)</b>
Human Papillomavirus infection increases cervical cancer risk	<b>179 (48.5)</b>	<b>190 (51.5)</b>
Having more than one sex partner puts a woman at higher risk of cervical cancer	<b>285 (77.2)</b>	<b>84 (22.8)</b>
Smoking puts a woman at higher risk of cervical cancer	<b>255 (69.1)</b>	<b>114 (30.9)</b>
Family history of cervical cancer puts a woman at higher risk of cervical cancer	<b>227 (61.5)</b>	<b>142 (38.5)</b>
HIV/AIDS puts a woman at a higher risk of cervical cancer	<b>214 (58.0)</b>	<b>155 (42.0)</b>

<b>Knowledge Area</b>	<b>Number(%) Adequate</b>	<b>Number(%) Inadequate</b>
Use of oral contraceptive puts a woman at higher risk of cervical cancer	<b>231 (62.6)</b>	<b>138 (37.4)</b>
Weakened immune system puts a woman at higher risk of having cervical cancer	<b>269 (72.9)</b>	<b>100 (27.1)</b>
Multiple deliveries put a woman at risk of having cervical cancer	<b>112 (30.4)</b>	<b>257 (69.6)</b>
You can only get cervical cancer when you are sexually active	<b>224 (60.7)</b>	<b>145 (39.3)</b>
Having a sex partner who has other partners puts you at the risk of cervical cancer	<b>227 (61.5)</b>	<b>142 (38.5)</b>
<b>*Knowledge Score on Cervical Cancer</b>	<b>277 (75.1)</b>	<b>92 (24.9)</b>
<b>*Mean Knowledge <math>\pm</math> sd (Range)</b>	<b>7.70 <math>\pm</math> 2.13 (2–11)</b>	

Table 4.3 above illustrates that the majority of participants answered yes to the question that cervical cancer was a cancerous tumour that affected the cervix (97.3%), and that having more than one sex partner puts a woman at higher risk of cervical cancer (77.2%). Also, the majority knew that a weakened immune system increases a woman's risk of having cervical cancer (72.9%) and being sexually active put a woman at greater risk of cervical cancer (70.2%). Also, 61.5% said that having a sex partner who had other partners puts you at risk of cervical cancer and 69.1% accepted that smoking put a woman at higher risk of cervical cancer and that a family history of cervical cancer put a woman at higher risk of cervical cancer (61.5%). Furthermore participants knew that HIV/AIDS put a woman at higher risk of cervical cancer (58.0%), as did being sexually active (70.2%) and using oral contraceptives (62.6%).

The majority of participants indicated that multiple deliveries puts a woman at risk of having cervical cancer (69.6%) and as did Human Papillomavirus infection (51.5%). Data points to a knowledge level of 75.1% on cervical cancer with a mean knowledge score of  $7.70 \pm 2.13(2-11)$ . This means that of the 12 questions asked on knowledge of cervical cancer, the average score of the participants was 7.70 with a spread of 2.13 and participants scores were between a score of 2 to 11. The lowest score achieved by any the participants was 2 and the highest score was 11.

#### **4.4 Participants' perception on cervical cancer and its screening (n=369)**

The study objective four sought to determine the perception of participants on cervical cancer and cervical screening. The table below indicates the results:

**Table 4.4: Participants' perception on cervical cancer and its screening (n=369)**

<b>Perception</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>	<b>Mean ± sd</b>	<b>Median (IQR)</b>
Cervical screening can detect cervical changes before they become cancerous	<b>30(8.1)</b>	<b>10(2.7)</b>	<b>58(15.7)</b>	<b>143(38.8)</b>	<b>128(34.7)</b>	<b>3.9±1.16</b>	<b>4(3-5)</b>
If cervical changes are found early, they are easily curable	<b>26(7.0)</b>	<b>32(8.7)</b>	<b>29(7.9)</b>	<b>144(39.0)</b>	<b>138(37.4)</b>	<b>3.9±1.12</b>	<b>4(4-5)</b>
Cervical cancer screening enables a woman to know if she is healthy	<b>10(2.7)</b>	<b>28(7.8)</b>	<b>32(8.7)</b>	<b>129(35.0)</b>	<b>170(45.1)</b>	<b>4.1±1.0</b>	<b>4(4-5)</b>
Getting cervical test would only make me worry	<b>118(32.0)</b>	<b>82(22.2)</b>	<b>36(9.8)</b>	<b>58(15.7)</b>	<b>75(20.3)</b>	<b>2.7±1.5</b>	<b>2(1-4)</b>
If I am destined to get cancer, I will get it	<b>98(26.6)</b>	<b>128(34.7)</b>	<b>60(16.3)</b>	<b>43(11.7)</b>	<b>40(10.8)</b>	<b>2.5±1.3</b>	<b>2(1-3)</b>
The purpose of screening is to diagnose if I have cancer or not	<b>10(2.7)</b>	<b>35(9.5)</b>	<b>30(8.1)</b>	<b>154(41.7)</b>	<b>140(37.9)</b>	<b>4.0±1.0</b>	<b>5(4-5)</b>
Screening is not necessary since there is no cure for cancer	<b>120(32.5)</b>	<b>146(39.6)</b>	<b>46(12.5)</b>	<b>19(5.1)</b>	<b>38(10.3)</b>	<b>2.2±1.2</b>	<b>2(1-3)</b>
The cervical screening is painful	<b>64(17.3)</b>	<b>82(22.2)</b>	<b>172(46.6)</b>	<b>35(9.5)</b>	<b>16(4.3)</b>	<b>2.6±1.0</b>	<b>3(2-3)</b>
It is too expensive to have cervical cancer screening	<b>82(22.2)</b>	<b>84(22.8)</b>	<b>118(32.0)</b>	<b>47(12.7)</b>	<b>38(10.3)</b>	<b>2.7±1.2</b>	<b>3(2-3)</b>
It is embarrassing to have cervical cancer screening	<b>110(29.8)</b>	<b>106(28.7)</b>	<b>46(12.5)</b>	<b>81(22.0)</b>	<b>26(7.0)</b>	<b>2.5±1.3</b>	<b>2(1-4)</b>
If a woman is a virgin, a Pap test will take away her virginity	<b>102(27.6)</b>	<b>98(26.6)</b>	<b>78(21.1)</b>	<b>55(14.9)</b>	<b>36(9.8)</b>	<b>2.5±1.3</b>	<b>2(1-3)</b>
I don't know where I could go if I wanted cervical cancer screening	<b>82(22.2)</b>	<b>113(30.6)</b>	<b>54(14.6)</b>	<b>84(22.8)</b>	<b>36(9.8)</b>	<b>2.7±1.3</b>	<b>2(2-4)</b>
My partner will not want me to have cervical cancer screening	<b>27(7.3)</b>	<b>20(5.4)</b>	<b>54(14.6)</b>	<b>116(31.4)</b>	<b>152(41.2)</b>	<b>2.0±1.2</b>	<b>2(1-3)</b>

SD= Strongly Disagree D = Disagree N = Not Sure A = Agree SA = Strongly Agree sd = Standard Deviation IQR= Interquartile Range

**Table 4.4: Participants' perception on cervical cancer and its screening  
continued...**

Perception	SD	D	N	A	SA	Mean ± sd	Median (IQR)
If a young woman goes for Pap test everyone will think she is having sex	<b>94(25.7)</b>	<b>103(27.9)</b>	<b>32(8.7)</b>	<b>86(23.3)</b>	<b>52(14.4)</b>	<b>2.7±1.4</b>	<b>2(1-4)</b>
Cervical cancer only happens to women over 50 years of age	<b>120(32.5)</b>	<b>113(30.6)</b>	<b>52(14.1)</b>	<b>52(14.1)</b>	<b>32(8.7)</b>	<b>2.4±1.3</b>	<b>2(1-3)</b>
Young women are at risk for cervical cancer	<b>46(12.5)</b>	<b>70(19.0)</b>	<b>66(17.9)</b>	<b>98(24.1)</b>	<b>98(26.6)</b>	<b>3.3±1.4</b>	<b>4(2-5)</b>
I am at risk for cervical cancer	<b>73(19.8)</b>	<b>60(16.3)</b>	<b>50(13.6)</b>	<b>112(30.4)</b>	<b>74(20.1)</b>	<b>3.2±1.4</b>	<b>4(2-4)</b>
Having cervical cancer will make a woman's life difficult	<b>56(15.2)</b>	<b>48(13.0)</b>	<b>64(17.3)</b>	<b>119(32.2)</b>	<b>82(22.2)</b>	<b>3.3±1.4</b>	<b>4(2-4)</b>
There are effective treatments for cervical cancer	<b>31(8.4)</b>	<b>20(5.4)</b>	<b>54(14.6)</b>	<b>120(32.5)</b>	<b>144(39.0)</b>	<b>3.9±1.2</b>	<b>4(4-5)</b>
Total perception score <b>=325(88.1%)</b>							
Mean perception score ± sd(IQR) = <b>68.2±8.3(47-91)</b>							

SD= Strongly Disagree D = Disagree N = Not Sure A = Agree SA = Strongly Agree sd = Standard Deviation IQR= Interquartile Range

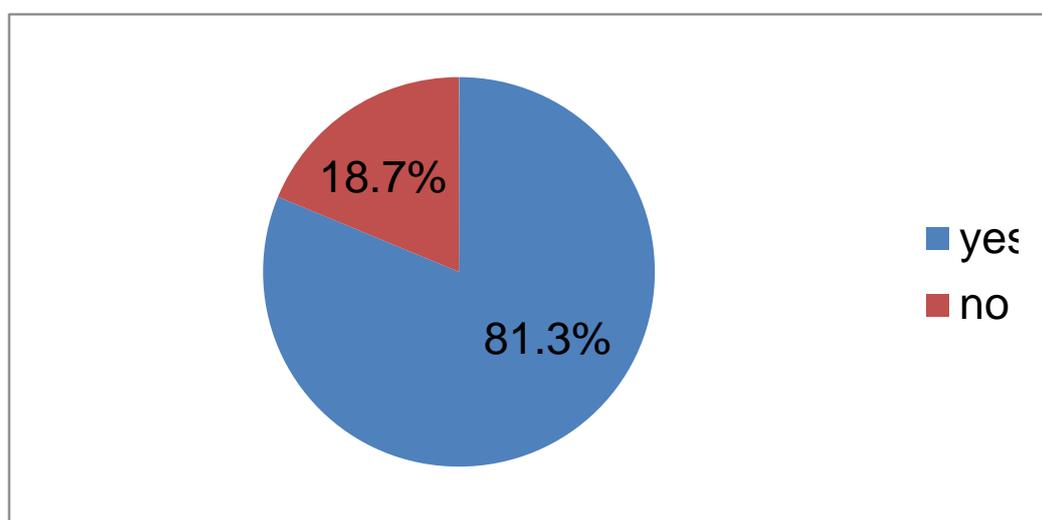
Table 4.3 as shown above revealed more than one third (38.8%) of participants agreed that cervical screening could detect cervical changes before they became cancerous and also agreed that early detection of cervical changes could lead to the cure of cervical cancer. The majority (39.6%) of participants indicated that screening was necessary since there was no cure for cancer. The majority (29.8%) strongly disagreed that it was embarrassing to have cervical cancer screening and that if a woman was a virgin, a Pap test would take away her virginity (27.6%). Some also believed that if one was destined to get cancer, one would get it. A proportion of them disagreed with the statement that women did not know where they could go if they wanted cervical cancer screening and that if a young woman went for Pap test everyone will think she was having sex. The majority of participants also were not

sure whether the cervical screening was painful (46.6%) and strongly agreed that young women were at risk of cervical cancer (26.6%). However, the majority (41.2%) strongly agreed and that their partners would not want them to have cervical cancer screening

The study indicated that Majority (88.1%) had a positive perception on cervical cancer and cervical cancer screening with a mean perception score of  $68.2 \pm 8.3$  (47-91). For perception the highest value of 5 meant the participants strongly disagreed and the lowest value of 1 that the participants strongly agreed. There was a total of 19 questions on perception. Therefore, participants who scored from 19-57 were classified as having a negative perception and those who scored 58-95 were classified as having a positive perception. Based on this, participants average score was 68.2, the average distance from the mean was  $sd = 8.3$  and participants scores were between the interquartile score range of 47-91.

#### 4.5 Cervical cancer screening utilisation

Research question four sought to determine cervical cancer screening utilisation amongst women in the Kumasi metropolis. Two questions were used to determine the cervical cancer screening rate among participants.



**Figure 4.5: Percentage of participant's utilising cervical cancer screening (n=369)**

Figure 4.2 shows the percentages of participants who had undergone the screening . The majority, 300 (81.3%) indicated that they had not been screened before while only 69 (18.7%) had ever been screened.

**Table 4.5: Number of times participants have undergone cervical cancer screening, 69 (18.7%)**

<b>Number of times</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Once	64	17.3
Twice	5	1.4
<b>Total</b>	<b>69</b>	<b>18.7</b>

Table 4.5 demonstrates the number of times participants had undergone cervical cancer screening if they had undergone the screening before. A few, 69 (18.7%) participants had utilised cervical cancer screening services. Also, 64 (17.3%) had undergone the screening once and 5 (1.4%) had been screened twice.

#### **4.6 Relationship between socio-demographic factors and level of knowledge, perceptions and utilisation of cervical cancer screening**

Research objective five sought to determine the relationship between socio-demographic factors and the level of knowledge, perceptions and utilisation of cervical cancer screening. The tables illustrate the results obtained from the Pearson's Chi-Square correlation analysis between socio-demographic factors and level of knowledge, perceptions and utilisation of cervical cancer screening.

**Table 4.6a: Age range of participants versus knowledge (n=369)**

	<b>Knowledge Categories</b>		<b>Total</b>	<b>Pearson Chi-square</b>	<b>df</b>	<b>p value</b>
	<b>Inadequate Knowledge</b>	<b>Adequate Knowledge</b>				
<b>Age range of participants</b>						
18-30	42 (11.4%)	172 (46.6%)	214	9.626 <sup>a</sup>	3	p= 0.022
31-45	34 (9.2%)	81 (22.0%)	115			
46-60	14 (3.8%)	22 (6.0%)	36			
60+	2 (0.5%)	2 (0.5%)	4			
<b>Total</b>	<b>92 (24.9%)</b>	<b>277 (75.1%)</b>	<b>369</b>			

df = degree of freedom

In table 4.6a, the study found a statistically significant relationship between the age range of the participants and the knowledge categories of the participants,  $\chi^2 (3, 369) = 9.626$ ,  $p = 0.022$  at 95% confidence interval.

Of the 277 who had adequate knowledge, 172 (46.6%) were between the ages of 18-30 years and 81 (22.0%) between the ages of 31-45 years.

**Table 4.6b: Age range of participants versus perception (n=369)**

	Perception		Total	Pearson Chi-square	df	p value
	Positive Perception	Negative Perception				
<b>Age range of participants</b>						
18-30	26 (7.0%)	188 (50.9%)	214	0.581 <sup>a</sup>	3	$p=0.901$
31-45	14 (3.8%)	101 (27.4)	115			
46-60	4 (1.1%)	32 (8.7%)	36			
60+	0	4 (1.1%)	4			
<b>Total</b>	<b>44 (11.9%)</b>	<b>325 (88.1%)</b>	<b>369</b>			

df= degree of freedom

In table 4.6b, 325 (88.1%) of the 369 participants had a positive perception of cervical cancer and cervical cancer screening. However, 188 (57.8%) were between the ages of 18-30 and 101 (31%) between the ages of 31-45 years. The study found no statistically significant relationship between the age range of the participants and the perception categories of the participants,  $\chi^2 (3, 369) = 0.581$ ,  $p = 0.901$  at a 95% confidence level.

**Table 4.6c: Age range of participants versus cervical cancer screening utilisation (n=369)**

	Cervical Cancer Screening Utilisation		Total	Pearson Chi-square	df	p value
	Yes	No				
<b>Age range of participants</b>						
18-30	36 (9.8%)	178 (48.2%)	214	6.502 <sup>a</sup>	3	$p=0.090$
31-45	21 (5.7%)	94 (25.5%)	115			
46-60	12 (3.2%)	24 (6.5%)	36			
60+	0	4 (1.1%)	4			
<b>Total</b>	<b>69 (18.7%)</b>	<b>300 (81.3%)</b>	<b>369</b>			

In table 4.6c, of the 69 who had undergone screening, participants between the ages of 18-30 years had the highest percentage (9.8%) of participants who had undergone screening among all the age groups. The results,  $\chi^2 (3, 369) = 6.502$ ,  $p = 0.090$  indicated no significant relationship between age of the participants and cervical cancer screening utilisation of the participants at 95% confidence level. Participants between the age range of 18-30 were more likely to have undergone the screening with those age 60 and above being less likely to have undergone screening for cervical cancer.

**Table 4.6d: Marital status versus knowledge (n=369)**

	Knowledge Categories		Total	Pearson Chi-square	df	p value
	Inadequate Knowledge	Adequate Knowledge				
<b>Marital status of participants</b>						
married	58 (15.7%)	91 (24.7%)	149	28.686 <sup>a</sup>	3	p<0.001
single	28 (7.6%)	142 (38.5%)	170			
divorced/separated	4 (1.1%)	12 (3.3%)	16			
cohabiting	2 (0.5%)	32 (8.7%)	34			
<b>Total</b>	<b>92 (24.9%)</b>	<b>277 (75.1%)</b>	<b>369</b>			

In table 4.6d, the study found a significant association between the marital status of the participants and the knowledge categories of the participants,  $\chi^2 (3, 369) = 28.686$ ,  $p < 0.001$  at 95% confidence interval. Of the 277 (75.1%) who had adequate knowledge, the majority 142 (38.5%) were single.

**Table 4.6e: Marital status versus perception (n=369)**

	Perception Categories		Total	Pearson Chi-square	df	p value
	Negative perception	Positive perception				
<b>Marital status of participants</b>						
married	13 (3.5%)	36 (36.9%)	149	2.711 <sup>a</sup>	3	p=0.438
single	25 (6.8%)	145 (39.3%)	170			
divorced/separated	2 (0.5%)	14 (3.8%)	16			
cohabiting	4 (1.1%)	30 (8.1%)	34			
<b>Total</b>	<b>44 (11.9%)</b>	<b>325 (88.1%)</b>	<b>369</b>			

In table 4.6e, of the 325 (88%) who had a positive perception of cervical cancer screening, the participants who were single had the highest level of positive perception. However, no significant association was found between the marital status of participants and perception of participants,  $\chi^2(3, 369) = 2.711$ ,  $p = 0.438$  at a 95% confidence interval.

**Table 4.6f: Marital status versus cervical cancer screening utilisation (n=369)**

	Cervical Cancer Screening Utilisation		Total	Pearson Chi-square	df	p value
	Yes	No				
<b>Marital status of participants</b>						
Married	37 (10.0%)	112(30.4%)	149	8.320 <sup>a</sup>	3	p=0.040
Single	22 (6.0)	148 (40.1%)	170			
Divorced/separated	2 (0.5%)	14 (3.8%)	16			
cohabiting	8 (2.2%)	26 (7.0%)	34			
<b>Total</b>	<b>69 (18.7%)</b>	<b>300 (81.3%)</b>	<b>369</b>			

In table 4.6f, 37(10.0%) of the 69 (18.7%) participants who had been screened before were married. We observed an association between the marital status of the participants and cervical cancer screening utilisation of the participants,  $\chi^2(3, 369) = 8.320$ ,  $p=0.040$ . The probability is 0.040 indicating a statistically significant relationship between marital status of the participants and cervical cancer screening utilisation of the participants. Participants who were married are more likely to be screened and those who were divorced/separated were less likely to be screened.

**Table 4.6g: Educational level versus knowledge (n=369)**

	Knowledge Categories		Total	Pearson's Chi-Square Value	df	p value
	Inadequate Knowledge	Adequate Knowledge				
<b>Educational Level</b>						
None	48 (13.0%)	6 (1.6%)	54	9.970 <sup>a</sup>	4	p=0.001
Primary	50 (13.6%)	53 (14.4%)	103			
Junior	12 (3.3%)	38 (10.3%)	50			
Secondary	11 (3.0%)	51 (13.8%)	62			
Tertiary	10 (2.7%)	90 (24.4%)	100			
<b>TOTAL</b>	<b>92 (24.9%)</b>	<b>277 (75.1%)</b>	<b>369</b>			

In table 4.6g, of the 75.1% of participants who had adequate knowledge, women with tertiary level education had the highest percentage (24.4%) of participants with adequate knowledge. The results,  $\chi^2(4, 369) = 9.970$ ,  $p=0.001$  indicates statistically significant relationship between the educational level of the participants and their knowledge at 95% confidence level. Of the 100 participants who had attained tertiary level education, 90, representing 90.0%, had adequate knowledge.

**Table 4.6h: Level of education versus perception (n=369)**

	Perception Categories		Total	Pearson Chi-square	df	p value
	Negative perception	Positive perception				
<b>Level of Education of participants</b>						
None	12 (3.3%)	42 (11.4%)	54	9.366 <sup>a</sup>	4	p=0.534
Primary	14 (3.8%)	89 (24.1%)	103			
Junior high	6 (1.6%)	44 (11.9%)	50			
Senior high	6 (1.6%)	56 (15.2%)	62			
Tertiary	6 (1.6%)	94 (25.5%)	100			
<b>Total</b>	<b>44 (11.9%)</b>	<b>325 (88.1%)</b>	<b>369</b>			

In table 4.6h, there was no significant relationship found between the educational level of the participants and their perception of cervical cancer screening,  $\chi^2(4, 369) = 9.366$ ,  $p= 0.534$ .

**Table 4.6i: Level of education versus cervical cancer screening utilisation (n=369)**

	Cervical Cancer Screening Utilisation		Total	Pearson Chi-square	df	p value
	Yes	No				
<b>Level of education of participants</b>						
None	14 (3.8%)	40 (10.8%)	54	15.762 <sup>a</sup>	4	p=0.003
Primary	9 (2.4%)	94 (25.5%)	103			
Junior high	6 (1.6%)	4 (11.9%)	50			
Senior high	12 (3.3%)	50 (13.6%)	62			
Tertiary	28 (7.6%)	72 (19.5%)	100			
<b>Total</b>	<b>69</b>	<b>300(81.3%)</b>	<b>369</b>			

In table 4.6i, the results  $\chi^2 (4, 369) = 15.762$ ,  $p= 0.003$  indicate a relationship between educational level of the participants and cervical cancer screening utilisation which is statistically significant at 95% confidence interval. Participants who had attained a tertiary level of education were more likely to undergo cervical cancer screening and those who had a junior high level of education were less likely to have been screened.

**Table 4.6j: Work status versus knowledge (n=369)**

	Knowledge Categories		Total	Pearson Chi-square	df	p value
	Inadequate knowledge	Adequate knowledge				
<b>Work status of participants</b>						
Employed	60 (16.3%)	189(51.2%)	249	0.405 <sup>a</sup>	2	p=0.817
Unemployed	20 (5.4%)	52 (14.1%)	72			
Student	12 (3.3%)	36 (1.8%)	48			
<b>Total</b>	<b>92 (24.9%)</b>	<b>277(75.1%)</b>	<b>369</b>			

According to table 4.6j, the majority, 189 (51.2%) of the 277 participants with adequate knowledge were employed. However, the study results  $\chi^2 (2, 369) = 0.405$ ,  $p= 0.817$  indicate a statistically insignificant relationship between the work status of the participants and their knowledge of cervical cancer.

**Table 4.6k: Work status versus perception (n=369)**

	Perception Categories		Total	Pearson Chi-square	df	p value
	Negative perception	Positive perception				
<b>Work status of participants</b>						
Employed	31 (8.4%)	218(59.1%)	249	0.413 <sup>a</sup>	2	p=0.813
Unemployed	7 (1.9%)	65 (17.6)	72			
Student	6 (1.6%)	42(11.4%)	48			
<b>Total</b>	<b>44 (11.9%)</b>	<b>325(88.1%)</b>	<b>369</b>			

Table 4.6k indicate,  $\chi^2 (369) = 0.413$ ,  $p= 0.813$ . This indicates no significant relationship between the work status of the participants and their perception of cervical cancer screening. Also, 59.1% of the participants who were employed had positive perception of cervical cancer screening.

**Table 4.6l: Work status versus cervical cancer screening utilisation (n=369)**

	Cervical Cancer Screening Utilisation		Total	Pearson Chi-square	df	p value
	Yes	No				
<b>Work status of participants</b>						
Employed	55 (14.9%)	194(52.6%)	249	10.207 <sup>a</sup>	2	p=0.006
Unemployed	4 (1.1%)	68 (18.4%)	72			
Student	10 (2.7%)	38 (10.3%)	48			
<b>Total</b>	<b>69 (18.7%)</b>	<b>300(81.3%)</b>	<b>369</b>			

The p-value is 0.006. This means that there is 0.6% chance to find the observed degree of association between the variables if they are perfectly independent in the population. A statistically significant relationship between work status of the participants and cervical cancer screening utilisation,  $\chi^2(369) = 10.207$ ,  $p=0.006$ , is indicated. Also,  $n=55$  (14.9%) of the 69 participants who had undergone cervical cancer screening were employed. Participants who were employed were more likely to have been screened and those who were unemployed were less likely to have been screened.

**Table 4.6m: Number of children versus knowledge of cervical cancer (n=369)**

	Knowledge Categories		Total	Pearson Chi-square	df	p value
	Inadequate Knowledge	Adequate Knowledge				
<b>Number of children</b>						
1	30 (8.1%)	78(21.1%)	108	36.287 <sup>a</sup>	8	p<0.001
2	18 (4.9%)	71 (19.2%)	89			
3	10 (2.7%)	44 (11.9%)	54			
4	10 (2.7%)	16 (4.3%)	26			
5	0	14 (3.8%)	14			
6	8 (2.2%)	4 (1.1%)	12			
7	4 (1.1%)	0	4			
8+	2 (0.5)	2 (0.5%)	4			
None	10 (2.7%)	48 (13%)	58			
<b>Total</b>	<b>92 (24.9%)</b>	<b>277(75.1%)</b>	<b>369</b>			

The p-value denoted by “asymptotic significance (2-tailed)” is <0.001. In table 4.6m, we observed an association between the number of children and the knowledge

categories of the participants,  $\chi^2 (8, 369) = 36.287$ ,  $P < 0.001$  which is statistically significant.

**Table 4.6n: Number of children versus perception (n=369)**

	Perception Categories		Total	Pearson Chi-square	df	p value
	Negative perception	Positive perception				
<b>Number of children</b>						
1	19 (5.1%)	89(24.1%)	108	36.287 <sup>a</sup>	8	p<0.001
2	5 (1.4%)	84(22.8%)	89			
3	4 (1.1%)	50(13.6%)	54			
4	6 (1.6%)	20 (5.4%)	26			
5	2 (0.5%)	12 (3.3%)	14			
6	0	12 (3.3%)	12			
7	0	4(1.1%)	4			
8+	0	4 (1.1%)	4			
None	8 (2.2%)	50(13.6%)	58			
<b>Total</b>	<b>92 (24.9%)</b>	<b>77(75.1%)</b>	<b>369</b>			

From table 4.6n, a significant association between the number of children and the perception categories of the participants,  $\chi^2 (8, 369) = 36.287$ ,  $p < 0.001$  was denoted. The majority, 89 (24.1%) of the 277 with positive perception had one child and 84 (22.8%) had two children.

**Table 4.6o: Number of children versus cervical cancer screening utilisation (n=369)**

	Cervical Cancer Screening Utilisation		Total	Pearson Chi-square	df	p value
	Yes	No				
<b>Number of children</b>						
1	22 (6%)	86(23.3%)	108	36.287 <sup>a</sup>	8	p<0.001
2	19 (5.1%)	70 (19%)	89			
3	14 (3.8)	40(10.8%)	54			
4	2 (0.5%)	24 (6.5%)	26			
5	2 (0.5%)	12 (3.3%)	14			
6	4 (1.1%)	8 (2.2%)	12			
7	0	4 (1.1%)	4			
8+	2 (0.5%)	2 (0.5%)	4			

None	4 (1.1%)	54(14.6%)	58
<b>Total</b>	<b>69 (18.7%)</b>	<b>300 (81.3%)</b>	<b>369</b>

We observed an association between the marital status of the participants and the cervical cancer screening utilisation of the participants,  $\chi^2 (8, 369) = 36.287$ ,  $P < 0.001$ . The probability,  $P < 0.001$  indicates a significant relationship between number of children and cervical cancer screening utilisation of the participants. Participants with one child were more likely to undergo the screening while participants with fewer than 7 children were less likely to undergo cervical cancer screening

#### 4.7 Summary

The results and statistical analysis of the data obtained from the questionnaire were discussed and presented. Data was obtained to answer the research question regarding factors affecting the utilisation of cervical cancer screening among women. The socio-demographic data of participants such as age, marital status, educational level, work status and number of children were presented in a table with the frequencies and percentages. Knowledge level of participants on cervical cancer was also analysed and presented in a table using percentages and frequencies. The perception of participants was also presented in a table with their ranges and interquartile range. The percentage of participants who had utilised the screening services was also presented using a pie chart and the number of times participants had undergone the screening presented using a table. The relationships between socio-demographic factors and knowledge, perception and screening utilisation were analysed using Pearson's chi-square test and were presented using tables.

In chapter five, the findings will be discussed and concluded according to the objectives of the study. Limitations of the study will be outlined. Recommendations will be made based on the study findings.

## **CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

The aim of this research study was to determine factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana. This chapter addresses the study results, the extent to which they may be generalised, the limitations of the study and recommendations.

### **5.2 Discussion**

The discussion is organised in five sub-sections based on the objectives of this study: Socio-demographic characteristics, knowledge of cervical cancer and screening, perceptions on cervical cancer and screening, utilisation of cervical cancer screening and the relationships between these variables.

#### **5.2.1 Objective 1: To describe socio-demographic characteristics of women attending health services in the Kumasi metropolis.**

The study revealed that more than half (58%) of the study participants were between the ages of 18-30 years. The findings indicated that younger women tended to seek reproductive health services more regularly than older women did. This suggests that as women age, they tend to show less concern about their health than they did when they were younger (Luciani et al., 2009: 795-807; Leyden et al., 2005: 677). This position is supported by Luciani, Jauregui, Kieny and Andrus (2009: 795-807) who attributed the seeming lack of health consciousness amongst older women to significant increases in social and domestic responsibilities. Also, Leyden et al. (2005: 677) revealed that older women were more likely not to screen compared to younger women.

Also, the study revealed that majority, 170 (46.1%) of 369 of women seeking reproductive health services in the Kumasi metropolis were single. The finding suggests that single women showed more care about issues relating to their reproductive health and therefore sought more knowledge and showed concern about their reproductive health. This finding is similar to a study by Hoque and Hoque (2009: 21-23) and Lyimo and Beran (2012: 12-22). Some of the factors that

caused married women and to a larger extent, women cohabiting with their boyfriends, not to seek healthcare as regularly as single women has did, has been posited by some studies to be as a result of the need for married and cohabiting women to seek the consent of their husbands and boyfriends respectively (Hoque & Hoque, 2009: 21-23; Lyimo & Beran 2012: 12-22). Hoque and Hoque (2009: 21-23) reported that the authority of men over women in the African social setting affected the healthcare needs of women negatively. Furthermore, a study done by Lyimo and Beran (2012: 12-22) reported lack of consent by husbands being one of the reasons why married women did not seek reproductive health services.

Furthermore, this study found that the majority (85.4%) of the women had some level of education and few (14.6%) had never attended school before. The study by Utoo et al. (2013: 2-3) found that women with low levels of education tended not to see the need for cervical cancer screening. Women with a higher level of education tended to be well informed of the risk in not seeking cervical cancer screening.

In a sharp deviation from the above expectation, this study indicated that more women with primary level education were found to frequently utilise the healthcare reproductive health services than women with secondary and tertiary level education. This study is in agreement to Juckett and Hartman-Adams (2010: 1209-1214) who indicated that the primary level of education was only a short step down the education ladder from secondary education and graduates of both steps could not be expected to exhibit significant levels of differences in terms of mental and behavioural capacity.

The findings indicate that more than 50% of participants were employed, indicating an ability to afford the cost of reproductive health care services including cervical screening services, as the screening comes at a little fee. Unemployed women, according to Lyimo and Beran (2012: 12-22) tended to rely on their husbands for money to pay for reproductive health services. In cases involving single unemployed women, the inability to afford reproductive health care services could serve as an effective restriction on cervical cancer screening. The findings of this study support the assertions of Lyimo & Beran (2012: 12-22) that affordability is a significant factor in access to health care for women, and employment enables women to better afford

health care, with the result of higher utilization of reproductive health services amongst employed women.

Furthermore, the study showed that most of the study participants had children. It study also showed that most of the study participants had dependents and the researcher recognises that they therefore were more likely to be more concerned about the status of their health.

Overall, the study showed that women seeking reproductive health services in the Kumasi metropolis were mostly single in terms of relationship status, young in terms of age, educated at primary school level, mostly employed, and had given birth before. The study showed that significantly lower numbers of women attending health services in the Kumasi metropolis were married, older, unemployed and uneducated. This relates to many studies as the studies indicated few of their study participants were married, older, unemployed and uneducated (Luciani et al., 2009: 795-807; Leyden et al., 2005: 677; Hoque & Hoque 2009: 21-23; Lyimo & Beran (2012: 12-22).

### **5.2.2 Objective 2: To determine the level of knowledge on cervical cancer and cervical screening among women attending health services in the Kumasi metropolis of Ghana.**

In determining the pattern of responses between 'Yes; and 'No' options, the study conducted a mean analysis of the data. There were 12 questions testing knowledge. Participants who scored 0-6 were classified as having inadequate knowledge and those who scored 7-12 were classified as having adequate knowledge. An overall mean knowledge of 7.70 which was the average score on knowledge by participants was obtained. This shows that most of them had adequate of cervical cancer and cervical cancer screening.

The response patterns indicated that the majority of sampled participants had the adequate knowledge regarding the cervical cancer. The majority (75.1%) of the study participants showed adequate knowledge of what cervical cancer was, the risk factors for women, the causative agents and factors, and the conditions that contributed to the development of cervical cancer. This is supported by a study done in Nigeria which reported the level of knowledge on cervical cancer and cervical

screening to be high (65%) (Utoo et al., 2013: 2-3). However, a study by Eze et al. (2012: 238-243) in South-eastern Nigeria revealed that fewer than 40% of 360 participants were aware of cervical cancer. Thirty and twentyfive percent of the same participants respectively were aware that cervical cancer was preventable and had heard of cervical cancer screening.

In spite of findings indicating high levels of knowledge in the Kumasi metropolis, studies in other parts of the country showed significantly reduced knowledge levels (Abotchie & Shokar, 2009: 412-416; Ebu et al., 2015: 31-39). For example, a study done in Elmina, Ghana reported that 93.7% of the participants had no knowledge of the risk factors for cervical cancer and 92 % had no idea that cervical cancer could be prevented. In addition, of the 392 participants, n=384 (97.7%) had never heard of cervical cancer screening (Ebu et al., 2015: 31-39).

Overall, 75.1% of the participants demonstrated adequate levels of knowledge about cervical cancer which was impressive considering the fact that a significant number of participants had basic to no education at all, while 24.9% demonstrated no or very low level of knowledge on cervical cancer and cervical cancer screening.

### **5.2.3 Objective 3: To determine the perceptions of women attending health services in the Kumasi metropolis of Ghana on cervical cancer and cervical screening.**

The study found that the majority (88.1%) of participants had a positive perception on cervical cancer and cervical cancer screening. Most participants strongly agreed that cervical screening could detect cervical changes before they became cancerous and that early detection of cervical changes could lead to the prevention of cervical cancer. This is in agreement to a study done in Laos, which reported that 64% of participants believed that cervical cancer could be prevented (Phongsavan, Phengsavanh, Wahlström & Marions, 2010: 821-826). It is also supported by a study which found that twice the proportion of the women who had participated in cervical screening programmes believed that cervical cancer was easily cured when identified early, as opposed to the non-participant group who believed that cervical cancer was not treatable irrespective of time of identification (Leyva, Byrd & Tarwater, 2006: 13-24).

Furthermore, the majority (72.1%) of participants also correctly believed that screening was necessary, even though there was no cure for cancer. This is in contrast to a study by Blesser et al. (2007: 396-404) which indicated the main reason given by forty-one percent (41%) of women who failed to participate in cervical cancer screening programmes was that they did not see the need for cervical cancer screening (Bessler et al., 2007: 396-404). The majority did not believe that it was embarrassing to have a cervical cancer screening (58.7%) and that if a woman was a virgin, a Pap test would take away her virginity (54.2%). Some (51.3%) also disagreed that if one was destined to get cancer, one would get it. A proportion (52.8%) of them disagreed that women did not know where they could go if they wanted cervical cancer screening, and that if a young woman went for Pap test everyone would think she was having sex (53.6%). The majority of participants were not sure whether the cervical screening was painful (46.6%) or whether it was too expensive. This is understandable given the fact that the majority (81.3%) had not undergone the screening before. Furthermore, the majority (50.7%) of participants agreed that young women are at risk of cervical cancer and that they were also at risk of developing cervical cancer (50.5%). A previous study has shown that individuals, who believed they had risk factors for cervical cancer, were more likely to take action to prevent an adverse outcome subsequent to getting the disease (Saslow et al., 2008: 53-72 ). However, with the belief that they were at risk of cervical cancer, the majority had not undergone the screening. A perception of not being at risk for cervical cancer has been verified as a reason for not utilising cervical cancer screening in previous studies (Mutyaba et al., 2006: 13-18; Winkler et al., 2008: 10-24; Ibekwe, Hoque & Ntuli-Ngcobo, 2010: 1021-1027). The majority (72.6%) believed that their partners would not want them to have cervical cancer screening services. This is similar to a study by Lyimo & Beran (2012: 12-22) who reported women indicated a lack of consent from their husbands as the reason for not undergoing cervical cancer screening.

It is believed that when one perceives an action as beneficial, it brings about good proactive health behavior (Adanu et al., 2010: 59-63; Hoque & Hoque, 2009: 21-24). However, in this study, even though more than half of the participants perceived cervical cancer screening as beneficial but only 18.7% had utilised it. This is in contrast to most studies in which the majority of participants saw no need for

screening, and therefore it affected the screening rate negatively (Hoque et al., 2008: 113-115; Bessle et al., 2007: 397-404).

Furthermore, It is believed in the findings from this study that participants gave positive answers to most of the questions asked on barriers to cervical cancer screening such as fear, unavailability of screening services, embarrassment and many others, with the exception of lack of spousal consent, painful procedure and expensive procedure. This is similar to many studies which reported more than two of the mentioned barriers as the reason why participants did not want to be screened (Agurto et al., 2006: 81-86 ; Adanu et al., 2010: 59-63; Oshima & Maezawa, 2013: 4313-4318; Bessler et al., 2007: 396-404; Abotchie & Shokar, 2009: 412-416; Ebu et al., 2015: 31-39).

The majority of participants (88.1%) had a positive perception on cervical cervical cancer screening. Despite this positive perception regarding cervical cervical screening, the rate of cervical cancer screening utilisation was found to be very low.

#### **5.2.4 Objective 4: To determine cervical cancer screening utilisation amongst women**

The majority of participants (81.3%) attested to not having had a cervical cancer screening test in their lives. The study showed that only 18.7% of the sampled participants had participated in a cancer screening exercise before. This finding is similar to the few studies that have been conducted in the country. Adanu et al. (2010: 59-63) reported that more than 50% of women in developing countries have never had a single cervical screening done. Furthermore, another study reported only 2.1% of women having being screened before (Adanu et al., 2010: 59-63). Also, a study done in the coastal part of Ghana reported only 0.8% of study participants having been screened for cervical cancer before (Ebu et al., 2015: 31-39). This study seems to have a higher screening rate than these reported studies in Ghana even though the rate is still low.

Again, the results are also similar to the findings in other countries as reported in literature (Utoo et al., 2013: 2-3; Ferlay et al., 2010: 2893-2917; Moodley, 2009: 12; Mosavel et al., 2009: 114-119; Louie et al., 2009: 1287-1302; Hoque et al., 2008: 113-115; Ezem, 2007: 94-96; Udigwe, 2006: 40-43).

The study showed that, not only do women refused to undergo cervical cancer screening, the few women who do, only conducted the test once and thereafter neglected to go for further testing. Adanu et al. (2010: 59-63) recounted the fruitlessness of continuing testing processes and how one test in a long while was not enough to protect a woman against the silent dangers of cervical cancer.

#### **5.2.5 Objective 5: To determine the relationships between socio-demographic factors and level of knowledge, perceptions and utilisation of cervical cancer screening.**

Using Pearson's chi-square test, the relationships between the variables were analysed at 95% confidence level. The age of the participants was found to be significantly related to their knowledge level of cervical cancer and cervical cancer screening,  $p=0.022$  with the majority (62.1%) of those having adequate knowledge being in the age range 18-30 years. This result is similar to the result of a study conducted in United States, which reported that younger women were more likely to be screened than older women were (Lyden et al., 2005: 677).

The study found an association between age and cervical cancer screening utilisation. However, this relationship was found to be statistically insignificant,  $p=0.09$ . The study found a significant relationship between marital status and knowledge level,  $p<0.001$  and also marital status and cervical cancer screening utilisation,  $p=0.040$ . It was reported that the majority of single women tended to have adequate knowledge as opposed to women who were married. Also the majority of women who had been screened before, were married (53.6%). This assertion was supported by a study which reported 85.9% of those screened being married (Mutuma et al., 2016: 94-98).

Education had a significant positive effect on the knowledge levels. Women who had attained a tertiary level education had adequate knowledge (32.5%); 90% of women who had attained a tertiary qualification had adequate knowledge on both cervical cancer and cervical cancer screening. This is supported by a study done in Nigeria which reported women with a higher level of education tended to be well informed on cervical cancer and cervical cancer screening (Utoo et al., 2013: 2-3).

The perceptions of the women were found to be related to the level of education of participants. The majority of women (88.1%) indicating a positive perception, had attained a tertiary level of education (28.9%). Even 86.2% of the 325 who had a positive perception had attained some level of education, from primary to tertiary level, with 12.9% who had never attained any level of education. However, this relationship was found not to be statistically significant,  $p=0.53$ .

Educational level was found to be significantly related to the utilisation of cervical cancer screening with  $p=0.003$ . The highest number of women who had been screened before were those with a tertiary level of education (40.6%). This finding is similar to the study which found that 48% of those who had tertiary education had been screened before (Mutuma et al., 2016: 94-99). Also, a higher level of education was reported in studies to have a positive influence on cervical cancer screening utilisation (Lyimo & Beran, 2012: 12-22; Adanu et al., 2010: 59-63).

The next association was that of work status and knowledge level, perception level and cervical cancer screening utilisation. Only cervical cancer screening utilisation was found to be significantly related to work status with a  $p$  value of 0.006. These findings were in agreement with those of a study conducted in Kenya, which reported that the work status of participants significantly influenced the utilisation of cervical cancer screening (Mutuma et al., 2016: 94-99). Knowledge and perception level were found to be insignificant in relation to work status with  $p$  values of 0.82 and 0.81 respectively.

The number of child participants had, significantly influenced participants' knowledge, participants' perception level and utilisation of cervical cancer screening with  $p$  values of  $<0.001$  respectively.

Age significantly influenced the knowledge level of participants on cervical cancer and cervical cancer screening. Most of the participants were young, single and had some form of education. The majority were employed and had only one child.

### **5.3 Limitations of the study**

The following limitations were encountered. Financial constraints due to the large sample size made data collection very difficult. This was because the researcher

could have used a larger sample size than what was used. Also there was limited access to internet in the hospitals, as well as other areas, which made access to additional information very difficult and delayed discussions with supervisor and the statistician from Stellenbosch university who assisted in data analysis. All discussions were done on Skype, WhatsApp and e-mail. The researcher also needed ongoing internet access for searching of information on cervical cancer and cervical screening. Frequent power cuts due to load shedding made organisation of work very tedious, as the work schedule had to be organised around power outages.

#### **5.4 Summary**

Most of the participants were young, single and had some form of education. The majority of them were employed and had only one child. Participants had adequate knowledge on both cervical cancer and cervical cancer screening. Also their perception level on cervical cancer screening was high. However, there was low utilisation of cervical cancer screening. Socio-demographic characteristics such as age, marital status, education level and parity of participants were found to be significantly related to the knowledge level of participants. Educational level and parity of participants were also found to be significantly related to perception levels. Lastly, marital status, work status and parity of participants were also found to be significantly related to cervical cancer screening.

#### **5.5 Recommendations**

Based on the findings of the study the following recommendations are made.

##### **5.5.1 Conduct further studies in other districts**

The study indicated that women attending reproductive health services in the Kumasi metropolis has some sort of education and therefore had adequate knowledge on cervical cancer and cervical cancer screening. Kumasi metropolis is a large cosmopolitan city where levels of education are relatively higher than in rural districts and smaller towns. Therefore, it is not likely to have similar knowledge level and education amongst women in the rural and small towns of the country. The study therefore recommends further studies in other districts, rural and small towns in the country to be able to gauge awareness levels nationally and determine measures to help improve national awareness and advocacy for the cervical cancer screening.

### **5.5.2 Increase Public Education**

The study indicated a high sense of awareness of cervical cancer and positive perceptions on cervical cancer screening amongst women attending health institutions in the Kumasi metropolis. Some studies in other districts in Ghana however, reported low levels of knowledge and awareness amongst women. A high level of public education in Kumasi can however not be effectively generalised to include rural and remote districts and other metropolitan areas where education in general is not particularly high. The study therefore recommends that the management of the health ministry, hospitals, NGOs and other stakeholders improve public education and awareness programmes to raise awareness of cervical cancer screening amongst women nationally.

### **5.5.3 Develop Programs to Target Vulnerable Group**

The study indicated that women attending health services in the Kumasi metropolis were mostly single in terms of relationship status, young in terms of age, had some level of education and were mostly employed. Furthermore, the study showed that significantly lower numbers of women that attended health services in the Kumasi metropolis were married, older, unemployed and uneducated. These differences in awareness and participation in cervical cancer screening amongst different categories of women do not augur well for holistic improvement in halting the increase in the incidence of cervical cancer, let alone eradicate it. The study therefore recommends that targeted measures should be taken to improve awareness and participation of all categories of women with regards cervical cancer screening.

### **5.5.4 Organisation of regular National Cervical Cancer Day**

The Ministry of health in partnership with the directors for the various hospitals should sponsor the organisation of a National Cervical Cancer Day in all the districts in the country. This should focus on creating more awareness of the role of cervical cancer screening services in the reduction of cervical cancer, as well as the psychological and socio-economic effects of having a family members with cervical cancer. It should also motivate women to undergo screening for cervical cancer.

### **5.5.5 Increase cervical cancer screening centres**

Cervical cancer screening centres should be extended to all district hospitals and the health centres by the Ministry of health. This also means that human, financial and material resources should be made readily available to ensure the sustainability of these centres.

### **5.6 Future research**

The following areas are proposed for future research.

- Determining knowledge of both men and women, of cervical cancer, in the remote areas of Ghana
- Exploring men's views on cervical cancer screening

### **5.7 Dissemination**

The researcher intends to publish the study with the permission of the supervisor and the university so that women can access the findings in relation to the factors affecting the utilisation of cervical cancer screening services.

### **5.8 Conclusion**

In all, even with adequate knowledge of cervical cancer and a positive perception of cervical cancer screening, utilisation of cervical cancer screening services is significantly low among women in the Kumasi metropolis of Ghana. Fear of the screening procedure being painful, as well as the screening service being too expensive may be part of the reason for the low utilisation of cervical screening. The study aim and the related objectives were achieved.

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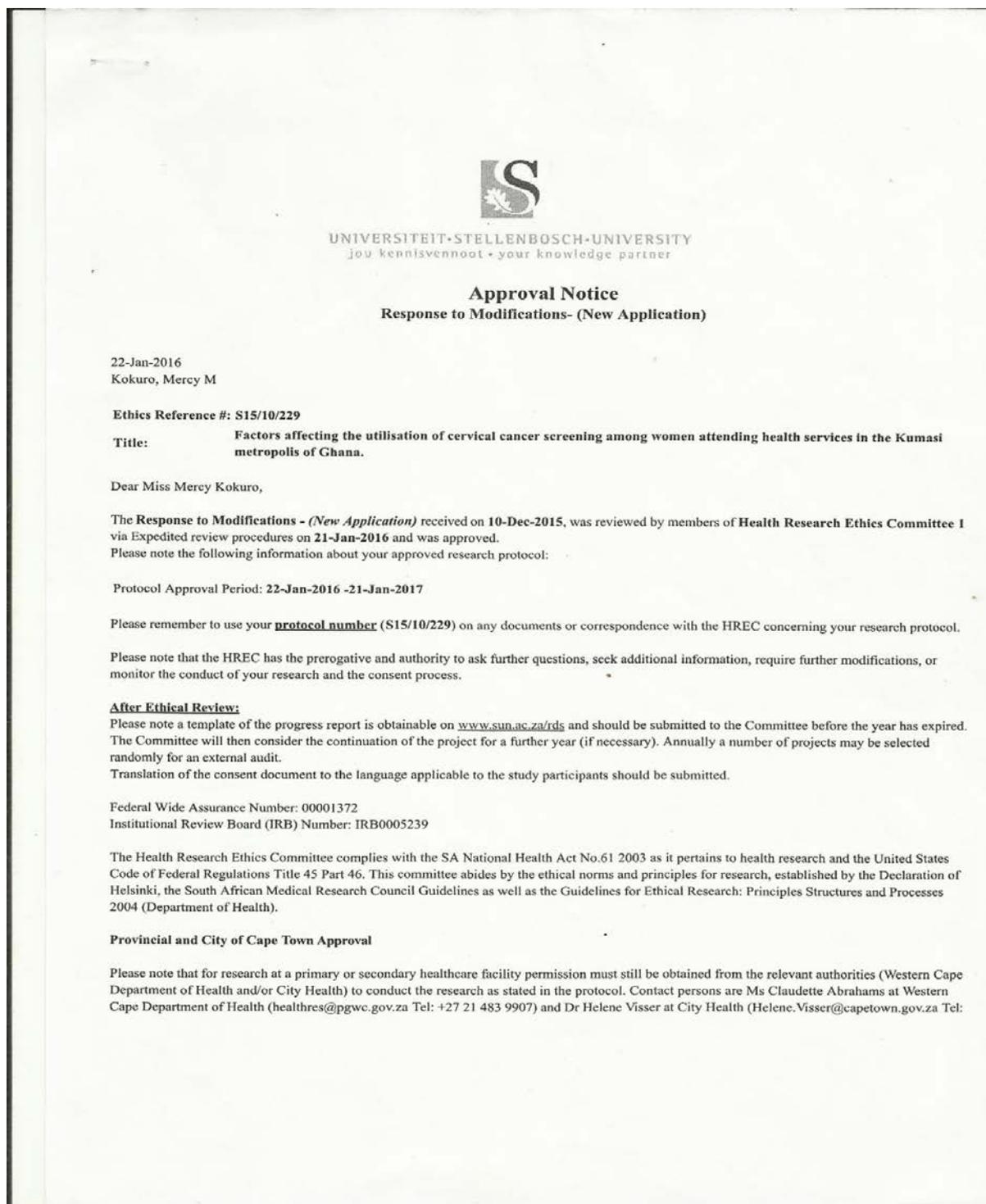
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## APPENDICES

### APPENDIX 1: ETHICAL APPROVAL FROM STELLENBOSCH UNIVERSITY



+27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.

For standard HREC forms and documents please visit: [www.sun.ac.za/rds](http://www.sun.ac.za/rds)

If you have any questions or need further assistance, please contact the HREC office at 0219389657.

**Included Documents:**

Protocol Synopsis

CV M Kokuro

Declaration E Smuts

Application form

20151210 MOD Protocol

Application form\_signature page

Protocol

Consent form (English)

Checklist

20151210 MOD Cover letter

Consent form (Ghanaian Language)

Questionnaire (Ghanaian Language)

CV E Smuts

Declaration M Kokuro

20151210 MOD Consent form

Sincerely,

Franklin Weber

HREC Coordinator

Health Research Ethics Committee 1

## Investigator Responsibilities

### Protection of Human Research Participants

Some of the responsibilities investigators have when conducting research involving human participants are listed below:

1. Conducting the Research. You are responsible for making sure that the research is conducted according to the HREC approved research protocol. You are also responsible for the actions of all your co-investigators and research staff involved with this research.
2. Participant Enrolment. You may not recruit or enrol participants prior to the HREC approval date or after the expiration date of HREC approval. All recruitment materials for any form of media must be approved by the HREC prior to their use. If you need to recruit more participants than was noted in your HREC approval letter, you must submit an amendment requesting an increase in the number of participants.
3. Informed Consent. You are responsible for obtaining and documenting effective informed consent using **only** the HREC-approved consent documents, and for ensuring that no human participants are involved in research prior to obtaining their informed consent. Please give all participants copies of the signed informed consent documents. Keep the originals in your secured research files for at least fifteen (15) years.
4. Continuing Review. The HREC must review and approve all HREC-approved research protocols at intervals appropriate to the degree of risk but not less than once per year. There is **no grace period**. Prior to the date on which the HREC approval of the research expires, **it is your responsibility to submit the continuing review report in a timely fashion to ensure a lapse in HREC approval does not occur**. If HREC approval of your research lapses, you must stop new participant enrolment, and contact the HREC office immediately.
5. Amendments and Changes. If you wish to amend or change any aspect of your research (such as research design, interventions or procedures, number of participants, participant population, informed consent document, instruments, surveys or recruiting material), you must submit the amendment to the HREC for review using the current Amendment Form. You **may not initiate** any amendments or changes to your research without first obtaining written HREC review and approval. The **only exception** is when it is necessary to eliminate apparent immediate hazards to participants and the HREC should be immediately informed of this necessity.
6. Adverse or Unanticipated Events. Any serious adverse events, participant complaints, and all unanticipated problems that involve risks to participants or others, as well as any research-related injuries, occurring at this institution or at other performance sites must be reported to the HREC within **five (5) days** of discovery of the incident. You must also report any instances of serious or continuing problems, or non-compliance with the HRECs requirements for protecting human research participants. The only exception to this policy is that the death of a research participant must be reported in accordance with the Stellenbosch University Health Research Ethics Committee Standard Operating Procedures [www.sun025.sun.ac.za/portal/page/portal/Health\\_Sciences/English/Centres%20and%20Institutions/Research\\_Development\\_Support/Ethics/Application\\_package](http://www.sun025.sun.ac.za/portal/page/portal/Health_Sciences/English/Centres%20and%20Institutions/Research_Development_Support/Ethics/Application_package) All reportable events should be submitted to the HREC using the Serious Adverse Event Report Form.
7. Research Record Keeping. You must keep the following research-related records, at a minimum, in a secure location for a minimum of fifteen years: the HREC approved research protocol and all amendments; all informed consent documents; recruiting materials; continuing review reports; adverse or unanticipated events; and all correspondence from the HREC
8. Reports to the MCC and Sponsor. When you submit the required annual report to the MCC or you submit required reports to your sponsor, you must provide a copy of that report to the HREC. You may submit the report at the time of continuing HREC review.
9. Provision of Emergency Medical Care. When a physician provides emergency medical care to a participant without prior HREC review and approval, to the extent permitted by law, such activities will not be recognised as research nor will the data obtained by any such activities should it be used in support of research.
10. Final reports. When you have completed (no further participant enrolment, interactions, interventions or data analysis) or stopped work on your research, you must submit a Final Report to the HREC.
11. On-Site Evaluations, MCC Inspections, or Audits. If you are notified that your research will be reviewed or audited by the MCC, the sponsor, any other external agency or any internal group, you must inform the HREC immediately of the impending audit/evaluation.

## APPENDIX 2: PERMISSION OBTAINED FROM INSTITUTIONS / DEPARTMENT OF HEALTH

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

My Ref. No:  
Your Ref. No:

Tel. No. 03220 - 24106 / 27639  
Fax. No. 03220 - 24106  
Mob. 0277-899-666  
E-mail: [ksighs@yahoo.com](mailto:ksighs@yahoo.com)  
[yawudzi@yahoo.com](mailto:yawudzi@yahoo.com)



METRO HEALTH DIRECTORATE,  
GHANA HEALTH SERVICE,  
P. O. BOX KS 12588,  
KUMASI.

2<sup>nd</sup> February, 2016

**THE MEDICAL DIRECTORS  
KUMASI SOUTH HOSPITAL  
KUMASI**

**THE MEDICAL SUPERINTENDENTS  
MANHYIA, TAFO AND SUNTRESO HOSPITALS  
KUMASI**

### **INTRODUCTORY LETTER**

I write to introduce to you, Miss Mercy Kokuro, the Vice Principal of Nursing Training College and a student pursuing Master of Nursing Program at Stellenbosch University in the Republic of South Africa.

Permission has been granted the above-mentioned individual to conduct a research in **"Factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi Metropolis in Ghana"** in your facilities.

The Management of the Metro Health Directorate will be grateful if you could give her the necessary assistance.

Thank you.

**DR. (MRS) ALBERTA A. BIRITWUM NYARKO  
METRO DIRECTOR OF HEALTH SERVICES  
KUMASI**

### **APPENDIX 3: PARTICIPANT INFORMATION LEAFLET AND DECLARATION OF CONSENT BY PARTICIPANT**

**TITLE OF THE RESEARCH PROJECT:** Factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana

**REFERENCE NUMBER:** S15/10/229

**PRINCIPAL INVESTIGATOR:** Mercy Kokuro (Senior Nursing Officer)

**ADDRESS:** P.O. Box KS 15505, Kumasi, Ghana-West Africa

**CONTACT NUMBER:** +233 244660215

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask me any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is entirely voluntary and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part initially.

This study has been approved by the **Health Research Ethics Committee at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

#### **WHAT IS THIS RESEARCH STUDY ALL ABOUT?**

- The study will be conducted in two government hospitals in the Kumasi metropolis. Three hundred and sixty nine (369) participants will be recruited in the two hospitals.
- This study aims at finding the factors hindering women's decision to get screened for cervical cancer. Information obtained will be used to improve cancer screening services and health promotion in the future.

- The investigator will administer a questionnaire containing 38 close-ended and open-ended questions to you. You are supposed to answer the closed-ended (questions with options provided) by ticking the right option in the box that is provided for each question. For the questions options are not provided, you are to write your own answer in the box provided. If you are unable to read and write, the investigator will read and explain the instructions and the questions in Twi language to your understanding and assist you to fill the questionnaire. An envelope will be provided for you to put the questionnaire inside and seal it when you finish answering the questions. You are not to write your name or address on the questionnaire and all answered questionnaires will be put in a sealed envelope and put under lock and key.
- Two out of the four hospitals within Kumasi will be selected by placing the name of each hospital in a sealed opaque envelope and picking any two. Afterwards, participants will be selected using systematic sampling from the two selected hospitals. Systematic sampling means a sample interval will be calculated and will be used to select the participants in an orderly manner with equal interval.
- No medication will be given in this study as it is a non-interventional study.

#### **WHY HAVE YOU BEEN INVITED TO PARTICIPATE?**

- You are being invited to participate in this study by sharing your knowledge, perception and experiences on cervical cancer and cervical cancer screening.

#### **WHAT WILL YOUR RESPONSIBILITIES BE?**

- You are to answer all the questions in a sincere and honest manner. Answers given will not be judged however the researcher will correct misconceptions.

#### **WILL YOU BENEFIT FROM TAKING PART IN THIS RESEARCH?**

- There will be no direct personal benefit linked to participation in this study. However, this study will assist the researchers, policy makers and health professionals to identify the factors that influence cervical cancer screening so as aid in future planning, policy making and care provision for the benefit of society at large.

### **ARE THERE ANY RISKS INVOLVED IN YOUR TAKING PART IN THIS RESEARCH?**

- There will be no anticipated risk associated with this study.

### **IF YOU DO NOT AGREE TO TAKE PART, WHAT ALTERNATIVES DO YOU HAVE?**

- Your participation is entirely voluntary and you are free to decline to participate. Also, you can withdraw from study whenever you wish to do so and no penalty and punishment will be attached to your withdrawal.

### **WHO WILL HAVE ACCESS TO YOUR MEDICAL RECORDS?**

- The information collected will be treated as confidential and protected. The information is used in a publication or thesis, however the identity of the participant will remain anonymous. Data collected will be made accessible to only the researcher, the statistician and supervisor. The researcher will keep all questionnaires under lock and key for not less than 5 years after data analysis.

### **WHAT WILL HAPPEN IN THE UNLIKELY EVENT OF SOME FORM INJURY OCCURRING AS A DIRECT RESULT OF YOUR TAKING PART IN THIS RESEARCH STUDY?**

- No unlikely events of some form of injuries are anticipated since this is a non-interventional study. Therefore issues on insurance cover are not addressed.

### **Will you be paid to take part in this study and are there any costs involved?**

- No, you will not be paid to take part in the study but will be given water and fruit juice as refreshment. There will also be no costs involved for you, if you do take part in the study.

### **Is there anything else that you should know or do?**

- You can contact the Health Research Ethics Committee at +2721-938 9207 if you have any concerns or complaints that have not been adequately addressed by your study doctor.
- You will receive a copy of this information and consent form for your own records.

**Declaration by participant**

By signing below, I ..... agree to take part in a research study entitled (Factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana).

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (place) ..... on (date) .....2016.

.....  
**Signature/ Thumbprint of participant**

.....  
**Signature of witness/Thumbprint**

**Declaration by investigator**

I (name) ..... declare that:

- I explained the information in this document to .....
- I encouraged her to ask questions and took adequate time to answer them.
- I am satisfied that she adequately understands all aspects of the research, as discussed above
- I did not use an interpreter.

Signed at (place) .....on (date) ..... 2016.

.....  
**Signature of investigator**

.....  
**Signature of witness**

**APPENDIX 4: QUESTIONNAIRE IN ENGLISH**

**TITLE:** FACTORS AFFECTING THE UTILISATION OF CERVICAL CANCER SCREENING AMONG WOMEN IN THE KUMASI METROPOLIS

**INSTRUCTIONS:** Please read the questions below carefully and answer by writing, or ticking  in the box that corresponds to your peculiar circumstances or preferred option as appropriate.

**SECTION A: SOCIO-DEMOGRAPHICS**

1. What is your age?

2. What is your marital status?

Married

Single

Divorced/Separated

Cohabiting (living with partner)

3. What is the highest educational level you have attained?

None

Primary school

Junior High School

Senior High School

Tertiary

4. What is your work status?

Employed

Unemployed

Student

Retired

5. How many children do you have?

1  5

2  6

3  7

4  8 and above

**SECTION B: KNOWLEDGE OF CERVICAL CANCER**

From questions 6-17, indicate whether the following statements are true or false by ticking yes or no.

6. Cervical cancer is a cancerous tumour that affects the cervix

Yes  No

7. Being sexually active (having sex) puts a woman at greater risk of cervical cancer

Yes  No

8. Human Papillomavirus infection increases cervical cancer risk

Yes  No

9. Having more than one sex partner puts a woman at higher risk of cervical cancer

Yes  No

10. Smoking puts a woman at higher risk of cervical cancer

Yes  No

11. Family history of cervical cancer puts a woman at higher risk of cervical cancer

Yes  No

12. HIV/AIDS puts a woman at higher risk of cervical cancer

Yes  No

13. Use of oral contraceptives put a woman at higher risks of cervical cancer

Yes  No

14. Weakened immune system makes you stand at risk of having cervical cancer

Yes  No

15. Multiple deliveries put a woman at risk of having cervical cancer?

Yes  No

16. You can only get cervical cancer when you are sexually active?

Yes  No

17. Having sex partner who has other partners put you at risk of cervical cancer

Yes  No

**SECTION C:**

From questions 18-36, indicate with a tick the extent of your agreement from strongly disagree to strongly agree on the following statements.

	<b>Women's perception on cervical cancer and screening</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Not sure</b>	<b>Agree</b>	<b>Strongly Agree</b>
18	Cervical screening can detect cervical changes before they become cancerous					
19	If cervical changes are found early, they are easily curable					
20	Cervical screening will make a woman so knows if she is healthy					
21	Getting cervical test would only make me worry					
22	If I am destined to get cancer, I will					
23	The purpose of screening is to diagnose if I have cancer or not					
24	Screening is not necessary since there is no cure for cancer					
25	The cervical screening is painful					
26	It is too expensive to have cervical cancer screening					

27	It is embarrassing to have cervical cancer screening					
28	If a woman is a virgin, pap test will take away her virginity					
29	I don't know where I could go if I wanted cervical cancer screening					
30	My partner would not want me to have cervical cancer screening					
31	If a young woman goes for pap test everyone will think she is having sex					
32	Cervical cancer only happens to women over 50 years					
33	Young women are at risk for cervical cancer					
34	I am at risk for cervical cancer					
35	Having cervical cancer would make a woman's life very difficult					
36	There are effective treatments for cervical cancer					

**SECTION D: CERVICAL CANCER SCREENING UTILISATION**

37. Have you had cervical cancer screening done before?

Yes  No

If answer to 37 above is 'yes' answer 38

38. How many times have you undergone screening

..... End of form .....

Thank you.

**APPENDIX 5: QUESTIONNAIRE IN GHANAIAN LANGUAGE (TWI)****NSĚMMISA KRATAA**

**TI AĚM:** NNEĚMA A ĚMMA MMAA MFA WĚN HO NHYE AWOĚĚ ANO KOKORAM NHWEHWĚMU MU WĚ AYAREHWĚ DWUMADIE MU WĚ KUMASE MPĚTAMU

**INSTRUCTIONS:** Mepa wo kyew, kenkan nsemmsisa yi a edidi soo yi yie na nam adaka a ye de ama nsemmsisa biara no twa mu so bua nsemmsisa a ye ama wo muaye ahodoɔ no. Twere wo ankasa mmuaee wo adaka a ye de ama nsemmsisa a yen amfa muaee ahodoɔ ama no no.

**ŐFA A: ASETENAMU NHWEHWĚMU PONO**

1. W'adi mfie sen?

2. W'awadee ho nsem te sen/Gyinabere tei sen?

Aware  Nwaree  Magyae/Ntam Ate

Me ne mempena na ete

3. Wo koo sukuu duruu sen?

Mankɔ bi  Mfitiasee (Primary)  Adantamu (JHS)  
 Ntoasoɔ (SHS)  Sukuupɔn

4. Adwuma mu nsem?

Ye adwuma  Nye adwuma   
 Sukuuni/Osuani  Wo ahomegyee mu

5. Wo wo mma sen/Wo mma ye sen?

Baako  Nnum   
 Mmienu  Nsia   
 Mmiensa  Nson   
 Nnan  Nnwɔtwe ne akyire



17. Sɛ wo hokafoɔ wɔ mmaa bebree ka wo ho a wobetumi anya awodeɛ ano kokoram pa ara?

Aane

Daabi

**ɔFA C:** ɛfiri nsemmissa 18-36, kyere sɛ neɛ wo ne me ye adwene ɛfa

	<b>Mmaa adwene a wɔwɔ fa awodeɛ ano kokoram nhwehwɛmu ho</b>	<b>Ne wo Nnye Adwene</b>	<b>Ne wo nnye adwene koraa</b>	<b>Me nnim</b>	<b>Me ne wo ye adwene</b>	<b>Me ne wo ye adwene pa ara</b>
18	Awodeɛ ano nhwehwɛmu betumi ahunu nsakraeɛ ansa na adane kokoram					
19	Sɛ wɔhunu nsakraeɛ wɔ awodeɛ no ano ntɛm a wɔtumi sa yadeɛ no koraa					
20	ɛye sɛ ɔbaa beko ako hwehwe n'awodeɛ ano na wahunu sɛ ɔte apo a					
21	Awodeɛ ano hwehwɛmu no bebɔ me hu					
22	sɛ ɛwɔ sɛ menya awodeɛ ano kokoram no a menya					
23	Nhwehwɛmu no botaeɛ ne sɛ wɔbehunu sɛ me wɔ kokoram anaa me nni bi					
24	Nhwehwɛmu no ho nhia ɛfiri sɛ kokoram nni aduro/wɔntumi nsa					
25	Awodeɛ ano nhwehwɛmu no ye ya					

26	Awodee ano kokoram nhwehwemu no boɔ ye den dodo					
27	Awodee ano kokoram nhwehwemu mo ye ateetee					
28	Se ɔbaa no ye ɔbaabun ampampa nhwehwemu a woye no beyi ne baabunu no					
29	Mennim baabi a meko, se mepɛ se meye awodee ano kokoram nhwehwemu a					
30	Me hokani mmpɛ se meye awodee ano kokoram nhwehwemu no					
31	Se abaayewa bi ko ye awodee ano kokoram nhwehwemu no obiara be dwene se ɔne barima da/ ɔfa barima					
32	Awodee ano kokoram ye mmaa a wanya mfie aduonum ne akyire nko ara					
33	Mmaayewa betumi anya awodee ano kokoram pa ara					
34	Metumi anya awodee ano kokoram					
35	Se ɔbaa nya awodee ano kokoram a ema n`asetena ye den					
36	Ayaresa mapa wo ho ma awodee ano kokoram					

**OFA D: AWODEE ANO KOKORAM NHWEHWEMU AKWANYA**

37. waye awodee ano kokoram no be pen ?

Aane Daadi

Se wo mmuaee a ewo soro ho (37) no ye "Aane a"

38. Mpen dodoɔ sen na waye awodee ano kokoram nhwehwemu yi bi?

..... Dwumadie no awiee .....

Meda wo ase.

## APPENDIX 6: DECLARATION BY LANGUAGE EDITORS



TAALSENTRUM  
LANGUAGE CENTRE  
IZIKO LEELWIMI



UNIVERSITEIT  
STELLENBOSCH  
UNIVERSITY

22 August 2016

Ms M Kokuro  
P.O.Box  
KS 15505  
Kumasi  
Ghana

Dear Ms Kokuro

The Stellenbosch University Language Centre hereby confirms that we have done a second-eye (light) edit of your English abstract and translated it into Afrikaans.

Please contact me if you have any questions.

Regards

*pp Shales*

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Marguerite van der Waal  
Head: Language Services  
Stellenbosch University Language Centre  
Tel: 021 808 3096  
Fax: 021 808 2863  
E-mail: [mvdwaal@sun.ac.za](mailto:mvdwaal@sun.ac.za)

Declaration by Susan Erasmus

10 November 2016

This is to certify that I, Susan Erasmus (ID 6303140191083) of 55 Stockley Road, Kenwyn, Cape Town, edited the entire thesis of Mercy Kokuro titled as follows: FACTORS AFFECTING THE UTILISATION OF CERVICAL CANCER SCREENING AMONG WOMEN ATTENDING HEALTH SERVICES IN THE KUMASI METROPOLIS OF GHANA

I am a professional subeditor, writer and translator.

I can be contacted on 082 924 6425 if any further information is required, such as references and a CV.

Signed:



## APPENDIX 7: DECLARATION BY TECHNICAL FORMATTER



To whom it may concern

This letter serves as confirmation that I, Lize Vorster, performed technical formatting of Mercy Kokuro's thesis entitled: *Factors affecting the utilization of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana*. Technical formatting entails complying with the SU technical requirements for a thesis and assignment.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Lize Vorster', is written over a simple line drawing of a pen nib.

Lize Vorster  
Language Practitioner

Vygie street 9, Welgevonden Estate, Stellenbosch, 7600 \* e-mail: [lizevorster@gmail.com](mailto:lizevorster@gmail.com) \* cell: 082 856 8221