FACTORS INFLUENCING UTILISATION OF CERVICAL CANCER SCREENING SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN GOMBE LOCAL GOVERNMENT AREA, GOMBE STATE, NIGERIA

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CERTIFICATION

This is to certify that this study was carried out by Hauwa Inuwa in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Nigeria, under my supervision.

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DEDICATION

I dedicate this work to the almighty God for His guidance, protection, endless provisions and love upon my life and also to my parent Rt. C.P Inuwa Garba Gasi and Mrs. Victoria Inuwa Garba for their love, care, prayer and support, may the almighty God bless and keep you.

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ABSTRACT

Cervical cancer is the second most common female cancer in women aged 15 to 44 years in Nigeria. Screening is one of the most cost-effective control strategies for the disease but its low utilisation has remained an issue of public health concern. Therefore, this study determined factors influencing the utilisation of cervical cancer screening services among women of reproductive age in Gombe Local Government Area, Gombe State, Nigeria.

This was a community-based, cross-sectional study design. Multi-stage sampling technique was used to select 230 women between the ages of 15 and 49 years in Gombe Local Government Area, Gombe state. A semi-structured interviewer-administered questionnaire was used to collect information from the respondents. Knowledge on cervical cancer was measured using a 45-point scale; scores between ≤15, >15≤30 and >30≤45 were categorised as poor, fair and good knowledge respectively. Respondents' attitude was measured on a 9-point scale; scores between ≤4 and >5≤9 were categorised as negative and positive attitude respectively. Descriptive statistics, Fishers' exact and Chi-square tests were used to analyze data and the level of statistical significance was set at $\alpha \leq 0.05$.

The respondents' age ranged from 15-49 years with a mean age of 29.64+8.06 years. More than half 121 (52.2%) of the respondents were Muslims, 130(56.5%) were married and 83 (70.3%) of those married were in a monogamous relationship. Few (4.8%) of the respondents had good knowledge of cervical cancer. Most 199 (86.5%) knew that cervical cancer can lead to death, less than half, 105 (45.7%) knew that HPV infection has been identified as the major cause of cervical cancer. A little more than half (52.2%) had a positive attitude towards cervical cancer screening, while only 9.5% of the respondents aged 25-49 years had undergone cervical cancer screening using Pap smear test. More than half, 128 (55.7%) of the respondents did not have health care facilities where cervical cancer screening is done in their locality. Factors influencing utilisation of cervical screening services was the fact that screening for cervical cancer was not recommended by their doctors or a nurse 95 (41.3%), 80(34.8%) said they were healthy so it is not necessary, almost a quarter of the respondents 56 (24.3%) indicated that fear of the procedure was the reason why they did not go for cervical cancer screening. There was an association between respondents' level of education (p=0.048), level of income (p=0.037), religion (p=0.035), attitude towards

cervical cancer screening (p=0.049), availability of health facilities for cervical screening (0.000) and utilisation of cervical cancer screening services.

Majority of the respondents had fair knowledge on cervical cancer, a little more than half had a positive attitude towards cervical cancer screening. The utilisation level of cervical cancer screening was low. Therefore, appropriate interventions targeting women, the households, communities and health facilities in Gombe should be planned and implemented by Gombe State health Ministries, Departments and Agencies in order to increase the utilisation of cervical cancer screening services in the state.

Word Count: 486

Key Words: Factors, Utilisation, Cervical Cancer Screening, Women of reproductive age,

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

GLOSSARY OF ABBREVIATIONS

ARC	International Agency for Research on Cancer
CDC	Centre for Disease Control
HPV	Human Papilloma Virus
ICO	Institut Catala d'Oncologia
LGA	Local Government Area
SPSS	Statistical Package for Social Science
WHO	World Health Organisation

DEFINITION OF KEY TERMS

Cancer of the cervix: This is a malignant disease that occurs when the cells of the cervix proliferate to abnormal cells and can affect deeper cell layers.

Screening: This is the act of being checked by a medical practitioner to rule out the development of a disease.

Utilisation: The act of using a service.

Women of Reproductive Age: This refers to all women that are aged between 15 and 49 years.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Cervical cancer is one of the gynecological cancers of public health concern affecting the cervix. According to World Health Organisation (2018), cervical cancer has a global incidence of 6.6 % among the total number of new cases diagnosed in 2018; behind breast, colorectal, and lung cancers respectively (Bray, Ferlay, Soerjomataram, Siegel, Torre and Jemal., 2018). Apart from being the fourth most common cancer among women globally, it is also the leading cause of morbidity and mortality, and approximately 90% of mortality are from low income countries (WHO, 2018). An estimated figure of 1 million women is currently living with it and every 2 minutes, a woman dies of it across the world (Ferlay, Soerjomataram, Ervik, Dikshit, Eser and Mathers, 2013).

The burden is high in low and middle-income countries which account for almost 90% of the global deaths from cervical cancer. In sub-Saharan Africa where resources for prevention, diagnosis, and treatment are limited or non-existent, cervical cancer is the second most prevalent type of cancer among women after breast cancer. It accounts for 22% of all female cancers with 34 out of every 100,000 women being diagnosed with it while 23 out of every 100,000 women die from it as a result of late diagnosis, invariably posing a huge health, economic and social burden on these regions (Ferlay, Soerjomataram and Ervik *et al.,* 2013).

In Nigeria, cervical cancer is the second most prevalent cancer among women of reproductive age, responsible for 14,089 annual deaths. Factors associated with high mortality include late detection due to lack of information about cervical cancer and lack of access to prevention services. The morbidity and mortality can be lowered with early diagnosis and treatment whereas; the late stage is associated with a low survival rate after surgery and radiotherapy (WHO, 2017).

Cervical Cancer is categorised into stages ranging from 0 to IV, the lower the number, the less the spread of cancer. The first stage is stage 0 (zero) which is the precancerous stage, Stage I (one) is the earliest stage and is the easiest to cure while stage IV (four) is the most advanced stage indicating that the cancer has spread to other parts of the body. The cure rate for stage I cancer is 85% to 90%, while the cure rate for stage IV cancer is only 5% to 10%. Invasive cancer of the cervix is treated with surgery, or radiation therapy and chemotherapy (Ndikom and Ofi, 2012).

Cervical cancer occurs when the smaller unit of life (cells) grow abnormally and invade other organs or tissues of the body. The cervix is the junction connecting the endo-cervix (the part of the cervix inside the cervical canal) and ecto-cervix (the part of the cervix outside the cervical canal) or the vagina and the upper part of the uterus. Cervical cancer is one of the easiest to prevent by screening, follow-up and understanding its risk factors which are majorly infection with the Human Papilloma Virus, early sexual intercourse, multiple sexual partners, oral contraceptives use (birth control pills) and cigarette use (Panatto, Amicizia, Truchi, Casabona, Luigi Lai *et al*., 2012).

A growing body of evidence (Balogun, Odukoya, Oyediran and Ujomu, 2012; WHO, 2013) has demonstrated that women can effectively be screened and clinically managed for cervical cancer using non-cytological modalities. Several screening tests exist and these include: conventional cytology, liquid-based cytology, Human Papilloma Virus (HPV) Deoxyribonucleic Acid (DNA) testing and the Visual Inspection with Acetate (VIA) (WHO, 2014; CDC, 2014).Two of the most common screening tests which can help diagnose and prevent cervical cancer are—the Pap test (or Pap smear test) which looks for pre-cancers, cell changes on the cervix that might become cervical cancer if they are not treated appropriately and the Visual Inspection with Acetate. The Pap test is recommended for all women between the ages of 25 - 64 years old and can be done in a doctor's office or clinic (American Cancer Society, 2020).

While access to effective and affordable screening and treatment services is of central importance in the prevention of cervical cancer, most African countries have recorded the lowest utilisation rates of cervical cancer screening services. The barriers to cervical cancer screening in Africa vary between and within countries. Sub-Saharan Africa hosts 12% of the world's population but accounts for 20% (57,000) of estimated cervical cancer-related deaths (Center for Infection Disease Research in Zambia, 2014). Sub-Saharan Africa has some of the highest cervical cancer-related mortality rates in the world (Campos Sharma, Clark and Lee *et al*., 2012). Like most African countries, Nigeria experiences the same barriers other countries are experiencing (Balogun, Odukoya and Oyediran *et al., 2012*; Bruni and Castellsague, 2013). The problem associated with poor screening for cervical cancer include lack of knowledge, lack of uniform accessibility and affordability and these are making it difficult for majority of women of reproductive age especially those in the rural areas to utilize cervical cancer screening services. Women's knowledge of cervical cancer as a disease and cervical cancer screening has been found to influence the decision

to be screened. Previous reports showed that the greatest risk for cervical cancer was the women's lack of knowledge on prevention methods and the ability to recognize the signs of the disease (Campos, Sharma, Clark and Lee *et al*., 2017; Maree, Lu and Wright 2011). Lack of awareness and deep-seated stigma associated with the disease also poses significant barriers to accessing this service (WHO, 2013). Unfortunately, due to lack of knowledge and several other barriers, only 5% of women in developing countries undergo screening for cervical cancer compared to over 40% in developed countries. Over 70% of women undergo screening in countries that have shown marked reduction in incidence and prevalence of cervical cancer (CDC, 2013; Balogun, Odukoya and Oyediran *et al.,* 2012; Bruni and Castellsague, 2013). Thus, it can be speculated that several factors may influence a woman's ability and desire to participate in cervical cancer prevention programs, and these have an impact on a woman's decision-making process. It is therefore essential that cervical cancer prevention efforts eliminate the most critical barriers that influence women's participation, as well as identify and foster conditions that support their use of cervical cancer screening services.

1.2 Statement of the problem

The high mortality and morbidity all over the world resulting from cervical cancer can easily be prevented through early diagnosis by screening but unfortunately, about 570,000 women are diagnosed annually in Sub-Saharan Africa at the late stage and 90% of them die from this disease (WHO, 2018). About 80% of cervical cancer cases occur in developing countries and Nigeria contributes significantly to this burden. In Nigeria, about 14,089 women have cervical cancer the annual number of new cervical cancer cases is 14,943 while the annual number of deaths is 10,403 with a crude mortality rate of 10.8% (Bray, Ferlay and Soerjomataram *et al.,* 2018).

Cervical cancer is the 2nd most common female cancer in women aged 15 to 44 years in Nigeria with the highest burden of this illness occurring among women in Northern Nigeria (Bruni, Albero, Serrano, Mena, Gomez, Munoz, Bosch and De Sanjose, 2018). The overall cost of illness of cervical cancer ranges from N191,338 to N1,001,298 and treatment was estimated between 19$ and $1,443 dollars for various stages; which shows that the disease places a huge burden on individuals, the struggling healthcare, and the national economy (Akinfewa and Monsur, 2018).

The practice of cervical cancer screening in Nigeria has remained very low due to several reasons ranging from poor knowledge of cervical cancer and cervical cancer screening, poverty, lack of

resources and infrastructure and marginalisation of women limiting accessibility and availability of the services in most of the healthcare facilities. Compounding this is the lack of policy on population-based cervical cancer screening programs which invariably translates to increased mortality and morbidity (Denny, Quinn, and Sankaranarayanan, 2006, Oluwole, Mohammed, Akinyinka and Salako, 2017).

1.3 Justification

Majority of the existing literature/studies in Nigeria were hospital-based focusing on the knowledge, perception, and attitude of women towards cervical cancer (Ebughe, Ekanem, Omoronyia, Omotoso, Ago, Agan and Ugbem, 2016; Abiodun, Oluwasola, Durodola, Ajani, Abiodun and Adeomi, 2017; Dike and Ijeoma, 2017; Akinpelu, Agboola, and Umezurike, 2018). This study is a community-based study aimed at identifying the various factors influencing the utilisation of cervical cancer screening among women of reproductive age. There is a great need for more community-based study, especially on the factors influencing utilisation, experiences, challenges and way forward.

This study has both theoretical and practical significance since it is geared towards addressing a key issue that is fundamental to women's sexual and reproductive health and their health at large. Theoretically, this study has contributed to the existing body of knowledge on factors influencing the utilisation of cervical cancer screening in Nigeria. It has also contributed to the scanty literature on the factors responsible for the low rate of utilisation of cervical cancer screening among women in the Northern part of Nigeria (Jedy-Agba, 2016).

Practically, the data generated from the study will be used by future researchers to explore other ways of understanding the challenges facing women in the area of utilisation of cervical cancer screening. The knowledge obtained from this study will be used to create public awareness on the importance of early diagnosis of cervical cancer as the sole means of reducing the huge burden of cervical cancer. A study of this nature may likely generate policy debates aimed at awakening the government and its agencies on the danger of women not utilising screening services and invariably its influence on the overall health of the nation.

1.4 Research Questions

- What is the level of knowledge on cervical cancer screening services among women of reproductive age in Gombe Local Government Area, Gombe State, Nigeria?

- What is the attitude of women of reproductive age towards the utilisation of cervical cancer screening services in Gombe Local Government Area, Gombe State, Nigeria?
- What is the level of utilisation of cervical cancer screening services among women of reproductive age in Gombe Local government Area, Gombe State, Nigeria?
- What are the factors influencing the utilisation of cervical cancer screening services among women of reproductive age in Gombe Local Government Area, Gombe State, Nigeria?

1.5 Broad Objective of the study

To investigate the factors influencing utilisation of cervical cancer screening services among women of reproductive age in Gombe Local Government Area, Gombe State, Nigeria

1.6 Specific Objectives

- To assess the knowledge of cervical cancer screening services among women of reproductive age in Gombe Local Government Area, Gombe State, Nigeria
- To explore the attitude of women of reproductive age in Gombe Local Government Area, towards cervical cancer screening.
- To assess the practice of cervical cancer screening among women aged 25 years and above in Gombe Local government Area, Gombe State, Nigeria
- To assess the factors influencing utilisation of cervical cancer screening services among women of reproductive age in Gombe Local Government Area, Gombe State, Nigeria

1.7 Research Hypotheses

The following Null hypotheses were tested:

- There is no significant association between socio-demographic characteristics (level of income, level of education, age, parity, religion) and utilisation of cervical cancer screening services
- There is no significant association between the level of knowledge and cervical cancer screening practices among the women.
- There is no significant association between attitude towards cervical cancer screening and utilisation of cervical cancer screening among the women
- There is a significant Association between availability of health care facility for cervical cancer screening and utilisation of cervical cancer screening among women

CHAPTER TWO

LITERATURE REVIEW

2.1 Burden of Cervical cancer

This chapter presents information on the utilisation of cervical cancer screening services among women of reproductive age. Primary and secondary literature was used to provide a background to the research problem and identify relevant research studies conducted worldwide.

The word cancer is defined by the WHO as a "large group of diseases involving abnormal growth of cells beyond their usual boundaries, which invade other parts of the body and/or spread to other organs". It can be called other names such as malignant tumors and neoplasms (World Health Organisation, 2019). Since every part of the body is made up of cells, these cells in almost any part of the body can become cancerous. When they become cancerous, they are named after the part of the body where it starts, even though it spreads to other body parts later (CDC, 2016).

According to WHO (2019), breast cancer, colorectal cancer, lung cancer, cervical cancer, and thyroid cancer are the most common types of cancers among women globally. Cervical cancer is the fourth most commonly occurring cancer in women and the second most common among women in less developed regions (World Cancer Research Fund, 2018).

The position of cervical cancer in the global ranking of cancers coupled with its burden makes it a serious disease of global health concern. Cervical cancer is the fourth common cause of cancer morbidity and mortality among women worldwide according to the 2018 Global Cancer statistics with approximate figures of 570,000 for incidences which accounts for 6.6% of all female cancers and 311,000 (7.5%) for mortality with approximately 90% of these cervical cancer-related deaths occurring in low- and middle-income countries (Bray *et al*., 2018). On a global level, about two-thirds of new cases are reported from less developed regions. There is a large variability in the incidence and mortality of this cancer as the incidence in Sub-Saharan Africa is 34.8 per 100,000 women annually, and mortality is 22.5 per 100,000 women compare to 6.6 and 2.5 per 100,000 women, for incidence and mortality respectively, in North America (Bray *et al*., 2018).

According to Cecilia, Rosliza and Suriani (2017) in a literature review done on the global burden of cervical cancer, they discovered that developing countries carry the greatest burden with mortality varying 18-fold between the different regions of the world, and rates ranging from less

than 2/100,000 in Western Asia, Western Europe, and Australia/New Zealand to more than 27.6/100,000 in Eastern Africa.

GLOBOCAN statistics report further confirmed that a decline has been observed in cervical cancer incidence and deaths in the developed world over the past 20 years but there has not been a significant change in poor resource settings. According to Okunnu (2010), it is the second most common cancer in women worldwide and most common in African women thus the most leading cause of cancer deaths in women in sub-Saharan Africa including Nigeria with a very poor survival rate (Okunnu,2010).

Akinfenwa and Monsur (2018) presented the WHO 2014 Africa cervical cancer multi indicator incidence mortality scorecard in their study (incidence of 29/1000 and mortality of 17.5/1000) and posited that the released data was not a true measure of the social and economic burden of the disease. They further suggested that the concept of disability-adjusted life year (DALY) introduced by the Global burden of Disease study is the fair measure that can sum up the years of life lost by the affected women due to disability (YLD) and years of life lost (YLL) due to premature death. It was further suggested that the value of healthy life lost for cervical cancer and other diseases (DALY saved/₦) should be compared and used as a guide for prioritizing health resource allocation by the government and health policymakers.

Nigeria has a population of 50.33 million women ages 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year, 14943 women are diagnosed with cervical cancer and 10403 die from the disease. Cervical cancer ranks as the 2nd most frequent cancer among women in Nigeria and the 2nd most frequent cancer among women between 15 and 44 years of age. About 3.5% of women in the general population are estimated to harbor cervical HPV-16/18 infection at a given time, and 66.9% of invasive cervical cancers are attributed to HPVs 16 or 18 (Bruno, et al., 2018). In Calabar, Ebughe, Ekanem, Omoronyia, Omotoso, Ago, Agan and Ugbem (2016) conducted a study on incidence of cervical cancer among the women living in the township using the data of cervical cancer diagnosed from Calabar cancer registry spanning from the beginning of 2004 till ending of 2013. It was reported that there was an increase of 9.5% rate in the incidence within 5-year of 2004-2008 and another increase of 12.1% rate in the incidence within another 5-year period from 2009-2013.

Cervical cancer is nearly always caused by a long-term infection with various strains of a particular virus known as human papillomaviruses (HPV), making sexual transmission of this infection a major risk factor for cervical cancer (Institute for Quality and Efficiency in Health Care, 2017). Many types of HPVs infect the skin cells and mucous membrane cells and are spread through sex or direct contact in the genital area. Infection through body fluids like sperm, blood or saliva is considered to be unlikely (Siddiqui, Ghazal, Bibi, Ahmed and Sajjad., 2016).

Infection with different strains of HPV (such as the HPV: 16 and18 are most common and HPV: 31, 45 and 58 are less common) only persists or becomes chronic in a small proportion of women and only a small percentage of these chronic infections can progress to pre-cancer; of these, even fewer will progress to invasive cancer (Berman, 2011). In addition to HPV, other risk factors such as early onset of sexual intercourse, multiple sexual partners, history of sexual transmitted disease, human immunodeficiency virus (HIV) infection, cigarette smoking and long term oral contraceptive use contribute greatly to increase in the rate of cervical cancer (Getinet, Gelaw, Sisay, Mahmoud and Assefa, 2015).

Cervical cancer does not show symptoms at early stages according to the American Cancer Society (2016), but when it becomes invasive and grows into nearby tissue, the symptoms will start showing and these may include abnormal vaginal bleeding during menstrual periods, abnormal bleeding after intercourse, continuous discharge of foul-smelling bloody liquid from the vagina, thick and prolonged menstrual blood (American Cancer Society, 2016; U.S National Library of Medicine, 2019).

Comprehensive cancer control includes primary prevention (vaccination against HPV), secondary prevention (screening and treatment of pre-cancerous lesions), tertiary prevention (diagnosis and treatment of invasive cancer) and palliative care (WHO, 2019). Cervical cancer prevention and control should be multidisciplinary with components like community education, social mobilisation, vaccination, screening, treatment and palliative care and include interventions across the life course (WHO, 2019).

Diagnosis of cervical cancer is the only way of ascertaining that the presence of cervical cancer. There are several ways of diagnosing cervical cancer when there are symptoms or abnormal smear test (Pap test) results; these include medical history and physical exam, colposcopy, biopsy, and

further tests after biopsy result (Cystoscopy, Proctoscopy, and examination under anesthesia) (American Cancer Society, 2016).

2.2 Prevalence of Cervical cancer screening

Cervical screening is a health intervention used on population of women at risk of developing cervical cancer to detect the precancerous stage for appropriate management (WHO, 2008). Early screening for cervical cancer is a key intervention in reducing the overall burden of the disease, and where it has been effectively utilised, it has been consistently shown to be effective in reducing the incidence rate or the occurrence of new cervical cancer cases and mortality from cervical cancer (Jemal, Bray and Forman, 2012). Cervical cancer screening varies across different categories of women based on their profession, location, countries, social class and cultural diversities. According to Kileo *et al* (2015) in their study conducted on the utilisation of cervical cancer screening services and its associated factors among primary school teachers in Ilala Municipality, Dar es Salaam, Tanzania, they reported that only 108 (21 %) of 512 female primary school teachers had ever been screened for cervical cancer, with a higher screening prevalence recorded among those aged 20–29, those who were married and had a higher level of education. Furthermore, women were more likely to utilize the cancer-screening services if they were multiparous.

In a study conducted at Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya which assessed perceptions of risk and barriers to cervical cancer screening among women. The study revealed that only 12.3% of the respondents reported having screened at least once before the study. The respondents reported critical barriers to access such as fear of positive screening (or abnormal Pap smear) results, lack of knowledge about the screening services and lack of finances to fund the services. Lack of awareness and low priority accorded women's health have also been cited as some of the factors contributing to the reluctance of women to access screening services (Were, Nyaberi and Buziba, 2011).

In Nigeria, Abiodun, Fatungase, Olu-Abiodun, Ajiboye and Awosile, (2013), reported a very low cervical cancer screening prevalence of 1.4% when they assessed awareness and knowledge about cervical cancer and the barriers to screening among women in Ogun State. Another study conducted by Oluwole *et al*., (2017) among rural women in Lagos reported that only 13.3% of the 400 respondents had ever been screened. In another study conducted in Sabon Gari, Zaria, Nigeria

among market women by Ahmed, Sabitu, Idris and Ahmed (2013), only 15.4% of the 260 women had been screened for cervical cancer. All the studies reported above are also similar to the findings by Idowu, Olowookere, Fagbemi and Ogunlaja (2016) among community women in Ilorin which reported a screening prevalence of 8.0% while Omotara, Yahya, Amodu and Bimba (2013) reported 2.3% in the Northeastern part of

Lack of sustainable prevention and control programmes including low uptake of HPV vaccines, low uptake of cervical cancer screening, diagnosis and treatment of invasive cancer as well as palliative care in countries with high incidence of cervical cancer according to WHO (2019) is one of the problems increasing the incidence and mortality related to the cancer of the cervix. It was further recommended that where screening programs are not available, diagnosing cervical cancer at an early stage and providing access to effective treatment can significantly improve the likelihood of survival (WHO, 2019). However, screening is not available or less utilised in developing countries where the majority of cervical cancer deaths are occurring. Currently, in many low resource settings especially in sub-Saharan African countries, the disease is often not identified until it is advanced or treatment is inaccessible resulting in a higher rate of death from cervical cancer (American Cancer Society, 2018).

Results of previous studies showed that cervical screening uptake is different among women; women from socioeconomic disadvantaged group, those that belong to ethnic or minority groups, disabled women and those living in borders has been reported to have the least participation rates in screening programmes (Akinyemiju, 2012; Aminisani, Armstrong, Egger and Canfell, 2012; Donatus, Nina, Sama, Nkfusai, Bede, Shirinde, Cumber, 2019). In Nigeria, the National Cancer Control Programme was developed in 2008 with the view of reducing the overall burden of cervical cancer and its socioeconomic impacts. Within the framework of the National Cancer Control Plan, the Federal Ministry of Health (FMOH) established a cervical cancer control plan which adopted screening for early disease detection of cervical cancer and human papillomavirus (HPV) vaccination for primary prevention in girls of 9–15 years (FMOH, 2008).

The awareness of HPV vaccines and cervical cancer screening is very low among Nigerian women especially in rural communities because there are no established screening programs. Therefore, there is a need for health promotion and education in form of public awareness and enlightenment among the Nigerian women at large as this would engender a more positive attitude and improved

the use of the services (Oluwole, Mohammed, Akinyinka and Salako, 2017). Furthermore, cervical cancer screening facilities are limited because of poor infrastructure and staffing, poor knowledge about cervical cancer and illiteracy, limited access to health services and laboratories and poor referral and follow up (Idowu, Olowookere, Fagbemi and Ogunlaja, 2016).

2.3 Predisposing factors

2.3.1 Knowledge of Cervical Cancer Screening

The knowledge of cervical screening varies among different groups of people due to several sociodemographic characteristics. According to WHO (2015), low utilisation of cervical cancer screening among women in low resource settings countries is associated with their low level of bawareness and knowledge of cervical cancer and its negative socio-economic impacts. In a study conducted in Yucatan, Mexico North-America continent among women of reproductive age, knowledge influenced cervical cancer screening. More than 50% of the respondent had low knowledge of HPV, while 38.9% and 25% knew about Pap smear and cervical cancer and this resulted in low screening practices among this group (Laura Conde-Ferráez, Allen, Martinez, Ayora-Talavera and González-Losa, 2012).

In a study conducted by Ogbonna (2017) on knowledge, attitude, and experience of cervical cancer screening among African female students in a UK University, it was reported that out of the one hundred and eighty-six respondents, seventy-one (38.2%) were aware of cervical screening, but only 20 (10.8%) reported having knowledge of cervical cancer. A small percentage of about 26.9% had screened for cervical cancer while the majority of them showed willingness to participate in future screening programs.

In another study conducted by Ebu, Mupepi, Siakwa, and Sampselle (2014) in Elmina, Southern Ghana, West Africa, the study showed that 93.6% of the 392 randomly selected sexually active females aged 10–74 years had no knowledge of cervical cancer risk factors, only nine (2.3%) reported having multiple sexual partners and being sexually active as risk factors, and 92% did not know about the prevention and treatment of cervical cancer. The majority (97.7%) had never heard of the Pap smear test. Only three (0.8%) of them had had a Pap smear test. Reasons for not seeking a Pap smear test included referral, fear of cervical cancer, and radio campaigns

Abiodun *et al*., (2013), reported a very poor knowledge of cervical cancer screening among their respondents when they assessed awareness and knowledge about cervical cancer and screening and

the barriers to cervical screening among women in Ogun State, Nigeria. It was reported that only 2.3% of the women could identify a virus as the cause of cervical cancer while 4.1% identified cervical screening as a way to prevent cervical cancer. Over ninety percent (97.7%) and (97.9%) had no or poor knowledge of risk factors and symptoms of cervical cancer respectively. In a similar vein, 90.5% identified lack of awareness as a barrier to the uptake of cervical screening and only 1.4% of the women had ever been screened. In a study conducted on knowledge, attitude and practice of cervical cancer screening among market women by Ahmed *et al*., (2013) in Sabon Gari, Zaria in the Northern part of Nigeria, it was reported that the respondent's knowledge of cervical cancer and cervical screening was fair with a score of 43.5% which invariably translated to a good attitude but surprisingly a poor practice.

Another study conducted among women of reproductive age in Ikere Ekiti, Nigeria by Babatunde, Olusola, Olusegun and Sunday (2017) revealed that the respondents had low knowledge about cervical cancer screening. Olubodun, Odukoya, and Balogun (2019) also reported similar findings in a study conducted among women residing in an urban slum in Lagos, southwest Nigeria.

2.3.2 Attitude towards Cervical Cancer Screening

The attitude of women of reproductive age towards cervical cancer screening can go a long way in affecting their screening practices. The belief and attitudes of people are critical determinants of their health-related actions because when cues to actions are present, the variations in uptake behaviour can be accounted for by beliefs and attitudes. Several factors influence the attitude of community women on cervical cancer screening, they include their level of education, age group, level of their awareness about cervical cancer, their level of knowledge, state of health, occupation and their previous experience with people who have had been diagnosed with cervical cancer. One of the factors that are very crucial in influencing the attitude of women is their level of education. For example, women of reproductive who can read and write may have more information about screening for cervical cancer compared to those who cannot read and write.

According to findings from a study on cervical cancer screening which was conducted among urban and rural Nigerian women, the attitude of the respondents was reported to be poor because most of the respondents felt that they had no medical problems and their screening practice was also poor (Nwankwo, Aniebue, Aguwa, Anarado and Agunwah in 2011). In a qualitative study conducted on awareness, perception and factors affecting the utilisation of cervical cancer

screening services among women in Ibadan, Nigeria by Ndikom and Ofi in 2012, the respondents were reported to have poor attitudes towards cervical cancer screening because they had a nonchalant attitude towards their health.

In a study conducted by Abiodun *et al*., (2013), the women who had a positive attitude were those with the highest level of education. In another similar study conducted by Owoeye and Ibrahim in 2013 among female students and adult staff in a tertiary institution in Niger Delta, age group was reported to be associated with good or poor attitude. He sutyd also found that there was an association between level of awareness and attitude.

The state of health can also influence attitude as reported in a study conducted by Jedy-Agba and Adebamowo (2012) among PLWHIV. Study finding revealed, that the respondents did not believe that it was possible to have HIV and cancer though some opined that it may be possible since both are caused by viruses. The respondents also believed that cancer is incurable or treatable by traditional means only.

The occupation of the respondents can also influence their attitude. Most of the studies conducted among healthcare workers showed that they have a good attitude about cervical cancer screening. Some of the studies conducted among female healthcare workers which reported a good attitude among respondents include the study by Awodele, Adeyomoye, Awodele, Kwashi, Awodele and Dolapo (2011); Arulogun and Maxwell (2012); Bakari, Takai and Bukar (2015); Mukama, Ndejjo, Musabyimana, Halage and Musoke (2017); Dike and Ehiemere (2017); Daniyan, Ekwedigwe, Yakubu, Mbamara, Amamilo and Ileogben (2019),

2.3.3 Perception towards Cervical Cancer Screening

Perception also influences cervical cancer screening practice according to Akinpelu, Agboola, and Umezurike (2018), because of the significant association between the two in most of the studies conducted and reviewed in this study. An analytical study conducted among Nigerian women on determinants of low cervical cancer screening uptake by Nwobodo and Ba-Break (2015) showed that wrong perception of cervical cancer and cervical cancer screening due to low level of knowledge about the disease and its prevention were major determinants of cervical cancer screening uptake in Nigeria. Among women, belief in being at risk and/or severity of cervical cancer was low just as the belief on the benefits of cervical cancer screening.

In a study conducted by Ifemelumma, Anikwe, Okorochukwu, Onu, Obuna, Ejikeme and Ezeonu on cervical cancer screening among women in low resource setting, the utilisation of cervical cancer screening was poor in this study as only 20.6% of the respondents had ever undergone screening with their poor perception being the main reason for non-screening. In a study carried out by Toye, Okunade, Roberts, Salako, Oridota, and Onajole (2017) among female secondary school teachers in Mushin LGA of Lagos, Nigeria, a majority of the women surveyed (95.7%) agreed that cervical cancer can be prevented. A large proportion (96.2%) also agreed that awareness of risk factors and a healthy lifestyle can prevent cervical cancer. A vast majority of the respondents (87.6%) agreed that women should be screened at least once in their lifetime while up to 76.2% of respondents favored vaccination of their teenage girls with the HPV vaccine.

Another contrasting angle to the perception of the cervical cancer screening was observed by Ndikom and Ofi (2012), from their qualitative study on awareness, perception and factors affecting utilisation of cervical cancer screening services among women in Ibadan, Nigeria. It was reported that the influence of knowledge on perception can be positive or negative irrespective of the level of the knowledge. They reported that the participants believed that it is important since, early detection aids prompt treatment. This expression revealed a good perception although their knowledge was poor. The major factors identified by the women that influenced screening utilisation were ignorance, Illiteracy, belief in not being at risk, having many contending issues, nonchalant attitude to their health, financial constraint and fear of having a positive result.

2.3.4 Level of Income

There are some studies on cervical cancer screening among community women which showed that the level of income can have an impact on the screening practices. Socio-economic status can also be another important factor responsible for good knowledge of cervical cancer prevention as it was reported in a study conducted by Olubodun, Odukoya, and Balogun (2019), among women residing in an urban slum in Lagos. Majority of the women have poor knowledge about cervical cancer and cervical cancer prevention. The reported low knowledge was linked to their low socioeconomic status that made seeking information on cervical cancer, screening and vaccination the lowest among their priority. It was reported that they all have low knowledge, only 7.9% of them are aware of cervical cancer screening while only 1.6% were aware of the HPV vaccine and none of them have ever been screened or received HPV vaccine. Kokuro (2017) conducted a study

on factors affecting the utilisation of cervical cancer screening among women attending health services in the Kumasi metropolis of Ghana and reported that there was a significant relationship between socio-demographic characteristics including socio-economic status and knowledge, perception and the utilisation of cervical cancer screening services.

2.3.5 Level of education

Of all the factors influencing cervical cancer screening and other preventive practices among community women, the level of education has a huge influence. Level of education is an important factor responsible for the level of knowledge of cervical cancer as shown from the trend in some of the studies where good knowledge of cervical cancer prevention was high only among respondents with high level of education (Ubajaka, Ukegbu, Ilikannu, Ibeh, Onyeonoro, Ezeanyim, 2015, Akinpelu, *et al*., 2018).

Most of the studies among healthcare workers reported good knowledge compared to the ones conducted among community women that reported poor knowledge because of the nurses' high level of education that was reported to be significant to their level of knowledge in those studies. According to a study conducted by Toye *et al*., (2017), among secondary teachers, they reported that all the participants have good knowledge because they can utilize both print and electronic media as well as engage medical personnel in gaining information on cervical cancer and cervical screening. Another study conducted by Jassim, Obeid and Nasheet (2018), in Bahrain among women visiting primary health care centers reported similar findings concerning the influence of level of education on cervical cancer knowledge, attitude, and screening. The respondents in that study were reported to have high school or higher and it influenced their knowledge, perception and attitude towards cervical cancer Pap smear screening.

Busingye, Nakimuli, Nabunya, and Mutyaba (2012), also reported similar findings in their study conducted at Mulago Hospital, Uganda on the acceptability of cervical cancer screening via Visual Inspection with Acetic acid (VIA) or Visual Inspection with Lugol's iodine (VILI). Educational level showed a significant association with screening uptake among respondents in that study. Among the 384 participants recruited into the study, 229 women agreed to undergo screening by VIA/VILI, 209 (91.3%) were willing to recommend the service to other women, while 223 (97.4%) stated that they would undergo VIA/VILI again if the need arose

2.3.6 Age

In a study conducted by Chosamata, Hong and Tiraphat in 2015 on determinants of cervical cancer screening utilisation among women aged 30-45 years in Blantyre district, Malawi, it was reported that the most significant determinants of utilisation were older age, having more than one sex partner, use of oral contraceptive and having heard of cervical cancer screening.

In another similar study conducted by Owoeye and Ibrahim in 2013 among female students and adult staff in a tertiary institution in Niger Delta, age group was reported to be associated with good or poor attitude. Similar findings were reported in a study conducted by Ncube, Bey, knight, Bessler, and Jolly (2015) among women in Portland Jamaica on factors associated with the uptake of cervical cancer screening, It was reported that 266 (66%) of the respondents had had a Papanicolaou (Pap) smear test and one of the predictors that were significant to the uptake of screening was age. The study conducted on demographics, knowledge, attitudinal, and accessibility factors associated with uptake of cervical cancer screening among women in a rural district of Tanzania and Cervical cancer screening and HPV vaccine acceptability among rural and urban women in Kilimanjaro Region, Tanzania by Cunningham, Skrastins, Fitzpatrick, Jindal, Oneko, Yeates, Booth *et al*. (2015), and Lyimo and Beran (2012) respectively had a similar finding to the one reported above.

2.3.7 Parity

Having many children has been reported as one of the risks associated with cervical cancer and the risks can be used to guide screening. According to the American Cancer Society (2011). It was further reported that the risk factors should be used to educate the women of reproductive age to discuss as modifiable risk factors to minimize cervical cancer risks with women, in addition to recommending Pap test screening. Since HPV is a virus transmitted through sexual contact, it is critical to have an understanding of cervical cancer as a sexually-transmitted disease to improve screening.

2.3.8 Religion

Religious affiliation is another factor affecting awareness and the level of knowledge of cervical cancer screening. According to Jacob (2014), in a study conducted on knowledge, attitude, and practice concerning cervical cancer screening among market women in Yola-metropolis, Adamawa State. It was reported that religious beliefs and whether respondents have heard about

cervical cancer was significant determinant of uptake. In another study conducted in Zambia by Nyambe, Kampen, Baboo and Van Hal (2019) knowledge, attitudes and practices of cervical cancer prevention among Zambian women and men, it was reported that the respondents religious belief improved their prevention practices as more than 80% who are of Christian faith reported to have vaccinated their daughters which was further reported to go against the report from few other studies that religious affiliation limit the uptake of screening and vaccination (Spencer, Roberts, Brahim, Patrick and Verma, 2014 Modibbo, Dareng, Bamisaye, Jedy-Agba, Adewole, Oyeneyin, Olaniyan and Adebamowo, 2015; Masika, Ogembo, Chabeda, Wamai and Mugo, 2015).

2.4 Enabling factors

2.4.1 Availability of resources as a factor influencing cervical cancer screening

Presence of health care centers where screening can be accessed plays an important role in the practice of cervical cancer screening. According to Babatunde and Ikimalo (2010), the absence of health facilities, lack of required personnel, equipment and unavailability of consumable supplies to run a successful screening program influence cervical cancer screening uptake. According to a study conducted by Dike and Ijeoma (2017), it was reported that the unavailability of screening services constitutes the major reason stated for poor cervical cancer screening practices by the respondents in that study.

The report from Dike and Ijeoma's study is similar to another one conducted by Singh and Badaya (2012) where lack of patient-friendly health services was reported as the most salient barrier towards screening. According to Idowu *et al*, 2016, the uptake of cervical cancer screening is poor among women who live in the places where the screening facilities are unavailable (Idowu, Olowookere, Fagbemi and Ogunlaja, 2016).

2.4.2 Accessibility to facilities as a factor influencing cervical cancer screening

In Nigeria, cervical cancer screening occurs, but only in a few selected sites and in disjointed projects rather than a full-fledged national-level program. This explains why screening coverage is still negligible. Furthermore, there is a lack of additional diagnostic and treatment options at the secondary levels of care. The link between screening and treatment has been dysfunctional (Federal Ministry of Health, 2018). The main challenges to increasing access to cervical cancer screening services include inadequate equipment and supplies; lack of treatment facilities when there is pre-cancer or cancer diagnosis; inadequate monitoring and evaluation – especially data

collection and management. The HPV vaccine that could be used in primary prevention is also not provided as part of the national vaccine and immunisation program (Morema *et al*, 2014).

According to Singh and Badaya (2012) lack of patient-friendly health services was one of the most salient barriers to screening. This was also supported by a study conducted by Allan (2015) in a study conducted on factors influencing the uptake of screening cervical cancer among women of reproductive age in Viagra county, Kenya. In another study conducted in Zimbabwe by Padingani, Marape, Hwalima, Gombe, Juru and Tshimanga (2018) on uptake of cervical cancer screening among women attending health facilities in the City of Bulawayo, It was reported in the study that the only screening options available in Zimbabwe are the pap smear, VIA (Visual Inspection with Acetic Acid). The only effective and large-scale screening method is one that is VIA based and they only have one in the whole of Bulawayo is at Central Hospital. Idowu *et al*, 2016 also reported that the challenges of cervical cancer screening in developing countries include limited access to health services and laboratories and lack of national screening programs (Idowu, Olowookere, Fagbemi and Ogunlaja, 2016). Therefore, lack of health care facilities is a major limitation cervical cancer screening practice.

2.4.3 Money (Ability to pay for services) as a Factor Influencing Cervical Cancer Screening

According to Ndikom and Ofi (2012), in their study among women in Ibadan, Nigeria, financial constraint is one of the major problems hindering women from going for cervical cancer screening in Nigeria as the available services are not free. Another qualitative study conducted in China, by Yang, Li, Chen, and Morgan (2019), identified cost of treatment as a major barrier. Other factors identified were fear of screening outcome, cultural barriers, and inconveniences, fear of time and availability of resources.

2.5 Reinforcing factors

These are social factors which play a crucial role in the utilisation and uptake of screening for cervical cancer.

2.5.1 Attitude of Health Care Worker as a Factor Influencing Cervical Cancer Screening

Sequel to good knowledge, attitude, and perception of the potential cervical cancer screening users, there are several external factors that can influence the rate of usage of screening services among women of reproductive age. These include health workers attitude, significant other's approval for screening, media, social circle, influence of peer group and social network.

According to a study conducted among female health care workers at University of Port Harcourt Teaching Hospital, Rivers State by Dike and Ijeoma (2017), cultural influences and attitudes of female health workers play significant roles in the uptake of cervical cancer screening. This was similar to a study conducted by WHO (2007), where it was observed that one of the barriers to screening included social stigma associated with reproductive health problems making it a reinforcing factor which hindered the utilisation of cervical cancer screening services.

Idowu *et al*., (2016) also reported that staff attitude influenced cervical cancer screening. In another study conducted in Malaysia on factors affecting the uptake of cervical cancer screening among African women in Klang Valley, poor attitude of healthcare provider was one of the predicting factors affecting the uptake of cervical cancer screening among the respondents. Therefore, if all these factors were taken care of, the practice of cervical screening will greatly improve among the women of reproductive age.

2.6 Theoretical and Conceptual Framework

The PRECEDE PROCEED framework guided the conduct of this study. PRECEDE is an acronym that stands for Predisposing, Reinforcing and Enabling Constructs in Educational Environmental Diagnosis and Evaluation. This theory helps to understand the causal factors of any given public health behaviour. The three key concepts of this model are explained below:

The Predisposing factors: They are factors which motivate or provide a reason for behaviour; they include knowledge, attitudes, cultural beliefs, perceived needs and abilities and readiness to act.

The Enabling factors: These are those factors that enable persons to act on their predispositions; these factors include available resources, accessibility, money, time, supportive policies, assistance, and services.

Reinforcing factors: These are factors which come into play after behaviour has been initiated. They encourage repetition or persistence of behaviours by providing continuing rewards or incentives e.g. Social support (family, peers), health care workers, law enforcement, and the media.

2.7 Application of the Model

The constructs of this framework were applied to the current research as follows:

i. Predisposing factor: The various factors that motivate the study targets -women of reproductive age to practice cervical cancer screening. This includes their socio-demographic characteristics, knowledge about cancer, attitude about the severity of cancer, cultural beliefs about cancer and their readiness to practice screening.

ii. Enabling factors: These are factors that enable the respondents to act on their predispositions. These will include; availability of screening centers, easy accessibility, and supportive policies in terms of subsidisation or provision of free screening services by government supported by national health policies.

iii. Reinforcing factor: They include factors which encourage the practices, persistence and consistent among the study targets. These include health workers' attitude, significant other's approval for screening, and influence of media, social circle, peer group as well as social network.

iv. Behaviour and lifestyle: This will motivate the respondents to adopt Community norms about cervical cancer, Good health-seeking behaviour.

v. Environment: This includes all those factors in their immediate surroundings that positively or negatively influenced their decision to uptake the screening such as health facilities settings, community attitudes towards screening, parents and guardians' dispositions towards screening etc.

vi. Health Outcomes: This refer to the outcome that cervical cancer has on the state of their health in respect to cervical cancer burden or prevention.

vii. Quality of life: This is related to either having a sound health that is free of cervical cancer burden or ill-health with burden of cervical cancer.

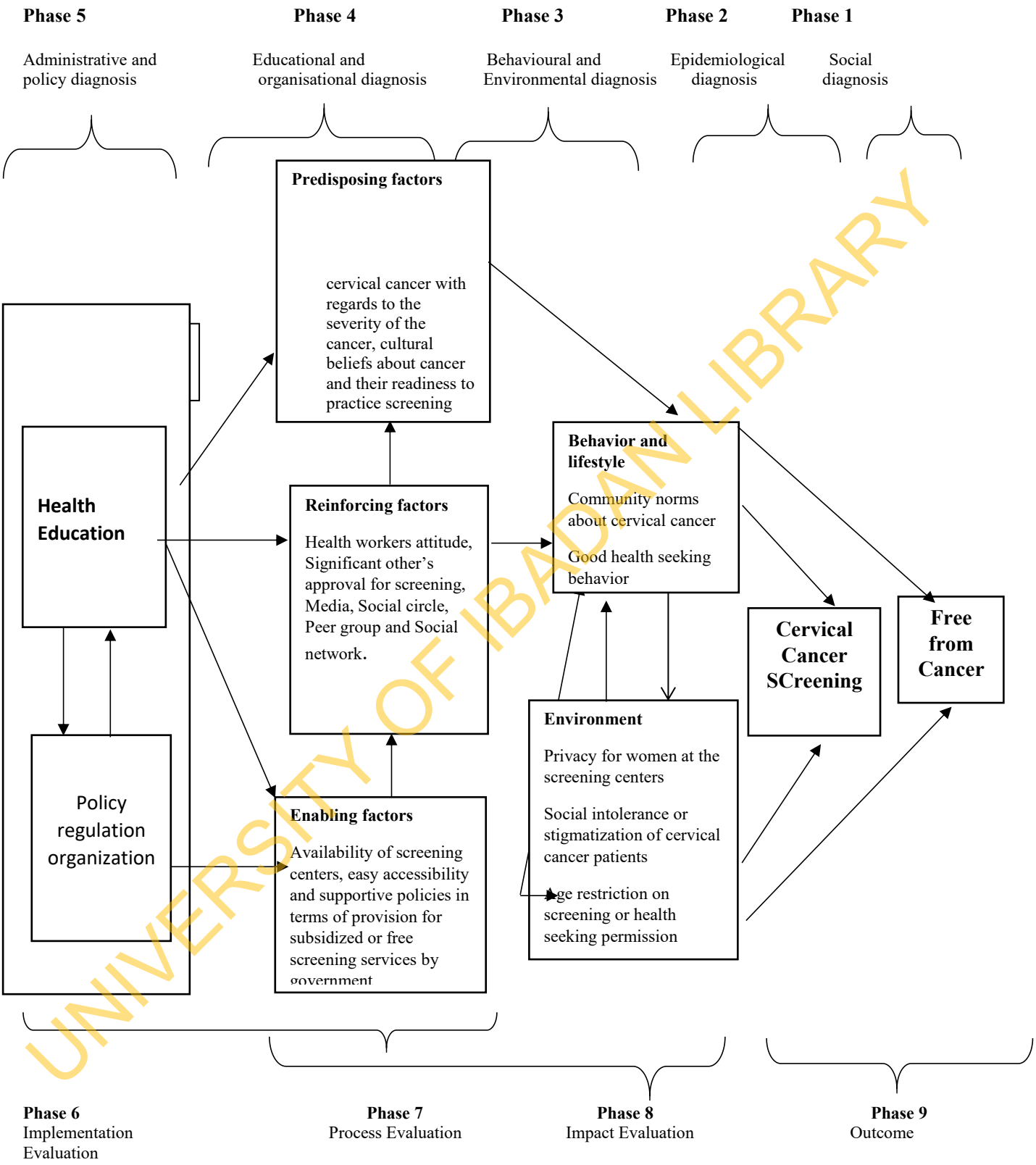

Figure 2.1: The PRECEDE Model adapted to explain factors influencing the utilisation of cervical screening services

CHAPTER THREE
METHODOLOGY

3.1 Study design

The study was a community-based, descriptive cross-sectional survey using semi-structured interviewer-administered questionnaires. A descriptive study design is used to assess a sample of a population at one specific point in time without trying to make inferences in order to identify areas for further research.

3.2 Description of the Study Area

The study was carried out among women of reproductive age in Gombe Local Government Area, Gombe State, Nigeria. Gombe Local Government Area is located in Gombe which is the capital city of Gombe State, located in the North Eastern part of Nigeria. The major means of livelihood in gombe is farming mostle legumes (beans, maize and animal rearing). According to the Natiœnal Bureau for Statistics literacy survey (2010) the national adult literacy level of adult in Gombe state is 57.9% were English is 65.1 males and 50.6 being females while adult literacy in any language is 71.6% with females having 63.7% and males 79.3% (Ishaq Adulkarim, Maman Ali, 2012). Gombe state has a total of 513 health care facilities were the primary health care has 447 public and 61 private clinics,for secondary health facilities the state has 18 public and 4 private, tertiary 1public and 0 private.The L.G.A has an area of 52 km2 and situated between latitude 10o 151 N and longitude 11 to 10I E of the Greenwich meridian with an estimated population of 268,000 among which females of reproductive age constitute 45% (City Population Statistics, maps and Charts, 2017, Gombe State Population Commission, 2017) .

3.3 Study population

The study population comprised of women of reproductive age residing within Gombe Local Government Area, Gombe State.

3.4 Inclusion criteria

All women between the ages of 15years to 49years of age residing in the Gombe Local Government Area who gave consent to participate in the study were included

3.5 Exclusion criteria

Women who already have cervical cancer, women who have speech, hearing or mental impairment were excluded from the study.

3.6 Sample Size determination

Sample size for this study was estimated using the Leslie Kish formula for single proportion which is as follows:

$$N = \frac{Z^2pq}{d^2}$$

N= Minimum sample size

Z= Standard normal deviation set at 1.96 normal interval

p= 15.4% which is the proportion of women who utilize cervical cancer screening in a northern Nigerian city (Ahmed, Sabitu, Idris *et al*., 2013)

q= Proportions that does not have the characteristics being investigated

(q=1-p) q= 1 – 0.154= 0.846

d= Degree of accuracy set at 0.05 (precision set at 5% significant)

Therefore, the sample size $N = \frac{(1.96)^2 \times 0.154 \times 0.846}{0.05^2}$

$$N = \frac{0.5004990144}{0.0025} = 200.1678$$

200.1678 ~ 201, N= 201

A non-response rate of 10% of 201 = 201 x10% = 20.1~21 i.e. 201+21 = 222

Therefore, 21 was added to the minimum sample size calculated (201) to make the sample size 222 to address issues of incomplete responses. I also added 8 respondents to round off the sample size to 230 i.e. 222+8 =230.

3.7 Sampling procedure

A multi-stage sampling procedure was used to select 230 women of reproductive age in the study site. Before sampling, the researcher grouped the prospective respondents. The grouping followed a similar style used in the NDHS for women of reproductive age (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, and 45-49).

1. The first step was to select 5 out of the 11 identified wards in Gombe L.G.A through balloting, the five wards include Bolari West ward Nasarawo Ward, Herwagana ward, Pantami ward, Jekadafari ward (Table 3.1)

- The second stage involved selection of one community from each of the 5 wards that was randomly selected (since each ward is made up of several communities and all of them cannot be selected)
- The third stage was a clustering of houses in these communities to have easy sampling area (the community was clustered in to 4 and of the clusters, community were randomly selected)
- The fourth stage was the selection of houses from the clusters through the use of purposive sampling of houses with women within the reproductive age (15-49).
- The fifth stage was the selection of the respondents by simple balloting if there are more than one of the respondents as earlier described.

3.8 Instrument for Data Collection

Data was collected with the use of semi-structured interviewer-administered questionnaires. The questionnaire was structured based on the specific objectives of the study.

The questionnaire was divided into five sections which are:

- Section A: Socio-demographic characteristics of respondents
- Section B: Knowledge on cervical cancer screening among respondents
- Section C: Attitude towards cervical cancer screening.
- Section D: Level of practices of cervical screening among women aged 25 years and above
- Section E: Factors influencing the utilisation of cervical cancer screening services.

Table 3.1 The wards in Gombe local government area

Wards in Gombe Local Government Area
1. Bolari East Ward
2. Bolari West Ward
3. Dawaki ward
4. Herwagana Ward
5. Jekadafari Ward
6. Kumbiya Kumbiya Ward
7. Nasarawo Ward
8. Pantmi Ward
9. Shamaki Ward
10. Ajya Ward
11. Bajoga Ward
The five wards that were selected using balloting 2. Bolari West ward *3.* Nasarawo Ward 4. Herwagana ward 5. Pantami ward 6. Jekadafari ward

3.9 Measurement of Variables

Measures for this study were theoretically derived from the PRECEDE PROCEED framework. Predisposing factors included the socio-demographic characteristics; knowledge; attitude; and perception, enabling factors looked at availability of resources; accessibility to facilities; ability to pay for theservice; while the reinforcing factors looked at the attitude of the healthcare workers. Respondents' knowledge of cervical cancer and cervical screening was measured on a 45-point scale. Every correct response for questions on knowledge of cervical cancer screening was scored

2 while wrong responses were scored 0. Knowledge Score (KS) of 0 ≤15 was rated as poor knowledge, KS of >15≤ 30 was considered fair and KS >30≥45 was rated as good knowledge.

Every correct response for questions on attitude towards cervical cancer screening was scored 2 while wrong responses were scored 0. Respondents' attitude was measured on a 9-point scale, scores between >0≤ 4 were negative attitude while >4≤9 were a positive attitude.

3.10 Validity of Instrument

The researcher did an extensive review of literature to ensure appropriate content and face validity. Construct validity was also used to ensure that variables in the theoretical framework are well represented in the instrument while the draft of the instrument was also given to the experts in the field of Health Promotion and Education in the Faculty of Public health, the University of Ibadan for review, as well as my supervisor. These individuals edited and made useful corrections and suggestions and the feedback was used to improve the draft before the actual administration of the questionnaire to the study participant in order to ensure relevance, appropriateness and adequacy of the items in each of the sub-sections.

3.11 Reliability of Instrument

To ensure that the instrument measures what is intended to measure, the researcher conducted a pre-test i.e. by administering the questionnaire to 10% of the total sample among women of reproductive age in Akko L.G.A, Gombe state. This LGA has similar socio-demographic characteristics with the study population. Cronbach alpha reliability statistics was used to assess the result of the pretested questionnaire by subjecting the retrieved field-tested questionnaire, this was subjected to Cronbach alpha analysis and a reliability coefficient of 0.7 was considered to be reliable. The outcome of the pretested was used to correct and modify the questionnaire.

3.12 Recruitment and Training of Research Assistants

Four (4) experienced female research assistants were recruited and trained on the ways and methods of data collection the training of the RAs held at Federal College of Education (F.C.E) Secondary school Gombe state, the RAs include graduates from university of Maiduguri ad university of Gombe In which there qualifications include BSc. in Health Education, languages and linguistics, BSc. Zoology and BSc. Microbiology. The training programme was designed to enhance the competencies of the research assistants in the ethical conduct of research study, administration of research instruments and the skills needed to relate courteously with the

respondents in order to get their full cooperation. During the training, a participatory approach was adopted and everyone was involved. Demonstration and return demonstration (role play) were also adopted as one of the training methodologies. The conduct of the pretest also served as an opportunity to enhance their practical skills.

3.13 Data collection procedure

For this study, serially numbered interviewer-administered questionnaire was used. The data was collected by the researcher with the use of three (3) out of the four trained female research assistants prior the time of data collection. Both the benefits and the possible harms that may arise as a result of participating in the study was explained to the respondents. The informed consent forms (attached to the questionnaire) was distributed to the potential respondents after they had been given adequate information about the study. Then, after the questionnaires were filled, the researcher checked for completeness and errors before leaving the field.

3.14 Data Management, analysis and presentation

Data collected was checked for completeness and accuracy. Copies of questionnaire were cleaned, sorted, coded following a predesigned coding guide. The Data was processed and analysed using Statistical Packages SPSS version 25. Unique identifiers were assigned to the questionnaires for easy identification and recall of the instrument. A coding guide was developed for sections of the tools which were open ended before data entry. Prior to data entry, all administered instruments were reviewed and corrections made. Data were cleaned and coded and stored in a password secured computer for analysis.

Descriptive and inferential statistical analysis methods were employed to analyse the quantitative data. The result was presented using descriptive statistics such as percentages and means with standard deviation.

Chi-square (fishers exert test) was used to test if there are significant association between the categorical variables e.g. knowledge of cervical cancer and cervical cancer screening.

3.15 Limitation of the Study

The limitation of the study was that the researcher had to rely on the self-reported responses from the respondents. The respondents were expected to report on their experiences, challenges, and

factors regarding utilisation of cervical cancer screening, however, there was no way of ascertaining whether their claims are true or not.

3.16 Ethical Consideration

Ethical approval was obtained from the Gombe State Ministry of Health Research Ethical Review Board (see appendix 2). Written/verbal informed consent was obtained from all the respondents. The research assistants explained the details in the consent forms, providing information on the objectives of the study and the benefits of the research. All respondents consented before the questionnaires were administered. They were also assured that information provided by them will be kept confidential and that they are free to withdraw from the research if the need arises.

Furthermore, all the respondents were permitted to ask the researcher questions to clarify any grey areas related to the study before and or during the interview. They were also made to understand that they have the right and option of withdrawing from the study at any time as part of the flexibility of quantitative data collection method and all the filled questionnaires were handled with utmost care.

Also, the following ethical considerations were ensured in the conduct of this study.

3.16.1 Confidentiality

In order to guarantee respondents confidentiality of the information that was given,names ,phone numbers or addresses of the respondent were not requested,only identification numbers were assigned to the questionnaire for proper coding.The data of all participants were identified by codes. The print data was kept safe in secured office lockers during and after the study and electronic data was stored in a password-protected computer system.

3.16.2 Beneficence

This study helped in identifying the barriers that the women of reproductive age face in the utilisation of cervical cancer screening as well as recommended possible solutions to policymakers so that they can make and implement evidence-based policies based on the findings from this study.

3.16.3 Risk:

There was no risk associated with this research

3.16.4 Informed Consent

The purpose of the research was adequately communicated to the respondents and the entire community and every respondent gave written/verbal consent before enrolment for the study (see appendix).

3.16.5 Voluntariness

Verbal informed consent was obtained from each respondent and they were informed that they have full rights to withdraw at any stage of the study.

3.16.6 Feedback

The outcome of this study and recommendations would be communicated to all stakeholders after the study.

3.16.7 Inducements

It was intended that no fees would be paid to any of the respondents.

CHAPTER FOUR

RESULT

4.1 Socio-Demographic characteristics of the respondents

The respondents' age ranged from 15-49 years with a mean age of 29.6±8.1 years. More than half 121 (52.2%) of the respondents were Muslims, 130(56.5%) were married and 83 (70.3%) of those married were living in a monogamous home. Less than half 112 (48.7%) of the respondents had tertiary level of education, few 19 (8.3%) of the respondents were unemployed, 41 (17.8%) had 5 – 13 number of children and 70 (30.4%) have been in marriage for 1-10 years (Table 4.1). Over 18.0% of the respondents earn between N5, 001 – N10, 000 (Table 4.1).

4.2 Level of Knowledge on Cervical Cancer Screening

4.2.1 Knowledge of Cervical Cancer

The knowledge of the respondents on the cerival cancer was low; most of the respondents had poor level of knowledge on cerical cancer (48.7%), and (46.5%) had fair knowledge. Very few respondents had good knowledge (4.8%) (Figure 4.1). Most 199 (86.5%) of the respondents knew that cervical cancer can lead to death, less than half 105 (45.7%) of the respondents knew that HPV infection has been identified as the major cause of cervical cancer and 91 (39.6%) opined that it is sufficient to do the cervical cancer screening only once in a woman's life time to eliminate the risk of cervical cancer. Most 183 (79.6%) of the respondents knew that cervical cancer is curable if detected early and 175 (76.1%) knew that women should have Pap Smears at least every 3 years (Table 4.2.1).

4.2.2 Knowledge of Cervical Cancer infection signs

Only 25 (10.9%) and 132(57.4%) knew that irregular menstruation is a sign of cervical cancer infection, unprompted and prompted respectively. About 27% of the respondents knew that foul smelling vagina discharge is a sign of cervical cancer infection when unprompted while 153(66.5%) knew when prompted. Few 59(26.7%) of the respondents knew that itching at the vagina is a sign of cervical cancer infection when unprompted while 127(55.2%) knew when prompted. Most 176(76.5%) of the respondents did not identify bleeding after intercourse as a sign of cervical cancer infection unprompted while 76(33.0%) did not identify it as a sign when prompted (Table 4.2.2).

Table 4.1: Socio-Demographic characteristics of the respondents

Variable	Frequency	Percent (%)
Age (years)	12	5.2
15 – 19	57	24.8
20 – 24	69	30.0
25 – 29	31	13.5
30 – 34	21	9.1
35 – 39	22	9.6
40 – 44	18	7.8
45 – 49		
Religion		
Islam	121	52.6
Christianity	103	44.8
No response	6	2.6
Marital Status		
Single	86	37.4
Married	130	56.5
Divorced	7	3.0
Widowed	5	2.2
No response	2	0.9
Level of Education		
No formal education	17	7.4
Primary	18	7.8
Secondary	79	34.3
Tertiary	112	48.7
No response	4	1.7
Husband Education		
No formal education	8	3.5
Primary	11	4.8
Secondary	22	14.3
Tertiary	79	34.3

Table 4.1: Socio-Demographic characteristics of the respondents (Cont.)

Variable	Frequency	Percent (%)
Occupation		
Civil servant/professional	71	30.9
House wife	44	19.1
Trader/Artisan/Laborer	38	16.5
Student	44	19.1
Unemployed	19	8.3
No response	14	6.1
Type of Marriage		
Polygamy	35	29.7
Monogamy	83	70.3
Number of Children		
1	18	7.8
2	24	10.4
3	28	12
4	21	9.1
5 – 13	41	17.8
No response	98	42.6
Period of Marriage		
1 – 10	70	30.4
11 – 20	45	19.6
21 – 30	14	6.1
31 – 40	4	1.7
No response	97	42.0
Average Income (₦)		
0 – 5000	65	28.3
5001 – 10000	42	18.3
≥ 10001	94	40.9
Family History of Cervical Cancer		
Yes	24	10.4
No	165	84.8
Don't know	11	4.8

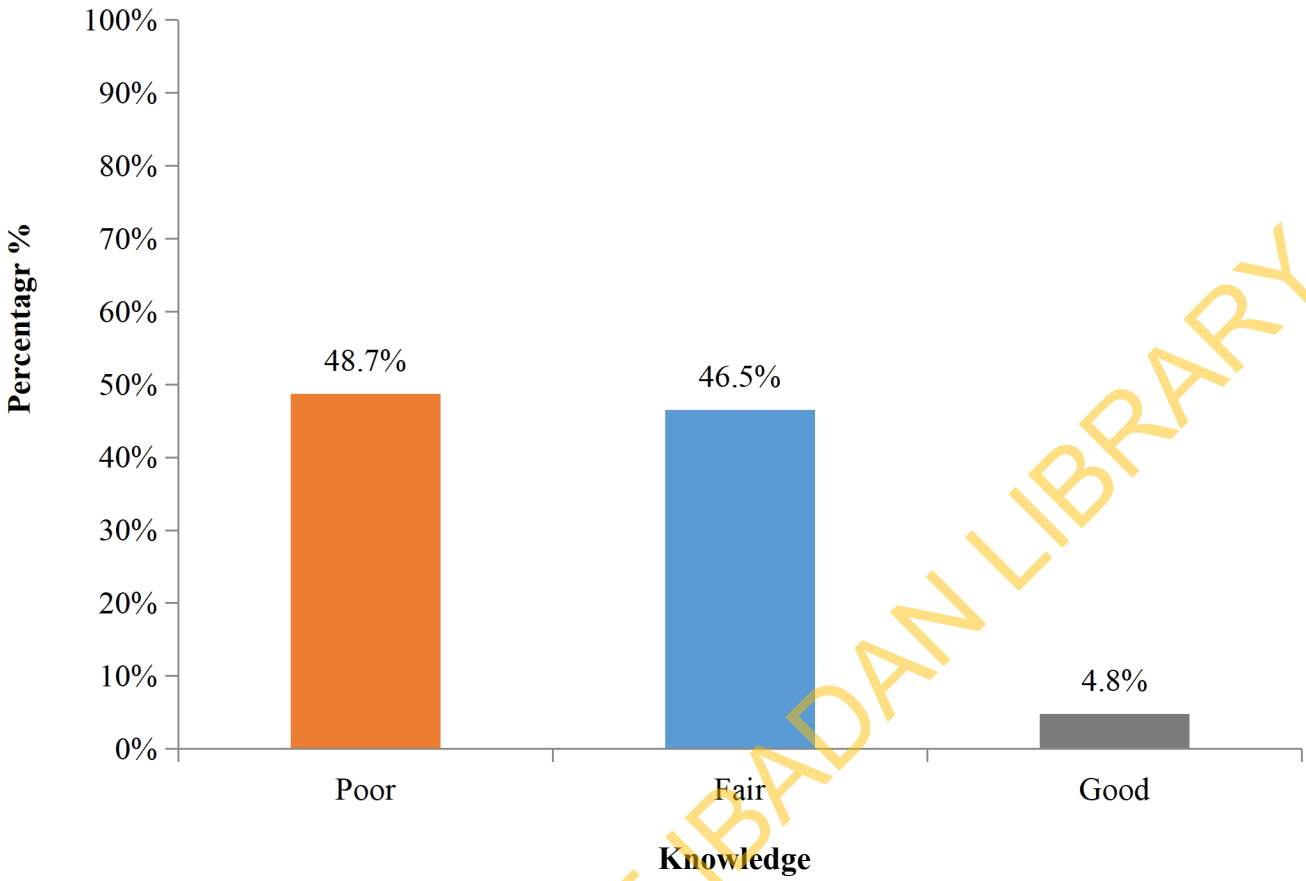

Figure 4.1: Level of Knowledge of Cervical Cancer

Table 4.2.1: Knowledge of Cervical Cancer

Knowledge of cervical cancer	Yes		No		Don't know	
	Freq.	(%)	Freq.	(%)	Freq.	(%)
Ever heard of cancer of the cervix	230	100				
Cervical cancer can lead to death	199	86.5*	25	10.9	6	2.6
HPV infection has been identified as the major cause of cervical cancer.	105	45.7*	118	51.3	7	3.0
HPV vaccine guarantee a 100% protection/prevention from cervical cancer	97	42.2*	126	54.9	7	3.0
Screening for cervical cancer helps in early diagnosis of cervical cancer	201	87.4*	23	10.0	5	2.2
It is sufficient to do the cervical cancer screening only once in a woman's life time to eliminate the risk of cervical cancer	91	39.6	134	58.3*	5	2.2
Cervical cancer is a genetic disease.	113	49.1*	110	47.8	6	2.6
Cervical cancer can be detected in its earliest stages	171	74.3*	54	23.5	5	2.2
Cervical cancer is curable if detected early	183	79.6*	41	17.8	6	2.6
Postmenopausal women still have the risk of getting cervical cancer	170	73.9*	54	23.5	6	2.6
Cervical precancerous lesions may be detected by screening	162	70.4*	60	26.1	8	3.5
Having multiple sexual partners can increase a woman's risk of having cervical cancer	179	77.8*	44	19.1	6	2.6
Family history of cervical cancer increases a woman's risk of having cervical cancer	146	63.5*	79	34.3	5	2.2
Women should have Pap Smears at least every 3 years	175	76.1*	51	22.2	4	1.7
A woman should not have sex 24 h before having Pap smear	133	57.8*	92	40.0	5	2.2
Pap smears can be performed at both menstrual and non- menstrual period	108	47.0*	113	49.1	9	3.9

(The symbol * signifies the correct response for the various questions)

Table 4.2.2: Knowledge of signs Cervical Cancer infection

Knowledge of Cervical Cancer infection signs	Unprompted						Prompted					
	Yes		No		Don't know		Yes		No		Don't know	
	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)	Freq	(%)
Irregular menstruation	25	10.9 *	202	87.8	3	1.3	132	57.4 *	85	37.0	13	5.7
Bleeding between periods	31	13.5 *	19	85.7	2	.9	151	65.7 *	65	28.3	14	6.1
Foul smelling vagina discharge	61	26.5 *	168	73.0	1	.4	153	66.5 *	47	20.4	30	13.0
Longer and heavier menstrual flow	30	13.0 *	197	85.7	3	1.3	135	58.7 *	73	31.7	22	9.6
Post-menopausal bleeding	28	12.4 *	198	86.1	4	1.7	150	65.2*	63	27.4	17	7.4
Itching at the vagina	59	26.7 *	153	66.5	18	7.8	127	55.2 *	60	26.1	43	18.7
Bleeding after intercourse	30	13.0 *	176	76.5	24	10.4	132	57.4*	76	33.0	22	9.6
Painful menstruation/pain in the pelvic	16	7.0*	190	82.6	24	10.4	102	44.3 *	113	49.1	13	5.7
Severe bleeding	53	23.0 *	161	70.0	16	7.0	123	53.5*	72	31.3	35	15.2

(The symbol * signifies the correct response for the various questions)

4.2.3. Knowledge of Risk Factors

Less than half 77(33.5%) of the respondents identified high numbers of sexual partners as a risk factor of cervical cancer. Majority 194 (84.4%) of the respondents reported that spiritual attack was not a risk factor of cervical cancer. Over a quarter 59(25.7%) identified family history of cervical cancer as a risk factor for cervical cancer, 52(22.6%) identified HPV infection and 82(35.7%) identified previous history of sexually transmitted diseases as risk factors of cervical cancer. (Table 4.2.3)

4.2.4 Knowledge on cervical cancer screening procedure

Most 195 (84.8%) of the respondents did not know about any cervical cancer screening procedure. Less than a fifth 33(14.3%) of the respondents knew pap smear test and 83(36.1%) knew that a female should start screening for cervical cancer from 18 years and above.

4.3 Attitude to Cervical Cancer Screening

Many, (52.2%) of the respondents had a positive attitude towards cervical cancer screening (Figure 4.2). A third, 71(30.9.0%) of the respondents agreed that they were not confident to ask questions from the healthcare providers at the clinics regarding cervical cancer screening and 75(32.6%) agreed that if a male healthcare provider performed the cervical cancer screening test, they would feel embarrassed. (See Table 4.3)

Table 4.2.3: Knowledge of Risk Factor

Risk factors	Yes		No	
	Freq	(%)	Freq	(%)
Having sex with uncircumcised male partner	43	18.7*	187	81.3
Old age	29	12.6 *	201	87.4
Family history of cervical cancer	59	25.7 *	171	74.3
Low socioeconomic status	25	10.9	205	89.1 *
Spiritual attack	36	15.7	194	84.4 *
Unhealthy diet	46	20.0	184	80.0 *
High numbers of sexual partners	77	33.5 *	153	66.0
High rates of abortion	65	28.3 *	165	71.7
HPV infection	52	22.6 *	170	77.4
Early age of sexual debut	52	22.6 *	178	77.3
Previous history of sexually transmitted diseases	82	35.7 *	148	64.3
Tobacco use	36	15.7 *	194	84.3
Poor menstrual hygiene	61	26.5 *	169	73.5
Prolong use of birth control pills	54	23.5 *	176	76.5
High rate of pregnancy	51	22.2 *	179	77.8
Unprotected sexual intercourse	76	33.1 *	154	66.9
Human immunodeficiency syndrome	40	17.4 *	190	82.6
Living with a cervical cancer patient	22	9.6	207	90.4 *

*** signifies the correct response for the various questions**

Table 4.2.4: Knowledge on cervical cancer screening procedure (N=230)

Screening Procedure	Freq	(%)
Knowledge about any cervical cancer screening procedure		
Yes	35	15.2
No	195	84.8
If yes, which one?		
-Pap smear test	33	94.2
-VIA (Visual inspection using Acetic acid)	1	2.9
-Biopsy	1	2.9
When a female should start screening for cervical cancer		
From 18 years and above	83	36.1
After menopause.	3	1.3
When one gets symptoms of cancer of the cervix	19	8.0
When one gets sexually transmitted infection.	12	5.2
When one becomes sexually active	36	15.7
I do not know	77	33.5
Benefit of cervical cancer screening		
To be safe/to know my status/early detection	134	58.3
Prevent cervical cancer	16	7.0
To get early treatment	2	0.9
I do not know	78	33.9

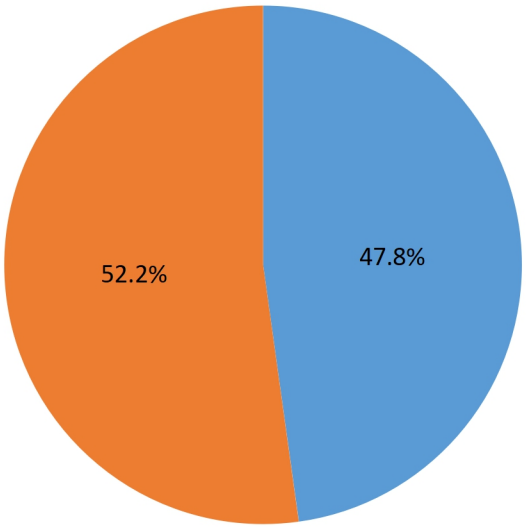

Figure 4.2: Level of attitude towards cervical cancer screening

Table 4.3 Attitude to Cervical Cancer Screening (N=230)

Statement	Agreed		Disagreed		Undecided	
	Freq	(%)	Freq	(%)	Freq	(%)
I am not confident to ask questions from the healthcare providers at the clinics regarding cervical cancer screening	71	30.9	145	63.0*	14	6.1
If a male healthcare provider performed the cervical cancer screening test, I would feel embarrassed	75	32.6	143	62.2 *	12	5.2
Practicing cervical cancer screening can help in detecting cervical cancer early	76	33.0 *	132	57.4	22	9.8
Doing a cervical cancer test cannot prevent women from having cervical cancer	99	43.0	102	44.3 *	29	20.7
I believe going for cervical cancer screening is unnecessary if there are no signs and symptoms	39	17.0	113	49.1 *	78	33.9
I am of the opinion that going for cervical cancer screening is too expensive	74	32.2 *	93	40.4	63	27.4
I don't believe that something wrong will be detected if I go for cervical cancer screening	68	29.6 *	114	49.6	48	20.8
I am not at risk of cervical cancer so there is no need to be screened	41	17.8	147	63.9*	42	18.2
I am spiritually protected so there is no need for cervical cancer screening	39	17.0	140	60.9 *	51	22.1

(The symbol * signifies the correct response for the various questions)

4.4 Practice of Cervical Cancer Screening

Only 15 (9.5%) of the respondents aged 25 to 49 years had ever had cervical cancer screening, out of which 15(100%) conducted pap smear test and 5 (33.3%) of the respondents had their screening ≤12months ago. Thirteen (86.7%) were screened at a health facility. Also, 11(73.3%) indicated that they had been screened only once in their life and 2 (1.2%) of the respondents had taken the HPV vaccine (Table 4.4). For respondents aged 25 to 65 years who had not screened (N=146), 61(45.0%) said it is because screening was not recommended by their doctor or a nurse, 48 (32.8%) said they were healthy and it is unnecessary, 47 (32.2%).

Table 4.4 Practice of Cervical Cancer Screening for women aged 25years and above (N=161)

Practice of Cervical Cancer Screening	Freq	(%)
Ever conducted cervical cancer screening		
Yes	15	9.5
No	146	90.7
Cervical Cancer Screening conducted (n=15)		
Pap smear test	15	100.0
When cervical cancer screening was done (n=15)		
<12months	5	33.3
>12months<36months	6	40.0
>36months to <10years	4	26.7
Where cervical cancer screening was done (n=15)		
At a health facility	13	86.7
During special events or outreach by NGOs or religious organisations	2	13.3
Reasons for going for cervical cancer screening (n=15)		
Preventive measures	7	46,7
Advice from family and friends	1	1.67
Health worker's recommendation	3	20.0
There was free cervical cancer screening by NGOs/government/religious organisations	2	13.3
Child birth problem	1	6.7
Infection	1	6.7

Table 4.4 Practice of Cervical Cancer Screening for women aged 25years and above (Contd.)

Practice of Cervical Cancer Screening	Freq	(%)
Age during first cervical cancer screening (n=15)		
25 to 39	13	86.7
40 to 65	2	13.3
How often do you go for cervical cancer screening?		
In my life time, have only been screened once	11	73.3
Yearly	3	20.0
Every two years	1	6.7
Ever taken HPV vaccine for the protection against cervical cancer?		
Yes	2	1.2
No	159	98.8
Dosage(s) of HPV vaccine taken (n=3)		
1 Dose	2	100.0

4.5 Factors influencing the Utilisation of Cervical Cancer Screening among Respondents who have screened

Table 4.5 shows the factors influencing the utilisation of cervical cancer screening among respondents who have screened**.** All 15(94.4%) of the respondents had health care facilities where cervical cancer screening is done in their locality and all 15 (100.0%) of the respondents have been screened at that health care facility.All 15(94.1%) of the respondents feel comfortable going to the health facility for cervical cancer screening.

4.6 Respondents' reason for not Utilising Screening Services

Predisposing factors

Few 31(21.2%) of the respondents indicated fear of the procedure as the reason why they did not go for cervical cancer screening, 48(32.8%) said they are healthy so it's not necessary, 61(41.8%) said it is because the screening is not suggested by their doctor or a nurse and 24(16.4%) said it is because they don't want to expose their private part for the screening. Only 4(2.7%) indicated cultural / religious factor as a reason (Table 4.6).

Enabling factors

Less than half 46(31.5%) of the respondents indicated lack of clinics where cervical cancer screening is done in their community as the reason why they did not go for cervical cancer screening, 42(28.8%) stated that it's because the tests are very expensive and 20(13.7%) stated absence of female healthcare workers as screeners as the reason for not going for cervical cancer screening (Table 4.6).

Reinforcing factors

Over one fifth of the respondents 27(18.5%) stated that the attitude of health care workers was a reason for not screening, 20(13.7%) listed a lack of support from partner/husband or others (i.e. friends, parents, sisters etc.) and 17(11.6%) stated that their partners will not want them to do cervical cancer screening as a reason for not screening (Table 4.6).

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Table 4.5 Factors influencing the utilisation of cervical cancer screening among respondents who have screened

Variables	Freq	(%)
Availability of health care facilities where cervical cancer screening is done in the locality (n=15)		
Yes	15	100.0
No	146	
Operates daily (n=15)		
Yes	15	100.0
No	0	0
Ever been screened for cervical cancer at that healthcare facility (n=15)		
Yes	15	10
Feel comfortable going to that health care facility for cervical cancer screening (n=15)		
Yes	15	100.0
No	0	0
Time spent in receiving the cervical cancer screening results (n=15)		
4 days	0	0
5 days	15	100.0
1 week	0	0
Months	0	0
Mode of transport to the nearest health facility where Cervical cancer screening services can be assessed		
Vehicle	15	100.0
Availability of road between the home and the nearest health care screening facility passable throughout the year		
Yes	15	100.0

Table 4.6: Respondents reason for not screening

Respondents reason for not screening (n=146)	Yes Freq(%)		No Freq(%)	
Fear of the procedure	31	21.2	115	78.8
Cultural / Religious reason	4	2.7	142	97.3
I'm healthy so it's not necessary	48	32.8	98	67.2
Not suggested by my doctor or a nurse	61	41.7	85	58.2
Attitude of health care workers	27	18.5	119	81.5
Lack of support from partner/husband or others (i.e. friends, parents, sisters etc.)	20	13.7	126	86.3
Lack of clinics where cervical cancer screening is done in my community	46	31.5	100	68.5
I don't want to expose my private part for the screening	24	16.4	122	83.6
The tests are very expensive.	42	28.8	104	71.2
Services are offered at the big hospitals and it is expensive to reach there	36	24.7	110	75.3
I am afraid of being screened positive for cervical cancer	31	21.2	115	78.8
My partner will not want me to do cervical cancer screening	17	11.6	129	88.4
I am afraid of what people will say if I am screened positive	19	13.0	127	87.0
I was unaware of the test	47	32.2	99	67.8
Absence of female healthcare workers as screeners	20	13.7	126	86.3

4.7 Potential challenges influencing access to cervical cancer screening information and services

A third of the respondents 78(33.9%) and 58(25.2%) reported that knowing where to screen for cervical cancer is a major or moderate challenge respectively. Less than half 70(30.9%) of the respondents stated that getting husbands' permission was a moderate challenge, 85(37.0%) identified getting money needed for cervical cancer screening as a major challenge and 28(12.2%) stated that having to take transport was a major challenge (Table 4.7).

Table 4.7: Potential challenges influencing access to cervical cancer screening information and services

Variable	Major challenge		Moderate challenge		No challenge	
	Freq	(%)	Freq	(%)	Freq	(%)
Knowing where to get cervical cancer screening services	78	33.9	61	25.2	91	39.6
Getting permission from husband to go to the healthcare facility for cervical cancer screening	38	16.5	71	30.9	121	52.6
Getting money needed for cervical cancer screening	85	37.0	56	24.3	89	38.7
Distance to a health facility	37	16.1	83	36.1	108	47.8
Having to take transport	28	12.2	81	35.2	121	52.6
Concern that there may not be a trained healthcare provider	58	25.2	65	28.3	107	46.5
Concern that there may not be a trained female healthcare provider to screen	53	23.0	55	23.9	122	53.0
Fear of being informed that I have cervical cancer	72	31.3	43	18.7	115	50.0
Concerns that there may not be equipment	36	15.7	68	29.6	126	54.8
Concerns about the opening hours	13	5.7	70	30.6	147	95

4.8 HYPOTHESES

4.8.1 Hypothesis 1

"There is no significant association between socio-demographic characteristics of women aged 25 years and above and utilisation of cervical cancer screening services"

Level of income

The result of the Fisher exact test at 0.05 level of significance showed that there is a significant association between level of income and utilisation of cervical cancer screening services. Just a few 12(14.3%) of respondents who earned over N10,001(>$32.80) had utilised cervical cancer screening services compared to 2 (7.7%) of the respondents who earned ₦5,001 – ₦10,000 ($16.40-$32.79) (p=0.037). Therefore, we reject the null hypothesis that there is no association between level of income and utilisation of cervical cancer screening services (Table 4.8.1).

Level of education

The result of the Fisher exact test at 0.05 level of significance showed that there is a significant association between level of education and utilisation of cervical cancer screening services. The utilisation of cervical cancer screening services was higher among women who had tertiary level education 13 (15.3%) compared to those without formal education 1 (6.3%) (p=0.048) Therefore, we reject the null hypothesis that there is no association between level of education and utilisation of cervical cancer screening services (Table 4.8.1).

Religion

There is a significant association between religion and utilisation of cervical cancer screening. More Christians 10 (14.3%) have screened compared to Muslims 4 (4.7%) (P=0.035). Therefore, we reject the null hypothesis that there is no association between religion and utilisation of cervical cancer screening services (Table 4.8.1).

Table 4.8.1: Association between respondents' socio-demographic (level of income, level of education, religion) characteristics and utilisation of cervical cancer screening services

Demographic Characteristics	Utilisation of Cervical Cancer Screening services				Fishers exact test	p-value	df
	Yes		No				
	Freq	(%)	Freq	(%)			
Level of Income					6.127	0.037	2
0 -5000($0-$16.39)	0	0.0	34	100			
5001–10000($16-$32.79)	2	7.7	24	92.3			
>10001($32.80)	12	14.3	72	85.7			
Level of Education							
No formal	1	6.7	14	93.3	6.897	0.048	3
Primary	0	0.0	16	100			
Secondary	1	2.3	43	97.7			
Tertiary	13	15.3	72	84.7			
Religion					--	0.035	1
Islam	4	4.7	82	95.3			
Christianity	10	14.3	60	85.7			

4.8.2 Hypothesis 2

There is no significant association between level of knowledge and utilisation of cervical cancer screening among women aged 25 years and above.

Table 4.8.2 shows that 5(6.8%) of those with low knowledge had utilised cervical cancer screening services compared to 11(11.4%) with fair and 1 (11.1%) with high knowledge. Therefore, we fail to reject the null hypothesis that there is no association between level of knowledge and utilisation of cervical cancer screening services (Table 4.8.2).

4.8.3 Hypothesis 3

There is no significant association between level of attitude towards cervical cancer screening and utilisation of cervical cancer screening among women aged 25 years and above.

Table 4.8.3 shows that, 6 (20.7%) of those with a good attitude towards cervical cancer and cervical cancer screening had utilised cervical cancer screening services compared with 8(8.7%) with a fair attitude and 1(2.5%). Therefore, we reject the null hypothesis that there is no association between attitude and utilisation of cervical cancer screening services

4.8.4 Hypothesis 4

Association between availability of health care facility for cervical cancer screening and utilisation of cervical cancer screening among women aged 25 years and above

Table 4.8.4 The result of the Fisher exact test at 0.05 level of significance showed that there is a significant association between availability of health care facility for cervical cancer screening and utilisation of cervical cancer screening among women ,among those with healthcare facilities for cervical cancer screening in their communities 15 (100%) (p=.000) (Table 4.8.4).

Table 4.8.2: Association between level of knowledge and utilisation of cervical cancer screening among women aged 25 years and above

Knowledge	Utilisation of Cervical Cancer Screening				Fishers exert test x^2	p-Value	df
	Yes		No				
	Freq	%	Freq	%			
Low	5	6.8	68	93.3	1.244	0.529	2
Fair	9	11.4	70	88.6			
High	1	11.1	8	88.9			

Table 4.8.3: Association between level of attitude towards cervical cancer screening and utilisation of cervical cancer screening among women

Attitude Towards Cervical Cancer	Utilisation of Cervical Cancer Screening				Fishers exert test x^2	P-Value	df
	Yes		No				
	Freq	(%)	Freq	(%)			
Poor	1	2.5	39	97.5	6.035	0.049	--
Fair	8	8.7	84	91.3			
Good	6	20.7	23	88.0			

Table 4.8.4: Association between availability of health care facility for cervical cancer screening and utilisation of cervical cancer screening among women

Availability of Healthcare facility for cervical screening in Respondents' community	Utilisation of Cervical Cancer Screening				Fishers exert test x^2	P-Value	df
	Yes Freq	Yes (%)	No Freq	No (%)			
Yes	15	100	0	0.0	--	0.000	--
No	0	0.00	146	100			

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMMMENDATIONS

5.1 Discussion

The age range of the respondents falls within (15-49) which is a representative age for women of reproductive age according to 2018 NDHS. More than half of the respondents were Muslims (Islam). This is in tandem with a study by Ahmed *et al*., (2013) in which most of the respondents were Muslims, as well as a study conducted in Sokoto where 74.8% practiced Islam (Kehinde, Mairo and Buhari, 2018). The fact that most of the respondents are of Islamic faith is as a result of the location of the study being in the Northern part of Nigeria which is a region where its inhabitants predominantly practices Islamic religion in Nigeria.

Most of the respondents have some form of education but only a few had no formal education. This is similar to a study done by (Ahmed, Sabitu, Idris *et al*.,2013) among market women in Zaria and another conducted in North-Eastern Nigeria (Mohammed *et al*., 2015). However, in a study conducted in Sokoto, 71.9% had secondary and tertiary education (Kehinde, Mairo and Buhari, 2018). This is higher than the percentage of the respondents in this study who had secondary and tertiary education. More than half of the respondents are married and have conceived a child or more. This is similar to the findings from the study among market women (Ahmed *et al*., 2013). More than half of the respondents 107(46.6%) earned below the minimum monthly wage of N18, 000 a. This could play a big role in the utilisation of cervical cancer screening services among this population.

Few of the respondents had good knowledge of cervical cancer. This is in line with the study among women in Mangalore city, where it was reported that few of the respondents had good knowledge of cervical cancer according to Harsha and Tanya (2014). A study conducted in Lagos among female public secondary school teachers reported that all of the respondents had good knowledge of cervical cancer (Toye, Sharrafadeen, Robert and Solato *et al*., 2017). Another study showed that more than half of the respondents had good knowledge about cervical cancer (Aweke, Ayanto and Ersado (017). When women do not have adequate knowledge of cervical cancer, they may delay seeking medical attention when signs and symptoms begin to manifest.

All of the respondents had heard of the cancer of the cervix. The findings of this study support another study carried out in Eastern China among rural women where it was reported that most of the respondents had heard of cervical cancer (Tongtong, Shunping, Julie and Gang, 2017). However, findings of this study contrast with a similar study conducted in Lagos where most of the respondents were not aware of cervical cancer (Oluwole, Mohammed, Akinyinka and Salako, 2017). Hassan and Ibrahim also reported that less than half of the respondents had heard of cervical cancer in Sokoto which is also a Northern state like the study area. It also contrasts with findings from studies conducted in the eastern part of the country where awareness of cervical cancer was low (Feyi-Waboso, Kamanu and Aluka, 2005; Chukwuali, Onuigbo and Mgbor, 2003). This shows that the study respondents were more aware of cervical cancer but less knowledgeable on cervical cancer. Awareness does not translate to knowledge. There is a need to go beyond just raising awareness on cervical cancer in Gombe state, and taking time to educate women on cervical cancer signs and symptoms, risk factors and screening procedures.

Less than half of the respondents identified HPV as the major cause of cervical cancer. Ifemelumma, Anikwe, Okorochukwu, Onu, Obuna, Ejikeme and Ezeonu, (2019) study contrasts this study as its findings reported that the majority of the health workers noted HPV as the primary cause. The study respondents used in Ifemelumma *et al*., (2019) study are women who are expected to have a good knowledge of the cause of cervical cancer considering their profession. This differs from the respondents in this study who were not in the health profession.

Few of the respondents knew that bleeding between periods is a sign of cervical cancer. This is not in line with a study conducted in Uganda where majority of the study respondents knew that inter-menstrual bleeding was a sign of cervical cancer (Amos, Christopher and Edward *et al*., 2016). Less than half of the respondents from this study identified foul-smelling vaginal discharge as a sign and symptom of cervical cancer. This supports a study carried out at Beni-Suif University where it was reported that more than two-thirds of women were unaware that vaginal bleeding between periods could be a sign of cervical cancer. In a study conducted by Bishnu, Devi and Mathura (2019), most of the respondents knew that smelling vaginal discharge is a sign of cervical cancer. Few of the study respondents identified post-menopausal bleeding as a sign of cervical cancer. This contrasts with the findings by Mwak *et al*., (2016) where it was reported that majority of the respondents in Uganda knew that post-menopausal bleeding was a sign of cervical cancer.

This is significant considering that in the six-year study of the clinical presentation of cervical cancer and the management challenges encountered at a State Teaching Hospital in Southeast Nigeria, about 88.5% of women who presented complained of vaginal bleeding (Justus, Esther and Felix, 2013). This confirms vaginal bleeding as a major sign of cervical cancer which all women must know.

Good knowledge of the signs and symptoms is necessary as it helps the women to be able to notice body changes and make complaints when necessary. Some of the signs of cervical cancer might look normal, for instance, vaginal bleeding and discharges. A woman who is not well educated on the signs and symptoms of cervical cancer might assume it's a natural thing. Therefore, health workers and the media have a great role to play in the education of women in Gombe State on the signs and symptoms of cervical cancer.

Very few of the respondents knew about cervical cancer screening procedures. This contrasts with findings from a study conducted in Southern Ethiopia where it was reported that more than two-thirds of the respondents knew that there was a procedure used to detect premalignant cervical lesions (Dubale, Deresse and Negashwere, 2017). The result of this finding is lower than that of a study carried out in South Africa by Hoque (2010) where it was reported that about half of the respondents had ever heard of the screening tests. Few of the respondents knew that females should start screening from 18years and above. The finding is consistent with Shrestha (2014) where it was revealed that only 16.0% knew the correct age to commence cervical cancer screening.

A little more than half of the respondents had a positive attitude towards cervical cancer screening. The percentage of respondents who had a positive attitude was lesser than that of a study conducted in Nepal, where 85% of the respondents had a positive attitude towards screening (Shrestha, Saha and Tripathi, 2013). This finding is inconsistent with the study conducted by Singh *et al*. (2014) in which few of the respondents had a favorable attitude. It, however, contrasts with findings from the study by Ehiemere, Frank and Robinson-Bassey (2015) where it was reported that the majority of the respondents had a negative attitude towards cervical cancer screening. The study respondents for Ehiemere, Frank and Robinson-Bassey's (2015) study were female health workers and it's quite surprising that health workers who are expected to promote positive attitudes on cervical cancer screening among women are the ones who had negative attitude towards it.

Terefe (2008) reported in a study conducted in a primary healthcare center in Benghazi Libya that the majority of the study participants (96%) showed a positive attitude towards cervical cancer screening. Terefe's (2008) findings showed that having a good attitude will influence the practice towards cervical cancer screening and it is mostly facilitated by having a good understanding of cervical cancer and screening.

Less than half of the respondents opined that doing a cervical cancer test cannot prevent women from having cervical cancer. Cervical cancer test helps one detect cervical cancer early and early detection helps kick-start prevention practices that will stop the spread of the cancerous cells in the cervix. About half of the respondents disagreed with the statement that going for cervical cancer screening is unnecessary if there are no signs and symptoms. This contrasts with findings from Jassim, Obeid and Al Nasheet (2018) study among women visiting primary health care Centres in Bahrain, it was reported that many of the respondents disagreed that going for cervical cancer screening is unnecessary if there are no signs and symptoms. Less than half of the respondents agreed that if a male healthcare provider performed the cervical cancer screening test, they would feel embarrassed. Jassim *et al*., (2018) also reported that majority of participants felt embarrassed when examined by a male doctor. Not every woman will be comfortable with a male doctor conducting cervical cancer screening. Therefore, health centers should take note of this point when planning and implementing cervical cancer screening programmes for women, most especially those in the Northern region of Nigeria.

The majority of the respondents have not utilised cervical cancer screening services. This is similar to a study conducted in Tanzania where 96% of the respondents had never gone for cervical cancer screening (Morema, Atieli, Onyango, Omondi and Ouma, 2014). It is also consistent with studies conducted among female health workers, where awareness of cervical cancer was high but the utilisation of cervical cancer screening services was low (Gharoro and Ikeanyi, 2006; Bayo *et al*., 2002). A study carried out in the Northern Central part of Nigeria revealed that screening was associated with awareness of cervical cancer screening (Pillay, Knight and Rmaih, 2009). Another study carried out in Western Nigeria reported that only 3.3% of the respondents utilised cervical cancer screening.

The accessibility, availability, and affordability of cervical cancer screening services are largely dependent on the health system with a major role played by health workers and funds deployed

into the health system. According to previous studies, utilisation of these services is also influenced by limited knowledge of the signs and symptoms of cervical cancer screening (Ndikom, Ofi and Awareness, 2012; Mabelele *et al*., 2018). Acceptability and uptake of these interventions by women may be affected by limited knowledge of the symptoms and consequences of cervical cancer. Low utilisation could also be because of reasons such as fear of an intrusive procedure, time spent waiting for checkup, and service provider barrier where the patient unexpectedly found a male nurse or where poor or no information of the procedure was provided ((Njuguna, Ilovi, Muiruri, Mutai, Kinuthia, Njoroge, 2017) These findings are similar with other studies conducted in sub-Saharan African countries. In a study carried out by Ndikom and Ofi (2012), lack of awareness about the screening was identified as the major factor as well as the fact that some women think that cervical cancer screening services are for educated people and the fact that when people are healthy they don't bother about preventive services as they have other problems to think about.

Early screening for cervical cancer is a key intervention in the reduction of maternal deaths. Cervical cancer screening has been consistently shown to be effective in reducing the incidence rate or the occurrence of new cervical cancer cases and mortality from cervical cancer (Jemal, Bray and Forman, 2012). To increase the utilisation of cervical cancer screening services, awareness and motivation for cervical cancer screening through various outlets should be built. This can be done by continuous education on cervical cancer and screening services, hosting screening events mainly for women, improving the attitude and services of health care providers, and promoting screening tools and policies that complement and are respectful of women across all spheres of life (Maar *et al*., 2016).

More than half of the respondents reported that there are no health facilities where cervical cancer screening is done in their locality. The availability of health care centers where cervical cancer screening can be accessed acts as an important drive to the practice of cervical cancer screening. Dike and Ijeoma (2017) reported that the unavailability of screening services constitutes the major reason that affects utilisation of cervical cancer screening services in that study. It also corresponds with Babatunde and Ikimalo (2010), where the absence of health facilities, lack of required personnel, equipment and unavailability of consumable supplies to run a successful screening program served as a hindering factor for the utilisation of cervical screening. A study conducted in

India, however, pointed out the fact that lack of patient-friendly health services was reported as the most salient barriers towards cervical cancer screening among women in India (Singh and Badaya, 2012).

Few of the respondents reported that the tests were very expensive. This supports the findings of a study conducted in Ibadan where it was reported that financial constraint is one of the major problems hindering women from going for cervical cancer screening in Nigeria as the available services are not free. Shresta (2019) as well reported that lack of money as well as fear of the painful procedure, fear of being diagnosed with cancer and stigma were reasons for not utilising cervical cancer screening (pap smear test).

Other reasons stated by respondents include the attitude of health care workers, lack of support from partners or husbands or others, not reccoemnded by a doctor or a nurse and a desire not to expose their private part for the screening. This is expected considering the cultural and religious beliefs of the Northerners. A lot can be done by paying advocacy visits to Ward District Committee, community leaders, traditional leaders, and religious leaders to help remove barriers such as lack of support from partners. Also, interventions targeting the health workers and their attitude to patients should be implemented. When the health workers are not receptive and patient with these women, it will discourage them from accessing the cervical cancer screening services.

5.2 Conclusion

Most of the respondents had fair knowledge on cervical cancer and more than half had a fair attitude towards cervical cancer screening services. The utilisation level of cervical cancer screening was low and the uptake of HPV was also low. Some of the factors that were reported by the respondents that influenced the utilisation of cervical cancer screening services include; poor availability and affordability of cervical cancer screening services, the attitude of health workers, fear of the screening procedure, lack of support from partner/husband or others, not suggested by a doctor or a nurse. These factors cut across the individual, community and institutional levels thus, multi-component, multi-level interventions are needed to improve the utilisation of cervical cancer screening services. Both the household, the community members, the health facility and the government (all other sectors) have to play their roles in making the utilisation of cervical cancer screening services a priority in Gombe State

5.3 Recommendations

Following the outcome of this research, the following recommendations are suggested;

1. Community health care workers should plan and implement programs targeted at promoting cervical cancer screening in markets, offices, and schools. Public education and awareness will help women seek medical attention if they have signs and symptoms of cervical cancer. This information should also be disseminated in a culturally acceptable way
2. Interventions on cervical cancer screening targeting household heads and stakeholders in communities in Gombe should be planned and implemented. This will help increase the support from the family, community, religious and traditional institutions to utilize cervical cancer screening services.
3. Information, Education and Communication (IEC) materials on cervical cancer and its screening should be designed in ways that the members of the community will be able to understand. This should be used to educate women in strategic places such as town halls, social gathering spots, mosques, churches, schools, etc
4. Women in Gombe should be trained on income-generating activities, to empower them financially. This will help remove the barrier of fund which prevents women from utilising cervical cancer screening services. The Ministry of Women Affairs in Gombe State should facilitate the women empowerment programme.
5. Facilities and equipment needed for the early detection, diagnosis, and treatment of cervical cancer should be provided by the government, most especially at the community level. This will help remove the barrier of low accessibility of cervical cancer screening.
6. Primary health care workers should include cervical cancer in their education for women to provide information to their patients most especially during postnatal and antenatal care services.
7. Media such as televisions and radio stations that most people listen toto should be used as a medium to communicate the right knowledge on cervical screening. This will increase awareness and encourage more women to utilize the screening services regardless of their health status.

REFERENCES

Abiodun, O., Fatungase, O., Olu-Abiodun, O., Idowu-Ajiboye, B. and Awosile, J. 2013. Assessment of Women's Awareness and Knowledge about Cervical Cancer and Screening and Barriers to Cervical Cancer Screening in Ogun State, Nigeria. *Journal of Dental Medicine Science*; *IOSR-JDMS*, *10*(3), pp.52-58.

Ackerson, K. and Preston, S.D. 2009. A decision theory perspective on why women do or do

Ackerson, K., Fellow, W. P., Gretebeck, K., and Assistant, R. N. 2007. Factors influencing cancer screening practices of underserved women, 19, 591–601. https://doi.org/10.1111/j.1745-7599.2007.00268.x

Adewole, I. F. 2008 Infection and Cancer: The Triumph of Science over Death 2nd DrChinyere Aneziokoro Memorial Lecture university of Ibadan international journal of caring sciences,2017 May-August volume 10/issues/763

Ahmed, S., A., Sabitu, K., Hadejia S., Ahmed. I., R. 2013. Knowledge, attitude, and practice of cervical cancer screening among market women in Zari, Nigeria, Nigeria Medical Journal. SEPT-OCT;54(5):p316-319.Doi :10.4103/0300-1652.122337

Ajzen, I., 1991. The theory of planned behaviour reaction and reflection. Organisational Behaviour and Human Decision 2011;50:179-211

Ajzen, I., and Fishbein, M., 1980. Understanding Attitudes and Predicting Social Behaviour.https//www.scienceopen.com/book?vid=c20c4174-d8dc-428d-b352-280b05eacdf7

Akinfenwa T., A,. and Monsur T., A,. 2018 Burden of cervical cancer in Northern Nigeria *Tropical Journal of Obstetric and Gyneacology*,35(1),pp.25-9

Akinpelu, A. O., Agboola, O. A., and Umezurike, E. T. 2018. Awareness and Perception towards the Utilisation of Cervical Cancer Screening (CCS) Services among Nurses in a Teaching Hospital in Ibadan, Nigeria, Global Journal of Medical Research. 18(2). https://globaljournals.org/GJMR-volume18/2-awareness and perception-towards.pdf.

Akinola, O.I., Aimakhu, C.O., Ezechi, O.C. and Fasubaa, O.B., 2018. Society of obstetrics and gynecology of Nigeria–Clinical practice guidelines: Guidelines for the prevention of cervical cancer. *Tropical Journal of Obstetrics and Gynaecology*, *35*(3), pp.371-376

Alfaro, K. M., Gage, J. C., Rosenbaum, A. J., Ditzian, L. R., Maza, M., Scarinci, I. C., Cremer, M. L. 2015. Factors affecting attendance to cervical cancer screening among women in the Paracentral Region of El Salvador: a nested study within the CAPE HPV screening program, 1–8. https://doi.org/10.1186/s12889-015-2360-7

American Cancer Society 2013. Cancer Facts and Figures. Atlanta, GA: American Cancer

American Cancer Society 2014. Cervical cancer: detailed guide.

American Cancer Society 2020. https:/./.americancancersociety.allegiancetech.com/cgi-bin/qwebcorporate.dll?idx=95HPTG&lastvisitedURL=https/./.www.cancer.org/cancer/cervical-cancer/.detection-diafnosi-staging/cervical-cancer-screening-guidelines.html

Aminisani, N., Fattahpour, R., Abedi, L., and Shamshirgaran, S. M. 2016. Determinants of Cervical Cancer Screening Uptake in Kurdish Women Living in Western Iran aAsian Pacific Journal of Cancer Prevention 2014, 17(8), 3763–3767.doi:1014456/apjcp.2016.167

Amos D. M., Christopher G. O., Edward M.W., Geogios L., Henry W., Martin R. (2016) awareness of cervical cancer risk factors and symptoms: cross-sectional community survey in post-conflict northern Uganda International Journal of Public Participation in Health care and health policy,2016 Jul. 19;40: 854-867.23.doi: 10.1111/ hex.12382

Amosu A. M., Degun A., M., Babalola A., O. and Thomas M., A. 2011. Level of specific knowledge, awareness, perception, and screening behaviour regarding carcinoma of the cervix among rural women in Iwo local government area, Osun State, Nigeria. Annals of Biological Research, 2 (2): 206-221.

Anorlu, R.I. 2008. Cervical cancer: The Sub-Saharan African perspective. Reproductive Health Matter,16:32,41-49,DOI:10.106/s0968-8080(08)32415-x

Anorlu, R.I., Banjo, A.A. and Odoemhum, C. 2000. Cervical cancer and cervical cancer among Antenatal Clinic Attendees in Selected Hospitals in Ibadan, Nigeria. Retrieved 7th August

Arulogun O., S., Maxwell O., O. 2012. Perception and utilisation of cervical cancer screening services among female nurses in University College Hospital, Ibadan, Nigeria. Pan Afr Med J 11: 69.

Aschengrau, A. and Seage, G., R. 2013. Essentials of epidemiology in public health. 3rd edition. attitude and practice about cancer of the uterine cervix among women living in Kinshasa,

Aweke Y., H., Ayanto S., Y., Ersado T., L., 2017. Knowledge, attitude and practice for cervical cancer prevention and control among women of childbearing age in Hossana Town, Hadiya zone, Southern Ethiopia: Community-based cross-sectional study. PLoS ONE 12(7): e0181415. https://doi.org/10.1371/journal.pone.0181415

Awosan J., K., Hassan M., Ibrahim M B. 2017. Knowledge of Cervical Cancer and Uptake of Pap Smear Test and Human Papillomavirus Vaccination among Gynecologic Clinic Attendees in Sokoto, Nigeria. International Journal of Scientific Study. DOI: 10.17354/ijss/2018/223

Awofeso, O., Roberts, A.A., Salako, O., Balogun, L. and Okediji, P., 2018. Prevalence and pattern of late-stage presentation in women with breast and cervical cancers in Lagos University Teaching Hospital, Nigeria. *Nigerian Medical Journal: Journal of the Nigeria Medical Association*, *59*(6), p.74.

Ayinde O., A. and Omigbodun A., O. 2003. Knowledge, attitude and practices related to prevention of cancer of the cervix among female health workers in Ibadan. J Obstet Gynaecol.;23(1):59–62.

Ayinde, O., A., Omigbodun A., O. and Ilesanmi, A., O. 2004. Awareness of Cervical Cancer, Papanicolaous smear and utilisation among female undergraduate in Ibadan.*Nigeria.African Journal Reproductive Health*Dec;8(3):68-80.PMID17348326

Babatunde, S. and Ikimalo J. 2010. Uptake of cervical cancer screening: awareness, willingness and practice among antenatal clinic attendees in Port Harcourt, Nigeria. Port Harcourt Medical Journal. 4:149–54.

Babatunde, S., Olusola, I., Olusegun, J., and Sunday, J. 2017. Knowledge and Awareness of Cervical Cancer Screening Among Women of Reproductive Age in Ikere Ekiti Local

Government Area, Ekiti State.*Nigeria International Journal for Caring Sciences* 10(2), 755–763.

Balogun M., R., Odukoya O. Oyediran M. and Ujomu P. 2012. Cervical Cancer Awareness and Preventive Practices: A challenge for Female Urban Slum in Lagos, South West*, Nigeria. African Journal of Reproductive Health March* 16(1):p75

Bateman, A., C., Katundu, K., Mwanahamuntu M., H., Kapambwe, V., V., Hicks M., L., Chi B., H., Stringer, J., S., Parham, G., P., Chibwesha C., J. 2015. The burden of cervical pre-cancer and cancer in HIV positive women in Zambia: a modeling study July 2015)24;15: 541.doi;10.1186/s12885-015-1558-5.

Bessler, P., and Jolly, P. 2007. Factors Affecting Uptake of Cervical Cancer Screening among Clinic Attendees Factors Affecting Uptake of Cervical Cancer Screening Among Clinic Attendees in Trelawny, Jamaica, (Retrieved May 2014). https://doi.org/10.1177/107327480701400410

Bingham, A., Bishop, A., Coffey, P., Winkler, J., Bradley, J., Dzuba, I., Winkler, J. 2003. Factors affecting utilisation of cervical cancer prevention services in low-resource settings.Salud publica Mex.2003;45suppl 3:S408-16.doi:10.1590/s0036-36342003000900015.PMID14746034.45(1).

Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R., Torre, L., and Jemal, A. (2018). Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: *A Cancer Journal for Clinicians*, 68(6),pp.394–424. Retrieved from www.ncbi.nlm.nih.gov/m/pubmed/30207593/

Bruni, L., Albero, G., Serrano, B., Mena, M., Gomez D., Munoz, J., Bosch, F. and De Sanjose, S. 2018. Human Papillomavirus and related cancers, Fact Sheet 2018. ICO/IARC Information Centre on HPV and Cancer Nigeria, 2014, 12–14.

Bruni, L., and Castellsague, X., 2009. WHO/ICO Information Centre on HPV and Cervical Cancer. UN Nuevo recurso en la Web. *Formacion Medicca Continuada en Atencion Primaria.* Februar ,16(2),p55

Bruni, L., Barrionuevo-Rosas, L., Albero, G., Serrano, B., Mena, M., Gómez, D., Muñoz, J., Bosch, F.X. and de Sanjosé, S. 2017. Human papillomavirus and related diseases in the world, Summary Report 27 July 2017, ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre).

Cancer Society of America 2016. Cervical Cancer Information Sheet. Retrieved 7th August 2019.PLosOne,20127(10):e46583.22.https://www.google.com.ph/amps/s/amp.cancer.org/research/cancer-facts-statistics/all-cancer-figures/cancer-facts-figures-2016.html

Center for Infection Disease 2014. Cervical Cancer Research in Zambia, womens Health: Cervical cancer.http:/./.www.cidrz.org/cervical-cancer/.accessed 15 Nov, 2018

Cham, B. 2018. Womens Health Science Journal Knowledge, Practice and Acceptability of Cervical Cancer Screening among Midwives in the Gambia. https://doi.org/10.23880/whsj-16000123

Charan, J., and Biswas, T. 2013. How to Calculate Sample Size for Different Study Designs inMedical Research? Indian Journal psychological Medicine 2013 April;35(2):121-6.doi:10.4103/0253-7176.116232.PMID:24049221;PMCID:PMC3775042

Chosamata, M. S., Hong, S. A., and Tiraphat, S. 2015. Determinants of cervical cancer screening utilisation among women aged 30-45 years in Blantyre district, Malawi,Journal of Public Health,13(1).2015

Chukwuali LI, Onuigbo WIB, Mgbor NC. 2003. Cervical cancer screening in Enugu, Nigeria. Tropical Journal of Obstetrics and Gynaecology. 20:109-12

Center for Infection Disease. (2014) Cervical Cancer Research in Zambia.

City Population, Gombe State in Nigeria. 2017.) https://citypopulation.de/php/nigeria-admin.php?adm1id=NGA016. Accessed on May, 2, 2019.

Conde-ferráez, L., Etelvina, R., Allen, S., Carrillo, J. R., Ayora-talavera, G., and González-losa, M. R. 2012. Factors Associated with Cervical Cancer Screening Amongst Women of

Reproductive Age from Yucatan, Mexico.Asian PacJournal Cancer Prevention 13(1), 9–14;2012;13.9.4719.PMID23167409.

Daniyan B., C, Ekwedigwe K., C, Yakubu E, Mbamara S., U. and Amamilo I., C, (2019) Assessment of Knowledge, Attitudes and Practice of Cervical Cancer Screening Among Female Health Workers in a Tertiary Health Facility in South-East Nigeria. J Integr Oncol 8:228. DOI: 10.4172/2329-6771.1000228

Denny, L., Quinn, M. and Sankaranarayanan, R. 2006. Screening for cervical cancer in developing countries. *Annals of Tropical Medicine and Public Health*.vaccinne 24,pp .S71-S77

Dike, F., M. and Ijeoma, O., E. 2017. Factors Influencing Uptake of Cervical Cancer Screening among Female Health Workers in University of Port Harcourt Teaching Hospital, Rivers State, 2(1), 1–9. https://doi.org/10.18311/jhsr/2017/8530

Dulla D., Daka, D. and Wakgari, N. 2017. Knowledge about cervical cancer screening and its practice among female health care workers in southern Ethiopia: a cross-sectional study. https://doi.org/10.2147/IJWH.S132202

Ebu, N., I., Mupepi, S., C., and Siakwa, M., P. 2015. Knowledge, practice, and barriers toward cervical cancer screening in Elmina, Southern Ghana. *International Journal Women health* 24(7): 31–39.doi:10.2147/ijwh.s71797.PMID:25565902;PMCID:PMC4284003.

Ehiemere, I. O., and Frank, M. D. 2015. Attitude and practice of cervical cancer screening among female health workers in university of Port- Harcourt teaching hospital, Rivers StateIranian. *Journal of Nursing and Midwifery*. 4(4), 72–82.doi:10.14303/JRNM.2015.125

Federal Ministry of Health, Nigeria Cancer Control Plan 2008– 2013, 2008. FMOH, Abuja, Nigeria, 2008

Ferlay J, Soerjomataram I, Dikshit R, Eser S, Mathers C, Rebelo M. 2015. Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. *International Journal of cancer*. 136(5),pp. E359-E386.

Feyi-Waboso PA, Kamanu C, Aluka C. 2005. Awareness and Risk factors for cervical cancer among women in Aba, South-Eastern, Nigeria. *Trop J Obstet and Gynaecol*. 2005; 22:25-28. | Article 20.

Gampos, N., Sharma, M., Clark, A., Lee, K., Geng, E., Regan, C., Kim, J. and Resch, S. 2017. The health and economic impact of scaling cervical cancer prevention in 50 low-Mid income-countries.*int jGynecology obstetric*,138,47-56. http://doi10.1002/ijgo.12184

Geremew, A. B., Gelagay, A. A., and Azale, T. 2018. Uptake of pre cervical cancer screening service and associated factors among women aged 30-49 years in Finote Selam town northwest Ethiopia Internatiinaljournal of collaborative Research onInternal Medicine and Public Health. 10(2), 829–842.http://internalmedicine.imedpub.com/uptake-of-pre-cervical-camver-screening services associated-factors-among-women-aged-3049-years-in-finote-salem-town-northwest.php?aid=23301:.

Getinet M, Gelaw B, Sisay A, Mahmoud EA, Assefa A. 2015. Prevalence and predictors of Pap smear cervical epithelial cell abnormality among HIV-positive and negative women attending gynecological examination in cervical cancer screening center at Debre Markos referral hospital, East Gojjam, Northwest Ethiopia. BMC Clin Pathol.;15:16. http://doi.org/10.1186/s12907-015-0016-2

Ghana Health Service 2013. Non-communicable Disease Control Programme: Strategies for Cervical Cancer Prevention in Ghana: Planning Meeting and Training of Health Staff for HPV Demo Vaccination in Ghana. Cape Coast, Ghana: Ghana Health Service; 2013.

Goyal A, Vaishnav G, Shrivastava A, Verma R. and Modi A. 2013. Knowledge, Attitude and practices about cervical cancer and screening among nursing staff in a teaching hospital. Int J Med Sci Public Health. 2:249–53

Green, L. and Kreuter, M., (1999) The precede–proceed model. *Health promotion planning: an educational approach. 3rd ed. Mountain View (CA): Mayfield Publishing Company*, pp.32-43.

Harsha Kumar, H., and Tanya, S. 2014. A Study on Knowledge and Screening for Cervical Cancer among Women in Mangalore City. Annals of medical and health sciences research, 4(5), 751–756. http://doi:10.4103/2141-9248.1415470

Hoque, M., E. 2010. Cervical cancer awareness and preventive behaviour among female university students in South Africa. *Asian Pac J Cancer Prev*, 11(1), 127-30.

Human Papilloma Virus and Related Disease report Nigeria. Version retrieves from www.hpvcentre.net on 17, June 2019

Hyacinth, H.I., Adekeye, O.A., Ibeh, J.N. and Osoba, T. 2013. Cervical cancer and Pap smear Ibadan, Nigeria. Retrieved 7th August 2018.

Ibekwe, C.M., Hoque, M.E. and Ntuli-Ngcobo, B. 2010. Perceived benefits of cervical cancer screening among women attending Mahalapye District Hospital,Botswana.Asian Pac Journal Cancer Prevention.2010;11(14):10217-7.PMID:21133618.

Idowu A, Olowookere A, Fagbemi A, Ogunlaja O. 2016. Determinants of Cervical Cancer Screening Uptake among Women in Ilorin, North Central Nigeria: A Community Based Study. Journal of Cancer Epidemiology, Volume 14 Article ID 6469240,page 1-8 http://dx.doi.org/ 10.1155/ 2016/6469240

Ifemelumma C., C, Anikwe C., C., Okorochukwu B., C. (2019). Cervical Cancer Screening: Assessment of Perception and Utilisation of Services among Health Workers in Low Resource Setting. International Journal of Reproductive Medicine. Article ID 6505482, 8 pages. https://doi.org/10.1155/2019/6505482

Iliyasu Z., Anubakar S., Aliyu H., Galadananci S., 2010. Cervical cancer risk perception and predictors of human papillioma virus vaccine acceptance among female university students in northern Nigeria. *J Obstet Gynecol*.;30(8):817–862.

International Agency for Research on Cancer. 2013. Mortality and prevalence of cervical cancer worldwide. Available https://www.cancer.org/cancer/cervical-cancer.html Retrieved on September 11, 2019.

Islami F., Goding-Sauer A., Miller D., Siegel L., Fedewa A., Jacobs J., McCullough L., Patel V., Ma J., Soerjomataram I., Flanders D., Brawley W., Gapstur M., Jemal A. 2018. "Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States". Ca. 68 (1): 31–54. doi:10.3322/caac.21440. PMID 29160902.

Jassim, G., Obeid, A., and Al Nasheet, H. A. 2018. Knowledge, attitudes, and practices regarding cervical cancer and screening among women visiting primary health care Centres in Bahrain. BMC public health, 18(1), 128. doi:10.1186/s12889-018-5023-7

Jedy-Agba E. and Adebamowo C. 2012. Knowledge, attitudes and practices of AIDS associated malignancies among people living with HIV in Nigeria. *Infectious Agents and Cancer* 7(1),p28 2012).http://doi.org/10.1186/1750-9378-7-28.

Jedy-Agba E., Odutola, M., Oga, E., Hassan, R. and Adebamowo, C. 2016. Cancer in Nigeria. *Nigerian National System of Cancer Registries* .5(1).:doi:10.3389/fonc.2016.00216.

Jemal A., Bray, F ,. And Forman D., 2012. Cancer burden in Africa and opportunities for prevention Cancer.118 (18):pp.4372–4384.http://doi:10.1002/cncr.27410.Epub2021 jan17.PMID:22252462.

Jia Y, Li S, Yang R, Zhou H, Xiang Q, Hu T. 2013. Knowledge about cervical cancer and barriers of screening program among women in Wufeng County, a high-incidence region of cervical cancer in China.PLoS One.2013Jul2:8(7):e67005.http://doi:10.1371/journalpone.0067005.PMID:23843976;PMCID:PMCID:PMC3699583.S

John, J. 2011. The knowledge, Attitude, Practice and Perceived Barriers towards screening for Premalignant cervical lessions among women aged 18years and above,in songea Urban, Ruvuma [Dissertation] Muhimbili university Health Allies Science ,2011.doi:http://dx.doi.org/10.18203/23/23/94-6040.ijcmph20181218.

Jones, R.E. and Lopez, K.H. 2013. Human reproductive biology. 4th edition. London: ISBN-13:978-0123821843, ISBN-9780123821843. 11(4):1021-1027.

Kibicho, J. 2014. Factors Influencing Utilisation of Cervical Cancer screening services in Embu hospital, Embu county,Kenya.http:hdl.handle.net/11295/74569

Kileo, N., M., Michael, D., Neke, N., M., and Moshiro, C. 2015. Utilisation of cervical cancer screening services and its associated factors among primary school teachers in Ilala Municipality,DaresSalaam,Tanzania.BMCHealthServicesResearch. https://doi.org/10.1186/s12913-015-1206-4

Kwok C, White K, Roydhouse JK. 2011. Chinese Australian women's knowledge, facilitators and barriers related to cervical cancer screening: a qualitative study. Journal of Immigrant and Minority Health. 13(6):1076–83.

Kish, L. (2004) *Statistical design for research* (Vol. 83). John Wiley & Sons.

Lees, B.F., Erickson, B.K. and Huh, W.K. (2016) Cervical cancer screening: evidence behind the guidelines. *American journal of obstetrics and gynecology*, *214*(4), pp.438-443.

Liu, T., Li, S., Ratcliffe, J. and Chen, G. (2017) Assessing knowledge and attitudes towards cervical cancer screening among rural women in Eastern China. *International journal of environmental research and public health*, *14*(9), p.967.

Mabelele M., M., Materu J., Ng'ida F., D, Ng'ida F., D. 2018. Knowledge towards cervical cancer prevention and screening practices among women who attended reproductive and child health clinic at Magu district Hospital, lake zone Tanzania: a cross-sectional study. BMC. Cancer *18*(1), p.565.doi:10.1186/s12885-018-4490-7

Mohammed M., M., Fowotade, A., Abdullahi, Y, M., El-nafaty, A., Y., Adamu, D., B., Pindiga, H., U., Bakare R., A. and Osoba, a., O. 2015. Epidemiological patterns of cervical human papillomavirus infection among women presenting for cervical cancer screening in North-Eastern Nigeria, BioMed Central 2005;10:39. DOI10.1186/s13027-015-0035-8.

Modibbo, F.I., Dareng, E., Bamisaye, P., Jedy-Agba, E., Adewole, A., Oyeneyin, L., Olaniyan, O. and Adebamowo, C. (2016) Qualitative study of barriers to cervical cancer screening among Nigerian women. *BMJ open*, *6*(1).

Mukama, T., Ndejjo, R., Musabyimana, A., Halage, A.A. and Musoke, D. (2017) Women's knowledge and attitudes towards cervical cancer prevention: a cross sectional study in Eastern Uganda. *BMC women's health*, *17*(1), pp.1-8.

Mugo A., G. 2018. Factors Associated with Utilisation of Pap Test for Cervical Cancer Screening Among Pregnant Women in Embu County Master of Science Epidemiology Jomo Kenyatta University of Agriculture and Technology.

National Population Commission. 2006. Nigeria 2006 census figures. National Population Commission, 2006.

National Population Commission (NPC) [Nigeria] and ICF. 2019. Nigeria Demographic and Health Survey 2018 Key Indicators Report. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF.

Nattembo, A. 2018. Attitudes, knowledge and perceptions towards cervical cancer messages among female university students. Cogent Medicine, 19, 1–7. https://doi.org/10.1080/2331205X.2018.1451427

Nayak A., U., Murthy S., N., Swarup A., Dutt V., Muthukumar V. 2016. Current knowledge, attitude, and practice about cervical cancer among rural Indian women. International Journal of Medical Science and Public Health; 5:1554-1558

Ndikom C., M., Ofi B., A. 2012. Awareness, perception and factors affecting utilisation of cervical cancer screening services among women in Ibadan, Nigeria: a qualitative study. Journal of Reprod. Health https://doi.org/10.1186/1742-4755-9-11

Nene, B., Jayant, K., Arrossi, S., Shastri, S., Budukh, A., and Hingmire, S. (2007). Determinants of women's participation in cervical cancer screening trial, Maharashtra, India, 031195(March 2006). https://doi.org/10.2471/BLT.

Nwabichie, C., C., Manaf, R., A. and Ismail, S. B. 2018. Factors Affecting Uptake of Cervical Cancer Screening Among African Women in Klang Valley, Malaysia, 19, 825–831. https://doi.org/10.22034/APJCP.2018.19.3.825

Nwankwo K., C., Aniebue U., U., Aguwa E., N., Anarado A., N., Agunwah E. 2011. Knowledge attitude and practice of cervical cancer screening among urban and rural Nigerian women: a call for education and mass screening. Eur J Cancer Care (Engl). ;20(3):362–367.

Ndejjo, R., Mukama, T., Kiguli, J. and Musoke, D. (2017) Knowledge, facilitators and barriers to cervical cancer screening among women in Uganda: a qualitative study. *BMJ open*, *7*(6).

Obeidat B., R., Amarin Z., O., Alzagahal L. 2012 Awareness, practice and attitude to cervical papanicolaou smear among female health care workers in Jordan. Eur J Cancer Care (Engl).;21(3):372–376.

Obi S., N., Ozumba B., C, Nwokocha A., R, Waboso P., A. 2007. Participation in highly subsidised cervical cancer screening by women in Enugu, Southeast Nigeria. Journal of Obstetrics and Gynaecolog. 27(3):305–7

Ogundipe, S. and Obinna C. 2008. Why Cancer is on the rise in Nigeria. Vanguard Media Limited.

Okunnu J. 2010. No woman needs to die from cervical cancer cyst, Oakland Centre, 48 Aguiye Ironsi Street Maitama District Abuja. www.bwsinit.org.

Olubodun, T., Odukoya O. and Balogun M. 2019. Knowledge, attitude and practiice of cervical cancer prevention, among women residing in an urban slum in Lagos, South West, Nigeria. *The Pan African Medical Journal*. Vol. 32: 130. Published 2019. Mar 18. Doi:10:11604pamj.2019.32.130.14432

Oluwaseun O., Opeyemi O., Ojo., Olusola B, Fasuba A. 2017 cervical cancer screening and practice in low resource countries: Nigeria as a case study. Trop J Obstet Gyneacolo,34:170-6

Oluwole, E., O., Mohammed, A., S., Akinyinka, M., R. and Salako, O. 2017. Cervical Cancer Awareness and Screening Uptake among Rural Women in Lagos, Nigeria, Community Medicine and Primary Health Care. 29(1), 81–88.https://www.ajol.info/index.php/jcmphc/article/view/160837.

Omotara, B., Yahya, S., Amodu, M., and Bimba, J. 2013. Assessment of the knowledge, attitude and practice of rural women of northeast Niegria on risk factors associated with cancer of the Cervix. Health 05(09), 1367-1371.doi: 10.4236/health.2013.59186.

Padingani, M., Marape, G., Hwalima, Z., Gombe, N., and Juru, M. T. 2018. Uptake of Cervical Cancer Screening among Women Attending Health Facilities in the City of Bulawayo, 2012, 153–163. https://doi.org/10.4236/ojepi.2018.83013

Shah V., Vyas S., Singh A., Shrivastava M. 2012. Awareness and knowledge of cervical cancer and its prevention among the nursing staff of a tertiary health institute in Ahmedabad, Gujarat, India.Ecancermedicalsscience.2012;6:270.doi 10.3332/ecancer.2012.270.Epub 2012sept 25.PMID:23008746;PMcIDPMC3437739.

Shekhar, S., Sharma, C., Thakur, S., Raina, N. 2013. Cervical cancer screening: Knowledge, attitude and practices among nursing staff in a tertiary level teaching institution of rural India. Asian Pac J Cancer Prev. 14:3641–5.

Shrestha, J., Saha, R., Tripathi, N. 2013. Knowledge, attitude and practice regarding cervical cancer screening amongst women visiting tertiary center in Kathmandu, Nepal. Nepal Journal of Medical science. 2013; 2:85–90

Shrestha, P. 2014. Knowledge, attitude, and practice regarding Pap smear test among women in ward no. 14, Dharan. [Master's Thesis in Public Health: The Arctic University of Norway] Retrieved on August 11 2019 from: http://munin.uit.no/bitstream/handle/10037/7995/thesis.pdf?sequence=2andamp;isAllowed=y.

Siddiqui, T., R., Ghazal, S. and Bibi, S., (2016) Use of the Health Belief Model for the Assessment of Public Knowledge and Household Preventive Practices in Kara- chi, Pakistan, a Dengue-Endemic City. PLoS Neglected Tropical Diseases, 10, No. 11. https://doi.org/10.1371/journal.pntd.0005129

Singh, E., Seth, S., Rani, V., and Srivastava, D., K. (2012). Awareness of cervical cancer screening among nursing staff in a tertiary institution of rural India. Journal of gynecologic oncology, 23(3), 141–146. doi:10.3802/jgo.2012.23.3.141

Thippeveeranna, C., Mohan S., Singh L., R, Singh N. 2013. Knowledge, attitude and practice of the Pap smear as a screening procedure among nurses in a tertiary hospital in north eastern India. Asian Pacific Journal of Cancer Prevention;14(2):849–52.

Liu, T., Li, S., Ratcliffe J. and Chen, G. 2017. Assessing Knowledge and Attitudes towards Cervical Cancer Screening among Rural Women in Eastern China. Int. J. Environ. Res. Public Health, 14, 967

Williams, M., Amoateng P., 2012. Knowledge and beliefs about cervical cancer screening among men in Kumasi, Ghana. Ghana Medical Journal.Sep;46(3):147-51.PMID:23661828:PMCID:PMC3625156.

Winkler, J., Bingham, A., Coffey, P. and Handwerker, W., P. 2008. Women' s participation in a cervical cancer screening program in northern Peru, 23(1), 10–24. https://doi.org/10.1093/her/cyl156

World Health Organisation, 2005. Determinants of Women's participation in Cervical Cancer Screening trial, Maharashtra, India. 2007 Apr; 85(4):264–72. doi: 102471/BLT. 06.031195.

World Health Organisation, 2013. Prevention of cervical cancer through screening using visual.

World Health Organisation, 2018. Comprehensive Cervical Cancer Control: A Guide to essential practice.

World Health Organisation, 2015. Factsheet on Cervical Cancer: Accessed on Nov. 6, 2019; Available at; http://www.who.int/mediacentre/factsheets/fs380/en/.

World Health Organisation, 2017. Cervical Cancer Burden; Accessed on May, 2, 2019; Available at http://www.afro.who.int/en/clusters-a-programmes/dpc/non-communicable-diseases-managementndm/programme-components/cancer/cervical-cancer/2810-cervical-cancer.html.

World Health Organisation. 2012. Country Cooperation Strategy 2008–2011: Ghana. Brazzaville, Republic of Congo: WHO Regional Office for Africa; Available from: http://www.who.int/countryfocus/cooperation_strategy/ccs_gha_en.pdf. Accessed October 21, 2014.

Yang, H., Li, S., Chen, Q. and Morgan, C. 2019. Barriers to cervical cancer screening among rural women in eastern China: a qualitative study, 1–8. https://doi.org/10.1136/bmjopen-2018-026413

Zone, G., and Minch, A. 2017. iMedPub Journals Utilisation of Cervical Cancer Screening and Associated Factors among Female Health Workers in Governmental Health Institution of Arba Minch Town and Zuria District, Gamo Abstract, 5(4), 4–9. https://doi.org/10.21767/2254-6081.100165

Zulu, W. 2017. Factors influencing utilisation of cervical cancer screening services by women at selected clinics of Lusaka urban district of Zambia.http://www.sematicscholar.org/paper/factors-influencing-utilisation-of-cervical-cancer-zulu/222cc2dec3195bb2c5408ffd59fe0b36167ff2b5.

Appendix 1

Questionnaire

Dear Respondent,

I am a post graduate student at the Department of Health Promotion and Education (Population and Reproductive Health Education), Faculty of Public Health, College of Medicine, University of Ibadan. I am conducting a study titled **FACTORS INFLUENCING UTILISATION OF CERVICAL CANCER SCREENING SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN GOMBE LOCAL GOVERNMENT AREA, GOMBE STATE, NIGERIA.**

Please note that your participation in this study is entirely voluntary. Each questionnaire has been given a **CODE NUMBER** to conceal your identity. All information that would be collected during this study will be treated with utmost confidentiality. Your participation in this study is very important as it would help to better understand the factors influencing cervical cancer screening among women of reproductive age and how programs and policies can be developed and implemented to increase cervical cancer screening. Please also note that there are no right or wrong answers to the questions asked or the statements made. The time needed to complete this questionnaire is approximately 20-25 minutes. Your willingness to be interviewed implies you have given consent to participate.

Thank you for cooperating.

Serial Number_____

Please answer all the questions as honestly and accurately as you can — this is very important.

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

1 What is your age as at last birthday (in years)? _____

2 What is your marital status? 1= Single [] 2= Married [] 3=Divorced [] 4=Widowed [] 5= Separated []

3 What is your Religion? 1=Islam 2= Christianity 3=Traditional 4=Others

4 What is your highest level of education:1 = No formal education 2 = Primary 3=Secondary 4 =Vocational 5 = Tertiary (specify) 1 = NCE 2 = OND 3 = HND 4 = University (undergraduate and postgraduate)?

5 What is your husband's highest level of education: 1 = No formal education 2 = Primary 3 = Secondary 4 = Vocational 5 = Tertiary (specify); 1 = NCE 2= OND 3 = HND 4 = University (undergraduate and postgraduate)

6 What is your occupation: 1 = Civil servant 2 =House wife 3=Artisan 4 = Labourer/Cleaner 5 = Student 6 = Unemployed 7 = Trading 8= Professional 9= Others (specify)_____?

7 How long have you been married? _____ (for married only)

8 What is your type of marriage 1 = Polygyny 2 = Monogamy?

9 How many children do you have? _____

10 Average monthly income_____

SECTION B: QUESTIONS ON KNOWLEDGE OF CERVICAL CANCER AND CERVICAL SCREENING AMONG RESPONDENTS

11 Ever heard of cancer of the cervix? 1= Yes 2= No

12 Is there any history of cervical cancer in your family? 1= Yes 2= No

13 Knowledge of cervical cancer

		1. Yes	**2. No**
1.	Cervical cancer can lead to death		
2.	HPV infection has been identified as the major cause of cervical cancer.		

3.	HPV vaccine guarantee a 100% protection/prevention from cervical cancer		
4	Screening for cervical cancer helps in early diagnosis of cervical cancer		
5.	It is sufficient to do the cervical cancer screening only once in a woman's life time to eliminate the risk of cervical cancer		
6.	Cervical cancer is a genetic disease.		
7.	Cervical cancer can be detected in its earliest stages.		
8.	Cervical cancer is curable if detected early		
9.	Postmenopausal women still have the risk of getting cervical cancer.		
10.	Cervical precancerous lesions may be detected by screening		
11.	Having multiple sexual partners can increase a woman's risk of having cervical cancer		
12.	Family history of cervical cancer increases a woman's risk of having cervical cancer		
13.	Women should have Pap Smears at least every 3 years		
14.	A woman should not have sex 24 h before having Pap smear		
15.	Pap smears can be performed at both menstrual and non- menstrual period		
TOTAL SCALE SCORE = 15 Correct answer 1 score Incorrect answer 0			

14 Which of the followings are signs of cervical cancer infection?

		Unprompted		Prompted	
S/N	**Signs**	**Yes**	**No**	**Yes**	**No**
1.	Absence of menstruation/ irregular menstruation				
2.	Bleeding between periods				
3.	Foul smelling vagina discharge				
4.	Longer and heavier menstrual flow				
5.	Post-menopausal bleeding				
6.	Itching at the vagina				
7.	Bleeding after intercourse				
8.	Painful menstruation				
9.	Severe bleeding				

TOTAL SCORE = 9

Correct answer 1score

Incorrect answer 0

15 Mention the risk factors associated with cervical cancer which you know? **[DON'T PROMPT THE RESPONDENT, SIMPLY INDICATE THE OPTIONS MENTIONED]**

S/N	Risk factors	1. Yes	2. No
1.	Having sex with uncircumcised male partner		
2.	Old age		
3.	Family history of cervical cancer		
4.	Low socioeconomic status		
5.	Spiritual attack		

6.	Unhealthy diet		
7.	High numbers of sexual partners		
8.	High rates of abortion		
9.	HPV infection		
10.	Early age of sexual debut		
11.	Previous history of sexually transmitted diseases		
12.	Tobacco use		
13.	Poor menstrual hygiene		
14.	Prolong use of birth control pills		
15.	High rate of pregnancy		
16.	Unprotected sexual intercourse		
17.	Human immunodeficiency syndrome		
18.	Living with a cervical cancer patient		
19	Others (specify)		
	TOTAL SCORE = 19 Correct answer 1score Incorrect answer 0		

16 Do you know about any cervical cancer screening procedure? 1= Yes 2=No (if NO skip to 18)

17 If yes, which one?

a. Pap smear test.
b. VIA (Visual inspection using Acetic acid)
c. VILI (Visual inspection using Lugol's Iodine)
d. Colposcopy
e. Biopsy
f. Others.

18 When should a female start screening for cervical cancer?

a. From 18 years and above
b. After menopause.
c. When one gets symptoms of cancer of the cervix
d. When one gets a sexually transmitted infection.
e. When one becomes sexually active
f. I do not know

19 Mention one the benefit of cervical cancer screening that you know

……

……

SECTION C: QUESTIONS ON ATTITUDE TOWARDS CERVICAL CANCER SCREENING AMONG RESPONDENTS

20 Instruction: Tick either Agreed, Disagreed and undecided to the following(for respondents who are not >25 years should skip to question 39)

S/N	Statement	Agreed	Disagreed	Undecided
1.	I am not confident to ask questions from the healthcare providers at the clinics regarding cervical cancer screening			
2.	If a male healthcare provider performed the cervical cancer screening test, I would feel embarrassed			
3.	I don't know that practicing cervical cancer screening can help in detecting cervical cancer early			
4.	Doing a cervical cancer test cannot prevent women from having cervical cancer			
5.	I believe going for cervical cancer screening is unnecessary if there are no signs and symptoms			
6.	I am of the opinion that going for cervical cancer screening is too expensive			
7..	I don't believe that something wrong will be			

	detected if I go for cervical cancer screening			
8.	I am not at risk of cervical cancer so there is no need to be screened			
9.	I am confident that I am spiritually protected so there is no need for cervical cancer screening			
TOTAL SCORE = 9 Correct answer 1 Incorrect answer 0				

SECTION D: QUESTIONS ON LEVEL OF PRACTICE OF CERVICAL SCREENING (for womem aged 25years and above)

21 Have you had cervical cancer screening done before?

1. Yes
2. No. (If No, go to question 28)

22 If yes, which one?

1. Pap smear test.
2. VIA (Visual inspection using Acetic acid)
3. VILI (Visual inspection using Lugol's Iodine)
4. Colposcopy
5. Biopsy
6. Others (specify)……

23 When last did you go for cervical cancer screening? .....

24 Where did you have the cervical cancer screening done? 1= at a health facility 2=during special events or outreach by NGOs or religious organisations 3= during special events or outreach by government 3=others (specify)……..……

25 What was the reason for going for cervical cancer screening?

1. Preventive measures
2. Advice from family and friends
3. Media influence
4. Health worker's recommendation
5. As part of my regular check-up
6. Was using IUCD, or oral contraceptives
7. There was free cervical cancer screening by non-governmental organisation/government/religious organisations
8. Others (specify)……

26 At what age did you have your first cervical cancer screening? .....

27 How often do you go for cervical cancer screening?

1. Have been screened only once in my life time
2. Yearly
3. Every two years
4. Every three years.
5. Others specify……

28 Have you ever taken HPV vaccine for the protection against cervical cancer?

1. Yes [] 2. No []

29 If yes to question 28, how many dosage(s) of HPV vaccine have you taken ----------?

SECTION E: QUESTIONS ON FACTORS INFLUENCING THE UTILISATION OF CERVICAL CANCER SCREENING SERVICES AMONG RESPONDENT

30 Are there any health care facilities where cervical cancer screening is done in your locality?
1= Yes 2= No (if NO, skip to Number 39)

31 If your response is yes to the above question, does it operate daily? 1= Yes 2= No
NO (If No specify the operation interval days…….)

32 Have you been screened for cervical cancer at that health care facility 1= Yes 2= No?

33 Do you feel comfortable going to that health care facility for cervical cancer screening?
1= Yes
2= No

34 How long does it take to receive the cervical cancer screening results?

1. Hours (specify)…….
2. Days (specify)…….
3. Weeks (specify)……
4. Months (specify)……

35 How much does it cost to travel to the nearest health facility where cervical? Cancer screening is done? (Specify amount in Naira……

36 What is your mode of transport to the nearest health facility where you can access? Cervical cancer screening services?

1. Walking
2. Bicycle
3. Vehicle
4. Other (Specify)

37 Is the road between your home and the nearest health care screening facility passable throughout the year?

1. Yes
2. No
3. If no, explain

38 Which of the following reasons influenced your decision not to go for cervical cancer screening services?

		Yes	**No**
1.	Fear of the procedure		
2.	Cultural / Religious reason		
3.	I'm healthy so it's not necessary		
4.	Not suggested by my doctor or a nurse		
5.	Attitude of health care workers		
6.	Lack of support from partner/husband or others (i.e. friends, parents, sisters etc.)		
7.	Lack of clinics where cervical cancer screening is done in my community		

8.	I don't want to expose my private part for the screening		
9.	The tests are very expensive.		
10.	Services are offered at the big hospitals and it is expensive to reach there		
11.	I am afraid of being screened positive for cervical cancer		
12.	My partner will not want me to do cervical cancer screening		
13.	I am afraid of what people will say if I am screened positive		
14.	I was unaware of the test		
15.	Absence of female healthcare workers as screeners		
16.	Others, please indicate		

TOTAL SCORE = 16

Correct answer 1

References

Abiodun, A. O. (2017). Awareness and perception of risk for cervical cancer among women in Ogbomoso, Nigeria. *Tropical Journal of Obstetrics and Gynaecology*, 218-223.

Incorrect answer 0

39 What are the possible challenges you think an individual face when trying to access cervical cancer screening information and services? Is any of the following *a Big, a Small or No problem*

S/N	Statement	Big	Small	No problem
1.	Knowing where to get cervical cancer screening services			
2.	Getting permission from husband to go to the healthcare facility for cervical cancer screening			
3.	Getting money needed for cervical cancer screening			

4.	Distance to a health facility			
5.	Having to take transport			
6.	Concern that there may not be a trained healthcare provider			
7.	Concern that there may not be a trained female healthcare provider to screen			
8.	Fear of being informed that I have cervical cancer			
9.	Concerns that there may not be equipment			
10.	Concerns about the opening hours			
11	Others (Specify)…….			
	TOTAL SCORE =10 Correct answer 1 Incorrect answer 0			

Thank you for your time.

Appendix 2

Takaddar Tambayoyi

Barkan ki dai me karatu,

Da Fari, Ni da daliba ce wacce ke neman kwarewa akan ilimin kula da lafiyar al'umma a matakin digiri na biyu a Jami'ar Ibadan da ke Kudancin Najeriya, Tsangayar Kula da Lafiyar Al'Ummah, Kwalejin Koyon Aikin Likitanci. Ina yin nazari ne akan

DALILAN DAKAN JAWO ZUWA KO QIN-ZUWA YIN GWAJIN SANKARAR BAKIN MAHAIFA DAKE SHAFAR BAKIN MAHAIFA TSAKANIN MATAN DA SUKA KAI MUNZALIN HAIHUWA DAKE ZAUNE CIKIN QARAMAR HUKUMAR GOMBE, JIHAR GOMBE DAKE NIGERIA

Bayar da gudunmawar ku akan wannan nazari ba dole bane, kuma tofa albarkacin bakin ku game da wanannan bincike ganin dama ne ba wai dole ba ne. Kina da damar kin amsa tambayoyina kuma zaki iya qin saurara ta ma, babu cuta babu cutarwa. Raayinki ba zai shafi alakar ki da i mai bincike ba. Duk abunda zaki fada muni sirri ne tsakanina da ke kuma bazan alakanta ki dashi ba. Wannan dalilin ne ma yasa mukai amfani da alamomin gane wannan takardar ba tare da yin amfani da sunan abokin tattaunawar mu ba.

Amma kuma gudunmawar ki game da wannan bincike na da matuqar muhimmanci domin, hakan zai taimaka qwarai da gaske domin gano dalilan dake janyo ko taimakawa yunqurin karbar tsarin gwajin ciwon daji dake shafar bakin mahaifa a tsakanin mata wadanda suka kai munzalin haihuwa. Da kuma yanda za'a inganta tsarikan lafiya da zasu inganta da kuma qara yawan mutanen dake zuwa wajen gwajin ciwon dajin dake shafar bakin mahaifa.

Ina so nayi amfani da wannan dama in tuna mana cewa babu wata amsa da za ace mata daidai ko ba daidai ba, don haka kowa ya fadi raayinsa da fahimtarsa game da abunda zamu tattauna akai. Tattaunawar mu da ke ba zata wuce minti 20 zuwa minti 25 ba. Yardarki game da ci gaba da amsa tambayoyin shike nuna kin amince ki bada gudunmawar ki game da binciken.

Nagode qwarai da hadin kan da kika bani

Nambar shaida_____

Don Allah ki amsa mana dukkan tambayoyin da za'ai miki bisa gaskiya sannan kuma tsakanin ki da Allah domin hakan na da matuqar muhimmanci.

.

SASHEN A: BAN-BANCE BAN-BANCEN MASU AMSA TAMBAYA

1. Shekarun haihuwarki nawa? _____
2. Mene matsayinki a yanzu game da auratayya? 1= Buduwa [ ] 2= Matar aure [ ] 3=Mun rabu da mijina [ ] 4=Bazawara [ ] 5= bama tare a yanzu [ ]
3. Menene addininki? 1=Islam 2= Kiristanci 3=Gargajiyanki 4=Wani addini daban
4. Menene matakin karatnki? 1 = Banyi boko ba 2 = Firamare 3=Sakandire 4 =makarantar koyon sana'a 5 = Gaba da sakandire1 = kwalejin ilimi 2 = Qaramar diploma 3 = Babbar diploma 4 = Jami'a(digirin farko/digiri na biyu)
5. Menene matakin ilimin mijinki? 1 = Baiyi karatun boko ba 2 = Firamare 3 = Sakandire 4 = Makarantar koyon sana'a5 = Gaba da sakandire (Yi bayani); 1 = Kwalejin ilimi 2= Qaramar diploma 3 = Babbar diploma 4 = Jami'a (Digirin farko/ Digiri na biyu)
6. Mecece sana'arki? 1 = Aikin gwamnati 2 =Matar gida 3=Artisan 4 = Aikatau 5 = Daliba 6 = Banda aiki 7 = Aikin hannu 8 = Siye da siyarwa 9 = Qwararriyar sana'a 10 = sauran sana'u (fadeta)_____
7. Shekararki nawa dayin aure? _____ (ga matan aure kawai)
8. What is your type of marriage 1 = Polygyny 2 = Monogamy
9. Yaranki nawa? _____
10. Qiyasin kudin da kike samu a wata_____

SECTION B: TAMBAYOYI AKAN ILIMI GAME DA GWAJIN SANKARAR BAKIN MAHAIFA GA ME AMSA TAMBAYA

11. Kin taba Jin labarin cutar sankarar bakin mahaifa?? 1= Eh 2= A'a
12. Shin akwai wacce ta tabuwa kamuwa da cutar sankarar bakin mahaifa a danginku? 1= Eh 2= A'a
13. Ilimi/masaniya game da sankarar bakin mahaifa

		3. Eh	**4. A'a**
a.	Sankarar bakin mahaifa yana kisa		
b.	Qwayar cutar HPV ita ke haddasa sankarar bakin mahaifa		

c.	Rigakafin qwayar cutar HPV yana hana karewa ko kuma magance sankarar bakin mahaifa		
d.	Yin gwajin cutar sankarar bakin mahaifa yana taimakawa wajen gano cutar da wuri.		
e.	Yin gwajin sankarar bakin mahaifa sau daya tak a rayuwa ya wadatar domin kore hatsarin kamuwa da cutar		
f.	Cutar sankarar bakin mahaifa gadonta ake		
g.	Akan iya gane cutar sankarar bakin mahaifa da wuri		
h.	Ana warkewa daga cutar sankarar bakin mahaifa idan an ganota da wuri		
i.	Matan da suka daina haihuwa suma kan iya kamuwa da cutar sankarar bakin mahaifa		
j.	Za'a iya gano raunin dake da alaqa da sanakarar bakin mahaifa		
k.	Abokan saduwa/jima'i fiye da daya kan iya haddasawa mace kamuwa da cutar sankarar bakin mahaifa		
l.	Samun macen da ta taba kamuwa da cutar sankarar bakin mahaifa a dangi kan iya haddasawa mutum kamuwa da cutar shima		
m.	Ana son mata su je domin (pap smears) gwajin sankarar bakin mahaifa a qalla sau daya cikin shekara uku.		
n.	Ba'aso mace ta sadu da namiji awa 24 kafin ai mata gwajin (pap smears)		
o.	Gwajin (Pap smears) sankarar bakin mahaifa za'a iya yinshi lokacin da mace ke al'ada ko bayan ta gama		

14. Wadanne ne alamomin cutar sankarar bakin mahaifa ?

		Unprompted		Prompted	
S/N	**Alamomi**	**Eh**	**A'a**	**Eh**	**A'a**
A	Rashin zuwa ko rikicewar al'ada				
B	Zubar da jini kafin lokacin al'ada				
C	Fitar da ruwa ta gaban mace me wari				
D	Dadewa da kuma zubar da jinni me yawa lokacin al'ada				
E	Zubar da jinni ga matan da suka daina haihuwa				
F	Qaiqayin gaba				
G	Zubar jinni yayin				
H	Jin zafi lokacin al'adaPainful menstruation				
I	Ballewar jinni				
J	Wasu daban (fadesu)				

15. Fadi abubuwan da kan iya haddasa cutar sankarar mahaifa daka sani? **[KARKA FADI ZABI KO DAYA GA ME AMSA**

TAMBAYA, KAYI ALAMA KAWAI AKAN ABINDA YA FADA]

S/N	**Hatsarin kamuwa**	**3. Eh**	**4. A' a**
a.	Saduwa da namijin da baida kaciya		
b.	Tsufa/ yawan shekaru		
c.	Family history of cervical cancer		
d.	Rashin wadata/ talauci		
e.	Iskokai		
f.	Cin abubuwa masu cutar da jiki		
g.	Yawan abokan saduwa/jima'i		
h.	Yawaitar samun barin ciki		

i.	Qwayoyin cutar HPV		
j.	Fara jima'i da qarancin shekaru		
k.	Kamuwa da ciwon sanyi a baya		
l.	Shan taba sigari		
m.	Rashin tsabtace jiki yayin al'ada		
n.	Dadewa ana amfani da maganin qayyade iyali		
o.	Yawan samun ciki		
p.	Saduwa ba tare da yin amfani da kariya ba		
q.	Human immunodeficiency syndrome		
r.	Zama tare da me cutar sankarar mahaifa		
s.	Wasu daban (fadesu)		

16. Shin ko kin san rabe raben gwajin sankarar bakin mahaifa? Idan kin sani, wadanne kika sani?

1= Eh 2=A a

17. Idan Eh ne wane kika sani?

a. Pap smear test.
b. VIA (Visual inspection using Acetic acid)
c. VILI (Visual inspection using Lugol's Iodine)
d. Colposcopy
e. Biopsy
f. Saura daban
g. Wane lokacine ya kamata mace ta fara zuwa gwajin sankarar bakin mahaifa?
h. Shekaru 18 zuwa sama
i. Bayan ta daina haihuwa
j. Yayin data fara ganin alamun cutar
k. Yayin data kamu da cutar sanyi.
l. Lokacin data fara sani/saduwa da namiji
m. Ban saniba

18. Yaushe mace ya kama ta ta fara zuwa gwajin sankaran mahaifa?
    a. Shekara 18 zuwa sama
    b. Bayan ta uche shekarun haihuwa
    c. Idan ta fara gani alamun cutar
    d. Idan ta samu cutar da ake samu wajen jamadi.
    e. Idan ta fara sani namiji
    f. Ban sani ba

19. Fadi alfanun yin gwajin sankarar bakin mahaifa da kika sani

……

……

SASHEN C: TAMBAYOYI AKAN DABI'UN ME AMSA TAMBAYA GAME DA GWAJIN SANKARAR BAKIN MAHAIFA

20. Qa'idai: ki zaba daga cikin zabukan da ke qasa shin kina ganin hakane, Ba haka bane, ko kuma kina da shakku game da maganganun da akai?

S/N	Statement	Eh hakane	Ba haka bane	Ina shakku
a.	Bani da qwarin gwiwar tambayar ma'aikatan lafiya dangane da gwajin sankarar bakin mahaifa			
b.	Tozarci ne idan namiji yai min gwajin sankarar bakin mahaifa			
c.	Gwajin (pap smears) bai da dadi kuma kamar akwai tozarci			
d.	Nasani cewa zuwa gwajin sankarar bakin mahaifa yana taimaka a gane cutar da wuri			
e.	Yin gwajin sankarar bakin mahaifa baya kiyaye mace daga kamuwa da cutar			

f.	Ba dole bane yin gwajin sankarar bakin mahaifa matuqar mutum bai fara ganin alamun cutar ban			
g.	Zuwa gwajin sankarar bakin mahaifa akwai tsada sosai			
h.	Ina tsoron a cemin ina da wata matsala babba idan naje gwajin sankarar bakin mahaifa			
i.	Bana cikin jerin wadanda ka iya kamuwa da cutar sankarar bakin mahaifa			
j.	Akwai kariyar Allah tare dani, bani buqatar zuwa gwajin sankarar bakin mahaifa			

SECTION D: TAMBAYOYI GAME DA MATAKAN GUDANAR DA GWAAJIN SANKARAR BAKIN MAHAIFA

21. Shin kin tabayin gwajin sankarar bakin mahaifa?
    3. Eh
    4. A'a (idan A'a, jeki ga tambaya ta 27)

22. Idan Eh kin tabayi, (wanne irin gwaji kikayi?)
    7. Pap smear test.
    8. VIA (Visual inspection using Acetic acid)
    9. VILI (Visual inspection using Lugol's Iodine)
    10. Colposcopy
    11. Biopsy
    12. Others (specify)……

23. Yaushe rabonki da yin gwajin sankarar bakin mahaifa? .....

24. A'ina akai miki gwajin ? 1= Asibiti 2= masu yin gwajin sankarar bakin mahaifa a cibiyoyi na musamman dake garuruwa da taimakon qungiyoyi masu zaman kansu 3= gwajin sankarar bakin mahaifa da akeyi a garuruwa wanda gwamnati ke daukar nauyi 3=Saura (fadesu)……

25. Wanne daliline yasa kikaje gwajin sankarar bakin mahaifa?
    9. Domin kare kaina daga kamuwa da cutar

10. Domin a tabbatar ina da cutar ko bani da ita
11. Saboda ma'aikatan lafiya sun bani shawarar inje gwajin
12. Yana daga cikin gwaje gwajen lafiyar da nake zuwa yau da kullum
13. Saboda ina amafani da magungunan tsarin iyali
14. Lokacin da akazo anayin gwajin kyauta a cibiyar gwajin sankarar bakin mahaifa da qungiyoyi masu zaman kansu dana addinai suka dauki nauyi
15. Saura (fadesu)……

26. Shekarun ki nawa lokacin da kika fara yin gwajin sankarar bakin mahaifa?.....
27. Yaya yanayin zuwanki domin gwajin sankarar bakin mahaifa?
    6. Sau daya na tabayin gwajin a rayuwata
    7. Shekara-shekara
    8. Bayan shekara bibbiyu
    9. Bayan shekara uku-uku
    10. Saura (fadesu) ……..
28. An taba miki rigakafin kamuwa da cutar sankarar bakin mahifa? 1. Eh [ ] 2. A'a [ ] (idan ba'a taba miki ba, jeki ga tambaya ta 31)
29. Idan an taba miki, sau nawa kika taba karbar rigakafin ----------?

SASHEN E: TAMBAYOYI GAME DA DALILAN DAKE SANYA MUTANE ZUWA DOMIN YIN GWAJIN SANKARAR BAKIN MAHAIFA

30. Shin akwai cibiyar lafiyar dake gudanar da gwajin sankarar bakin mahaifa a yankinku? 1= Eh 2= A'a(Idan babu, jeki ga tambaya ta 34)
31. Idan akwai cibiyar gwajin, shin suna fitowa kullum? 1= Eh 2= A'a

    Idan basa fitowa kullum, (fadi ranakun da suke fitowa …….)
32. Shin an taba miki gwajin sankarar bakin mahaifa a cibiyar gwajin ta yankin ku? 1= Eh 2= A'a
33. Shin kina da qwarin gwiwar zuwa cibiyar lafiya domin gwajin sankarar bakin mahaifa?

    1= Eh

    2= A'a

    Idan kince eh, amsa tambayoyin dake qasa, (Idan kince A'a f No move to question 42)

34. Idan kin taba yin gwajin sankarar bakin mahaifa fadi abubuwan da suka faru yayin gwajin.
    1. Anyimin gwajin cikin sirrantaccen wajen da ba me ganina
    2. Anyimin bayanai game da gwajin kafin aimin gwajin.
    3. Anyimin bayani dangane da sakamakon gwajin da akayi.
    4. An sanar dani lokacin dazan qara dawowa domin gwajin
35. Gwajin sankarar bakin mahaifa yakan dauki wane irin tsawon lokaci?
    5. Sa'oi nawa (fadesu)…….
    6. Sati nawa (Fadesu)……
    7. Watanni nawa (fadesu)……
36. Yaya nisan gidanki yake da cibiyar lafiyar dake gudanar da gwajin sankarar bakin mahaifa a qiyasin kilomita? (a) qasa da kilomita 1 (b) kilomita 2-4 (c) kilomita 4-6 (d) kilomita 6-8 (e) fiye da kilomita 8 Saura, (fad iadadin nisan) a qiyasin Kilomita……
37. Nawa ne kudin abin hawa da zaki kashe domin zuwa cibiyar lafiyar dake gudanar da gwajin sankarar bakin mahaifa?
    Cancer screening? (Specify amount in Naira……..……
38. Shin akwai kyakykyawar hanya zuwa inda ake yin gwajin sankarar bakin mahaifa a koda yaushe rani da damina?
    4. Eh
    5. A'a
    6. In kin sani ki yi bayani

39.Wadanne irin qalubale su ka haa ki samun damar gwajin sankarar bakin mahaifa(SAI WANDA BAI Y ICE AA A TAMBAYA TA 21 ZAI ANSER).

		Dalilai	**Eh**	**A'a**
1		Tsoron gwajin sankarar bakin mahaifa		
1		Dalilai na Al'ada da kuma addini		
1		Saboda lafiyata qalau ba abinda ke damuna		
2		Rashin shawarar zuwa gwajin daga		

		ma'aikatan lafiya		
2		Tsangwama daga wajen ma'aikatan lafiya		
2		Rashin samun qwarin gwiwa daga wajen maigidana (i.e. qawaye, iyaye, qanne da sauransu)		
2		Rashin asibitocin dake gudanar da gwajin sankarar bakin mahaifa a yankinmu		
2		Gaskiya banaso/inajin nauyin bude al'aurata aimin gwajin		
2		Tsadar gwajin sankarar bakin mahaifa		
2		Ba'ayin gwajin sai a manyan asibitoci, kuma akan kashe kudi kafin aje		
2		Ina tsoron a gwadani acemin ina da cutar		
2		Mijina baison inje gwajin sankar bakin mahaifar		
2		Ina tsoron abinda mutane zasuce idan an gwadani an ga ina da cutar		
3		Ban taba cin labarin ana gwajin sankarar bakin mahaifa ba		
3		Rashin ma'aikatan lafiya mata masu gwajin sankarar bakin mahaifa		
3		Wasu daban (fadesu)		

39. Wadanne irin qalubale kike ganin mutane ke fuskanta yayin da suke qoqarin samun damar gwajin sankarar bakin mahaifa? Sannan ya yanayin girman shi? ***a babban qalubale, qaramin qalubale, ba qalubale bane*?**

S/N	Ra'ayin maganata	Babban qalubale	Qaramin qalubale	Ba matsala bace

1.	Sanin inda mutum zaije ai mishi gwajin			
2.	Samun amincewar maigida domin zuwa wajen gwajin			
3.	Biyan kudin gwajin			
4.	Nisan wajen gwajin			
5.	Hawa abin hawa kafin aje wajen gwajin			
6.	Rashin tabbacin samun qwararrun ma'aikatan lafiya a wajen gwajin			
7.	Rashin tabbacin samun qwararriyar ma'aikaciyar lafiya mace me yin gwajin			
7.	Tsoron ace ina da cutar sankarar bakin mahaifa			
8.	Rashin tabbacin samuwar kayan aikin gwajin			
9.	Rashin tabbacin takaimaimai lokacin/ ranakun gwajin			
10	Saura (fadesu)……..			

Nagode qwarai kika bani aron lokacin ki

Appendix 3

Ethical approval letter

SECRET

GOMBE STATE OF NIGERIA
MINISTRY OF HEALTH HEADQUARTERS

All correspondence to be addressed to the Hon. Commissioner

State Secretariate
P.M.B. 042
Gombe, Gombe State.
☎: 072-220244
220274

Your Ref: _____

Our Ref: MOH/ADM/S/[illegible]

Date: 2nd July, 2019

Hauwa Inuwa ,
Department Health Promotion and Education,
Faculty of Public Health,
University of Ibadan.

RE: FACTORS INFLUENCING UTILIZATION OF CERVICAL CANCER SCREENING SERVICES AMONG WOMEN OF REPRODUCTIVE AGE IN GOMBE LOCAL GOVERNMENT AREA, GOMBE STATE NIGERIA

I am directed to inform you that, approval has been granted for the above subject matter.

Please, comply with the institutional guidelines, rules, regulations and tenets of the code for health research. The state committee reserves the right to visit your site without prior notification.

Pharm. Titunuwa S. Dogonbaya
FOR: STATE HEALTH RESEARCH COMMITTEE

SECRET