KNOWLEDGE OF CERVICAL CANCER AND WILLINGNESS TO UPTAKE HUMAN PAPILLOMA VIRUS VACCINE AMONG FEMALE ARTISANS IN IBADAN NORTH LOCAL GOVERNMENT AREA

BY

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ABSTRACT

Cervical cancer is the most common genital cancer and one of the leading causes of death among female population. In Nigeria, cervical cancer is the commonest gynaecological cancer which affects 28.5/100,000 women. Despite the availability of prophylactic vaccine that protects against four major types of HPV in Nigeria since the year 2006, there is still a low uptake of the vaccines by young adults in the nation. This study investigated the knowledge of cervical cancer among female artisans as well as to assess their willingness to uptake the vaccine.

The study was a cross-sectional design with a four-stage sampling technique. Three out of twelve wards were randomly selected within the Ibadan North local government. A convenience sample of 6 major artisan associations were identified for the research and this was across the 6 wards. An interviewer-administered questionnaire was used to elicit information from 382 respondents on demographic characteristics, knowledge, perception and willingness to uptake HPV vaccine. The knowledge was measured on 18-point scale. Scores ≤6 were considered poor; >6-12 fair while scores >12 were considered good. Data collected were analyzed using descriptive statistics and Chi-square test at p=0.05 level of significance.

Age of the respondents was 19.8±2.5 while more than half of the respondents are single. Most of the respondents (66.5%) have also completed their secondary school education. A total of 26.2% of respondents have had sex with the least age of sexual debut being 12 years of age. The overall level of knowledge of respondents on cervical cancer was deduced to be poor with a mean score of 5.3±2.4. Respondents had poor perception of cervical cancer and HPV vaccine with mean score of 5.5±1.9. Only 46 (12.0%) claimed they had ever taken HPV vaccine with about 87.0% not knowing the brand they took. The highest rated reason for taking the vaccine was parental advice (58.7%) followed by early sexual exposure before 18 (21.7%). Lack of awareness (89.3%) was rated has the highest reason for non-uptake of HPV vaccine among the respondents. About two-third (61.8%) of the respondents were willing to take up the HPV vaccine and most preferred to be vaccinated at the health centre 170 (72.0%). The respondents (61.3%) identified the high cost of vaccine as a limiting factor in up taking the vaccine while 70.5% agreed to uptake the vaccine if it's free. The knowledge of respondents was significantly associated with willingness to uptake the HPV vaccine. Also, the level of education of respondent and respondent's mother is significantly associated with willingness to uptake the vaccine.

Knowledge of cervical cancer was low while the willingness to uptake Human Papilloma Virus vaccine was high among female artisans in Ibadan North Local Government area of Oyo state. Hence, there is a need for health education of this target audience through peer education and also provision of free Human Papilloma Virus vaccine.

Keywords: Cervical Cancer, Human papilloma virus, Out-of-school female youths

Word Count: 472

DEDICATION

This research project is dedicated to the Almighty God, the Alpha and Omega who has made this possible.

CERTIFICATION

I hereby certify that this study was carried out by AKINYELURE, Aderonke Tolulope under my supervision in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Nigeria.

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GLOSSARY OF ABBREVIATIONS

HPV- Human Papilloma Virus

WHO – World Health Organization

DEFINITION OF TERMS

Female artisans-these are females between the age of 15 to 24 years who are learning a trade or skill.

Cervical cancer - cancer of the cervix.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Cervical cancer is the most common genital cancer and one of the leading causes of death among female population. Cervical cancer constitutes a major public health threat to women in many low and medium resourced countries in South and Central America, sub-Saharan Africa, South and Southeast Asia where it is still leading type of cancer among women. Cervical cancer is the second most common malignancy in women worldwide with high incidence in under-developed countries and Nigeria is one of these countries (Durowade, Osagbemi, Salaudeen, Musa, *et al.* 2012). The high burden of cervical cancer in these countries is due to high prevalence of human papilloma virus infection and lack of effective cervical cancer screening programs. In cases where effective screening programs are available, poor knowledge and negative health seeking behaviour of populace have led to poor utilization of such services (Arulogun and Maxwell, 2012).

Globally, cervical cancer comprises approximately 12% of all cancers in women. It is the second most common cancer in women worldwide but the commonest in developing countries. Annual global estimates are 470,600 new cases and 23,400 deaths from cervical cancer annually. Cervical cancer is one of the most preventable cancers because of increased awareness for early detection (Van Ballegooijen, 2000).

In Nigeria, cervical cancer is the commonest gynecological cancer which affects 28.5/100,000 women. The reported prevalence of HPV infection (the implicated virus) which studies have shown to be associated with sexual activity in the general population, and among women that develop cervical cancer are26.3% and 24.8% respectively (Olugbenga-Bello, Oke, Ajayi-Obe, Yusuf, Odekunle *et al*. 2016). There are specific high-risk HPV types associated with cervical cancer. About 70% of cervical cancer is caused by HPV type 16 and 18 (Clifford, Franceschi, Diaz, Munoz and Villa, 2006).

Human papilloma virus infection is one of the most common sexually transmitted infections (STI). About 50–80% of sexually active women are exposed to at least one HPV type during their lifetime. The peak incidence of HPV infection occurs in most populations within 5–10 years of the first sexual experience and the highest prevalence rates are seen in women aged 20–24 years (Makwe, Anorlu and Odeyemi, 2012).

The sexual behavior of a young person can be influenced by the family, the social environment, as well as the knowledge about STIs and contraception. So, these behaviors are modifiable and, with the proper health promotion programs in schools and media, protection could be promoted in order to prevent transmission of STIs, including HPV. Nowadays, it is widely accepted that these health promoting programs should run in conjunction with primary protection, through vaccination programs against HPV, and, at a later stage, secondary protection, through screening of the population for HPV-related cancers (Papanicolaou cytology and HPV-DNA identification tests) for identification and treatment of pre-invasive changes (CIN—cervical intraepithelial neoplasia in the uterine cervix) (Vaidakis, Moustaki, Zerva, Anatasia, Kyriaki *et al*., 2017).

Sub-Saharan Africa concentrates the largest burden of cervical cancer worldwide. The introduction of the HPV vaccination in this region is urgent and strategic to meet global health targets. It is clear that the introduction of the HPV vaccination to prevent cervical cancer in low and middle-income countries is an urgent and strategic approach to meet global health targets on women´s health (Bardajia, Mindu, Augustoc, Casellasa, Cambacoc *et al*., 2018). Two HPV vaccine types are now available for the prevention of HPV-related diseases. The quadrivalent vaccine targets HPV types 6, 11, 16 and 18, and the bivalent vaccine targets HPV types 16 and18. Both the quadrivalent and the bivalent vaccines have a high efficacy against HPV types 16- and 18-related cervical intraepithelial neoplasia (CIN) and cervical cancers. The HPV vaccine was licensed in Nigeria in 2008 (Makwe *et al*., 2012).

This study intends to investigate the knowledge of cervical cancer among female artisans as well as to examine their willingness to uptake the vaccine. One of the objectives of this study is also to determine the level of uptake of the vaccine a well as determine the factors influencing the uptake of the vaccine. This information will serve to understand the barriers and facilitators for effective HPV vaccine implementation, and it may be of relevance to other countries in sub-Saharan Africa and elsewhere with similar health problems and limited resources.

1.2 Statement of the problem

Globally, cervical cancer is one of the greatest threats to women's lives. In sub-Saharan Africa, the incidence of cervical cancer ranges from 30 to 40 per 100,000 women (GLOBOCAN, 2008). In the year 2005, 260,000 women died from it globally, nearly 95% of them in developing countries of which Nigeria is one. In Nigeria, cervical cancer kills one woman every hour and over 9000 every year (Toye, Okunade, Roberts, Salako *et al*., 2017).

The burden of cervical cancer in Nigeria is huge. Nigeria has a population of over 40 million women aged 15 and above who are at risk of cervical cancer. It accounts for 63% of genital cancers. Current estimates indicate that every year 14,550 women are diagnosed with cervical cancer and 9,659 die from the disease. It is projected that in 2025, there will be 22,914 new cervical cancer cases and 15,251 cervical cancer deaths in Nigeria (WHO, 2010). More than three-fourth of cervical cancer patients are diagnosed at advanced stages leading to poor prospects of long-term survival. This is due to lack of existence of nationwide screening programme, lack of infrastructure, low knowledge of health care workers as well as high cost of HPV vaccine. This constitutes a great public health burden because the resulting loss of lives is needless since the disease can be prevented.

Risk factors for HPV infection and subsequent cervical cancer include early age at first sexual exposure, multiple sexual partners, smoking and immunosuppression (Toye *et al*., 2017). There is a clear decline in age at coitarche, thereby suggesting a potential higher risk of exposure to HPV and by implication cervical cancer (Abiodun, Oluwasola, Durodola, Ajani *et al*., 2017). Research has shown that although the mean age of diagnosis is 50 years, women as young as 17years can also develop the disease with the highest risk group being 25-49 years (GLOBOCAN, 2008), hence the need to vaccinate young female adults as a means of primary prevention against contracting cervical cancer.

Despite the availability of prophylactic vaccine that protects against four major types of HPV in Nigeria since the year 2006, there is still a low uptake of the vaccines by young adults in the nation (Nnodu, Erinosho, Jamda, Olaniyi and Adelaiye, 2010). Based on different studies conducted among female populations to determine the factors responsible for the low uptake of the vaccine, the following factors were identified: high cost of vaccine, lack of awareness of availability of vaccine, perception of side effects of vaccine, physician's recommendation e.t.c (Mahajaran, Rajiah, Num and Yong, 2015; Blodt, Holmberg, Muller- Nordham and Riekmann, 2011; Wilson, Hashibe, Bodson, Gren, Taylor *et al*., 2016). The inability of young female adults especially female artisans to gain access and uptake the HPV vaccine will lead to increase in incidence of the disease and generally affect the economy since more finances would be diverted to health for management. The ripple effect will fall on the down turn of the economy of the nation.

1.3 Justification of the study

The out-of-school youths are sexually active and do not practice safe sex (Negussie, 2017). They also engage in high risk behaviours which predisposes them to acquiring sexually transmitted infections (STIs) especially human papilloma virus (HPV) infection which is a major cause of cervical cancer (Toye *et al*., 2017). Most of them are not well schooled, hence, are not exposed to basic sexual education like their counterparts in school which makes them take wrong uninformed decisions that affect their health negatively. They are the most active population in the nation constituting about one third of the total population.

Various researches have been conducted to assess the knowledge of female undergraduates, medical personnel such as nurses, secondary school teachers as well as in-school adolescents but this target groups are also often neglected in research studies relating to cervical cancer, hence the reason for this research. The result of this research is intended to be used to provide information about this target group on the subject matter and to also inform health promotion and educational programmes that can be targeted at them for behaviour change. Also, the result of this study can be used to inform the government and donor agencies on the crucial need to provide support for these individuals.

1.4 Research Questions

1. What is the level of knowledge of cervical cancer among female artisans in Ibadan North Local Government Area?
2. What is the perception of cervical cancer and human papilloma virus among female artisans in Ibadan North Local Government Area?
3. What is the level of uptake of human papilloma virus vaccine by female artisans in Ibadan North Local Government Area?
4. What is the willingness to uptake human papilloma virus vaccine among female artisans in Ibadan North Local Government Area?
5. What are the factors that are associated with the uptake of human papilloma virus vaccine among female artisans in Ibadan North Local Government Area?

1.5 Broad Objectives

This study is to investigate the knowledge of cervical cancer and the willingness to uptake HPV vaccine among female artisans in Ibadan North Local Government Area, Ibadan, Nigeria.

1.6 Specific Objectives

1. To assess the level of knowledge of Cervical Cancer among female artisans in Ibadan North Local Government Area.
2. To examine the perception about cervical cancer and human papilloma virus among female artisans in Ibadan North Local Government Area.
3. To determine the level of uptake of human papilloma virus (HPV) vaccine by female artisans in Ibadan North Local Government Area.
4. To determine the willingness to uptake human papilloma virus (HPV) vaccine among female artisans in Ibadan North Local Government Area.
5. To identify the factors that are associated with the uptake of human papilloma virus (HPV) vaccine among female artisans in Ibadan North Local Government Area.

1.7 Research Hypotheses (Null hypotheses)

H_o1: There is no significant association between knowledge of cervical cancer and willingness to uptake HPV vaccine.

H_o2: There is no significant association between age of respondents and willingness to uptake HPV vaccine.

H_o3: There is no significant association between parent's education and willingness to take HPV vaccine.

H_o4: There is no significant relationship between level of education of the respondents and their willingness to uptake HPV vaccine.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview of Cervical Cancer

Cervical Cancer is a major public health problem globally. Over 560,000 new cases and about 275,000 deaths are recorded each year, with more than 55% occurring in developing countries (Ferlay, Shin, Bray, Forman, Mathers and Parkin, 2010). It is the most common gynaecological cancer among women in sub-Saharan Africa (Loius, de Sanjose and Mayaud, 2009). It is estimated that 70,722 new cases of invasive cervical cancer occur annually in sub-Saharan Africa (Parkin, Sitas, Chirenje, Stein, Abratt and Wabinga, 2008).

Nigeria is the most populous country in Africa with approximately 173 million people (United Nations Department of Economic and Social Affairs, 2013). The incidence rate of cervical cancer in Nigeria was reported to be 25/100,000 per year, which translates to a disease burden for an estimated 32 million women in 2005 to about 8000 cases per year (Adewole, Benedet, Crai and Follen, 2005). Current estimates indicate that cervical cancer ranks as the second most frequent cancer among women in Nigeria (WHO/ICO Information Centre on HPV and Cancer 2014). Every year, 14089 women are diagnosed with cervical cancer.

Epidemiological, molecular and clinical evidences have shown that cervical cancer is caused by human papilloma virus, a sexually transmitted infection, especially serotype 6, 11, 16 and 18. Human papilloma virus infection is common in Nigeria (Agida, Akaba, Isah and Ekele, 2015). A study in Ibadan showed an overall prevalence of 26.3% while the prevalence among women without cervical lesions was 24.8% (Thomas, Herrero, Omigbodun, Ojemakinde, Ajayi and Fawole, 2004). Currently, it is estimated that about 23.7% of women in general population in Nigeria harbour cervical HPV infection at a time (United Nations Department of Economic and Social Affairs, 2013).

Cervical cancer ranks second among women in terms of the most commonly seen cancer types; with a nearly 528,000 new diagnoses and over 250,000 deaths annually (Mgomella et al., 2012). Cervical cancer is caused by sexually transmitted Human Papilloma Virus (HPV) (WHO, 2013). Also, low age of the first sexual intercourse (<16 years), having more than one sexual partner, history of sexually transmitted diseases (HIV, HSV-2, genital wart etc), high parity, black race, smoking, low socio-economic status, poor hygiene and oral contraceptive use are among the other

risk factors associated with cervical cancer (Guner and Taskiran, 2007; Kaya and Akin, 2009). It is reported that young adults of the society are especially under risk for sexually transmitted diseases (STDs) and one of the 20 youths are annually contracted with STDs (WHO, 1999). The World Health Organization recognizes Human papilloma virus (HPV) as the most common sexually transmitted infection in the world (WHO 2014).

2.2 Human Papilloma Virus

Human Papilloma virus (HPV) is a sexually transmitted wart virus. Among the sexually transmitted diseases (STDs) it is the most common. Almost all sexually active men and women gets HPV at some points throughout their life, and it is contagious even if the infected person shows no sign of symptoms (Centre for Disease Control and Prevention, 2015). The virus infects the epithelium or mucous membranes of epidermis, where it creates a latent infection (Melhus, 2010). In an early stage the virus produces virus proteins which stimulate cell division. When the skin cell is starting to evolve, a lot of virus particles develop, which turns into a wart that is full of infectious Human Papilloma Virus (Melhus, 2010). Vaginal intercourse is the predominant mode of genital HPV transmission (Winer, Le, Hughes, Adam, Kiviat and Koutsky, 2002). However, the virus can also be transmitted through skin contact (Winer *et al*., 2002). In the 1980s scientists achieved to isolate HPV type 16 and 18 from cervical cancer samples and a hypothesis was formed, recalling that cervical cancer was caused by HPV (Hausen, 2011).

2.3 HPV and Cervical Cancer

HPV is now recognized for being the main reason for developing cervical cancer. However, not all types of HPV cause cancer (Nubia Muñoz et al., 2003). HPV exists in over 100 various types of which about 40 types infect genitals. The types are classified into low and high risk types where high risk types, such as type 16, 18 and 31, are associated with cancer (Jacobs et al., 1995; Hariri, Dunne, Saraiya, Unger and Markowitz, 2014).

HPV type 16 and 18 alone causes worldwide 70 % of all cervical cancers (Clifford, Franceschi, Diaz, Munoz and Villa, 2006). World Health Organization (WHO) reported 266 000 deaths caused by cervical cancer in 2012. Further, 528 000 new cases of cervical cancer were reported, where approximately 85 % of the burden can be found in less developed regions of the world (WHO, 2015). Worldwide, people infected by HPV are estimated to 630 million. The prevalence of HPV is 50-80 % of sexual active women in age 15-24. Low- and middle income countries in Latin America, Africa and Southeast Asia have shown to be at significant risk of HPV infections.

2.4 Signs and Symptoms

Symptoms usually do not appear until abnormal cervical cells become cancerous and invade nearby tissue. When this happens, the most common symptom is abnormal vaginal bleeding. Bleeding may start and stop between regular menstrual periods, or it may occur after sexual intercourse, douching, or a pelvic exam. Menstrual bleeding may last longer and be heavier than usual. Bleeding after menopause or increased vaginal discharge may also be symptoms. (America Cancer facts and figures, 2008).

2.5 Risky Behaviours and Cervical Cancer

The findings from a population-based case control study carried out in Columbia and Spain identified several risk factors associated with cervical cancer. Early age at first intercourse and early age at first birth were associated with increased risk of cervical cancer; these effects were independent of one another. Low educational level was also a risk factor. Smoking and parity after age 24 were weakly and inconsistently associated with the risk of cervical cancer. Previous screening and ever having undergone a Caesarean section were protective factors (Brosch *et al*., 1992). Also, it can be influenced by factors, such as immune-suppression, nutritional factors as well as long-term use of oral contraceptives which is also associated with increased risk of cervical cancer (America Cancer facts and figures, 2008)

In terms of cervical cancer, participation in risky sexual behaviours increases a woman's risk of infection with human papilloma virus, of which certain types are recognized as the primary cause of cervical cancer. Furthermore, certain risky sexual behaviours have been shown to increase cervical cancer risk, even after controlling for HPV status.

Risky sexual behaviours related to cervical cancer have been identified as engaging in sexual intercourse at an age younger than 18 years, having a higher number of sexual partners, having a history of being treated for an STI, and having a current or past sexual partner who has been treated for an STI (Wharton and Tortolero, 2003). While not specific to cervical cancer, a broader definition of risky sexual behaviour has included having unprotected sexual activity, inconsistent use of condoms, having high-risk partners (including drug users), and survival sex (sex in exchange for money, drugs, food, or shelter) (Taylor-Seehafer and Rew 2000) The other known risk factors for cervical cancer are the early onset of sexual activities, multiple sex partners, long use of oral contraceptives, immunosuppressant’s, smoking and specific dietary factors (Blanche, 1989). Identified protective factors for early initiation of sexual activity include the development of

healthy sexuality, family and school connectedness, and the presence of caring adults (Taylor-Seehafer and Rew, 2000).

2.6 Early Detection

The Pap test is a simple procedure in which a small sample of cells is collected from the cervix and examined under a microscope. Pap tests are effective but not perfect. Their results sometimes appear normal even when a woman has abnormal cells of the cervix, and likewise, sometimes appear abnormal when there are no abnormal lesions on the cervix. DNA tests to detect HPV strains associated with cervical cancer may be used in conjunction with the Pap test, particularly when results are equivocal. Fortunately, most cervical pre-cancers develop slowly, so potentially nearly all cases can be prevented if a woman is screened regularly.

2.7 HPV Vaccine

HPV vaccines stimulate the body to produce antibodies that, in future encounters with HPV, bind to the virus and prevent it from infecting cells. The HPV vaccines are based on hollow virus-like particles (VLPs) assembled from recombinant HPV coat proteins. VLPs are not infectious, since they lack the virus's DNA. The vaccine was first developed by the University of Queensland in Australia. In 2006, the Food and Drug Administration (FDA) licensed the first prophylactic vaccine against HPV (Gardasil). There are three HPV vaccines are available: Cervarix, Gardasil and Gardasil 9 (manufacturer: Merck & CO., Inc.) is a HPV quadrivalent (Types 6, 11, 16, 18) vaccine, recombinant (FDA, 2017). Indications included the prevention of precancerous and cancerous conditions of the lower genital tract (vulva, vagina and uterine cervix), anal area and of the head and neck, caused by HPV6, 11, 16 and 18, in females and males aged 9–25 years.

Additionally, it protects against genital warts (condyloma acuminata) caused by HPV types 6 and 11 (FDA, 2017).

In 2014, the FDA approved the nonavalent vaccines against HPV (Gardasil 9; manufacturer: Merck & CO., Inc.). The nonavalent vaccine is indicated in women and men aged 9 through 26 years for the prevention of the following diseases: precancerous and cancerous condition of the uterine cervix, vulva, vagina, and anal canal caused by HPV types 16, 18, 31, 33, 45, 52, and 58 (FDA, 2017).

2.8 Knowledge of Cervical Cancer

In a study carried out among female outpatients in health centres in Oyam district, Uganda, 62.7% had heard about cervical and 51.7% defined it as cancer of the cervix in a sample of 445 respondents (Waiswa, Nsubuga, Muwasi, Kimeri, Ndikabona *et al*., 2017). According to a study among female university students on knowledge and attitude towards cervical cancer showed that less than half (42.9%) of the participants had heard about cervical cancer. Of those who had heard about cervical cancer, almost a quarter (22%) had heard from community health workers. Only 19% had heard about it from the media. Twenty-six (15.6%) of 167 participants who had heard of cervical cancer, did not know any risk factors for cervical cancer and only one respondent (0.6%) knew all the risk factors.

Almost half (48.5%) of the respondents knew that HPV causes cervical cancer. Two (1.2%) students said cervical cancer cannot be prevented and another 96 (58.6%) participants did not know that it is preventable (Hoque and Hoque, 2009). This is in contrast to a study carried out by Maharajan *et al*., 2015 on Knowledge of HPV Infection, Cervical Cancer and Willingness to Pay for Vaccination among Medical Students in Malaysia, 90% had good knowledge on cervical cancer which can be attributed to their course of study.

In Saudi-Arabia, a research was conducted among medical students at various levels to determine their knowledge on cervical cancer. On average, only 56% of females were aware about the early signs and symptoms whereas 57.8% females had knowledge about the risk factors of cervical cancers. Some 46.8% females were unable to select the correct answer regarding human papilloma virus (HPV) infection as the cause of cervical cancer (Al-Darwish, Al-Naim, Al-Mulhim, Al-Otaibi *et al*., 2014). Among 186 sub-Saharan African female students in a UK school setting, only 20 had knowledge of cervical cancer though 71% were aware of cervical cancer screening (Ogbonna, 2017).

In a study carried out in Nnewi Anambra among secondary school teachers on their knowledge on cervical cancer and pap smear test, the results depict that of the 142 respondents, 106 (74.6%) were aware of cervical cancer, while 36 (25.4%)have not heard of cervical cancer. With regards to Pap smear test, forty-four (41.5%) of the 106 respondents who have heard of cervical cancer were aware of cervical cancer screening by Pap smear, while 62 (58.5%) were unaware of this screening test. The study also reveals the sources of respondent's information. Out of the 44 respondents who have heard of the cervical cancer, 24 (54.5%) got their information through Radio/Television,

24 (54.5%) from Magazine/Newspapers, 16 (36.4%) from Hospitals, 14 (31.8%) from friends, 4 (9.1%) from Tertiary/Secondary schools, 2 (4.5%) from other sources like workshops and Church seminars (Ugwu, Obi, Ezechukwu, Okafor and Ugwu, 2018).

Among commercial sex workers in two cities in South-western Nigeria, only 26.2% of the respondents had good knowledge about cervical cancer. Majority of the respondents (40%) knew cervical cancer could be caused by unresolved HPV infection, 28.9% through unsafe sex, and 15.6% through excessive smoking, 8.9% through excessive alcohol consumption and 6.7% believed poor personal hygiene and poor nutrition among others (Olugbenga-Bello *et al*., 2016). Similarly, in a study conducted in China among female sex workers (FSW) on HPV and Cervical Cancer related knowledge reveals that 70.8% of FSW ever heard of cervical cancer, 22.1% heard of HPV, and 13.3% heard of the HPV vaccine (Hong, Zhang, Li, Lin and Liu, 2013).

A study carried out among Mozambican adolescent girls on awareness of cervical cancer and willingness to be vaccinated against HPV infection revealed that out of a total of 1147 adolescents enrolled in three selected districts of the country, [84% (967/1147)] of the girls had heard of cervical cancer, 33% (373/1144) of the girls have ever heard of HPV while 76% believed that cervical cancer could be prevented (Bardajia *et al*., 2018). A study on Human papilloma virus (HPV) infection and vaccine: knowledge, attitude and perception among female students at the University of Lagos carried out among 368 female students aged 16-29 years showed that only 17.7% and 14.4% of the students had ever heard of HPV infection and HPV vaccines respectively. Overall, only 11.1% knew that genital HPV infection can cause cervical cancer. Fourteen (6.9%) of those who were aware of cervical cancer agreed they were at risk of developing the disease (Makwe *et al*., 2012).

Among women aged 20-64 years in a study carried out in Ogun State, Nigeria, 6.5% of 2000 women were aware of cervical cancer. Out of the 2,000 women interviewed, only 45 (2.3%) could currently link cervical cancer to a virus as its causative agent. Over 95% of the women did not have an idea of the cause. Some women suggested evil spirits, unclean water source and poor hygiene as the cause. The majority of the women were unable to correctly identify the risk factors for cervical cancer. Also, over 95% were unable to correctly identify family history, cigarette smoking, multiple sexual partners, hormonal contraception usage, poor diet and HIV/AIDS as risk factors for cervical cancer. They were unable to identify the symptoms of cervical cancer. Only 4.1% and 3.1% respectively of the women could identify screening and vaccination as ways to

prevent cervical cancer while 2.4% of them said that proper and regular condom use was a means to prevent cervical cancer (Abiodun, Fatungase, Olu-Abiodun, Idowu, Ajiboye and Awosile, 2013).

2.9 Perception of Cervical Cancer and HPV Vaccine

A study on knowledge about Cervical Cancer, health beliefs and Human Papillomavirus vaccination rate among 777 female university students in Korea revealed that the levels of perceived benefit and seriousness were relatively high, while the levels of perceived barrier and susceptibility were relatively low (Lee, Keimung and Keimung, 2011). Relatively, in the study on knowledge, perception, and acceptance of HPV vaccination and screening for cervical cancer among women in Yogyakarta Province, Indonesia 62% of the 192 young women respondents had positive perception of cervical cancer and HPV vaccination (Endarti, Sabiti, Kristina, Farida, Rahmawanti and Andriani, 2018).

Opoku, Browne, Spangenberg, Moyer, Kolbilla and Gold, 2016 in a study on perception and risks factors for cervical cancer among women in Northern Ghana reported that 61% of women said that they had no personal risk for cervical cancer. A total of 27% of the respondents were in polygamous relationships, and of those, more than half didn't think they were at an increased risk of cervical cancer. In this study, two women had a total of ≥ 5 sexual partners in their lifetime and neither believed they were at any risk for cervical cancer. Also, 23% said their current partner had had at least 2 sexual partners in his lifetime, and of those, (61%) thought they were at no risk for cervical cancer. In addition, 46% of respondents reported not having any of the risk factors listed in the study. However, 23% of respondents reported having one risk factor while 21% had two risk factors and 11% had three or more risk factors.

Among Kenyan women in a study by Sedenga, Rositch, Otieno and Smith, 2013 about 22 out of 24 (92%) of all the previously screened women believed that cervical cancer was curable if detected early and that screening should be conducted annually. Most women (65%) felt they were at risk for cervical cancer.

2.10 Willingness to uptake HPV Vaccine

Based on a study carried out by Maharajan *et al*., 2016 on knowledge of human papillomavirus infection, cervical cancer and willingness to pay for cervical cancer vaccination among ethnically diverse medical students in Malaysia, reviewed that if it is free of charge 89.7% of all respondents would request it, but if they had to pay for it, (12.25%) will request for it.

The result of a study conducted on human papillomavirus awareness, knowledge and vaccine acceptance among 18-25 years old male and female vocational school students in Berlin, Germany, women were four times more likely to get vaccinated than men. Also, almost half of the unvaccinated participants were undecided whether they would like to receive the vaccine or not (Blodt *et al*., 2011). In a focus group study among 55 females: African-American (28) and Latino women (27) between the ages of 17-39 years; it was noted that the African- American women were willing to take the vaccine though skeptical about the side effects and effectiveness.

On the other hand, the Latino women were all willing to take the vaccine (Scarinci, GarcésPalacio and Partridge, 2007).

According to a study carried out among female health workers in Enugu, Nigeria on acceptability of human papilloma virus vaccine and cancer screening revealed that 91% of the respondents were willing to recommend the vaccine to their daughters, adolescents as well as other sexually unexposed young women (Ugwu *et al*., 2012). Among 375 female students in Northern Nigeria, 277 (74%) were willing to receive the HPV vaccine. It was reported that the age, medical education, HPV knowledge were significant predictors to their willingness in accepting the vaccine (Iliyasu, Abubakar, Aliyu, and Galadanci, 2010).

In contrast, a study on HPV infection and vaccines: knowledge, attitude and perception among female students at the University of Lagos carried out among 368 female students aged 16-29 years revealed that only 30 (57.7%) expressed their willingness to receive the vaccine. This was due to low level of knowledge about the vaccine and low perceived susceptibility (Makwe *et al*., 2012)

2.11 Factors Influencing Uptake of HPV Vaccine

Factors such as lack of information regarding HPV vaccination, safety and efficacy of HPV vaccination, high cost willingness to pay for vaccination and embarrassment of getting a vaccination for a sexually transmitted disease were the causes for inadequate acceptance of voluntary vaccination for HPV infection (Maharajan *et al.*, 2016). A study on human pappilloma virus awareness, knowledge and vaccine acceptance among 18-25 years old male and femalevocational school students in Berlin, Germany revealed that the predictors of vaccine uptake were higher knowledge of HPV, recommendations from health care provider and parents as well as a history of sexual intercourse (Blodt *et al*., 2011).

Bingham, Drake and La Montage, 2009 in a study on socio-cultural issues in the introduction of human papilloma virus vaccine in low-resource settings revealed that certain socio-cultural issues such as fear of quality of the vaccine, adverse effects, effects on fertility, and promotion of promiscuity are responsible for level of uptake of the vaccine. The predictors of HPV vaccine

uptake among omen of 19-26 years revealed that physician's recommendation was a great influence in taking the vaccine. According to this study, the strength of the physician's recommendation played a significant role in the decision to be vaccinated, resulting in a 4-fold greater likelihood of vaccination when women received a strong recommendation from their physician versus one that was not strong (Rosenthal, Weiss, Zimet, Ma, Good and Vichnin, 2011). In a systematic review conducted among teenage girls with most participants from U.S, higher vaccine uptake was associated with having health insurance, being of older age, receipt of childhood vaccines, a higher vaccine related knowledge, more healthcare utilization, having a healthcare provider as a source of information and positive vaccine attitudes. It was also reported that most African-American girls were less likely to initiate or complete the vaccine doses (Kessels, Marshall, Watson, Braunack-Mayer, Reuzel and Tooher, 2012). In Argentina, a study among 1200 women aged 18-49 years revealed that lack of doctor's recommendation (34.1%) and high cost of vaccine (15.7%) was mainly responsible for non-uptake of the vaccine (Arrossi, Maceira, Paolino and Sankaranarayanan, 2012).

Among 269 females of 13-26 years enrolled in a study by Conroy, Rosenthal, Zimet, Yin, Bernstein, Glynn and Kahn, 2009 it was seen that the factors such as insurance coverage for HPV vaccination and the belief that one's parents, partners, and clinicians endorsed HPV vaccination was a boost to up taking the vaccine by the females. In a focus group study among 55 females: African-American (28) and Latino women (27) between the ages of 17-39 years, the motivating factors for vaccine use included receiving education/information about the vaccine, affordable prices, good results in trials, and knowing others who had already gotten vaccinated (Scarinci*et al*., 2007).

2.12 Uptake of HPV vaccine

The uptake of HPV vaccine was reportedly low according to a study carried out on parents of young female adolescents. The study showed that eighteen percent of the daughters had not received the vaccine, although it had been offered; 34% had not been offered the vaccine and did not intend to get it in the next 12 months; 22% had not been offered the vaccine but intended to get it in the next 12 months; 26% had started vaccination or completed the series. The study also showed that mothers' and daughters' ages, race/ethnicity, mothers' self-reported history of HPV disease and age of sexual initiation, daughters' dating status and anticipated age of sexual initiation, the number of sexual topics discussed and level of comfort, mother's sexual values, and the family

environment were not related to their attitudes about getting the vaccine (Rosenthal, Rupp, Zimet, Heather *et al*., 2008).

According to Dempsey, Cohn, Dalton and Ruffin, 2011 in a study carried out among 11,545 women ages 19-26, 18% had initiated the vaccine series and only 10% had completed the 3 doses in the 30-month study period. The decreased series initiation was reported to be associated with older age, public insurance, white race and non-family medicine specialty. Decreased series completion was also associated with public insurance and African American race. Out of 189 females aged 13-26 enrolled in a follow-up study, 68 (36%) had received ≥1 HPV vaccine dose. Of the 121 who were unvaccinated, 54 (45%) had not returned to the clinic since the baseline study, 51 (42%) had returned but were not offered vaccine, and 15 (12%) had declined vaccination (Conroy *et al*., 2009).

A study on knowledge about Cervical Cancer, Health Beliefs and Human Papillomavirus vaccination rate among 777 female university students in Korea revealed the rate of HPV vaccination was 5.5% (Lee *et al.*, 2011). In the United State of America, a study carried out on factors related to HPV vaccine uptake and 3-dose completion among women in a low vaccination region of the USA reported that out of the 325 participants, 204 (62.8 %) had initiated the vaccine and 159 (48.9 %) had completed the 3-dose series (Wilson *et al*., 2016).

2.13 CONCEPTUAL FRAMEWORK

The Health Belief model would be used for this study. This model is a framework put together to identify the underlying reasons that influences people's behaviour towards a health problem. The health belief model has six constructs that provide a useful framework for designing both short term and long-term behavior change strategies. They include:

Perceived susceptibility: These are beliefs the individual has about the chances of getting a condition. The female artisans may perceive that they may be exposed to cervical cancer if they are sexually active and may be at risk of acquiring it.

Perceived severity: These are beliefs the individual has about the seriousness of a condition and its consequences. The female artisans may perceive cervical cancer as a serious disease that need to be prevented or they may view it as not so serious, hence not eager to get vaccinated.

Perceived benefits: These are beliefs the individual has about the effectiveness of taking action to reduce risk or seriousness. The female artisans may perceive that the HPV vaccine may be beneficial or not in the prevention of the disease.

Perceived barriers: These are the beliefs the individual has about the material and psychological costs of taking action. The female artisans may identify their personal barriers to getting tested and eliminate or reduce these barriers such as cost, accessibility and availability of health centers e.t.c.

Cues to action: These are the factors that activate "readiness to change". Media awareness, physician's recommendation e.t.c. can create a reminder for vaccine uptake by female artisans.

Self-efficacy: This is the confidence an individual has in his ability to take action. The female artisans will receive health education to prevent engagement in risky behaviours associated with cervical cancer.

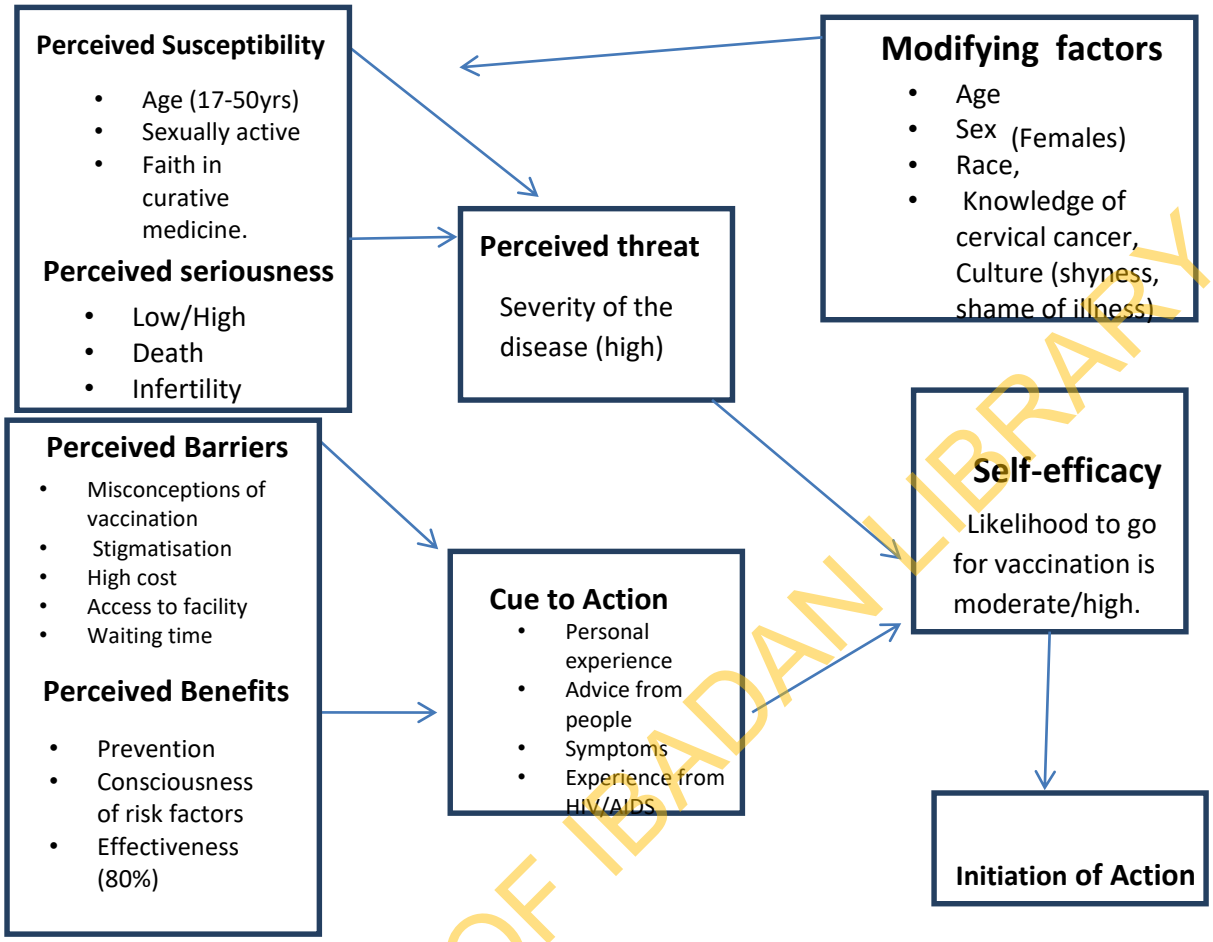

Figure 2.1: Health Belief Model

CHAPTER THREE METHODOLOGY

3.1 Study design

This study was a cross-sectional study using quantitative data collection method. It involved female artisans who are registered in different trade centres in Ibadan North Local Government Area (IBNLGA), Oyo State, Nigeria.

3.2 Study Area

Ibadan North Local Government is one of the five local government carved out of the defunct Ibadan Municipal Government in 1991 with the youth population of 128,563. According to the National Bureau of statistics, the age distribution of youths aged 15 – 24 was 60,570. The Local Government Area covers a landmass of 27,249 square kilometre with a population density of 2,626 persons per square kilometre. The 2016 estimated population for the Local Government area is put at 432,900 (NPC, 2014). It is bounded by Akinyele and Lagelu local Government to the North and to the East by Egbeda local Government. Ibadan North-West and Ibadan North-East bounds it to the South. There are no serious farming activities however trading and other commercial activities are predominant in this area and this makes it an urban area. It is also a home for small, medium and large scale industries. There are various vocational trades females engage in the community, this include but not limited to hairdressing, tailoring, catering, decoration, beautician, trading, e. t. c. It is also characterized by the population of the highest concentration of virtually all ethnicity and tribe in Nigeria subdivided into twelve wards. The study sites are six wards within the local government which were selected using convenient sampling. They include: Oke Are, Old Bodija, Yemetu, Bashorun, Sango and Agbowo.

3.3 Study Population

The study population were female artisans within the age range of 15 to 24 year old who are artisans and reside in Ibadan North local Government Area**.**

3.4.1 Inclusion criteria: Participants eligible for this study were female artisans that are not currently enrolled in a tertiary institution or awaiting admission into the tertiary institution as at the time of administration of the questionnaire. Participants must be at least 12months out of school to be eligible for this study.

3.4.2 Exclusion criteria:

Individuals in the study area was not eligible to participate in the study if:

1. Any of the inclusion criteria listed above was not met
2. If the master or respondent refuse to give their consent.

3.5 Sample Size Determination

The sample size was calculated using Leslie Kish formula for sample size determination in health studies:

$$n=\frac{z^2pq}{d^2}$$

Where n = sample size;

z = the standard normal deviation which corresponds to the 95% confidence level (1.96); p = prevalence on willingness to receive HPV vaccine by female students in University of Lagos, a study by Makwe *et al*., 2012 is 57.7%

$q = 1 - p$ (1 − 0.577 = 0.423);

d = degree of accuracy desired (0.05).

Therefore, $$n = \frac{1.96^2 \times 0.577 \times 0.423}{0.05^2}$$

$$= 375 \sim 380$$

3.6 Sampling Procedure

The sampling technique that was used for this study is a four-stage sampling technique among female artisans.

Apprentices are usually youths that have limited formal education who learn a vocation under the supervision of an expert in the field of the apprenticeship.

The multi-stage sampling technique entails

Stage 1

Three out of the twelve wards were randomly selected.

Stage 2

A convenience sample of 6 major artisan associations was identified for the research and this cuts across the 6 wards because they usually have more number of members which will help provide

more female artisans for the research. These associations include the Hair dressers, confectionary makers, Tailors, beauticians, traders and decorators. The trade association leader was contacted and pre-informed about the research details so that there can be a debriefing to the trade bosses during their scheduled meeting in which the researcher will be present. Trade bosses with target population was identified with the number available in the center specified and included for the research.

Stage 3

A simple random sampling technique was used to distribute the questionnaire across all apprenticeship for fair selection. Female artisans in these groups were identified using the inclusion and exclusion criteria.

3.7 Research instrument (The Questionnaire)

A semi-structured interviewer-administered questionnaire was designed in English language for the female artisans to collect quantitative data. The questionnaire was structured and divided into sections based on the objectives of the study as follows:

Section A: Socio-demographic characteristics

Section B: Knowledge of Cervical Cancer among female artisans

Section C: Perception of cervical cancer and HPV among female artisans

Section D: Uptake of HPV vaccine among female artisans

Section E: Willingness to uptake HPV vaccine among female artisans

Section F: Factors associated with uptake of HPV vaccine by female artisans

3.8 Validity

The questionnaire was validated by ensuring a comprehensive review of relevant literature and salient variables relating to the topic. The result of the literature review was used to develop the questionnaire. The developed questionnaire was subjected to peer review and reviews from specialist in health promotion and education which includes my supervisor to ascertain the face and content validity of the developed instrument.

3.9 Reliability

A pre-test was carried out among female artisans in Ibadan South-West LGA using 10% of the sample size to test the reliability of the instrument. Revision was made on the instrument based on the analysis of the result of the pre-test before the commencement of the study. Reliability analysis for questionnaire was done by using Cronbach Alpha statistical test and a reliability coefficient of 0.77 was gotten and considered as reliable.

3.10 Data Collection Procedure

Quantitative method of data collection was employed in which a semi-structured interviewer administered questionnaire was translated in Yoruba for easy understanding of the respondents. Four research assistants were trained on how to collect the data appropriately. The questionnaire was administered by the interviewer in Yoruba, a local dialect in the western part of Nigeria at the venue that is convenient for the respondent. Information relating to cervical cancer and HPV vaccine was explained to respondents who have never heard of cervical cancer before questions on perception and uptake were asked.

3.11 Data Management and Analysis

Questionnaire was reviewed to ensure completeness and basic interview skills such as numbering the questionnaire. The researcher checked the data collected each day to make sure that questionnaire were properly filled. A coding guide was developed to facilitate data entry and entered into a computer.

The analysis was done by using Statistical Package for the Social Scientists of version 21 (SPSS). The data collected was subjected to descriptive and inferential statistics which includes Chi square analysis with p-value set at 0.05 level of significance. An 18-point knowledge scale was used, scores <6 were considered poor; >6-12 fair while scores >12 were considered good. A 12-point perception scale, scores <6 were considered poor while scores >6-12 were considered good.

3.12 Ethical considerations

Ethical approval was obtained from the Ethical Review Board from Oyo State before the study is conducted. After this, the purpose and the procedures of the study was explained to the respondents in Yoruba that is a language they can understand. Verbal or written consent was obtained from all

respondents. Only respondents who were able to give informed consent (i.e. are able to demonstrate an understanding of the objectives of the study and the implication of their role in it) was recruited for this study.

- **Confidentiality of data**: In order to assure respondents of confidentiality of the information that was supplied, names of respondents will not be required, only identification numbers will be assigned to the questionnaires for proper recording.
- **Translation:** the questionnaire will be translated to Yoruba language for easy understanding of the questions by the respondents.
- **Beneficence to participants**: The outcome of the research will be of benefit not only to the participants, but the female artisans in the local government to provide educational intervention that will increase awareness and knowledge on cervical cancer.
- **Non-maleficence to participants**: The research did not require collection of invasive materials. Therefore, safety of the participants will be guaranteed.
- **Voluntariness**: The participants will be given full detail concerning the research before taking part in it so as to ensure that the fully understands the research and are willing to take part in it. The participant is free to withdraw at any point of the research.

3.13 Limitation of the Study

The result of this study was based on responses from the participants which may not be ascertained by this study. There might be difficulty in retrieving some information from participants as a result of their low educational status. To overcome this, the research instrument was translated to participants' language and research assistants were adequately trained.

CHAPTER FOUR

RESULTS

4.1 Socio demographic characteristics

There were 382 respondents recruited for this study, respondents' age ranged from 15 years old to 24 years old with mean age of 19.79 ± 2.50, respondents were comprised mostly of Yoruba ethnicity (73.3%) followed by individuals of Igbo ethnicity (20.2%). More than half of the respondents (58.6%) associated with Christianity as their religion, while 40.8% associated with Islam religion and 0.5% associated with traditional religion. There were a total of six (6) different occupation engaged in by respondents, majority of the respondent (32.5%) identified as Tailors followed by hairdressers (24.1%) and Traders (18.6%). Others include: decorator (13.9%), beautician (6.5%) and Caterer (4.5%). Educational status of respondents showed that more than half (66.5%) had senior secondary school education followed by junior secondary school (15.2%), there were however twenty-four (24) respondents who did not have any formal education. A small proportion of the respondents (8.1%) were married while a significantly larger proportion (88.2%) was not married (Table 4.1.1).

Parents' level of education was measured and it was revealed that more than half of the respondents' parents: fathers (53.9%) and mothers (56.3%) had secondary school education, however, it was discovered that there were more fathers (20.9%) who had university education than mothers (16.2%). Additionally, most of the fathers and mothers were found to be traders at 49.5% and 64.7% respectively, followed by civil servants where most were fathers (24.3%) compared to mothers (17.5%) (Table 4.1.2).

Table 4.1.1: Respondents' Socio-demographic characteristics (N=382)

Socio-demographic characteristics	Frequency	Percent (%)
Age		
15-19years	202	52.9
20-24 years	180	47.1
Ethnicity		
Yoruba	280	73.3
Igbo	77	20.2
Hausa	14	3.7
Edo	9	2.4
Kogi	1	0.3
Ibibio	1	0.3
Religion		
Christianity	224	58.6
Islam	156	40.8
Traditional	2	0.5
Occupation		
Hairdressing	92	24.1
Tailoring	124	32.5
Decorator	53	13.9
Beautician	25	6.5
Catering	17	4.5
Trading	71	18.6
Education		
No formal Education	24	6.3
Primary	46	12.0
Junior Secondary	58	15.2
Senior Secondary	254	66.5
Marital Status		
Married	42	11.0
Single	337	88.2
Co-habiting	3	0.8

Table 4.1.2: Respondents' parents Education and Profession (N=382)

Parents Education and Profession	Father		Mother	
	Frequency	Percent	Frequency	Percent
Education				
No formal education	31	8.1	37	9.7
Primary	65	17.0	68	17.8
Secondary	206	53.9	215	56.3
Tertiary	80	20.9	62	16.2
Profession				
Trader	189	49.5	247	64.7
Civil servants	93	24.3	67	17.5
Farming	43	11.3	25	6.5
Artisan	17	4.5	13	3.4
Professional	40	10.5	30	7.9

Assessing respondents' sexual history, it was found that 100 (26.2%) of the respondents have had sex. Age at sexual debut ranged from 12 years old being the youngest age of sexual initiation to 23 years old being the oldest age of sexual initiation among respondents, most respondents (22%) were found to have had sexual intercourse for the first time at the age of 20, followed by age 18 years (19%) and age 17 years (14%). The mean age at sexual debut is 18.0±2.3. However, most of the respondents (68%) had only one sexual partner while 32% of the respondents had multiple sexual partners ranging from 2 partners to 4 partners in the past 6 months (Table 4.1.3).

Table 4.1.3: Respondents socio-demographic characteristics (sexual history) (N = 100)

Variables	Frequency	Percent (%)
Ever had Sex		
Yes	100	26.2
No	282	73.8
Age of sexual debut*		
12-16 years	26	26.0
17-19 years	42	42.0
≥20 years	32	32.0
Number of sexual partner in the past 6 months		
1	68	68.0
2	26	26.0
3	5	5.0
4	1	1.0

***Mean Age at sexual debut 18.0±2.3**

4.2 Respondents' Knowledge of Cervical Cancer

There were eighty-five respondents (22.3%) who have heard about cervical cancer and it was gathered that among the respondents who have heard about cervical cancer, majority (37.6%) got the information from the television, followed by medical personnel (18.8%), internet (18.8%) and radio (12.9%). Other sources of information of cervical cancer identified by respondents included: Peers, family member and from personal experience of knowing someone who died as a result of complication from the disease (Fig 2).

A detail exploration of the knowledge items showed that respondents' knowledge on what cervical cancer is was poor with less than half of the respondents (41.2%) correctly identifying it as abnormal growth in cervix while 31.8% selected abnormal growth in the female womb and also another 27.0% of the respondents selected abnormal growth in the female vagina (Table 4.2.1). Out of those that have heard of cervical cancer, 61(71.8%) of respondents said cervical cancer has a cure.

Respondents further showed poor level of knowledge on symptoms of cervical cancer (35.25%), 28 (32.9%) respondents correctly selected bleeding after intercourse as symptoms of cervical cancer. A higher percentage (47.1%) correctly selected smelly vaginal discharge as a symptom of cervical cancer. Additionally, pain during sex and abdominal pain were correctly selected by 30.6% and 31.8% of the respondents (Table 4.2.2).

Furthermore, respondents' level on causes of cervical cancer was poor (36%), however, more than half (60%) of the respondents correctly selected multiple sexual partners as cause of cervical cancer, also, early sexual exposure was correctly selected by 49.4% of the respondents, smoking however was correctly selected by a small proportion of respondents (29.4%), likewise HPV infection was correctly selected by 20% of the respondents, a further lower proportion (16.5%) correctly selected long use of oral contraceptives a cause of cervical cancer (Table 4.2.2).

Respondents knowledge of ways of preventing cervical cancer was poor (27%), a very small proportion of respondents (7.1%) correctly selected pap smear test while 14.3% correctly selected use of condoms, abstinence was also correctly selected by more than half of the respondents

(52.4%) while HPV vaccination was correctly selected by 32.1% of the respondents as ways of preventing cervical cancer (Table 4.2.3).

In addition, respondents' knowledge on ways of diagnosing cervical cancer was poor (9%), there were a small proportion of respondents (10.7%) who correctly selected pap smear as a way of diagnosing cervical cancer, also there were 8.3% and 7.1% of respondents who correctly selected visual inspection with acetic acid and visual inspection with Lugol's iodine respectively with majority of the respondents (72.6%) selected I don't know (Table 4.2.3).

The overall level of knowledge of respondents on cervical cancer was deduced to be poor with a mean score of 5.3 ± 2.4 from a possible 18 score, this indicated that respondents' knowledge level is 29.2%. Also, it was found that majority of the respondents (78.8%) had poor knowledge of cervical cancer while 20% had fair knowledge while 1.2% had good knowledge (Table 4.2.4).

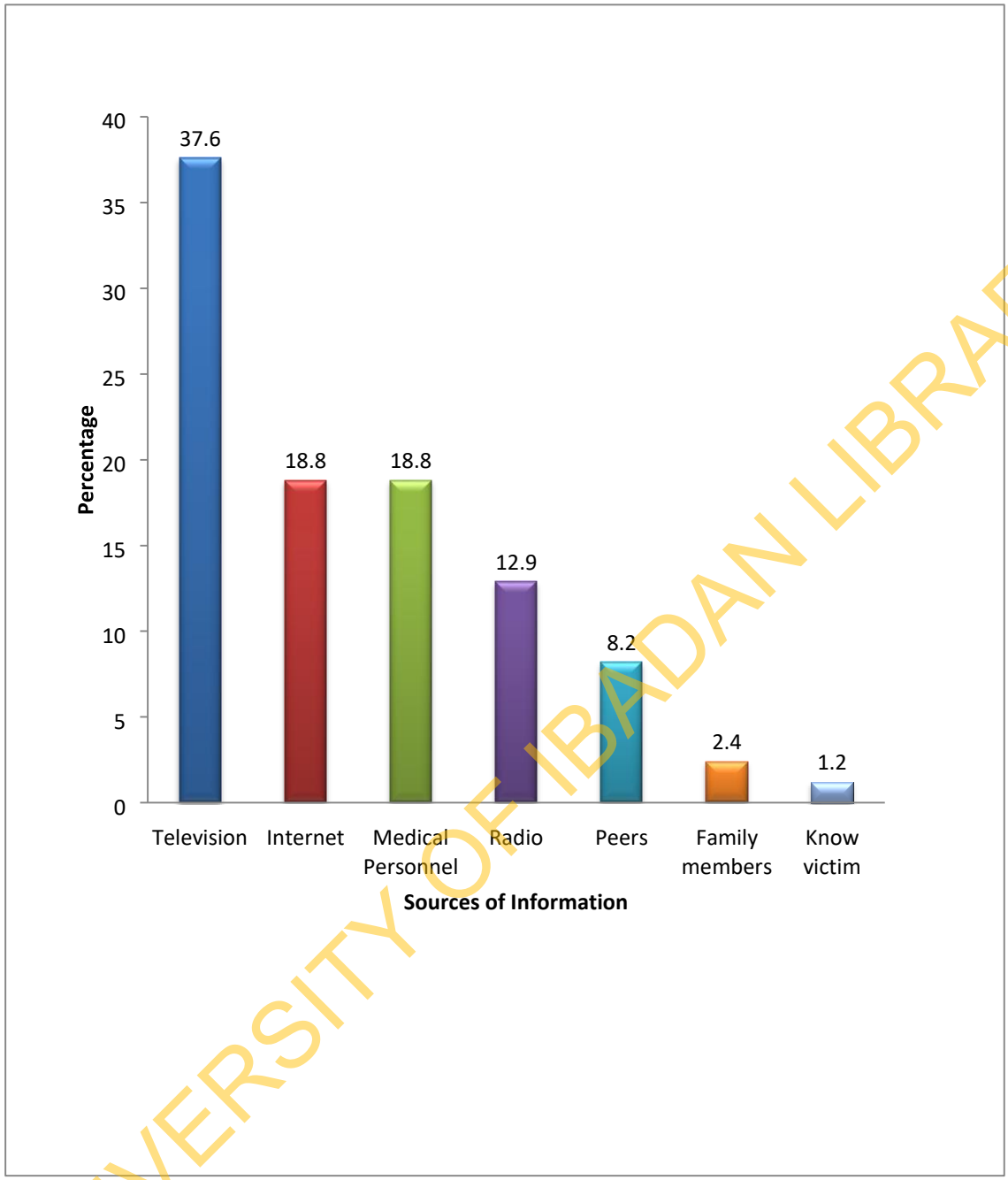

Fig 4.1: Respondents' Source of Information on cervical cancer

Table 4.2.1: Knowledge on what cervical cancer is (n=85)

Variable	Yes (%)	No (%)
Abnormal growth in the cervix	35 (41.2)*	50 (58.8)
Abnormal growth in female womb	27 (31.8)	58 (68.2)
Abnormal growth in the vagina	23 (27.0)	62 (73.0)

* *Correct response*

Table 4.2.2: Knowledge of cervical cancer (n= 85)

Variable	Frequency	Percent (%)
Symptoms of Cervical Cancer		
Smelly vaginal discharge*	40	47.1
Bleeding after Intercourse*	28	32.9
Abdominal pains*	27	31.8
Pain during sex*	26	30.6
Weight Loss	24	28.2
Itching in genital areas	21	24.7
High fever	16	18.8
Painful menstruation	15	17.6
Irregular Menstruation	11	12.9
Causes of Cervical Cancer		
Multiple sexual partners*	51	60.0
Early sexual exposure*	42	49.4
Smoking*	25	28.4
HPV vaccine*	17	20.0
Long use of oral contraceptive pills*	14	5.9
Breastfeeding	6	7.1
Family History of cervical cancer	5	16.5
HIV infection	3	3.5
Early menarche	2	2.4
Uncircumcised male partner	3	3.5

+ Multiple choices

**** Correct answer***

Table 4.2.3: Knowledge on ways of preventing and diagnosis of cervical cancer (n=85)

Ways of Preventing of Cervical cancer	Frequency	Percent (%)
Abstinence*	44	52.4
HPV vaccination*	27	32.1
Use of condom*	12	14.3
Healthy eating	9	10.7
Pap smear test *	6	7.1
Ways of Diagnosing Cervical cancer		
Don't know	61	72.6
Pap smear*	9	10.7
Visual inspection with acetic acid*	7	8.3
Visual inspection with Lugol's Iodine*	6	7.1

+ Multiple choices
** Correct answer*

Table 4.2.4: Knowledge distribution of respondents on cervical cancer (n=85)

Knowledge distribution	Frequency	Percent (%)
Poor (0- 6)	67	78.8
Fair (> 6 ≤ 12)	17	20.0
Good (> 12 ≤ 18)	1	1.2
Total	**85**	**100.0**

SECTION C: PERCEPTION TOWARDS CERVICAL CANCER AND HPV VACCINE

4.3 Respondents' perception towards cervical cancer and HPV vaccine

Majority of the respondents (86.9%) agreed that cervical cancer can kill someone compared to 5.9% who disagreed. In addition, majority (77.7%) also agreed that cervical cancer has no cure. The statement that cervical cancer does not exist in real life was disagreed to by more than half of the respondents (69.2%). Respondents' perceived susceptibility was also assessed when asked the statement that I cannot have cervical cancer and most of the respondents (78.6%) agreed to the statement showing feeling of invincibility to cervical cancer. In relation to this, the statement that cervical cancer does not affect their age group was met with mixed reaction as there was no significant difference in the number of respondents who agree, disagreed or were undecided at 35.4%, 32.6% and 32.0% respectively.

More than half of the respondents (51.7%) agreed that obtaining HPV vaccine is not sufficient in preventing cervical cancer, correspondingly, a similar proportion of respondents (54.8%) agreed that someone who has never had sex should not be worried about cervical cancer while majority (56.6%) of the respondents were undecided on the vaccine having negative side effects. Additionally, most respondents (40.7%) were also undecided on herbal medicine being more potent than the vaccine. Interestingly, more than half of respondents (52.3%) disagreed that cervical cancer is a spiritual attack, however, a larger proportion of the respondents (38.6%) disagreed that only promiscuous people need to take the vaccine while most respondents (81.8%) agreed that only doctors' recommendation is needed before taking the vaccine (Table 4.3).

Respondents' overall perception was determined to be poor perception of cervical cancer and HPV vaccine with mean score of 5.46 ± 1.94.

Table 4.3: Respondents' perception towards cervical cancer (N= 382)

Perception towards cervical cancer	Agree (%)	Undecided(%)	Disagree (%)
Cervical cancer can kill someone	324 (86.9)*	27 (7.2)	22 (5.9)
Cervical cancer has no cure	289 (77.7)*	62 (16.7)	21 (5.6)
Cervical cancer does not exist in real life	58 (15.7)	56 (15.1)	256 (69.2)*
I cannot have cervical cancer	291 (78.6)	48 (13.0)	31 (8.4)*
Cervical cancer does not affect my age group	128 (35.4)	116 (32.0)	118 (32.6)*
Obtaining HPV vaccine is not sufficient for preventing cervical cancer	197 (51.6)	129 (34.8)	45 (12.1)*
Someone who has never had sex should not be worried about cervical cancer	204 (54.8)	113 (30.4)	55 (14.8)*
The vaccine have negative side effects	127 (34.4)	209 (56.6)	33 (8.9)*
Herbal medicine is more potent than the vaccine	135 (36.6)	150 (40.7)	83 (22.5)*
Cervical cancer is a spiritual attack	91 (24.5)	86 (23.2)	194 (52.3)*
Only promiscuous people need to take the vaccine	130 (35.3)	96 (26.1)	142 (38.6)*
Only doctor's recommendation is needed before taking the vaccine	302 (81.8)	49 (12.8)	18 (4.7)*

Correct Option

4.4 Uptake of HPV vaccine

Only 46(12.0%) out of 382 respondents claimed they had ever taken HPV vaccine. When asked which of the HPV brand was taken, majority of the respondents (87.0%) did not know the brand, however Gardasil (8.7%) and Cervarix (4.3%) were the most used. Number of doses taken by respondents ranged from 1 to 3 with most respondents (45.7%) taking two doses. Most respondents (67.4%) took the vaccine the previous year (Table 4.4.1).

Reasons given by respondents for the uptake of HPV varied from previous history of STD infection (4.3%) to parental advice (58.7%), having sex before the age of 18 years (21.7%)was also identified by respondents as reason for uptake HPV vaccine. Location of uptake of the vaccine included either Primary Health Care centre (60.9%) or General hospital (39.1%) (Table 4.4.2).

However, for respondents who haven't obtained the HPV vaccine, lack of awareness about the vaccine (89.3%) was the most common reason given by respondents, also given were: availability of the vaccine (3.3%), affordability (3.6%), not seeing need for the vaccine (2.7%) and no history of cancer (1.2%). Enlightenment was identified by 70.7% of the respondents as what will make their peers not to take it, followed by cost of vaccine (23.8%) (Table 4.4.3).

Table 4.4.1: Uptake of HPV by respondents (N= 382)

Ever taken HPV	Frequency	Percent (%)
Yes	46	12.0
No	336	88.0
Type taken		
Cervarix	2	4.3
Gardasil	4	8.7
I don't know	40	87.0
Number of doses taken		
One	16	34.8
Two	21	45.7
Three	9	19.6
Vaccine was taken		
Last month	12	26.1
Last year	31	67.4
Two years ago	2	4.3
Can't remember	1	2.2

Table 4.4.2: Respondents' reasons for taking HPV vaccine (N= 382)

Reasons for taking vaccine	Frequency	Percent (%)
Previously contracted STD	2	4.3
Multiple sexual partners	2	4.3
Sex before 18 years	10	21.7
Recommended by physician	5	10.9
Parent's advice	27	58.7
Place vaccine was taken		
Primary Health Care	28	60.9
General Hospital	18	39.1

Table 4.4.3: Respondents reasons for not taking HPV vaccine (N= 382)

Reasons for not taken the vaccine	Frequency	Percent (%)
Don't know about it	300	89.3
Not available	11	3.3
Cannot afford it	12	3.6
Don't need it	9	2.7
Don't have cancer	4	1.2
What will make your peers not take the vaccine?		
Poor knowledge of cervical cancer	270	70.7
Cost	91	23.8
Confidentiality issue	14	3.7
Pain with vaccine	1	3.7
Not promiscuous	1	0.3
No time	1	0.3
No cancer	1	0.3
Scared	3	0.8

4.5 Respondents' willingness to take up HPV vaccine

More than half of the respondents (61.8%) are willing to take up the HPV vaccine. Most of the respondents however would prefer to be vaccinated at the health centre 170 (72.0%), followed by home 45(19.1%) and place of work 21(8.9%).

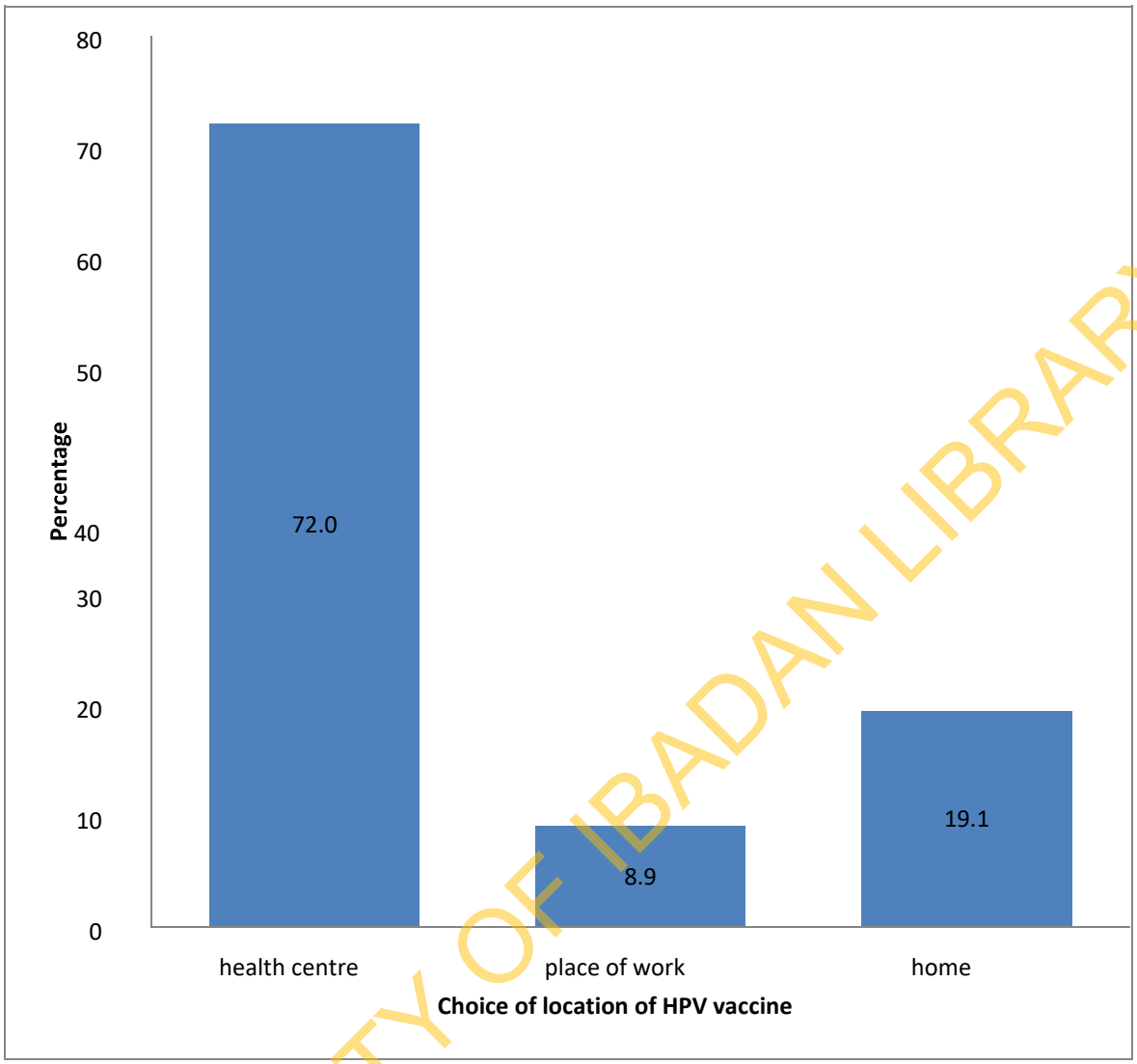

Figure 4.2: Respondents' choice of location for vaccination

4.6 Factors Affecting the Uptake of the Vaccine

More than half of the respondents (61.3%) agreed that HPV vaccine is too expensive and a large proportion of the respondents (47.6%) agreed that the duration of the complete vaccine dosage is too long. There was no significant difference in the proportion of respondents who agreed (35.5%), disagreed (31.0%) and undecided (33.4%) to the statement that health care workers are not confidential. Distance to the health care being too far was agreed and disagreed to by 37.7% and 38% of the respondents respectively. More than half of the respondents (56.8%) agreed that they don't have knowledge about the vaccine. Additionally, more than half (59.1%) of the respondents agreed that they will take the vaccine if their doctor tells them to, however most respondents (52%) were undecided on HPV having dangerous side effects. Pain during vaccination being unbearable was found to be an undecided statement among most of the respondents (47.3%). There was disagreement among most respondents (69.9%) on the statement that HPV vaccination is against their religion. Uptake of HPV vaccine if family supports was agreed to by most respondents (60.2%) while 65.5% of the respondents disagreed that their culture does not support HPV vaccine uptake. Concluding, 70.5% of the respondents agreed that they will take the vaccine if it is free (Table 4.5).

Table 4.5: Factors Affecting the Uptake of the Vaccine (N=382)

STATEMENTS	Agree n(%)	Undecided n(%)	Disagree n(%)
HPV vaccine is too expensive	231 (61.3)	120 (31.8)	26 (6.9)
The duration of the complete vaccine dosage is too long	179 (47.6)	175 (46.5)	22 (5.9)
Health care workers are not confidential	134 (35.1)	126 (33.4)	117 (31.0)
Health care centre is too far	141 (37.7)	91 (24.3)	142 (38.0)
Don't have knowledge about the vaccine	212 (56.8)	98 (26.3)	63 (16.9)
Doctor's recommendation is important before I take the vaccine	221 (59.1)	91 (24.3)	62 (16.6)
HPV vaccine has dangerous side effects	115 (30.1)	196 (52.0)	66 (17.5)
Pain during vaccination is unbearable	122 (32.4)	178 (47.3)	76 (20.2)
HPV vaccination is against my religion	53 (14.1)	60 (16.0)	262 (69.9)
Will take the vaccine if supported by family	227 (60.2)	61 (16.2)	89 (23.6)
My culture does not support HPV vaccine uptake	84 (22.3)	46 (12.2)	247 (65.5)
Will take the vaccine if it is free	265 (70.5)	63 (16.8)	48 (12.8)

4.7 Hypotheses Testing

Hypothesis One: There is no significant relationship between knowledge of cervical cancer and willingness to uptake HPV vaccine.

Chi-Square test analysis was used in testing this hypothesis to statistically test for significant relationship between respondents' level of knowledge and willingness to uptake HPV. Data showed that there was a significant relationship between respondents' level of knowledge and willingness to uptake HPV vaccine (X^2= 7.26, df=2, p <0.05). Therefore, the null hypothesis is rejected (Table 4.6.1).

Hypothesis Two: There is no significant relationship between age of female artisans and their willingness to uptake HPV vaccine.

Chi-Square test analysis was used in testing this hypothesis to statistically test for significant relationship between respondents age and their willingness to uptake HPV vaccine. Data showed that there was no significant relationship between respondents age and their willingness to uptake HPV vaccine (X^2= 7.285, df=1, p > 0.05). Therefore, the null hypothesis is accepted (Table 4.6.2).

Hypothesis Three: There is no significant relationship between parent's education and willingness to take HPV vaccine.

Chi-Square test analysis was used in testing this hypothesis to statistically test for significant relationship between respondents' willingness to uptake HPV vaccine and parents' education. Data showed there was no significant relationship between respondents' willingness to uptake HPV vaccine and fathers' education (X^2= 6.28, df=3, p > 0.05) however, there was a significant relationship with mothers' education (X^2=19.60, df=3, p < 0.05). Therefore, the null hypothesis is accepted for fathers' education and rejected for mothers' education (Table 4.6.3.1 and 4.63.2 respectively).

Hypothesis Four: There is no significant relationship between level of education of the respondents and their willingness to uptake HPV vaccine.

Chi-Square test analysis was used in testing this hypothesis to statistically test for significant relationship between respondents' level of education and their willingness to uptake the HPV

vaccine. Data showed that there was a significant relationship between respondents' level of education and their willingness to uptake the HPV vaccine (X^2 = 15.305, df=3, $p < 0.05$). Therefore, the null hypothesis is rejected (Table 4.6.4).

Table 4.6.1: Relationship between knowledge on cervical cancer and willingness to uptake HPV vaccine

Willingness to uptake HPV vaccine	Level of knowledge			Total	X_2	p-value
	Poor	Fair	Good			
Yes	33 (70.2)	14(29.8)	0(0.0)	47	7.261	0.014*
No	34(89.5)	3(7.9)	1(2.6)	38		
Total	**67**	**17**	**1**	**85**		

**Fisher's exact test: Significant*

Table 4.6.2: Relationship between age of respondents and their willingness to uptake HPV vaccine.

Respondents' Age	Willingness to uptake HPV vaccine		Total	X^2	p-value
	Yes	No			
15 – 19 years	112(55.4%)	90(44.6%)	202	7.285	0.007
20 -24 years	124(68.9%)	56(31.16%)	180		
Total	**236**	**146**	**382**		

**Not Significant*

Table 4.6.3.1: Relationship between father's education and willingness to take HPV vaccine

Father's education	Willingness to uptake HPV vaccine		Total	X_2	pvalue
	Yes	No			
No formal education	14(45.2%)	17(54.8%)	31	6.276	0.099
Primary	41(63.1%)	24(36.9%)	65		
Secondary	136(66.0%)	70(34.0%)	206		
Tertiary	45(56.3%)	35(43.8%)	80		
Total	**236**	**146**	**382**		

**Not Significant*

Table 4.6.3.2: Relationship between mother's education and willingness to take HPV vaccine

Mother's education	Willingness to uptake HPV vaccine		Total	X_2	p-value
	Yes	No			
No formal education	14(37.8%)	23(62.2%)	37	19.600	0.0008*
Primary	34(50.0%)	34(50.0%)	68		
Secondary	151(70.2%)	64(29.8%)	215		
Tertiary	37(59.7%)	25(40.3%)	62		
Total	**236**	**146**	**382**		

**Significant*

Table 4.6.4: Relationship between respondents' level of education and willingness to take HPV vaccine

Respondents' level of education	Willingness to uptake HPV vaccine		Total	X_2	p-value
	Yes	No			
No formal education	8(33.3%)	16(66.7%)	24	15.305	0.002*
Primary	23(50.0%)	23(50.0%)	46		
Junior Secondary	33(56.9%)	25(43.1%)	58		
Senior Secondary	172 (67.7%)	82(32.3%)	254		
Total	**236**	**146**	**382**		

**Significant*

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion

5.1.1 Respondents socio-demographic characteristics

The study recruited three hundred and eighty-two female artisans with a mean age of 19.83. The respondents were predominantly of Yoruba ethnicity, which can be attributed to the geographical location of the study site which is a Yoruba dominated area (Ibadan, Oyo state). There were ten (6) identified jobs offered by respondents, however, tailors and hairdressers were the most preeminent, these two jobs are culturally believed and accepted to be dominated by women, this is an attributable factor to the findings in this study.

The study revealed that more than half of respondents (66.5%) had completed secondary school education compared to 6.3% who had no formal education. This agrees with NPC and ICF Macro (2014) which documented that less than 22% of the urban population in South-West, Nigeria who had no formal education. The same can be said concerning the respondents' parents as more than half of the mothers and fathers had secondary school education. It was also found that most of respondents' parents are traders.

Most of the respondents had never had sexual intercourse before, however the small proportion of the respondents who have had sexual intercourse before had started between the ages of 12 years old and 23 years old, however, most respondents started having sex at the age of 20 years. While majority of respondents were faithful to one sexual partner, a small proportion had multiple sexual partners for as much as 4 partners.

5.1.2 Respondents' Knowledge of Cervical Cancer

Level of awareness of respondents was found to be very low (22.3%), a similar finding was uncovered by Abiodun *et al* (2013), although the demographic of respondents are not similar as the study had women as old as 64 years old compared to the oldest being 28 years old in this study however, most respondents from both study had secondary school education, which puts them at the same educational level of understanding. To further establish this, statistical analysis to test for

significant association between respondents' level of knowledge and their age revealed that there is no significant association, indicating that the age of respondents does not affect or influence their level of knowledge.

A higher level of awareness was recorded among female university students (42.9%), female students (71%), secondary school teachers (74.6%) and among female outpatients (62.7%) by Hoque *et al* (2009), Ogbonna (2017), Ugwu *et al.* (2018) and Waiswa *et al* (2017) respectively. It can be deduced from comparing the findings from the study that a higher level of education and exposure to the hospital environment may contribute positively to a higher level of awareness of cervical cancer.

The sources of information for this study's respondents included mass media (television and radio) and medical personnel as the highest contributors to their level of awareness; this is similar to the study carried out by Hoque *et al* (2009) where community health workers and media were the highest contributor to source of information on cervical cancer. Ugwu *et al* (2018) also reported Radio/Television, Magazine/Newspapers, Hospitals, Friends, Tertiary/Secondary schools as sources of information for cervical cancer.

The level of knowledge of respondents was low, with a mean score of 5.3±2.4 from a possible 18 score putting the percentage at 29.2%, a similar low level of knowledge was recorded by Makwe *et al* (2012) when female university students had a score of 2 from a possible 15 score. Contributing to the very low level of knowledge was the respondents' low knowledge on definition of cervical cancer, respondents' knowledge on if cervical cancer has a cure was also very poor. Respondents further showed very poor level of knowledge on symptoms of cervical cancer, a low level of knowledge of the causes of cervical cancer which was reoccurring in studies carried out among different respondents across different studies: among women in Ogun state, knowledge on causes and risk factors to cervical cancer was low (Abiodun *et al*, 2013); among students, more than half of the participants could not correctly identify causes of cervical cancer (Al-Darwish *et al*, 2014); also among female university students, most respondents did not know any risk factors for cervical cancer and only one respondent (0.6%) knew all the risk factors (Hoque *et al* 2009).

Also revealed in this study was that respondents had low level of preventive measures against cervical cancer and ways of diagnosing cervical cancer, this was also found to be similar among

university students where more than half did not know that cervical cancer is preventable (Hoque *et al* 2009). Medical students however showed significantly higher level of knowledge on preventive measures and diagnosing cervical cancer, this however can be attributed to their level of education which is absent among the study respondents who mostly had secondary school education. It can also be said that lower level of education has influence on knowledge on cervical cancer as evident in a study by Olugbenga-Bello *et al* (2016) where most sex workers in south-western cities in Nigeria had low level of knowledge on cervical cancer.

5.1.3 Respondents' perception towards cervical cancer and HPV vaccine

Respondents' overall perception was determined to be poor. While perceived seriousness of cervical cancer was found to be high among respondents, their perceived susceptibility was low, a similar trend was recorded in Korea where the levels of perceived benefit and seriousness were relatively high, while the levels of perceived barrier and susceptibility were relatively low (Lee *et al.* 2011). Respondents in this study showed low level of perceived susceptibility and this may be attributed to respondents' low level of knowledge on causes of cervical cancer and this as truncated their feeling of being susceptible to the disease.

Respondents perceived benefit of the HPV vaccine was negative as more than half do not feel HPV vaccine is sufficient to prevent cervical cancer. However, in Indonesia, most of the respondents had positive perception of cervical cancer and HPV vaccination (Endarti *et al.* 2018).

5.1.4 Uptake of HPV vaccine

Uptake of HPV vaccine by respondents was determined to be low at 12%. Rosenthal *et al* (2008) documented a low level of uptake of HPV vaccine by young female adolescents, furthermore, over a 30-month period, only 10% of women between the age of 19 years and 26 years old had completed the HPV vaccine (Conroy *et al.*, 2009). A lower uptake rate was recorded among university students in Korea where the rate of HPV vaccination was 5.5%. However, in the United States of America, almost half of women had completed the doses for HPV (Wilson *et al.* 2016). There seem to be a disparity in the level of uptake of the HPV vaccine where the developed country has a higher level of uptake than developing countries.

Respondents who haven't obtained the HPV vaccine identified lack of awareness about the vaccine, availability of the vaccine, affordability, not seeing need for the vaccine and no history of cancer were prominent factor mitigating the uptake of the vaccine.

5.1.5 Respondents' willingness to take up HPV vaccine

Willingness to obtain the HPV vaccine among respondent was high. This finding however may be dependent on an important factor as identified by Maharajan *et al* (2016) that cost of vaccine is important in driving women's willingness to obtain HPV vaccine, this was evident in their study that if the vaccine is free of charge 89.7% of all respondents would request it, but if they had to pay for it, 12.25% will request for it. In the absence of information on cost of vaccine, it was documented that almost half of German women participants were undecided whether they would like to receive the vaccine or not (Blodt et al., 2011).

5.1.6 Factors influencing uptake of HPV vaccine

According to Maharajan *et al.* (2016), Blodt *et al*., (2011), Bingham *et al.* (2009) and Arrossi *et al.* (2012) factors such as lack of information regarding HPV vaccination, safety and efficacy of HPV vaccination, high cost, willingness to pay for vaccination and embarrassment of getting a vaccination for a sexually transmitted disease were the causes for inadequate acceptance of voluntary vaccination for HPV infection. These factors were present in this study, with factors like high cost of vaccine, long duration of completion; healthcare workers not confidential, lack of knowledge, family support were prominent.

5.2 Implication to Health Promotion and Education

Evidently, cervical cancer is a disease that has been documented to be of public health concern with the rising numbers of mortality cases in Nigeria (Toya *et al*, 2017). Knowing that women aged 15 and above who are at risk of cervical cancer, it is needed that these population group are made aware of the disease thereby encouraging preventive measures and reducing prevalence in the long run.

This study reveals that few female artisans have heard about cervical cancer and those who have heard have little knowledge of the disease, despite that they have heard of it before. This is an

indication that more effort should be made in creating awareness about the disease and health education should be explored. One of the major channels identified by respondents was the mass media which included the television and radio. There is need for media advocacy to educate this target group on cervical cancer, the risk factors and preventive measures while encouraging the uptake of HPV vaccine. Creating awareness is not enough, but most important is that women are knowledgeable about the disease in order to make informed decision in improving their health.

5.3 Conclusion

Findings from this study has revealed that cervical cancer despite being the most common genital cancer and one of the leading cause of death among the world female population, it is met with little or no level of in-depth understanding among female artisans. Respondents showed a fair level of awareness after knowing about cervical cancer on the mass media, however knowing about the disease did not translate to high level of knowledge of the disease.

The perceived seriousness of cervical cancer was found to be high among respondents while their perceived susceptibility was low with majority feeling that they cannot be infected. Uptake of HPV vaccine was low although about two-third of the respondents were willing to take the vaccine. Factors such as high cost, poor knowledge of cervical cancer and HPV vaccine were identified as barriers to uptake of the vaccine while doctor's recommendation, free vaccination and family support were identified as factors that promote the vaccine uptake among the respondents.

5.4 Recommendations

Based on findings from this study, the following are recommended:

1. There is need for the introduction of sustainable workplace health promotion intervention especially for female artisans who has been under-explored in an attempt to educate the Nigerian youth as most intervention focused on youths are implemented in the school setting and this has been evidently showed by the study the significant difference in the level of knowledge of cervical between respondents and educated students from other study.

2. It is evident that the mass media is an accessible channel of information to female artisans, efforts at creating awareness need to be channeled through the mass media and social media.
3. One of the strategies that has been proven to work over the time has been peer education, this needs to be introduced among female artisans in order to improve on their knowledge on cervical cancer.
4. Mothers should also be educated about cervical cancer and HPV vaccine in order for them to be able to encourage their child to uptake the vaccine.

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INFORMED CONSENT FORM

IRB Research approval number:

This approval will lapse on:

Title of research: Knowledge of Cervical Cancer and willingness to uptake human papillomavirus vaccine among female artisans in Ibadan North local government area.

Name of researcher: This study is being conducted by AKINYELURE, Aderonke Tolulope of the Department of Health Promotion and Education, University of Ibadan.

Purpose of research: The purpose of this research is to investigate the knowledge of cervical cancer and willingness to uptake the human papillomavirus vaccine among female artisans in Ibadan North local government area.

Procedure of research: The study will use a quantitative method (Questionnaire) to elicit information from study participants. A total of 380 participants will be recruited into study. Selection of study participants will be done by multistage sampling techniques. Only those who meet the inclusion criteria will be considered

Expected duration of research and participants' involvement: Each research participants is expected to answer the questions in the questionnaire within fifteen to twenty minutes of administration by the researcher. The research work is expected to last for two months.

Risk: This research will not cause any harm. It will not involve utilization of any invasive material or collection of biological samples

Cost to the participants: Participation in this research will not have any financial cost but will require only about twenty minutes (20) of participants' time.

Benefit: There is no direct benefit from this study but the findings would be of great value in the design of interventions at promoting knowledge of cervical cancer and uptake of the HPV vaccine among the female artisans in Ibadan North local government.

Confidentiality: All identifiers will be removed from the questionnaire and confidentiality will be ensured through protection of data collected from participants.

Voluntariness: Your participation in this research is totally voluntary.

Alternatives to participation: If you choose not to participate in the study, you will be exempted. However, your utmost cooperation will be exceedingly appreciated.

Consequences of participants' decision to withdraw from research and procedure for orderly termination of participation: You can choose to withdraw from the research at any time. However, please note that some of the information provided by you before withdrawal may be modified or used in reports.

What happens to research participants and communities when the research is over?

The outcome of this research will be disseminated accordingly.

Any apparent of potential conflict of interest?

There is no conflict of interest as pertains to this study

Statement of person obtaining informed consent

I have fully explained this research to _____ and have given sufficient information, including about risks and benefits, to make an informed decision.

DATE: _____ SIGNATURE: _____

NAME: _____

Statement of person giving informed consent

I have read the description of the research and I fully understand the processes involved in the research. I understand that my participation is voluntary. I know enough about the purpose, methods, risks, and benefits of the research study to judge that I want to take part in it. I understand that I may freely stop being part of this study at any time. I have received a copy of this consent form and additional information sheet to keep for myself.

DATE: _____ SIGNATURE: _____

NAME: _____

Detailed contact information including contact address, telephone, fax, email and any other contact information of researcher, institution HREC and head of the institution.

This research has been approved by the Oyo State Research Ethical Review Committee and the chairman of this committee can be contacted at Ministry of Health Secretariat, Ibadan.

In addition, if you have any question about your participation in this research, you can contact the principal investigator,

Name _____ Department _____

Phone _____Email _____

PLEASE KEEP A COPY OF THE SIGNED INFORMED CONSENT

FỌỌMU IFOHUNSI TIIMO NIPA JEJERE OJU OPO IBIMO ATI IFE LATI GBA AJESARA PAPILLOMAVIRUS TI ENIYAN LAARIN AWON OMIDAN TI KO LO SI ILE-IWE NI AGBEGBE ARIWA IBADAN.

IRBiwadiìtẹwọgbànọmba:

Itẹwọgbàyiiyookọjani:

Akoletiiwadi:imo nipa jejere oju opo ibimo ati ife lati gba ajesara papillomavirus ti eniyan laarin awon omidan ti ko lo si ile-iwe ni agbegbe ariwa Ibadan.

Orukọtioluwadi: Iwadiyitiwaniwaiyenipasẹ Akinyelure, Aderonke Tolulope,omoIle-ẹkọgigati Ibadan niẹkaIgbelarugeIleraatiẸkọ

Idi tiiwadi: Awọniditiiwadiyinilati se iwadi imo nipa jejere oju opo ibimo ati ife lati gba ajesara papillomavirus ti eniyan laarin awon omidan ti ko lo si ile-iwe ni agbegbe ariwa Ibadan.

Iwọn atiilana fun gbigba data:Lapapọ ogorun meta ati ogorinawonọdọbinrinagbalagbatikolọsiile-ekoni agbegbe ariwa Ibadan**.** Areayoowanikopa fun iwadiyililo liana imupeseipeletiọpọlọpọlatiyanawọneniyanti o yẹ.

Akokoti a yẹ fun iwadi: Ilanayiiyooṣiṣe fun osukan. O nilatipeseidahunsiibeereti o waninuiweibeerenaa. Awọnibeeretiwani o tiṣeyelatipariniogunisẹju.

Ewu: Kosiawọnewutiaranikopaninuiwadiyii. Sibẹsibẹ, awọnibeerekanwaloriawọnabuda-ti-araẹni-araatiihuwasiibalopọtidiẹninuawọnolufisunyookolati ma ledahun.

Awọniyeowolatikopaninudidopọmọiwadiyii: ikopayoona o ohunkohun. O yoo, sibẹsibẹ, yadiẹninuakokorẹ.

Anfaani: Ni opiniwadinaa, awọnawariyoowuloniidamoawọnogbonimoatiki o ṣeidiwọidaamutiainialayeti o to lori imo nipa aarun jejere oju opo ibimo ati ajesara hpv.

Asiri: Gbogboawọnalayeti a gbaniiwadiyiiniao fun ninọmba. Awọnorukọtiawọneniyan ti o dahunkiiyoowaloriawọnibeere. Ni afikun, orukọrẹtabiawọnamiidanimọmiirankiiyoo lo nieyikeyikiiyoowaloriiwetabiiroyin.

Iyọọda:ikopaninuiwadiyini o šeeigbọkanleatinuwa.

Awọnabajadetiipinnuawọnolukopalatiyọkuroninuiwadiatiilana fun létòletòifopinsi: O leyanlatiyọkuroninuiwadinieyikeyiakokolaisiijiyakankan. Jọwọṣeakiyesipediẹninuawọnalayeti a tigbalatiọdọrẹṣaajuki o to yanlatiyọkuroni a le lo ninuawọniroyinatiawọniweaṣẹ.

GbólóhùntiÈnìyàn

Mo tiṣealayenikikuntiisedaatidarapọmoiwadinaa fun _____ atiwipemotipesealayeti o to fun

Ọjọ _____ Ibuwọlu _____
Oruko _____ GbólóhùntiÈnìyànti fi asesiiwadi

Mo tikaapejuwetiiwadinaaatipe a tiṣealaye fun mi niedetio ye mi. Mo mo wipeikopa mi jẹatinuwa. Mo mọnipaidi, awọnọna, ewu, atiawọnanfanitiiwadiyiilatidarapoatiṣealabapinninurẹ.

O ye mi pemo le ma tẹsiwajuninuiwadiyii.Nikẹyìn, Mo tigbafọọ uiwadiìtẹwọgbàatiiweifowosialayefun ara mi. Ọjọ _____ Ibuwọlu _____ Oruko _____

QUESTIONNAIRE

Introduction,

I am a postgraduate student of the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan. I am conducting a study on "**Knowledge of Cervical Cancer and Willingness to Uptake Hpv vaccine among out-ofschool female youths in Ibadan North Local Government Area"** and I hereby request your voluntary participation. The results provided from this study will help to improve knowledge on the above topic. All information will be treated with utmost confidentiality. Please you are required to provide honest and accurate information.

Kindly indicate your willingness to participate by ticking the box below.

Would you like to participate?

YES ☐ NO ☐

Signature and date _____

SECTION A:SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Age as at last birthday _____ (in years)
2. Ethnicity: 1. Yoruba ☐ 2. Ibo ☐ 3. Hausa ☐ 4. Others specify _____
3. Religion: 1. Christianity ☐ 2. Islam ☐ 3. Traditional ☐ 4. Others specify _____
4. Trade group 1. Hairdresser ☐ 2. Tailor ☐ 3. Decorator ☐ 4. Beautician
5. Baker ☐ 6. Trader ☐ 7. Others (specify)_____
5. Highest Educational qualification: 1. No formal Education ☐ 2. Primary ☐ 3. Junior Secondary ☐ 4. Senior Secondary ☐ 5. Others _____
6. Marital Status: 1. Married ☐ 2. Single ☐ 3. Single mother ☐ 4. Divorced ☐ 5. Co-habiting ☐

7. Educational Status of Father: 1. None ☐ 2. Primary ☐ 3. Secondary ☐ 4. University ☐

8. Educational Status of Mother: 1. None ☐ 2. Primary ☐ 3. Secondary 4. University ☐

9. Father's profession: 1. Trader ☐ 2. Civil Servant ☐ 3. Farming ☐ 4. Artisan ☐ 5. Professional ☐

10. Mother's profession: 1. Trader ☐ 2. Civil Servant ☐ 3. Farming ☐ 4. Artisan ☐ 5. Professional ☐

11. Have you had sex? Yes ☐ No ☐

12. Age at first sexual intercourse _____

13. Number of sexual partners in the last 6 months _____

SECTION B:KNOWLEDGE OF CERVICAL CANCER

Instruction: Please answer the following questions appropriately.

14. Have you heard about cervical cancer? Yes ☐ No ☐

15. How did you know about cervical cancer?

1. Television ☐
2. Internet ☐
3. Peers ☐
4. Know victims who died of cervical cancer ☐
5. Medical personnel ☐
6. Family members ☐
7. Radio ☐
8. Others specify _____

16. What is cervical cancer? 1. Abnormal growth in the cervix 2. Abnormal growth in the female's womb ☐ 3. Abnormal growth in female's vagina ☐ 4. Others (specify) _____ ☐

17. Cervical cancer has a cure. 1. True ☐ 2. False ☐ 3. I don't ☐ know

18. What are the symptoms of cervical cancer that you know?

1. Bleeding after intercourse ☐
2. Weight Loss ☐
3. Smelly Vaginal Discharge ☐
4. Itching in genital areas ☐
5. Irregular menstruation ☐
6. Pain during sex ☐
7. Painful menstruation ☐
8. Abdominal Pains ☐
9. High fever ☐

19. What are the causes of cervical cancer?

1. Multiple sexual partners ☐
2. Early sexual exposure ☐
3. Smoking ☐
4. HPV infection ☐
5. Family history of cervical cancer ☐
6. Breastfeeding ☐
7. Long use of Oral Contraceptive pills ☐
8. HIV Infection ☐
9. Early Menarche ☐
10. Uncircumcised Male Partner ☐

20. What are the ways of preventing cervical cancer?

1. Pap smear test ☐
2. Use of Condom ☐
3. Abstinence ☐
4. Eating Healthy ☐
5. HPV vaccination ☐
6. Others _____(specify)

21. What are the ways to diagnose cervical cancer?

1. Pap smear ☐

2. Visual inspection with acetic acid ☐

3. Visual Inspection with Lugol's Iodine ☐

4. I don't know ☐

SECTION C: PERCEPTION OF RESPONDENTS ON CERVICAL CANCER AND HPV VACCINE

Please indicate by ticking (√) whether you A-AGREE, D-DISAGREE, UNDECIDED-UD with the following statements.

S/N	STATEMENT	A	UD	D
22	Cervical cancer can kill someone			
23	Cervical cancer can be treated if detected early			
24	Cervical cancer is a disease for the rich			
25	I cannot have cervical cancer			
26	Cervical cancer does not affect my age group			
27	Taking HPV vaccine is sufficient in preventing cervical cancer			
28	A virgin should not be worried about cervical cancer			
29	The vaccine have negative side effects			
30	Herbal medicine is more potent than the vaccine			
31	Cervical cancer is a spiritual attack			
32	Only promiscuous people need to take the vaccine			
33	Only doctor's recommendation is needed before taking the vaccine			

SECTION D:UPTAKE OF HUMAN PAPPILOMA VIRUS (HPV) VACCINE.

PLEASE TICK (√) CORRECT RESPONSE APPROPRAITELY

34. Have you taken the HPV vaccine? 1. Yes ☐ 2. No ☐ **If No go to question 40**

35. Which one did you take? 1. Cervarix ☐ 2. Gardasil ☐ 3. I don't know ☐

36. How many dose did you take? 1. One ☐ 2. Two ☐ 3. Three ☐

37. When did you take it? 1. Last month ☐ 2. Last year ☐ 3. Others specify____

38. Why did you take it? 1. Have previously contracted STIs ☐

2. Have multiple sexual partners ☐ 3. Had sexual intercourse before age 18 ☐

4. Was recommended by physician ☐ 5. Parent's advice
6. Others (specify)_____

39. Where did you take it? 1. Primary Health Centre ☐ 2. General Hospital ☐
3. Others (specify) _____

40. Why have you not taken it?

1. I don't know about it ☐
2. It is not available ☐
3. I cannot afford it ☐
4. Others (specify)
_____

41. What will make your peers not to take the vaccine?

1. Cost of vaccine 2. ☐ Enlightenment about the vaccine ☐
3. Confidentiality of health worker 4. ☐ Others (specify) _____

SECTION E: WILLINGNESS TO UPTAKE THE VACCINE

42. Would you like to be vaccinated? 1. Yes ☐ 2. No ☐

43. Where would you like to be vaccinated?

1. Health centre ☐ 2. Place of work ☐ 3. Home ☐ 4. Others specify_____

SECTION F:FACTORS AFFECTING THE UPTAKE OF THE VACCINE

Please tick (√) appropriately AGREE, DISAGREE or UNDECIDED to the statements below.

S/N	STATEMENTS	Agree	Undecided	Disagree
44	HPV vaccine is too expensive			
45	The duration of the complete vaccine dosage is too long			
46	Health care workers are not confidential			
47	Health care centre is too far			
48	I don't have knowledge about the vaccine			
49	I will take the vaccine if my doctor tells me to			
50	HPV vaccine has dangerous side effects			
51	Pain during vaccination is unbearable			
52	HPV vaccination is against my religion			
53	If my family supports me, I will take the vaccine			
54	My culture does not support HPV vaccine uptake			
55	I will take the vaccine if it is free			

THANK YOU FOR YOUR TIME AND PARTICIPATION YORUBA QUESTIONAIRE

AKORI: IMO NIPA JEJERE OJU OPO IBIMO ATI IFE LATI GBA AJESARA PAPILLOMAVIRUS TI ENIYAN LAARIN AWON OMIDAN TI KO LO SI ILE-IWE NI AGBEGBE ARIWA IBADAN.

Iwe Ifohunsokan

Olufe owon,

Moje akekoo onipo giga keji tile eko giga unifasiti ti ie Ibadan ni ipinle Oyo. Mo nse akojo ayewo lori imo lori arun jejere oju opo ibimo ati ife lati gba ajesara ti papillomavirus ti eniyan laarin awon omo obirin odo to ko lo si ile iwe ni agbegbe ariwa Ibadan ni ipinle Oyo. Emi bere fun ikopa ninu ayewo yi latinuwa yin. Esi ti ao ri ninu ayewo yii ma fiun imo lori akori yi. Gbogbo oro ti eba bami so yoo wa ni bon kele. Mo ro yin ki edahun gbogbo ibeere yi pele otito ati ododo.

Ejo efi han ti eba fe lowosi ayewo yi

Beeni ☐ Rara ☐

Ibuwolu ati Ojo _____

Abala A: Ohun idamo nipa eniyan

1. Ojo Ori _____
2. Eya: 1. Yoruba ☐ 2. Ibo ☐ 3. Hausa ☐ 4. Ati awon omiran _____
3. Esin: 1. Onigbagbo ☐ 2. Islam ☐ 3. Esin Abalaye ☐ 4. Ati awon omiran_____
4. Ise owo 1. Onidiri ☐ 2. Aranso ☐ 3. Asesosile ☐ 4. Amunidara ☐ 5. beka ☐ 6. Onisowo ☐ 7.Ati awon omiran _____
5. Iye iwe ti eka: 1. Mi o kawe rara ☐ 2. Alako bere nikan ☐ 3. Iwe girama alakobere 4. Iwe girama giga ☐ 5.Ati awon omiran _____
6. Ipo Igbeyawo: 1. Mo ti loko 2. ☐ Mo ti segbeyawo 3. ☐ Mo nda omo to ☐ 4. Mo ti ko oko ☐ 5. Mo ngbe pelu afesonan mi ☐
7. Iye iwe ti baba yin ka: 1. Won o kawe ☐ 2. Iwe alako bere nikan ☐ 3. Iwe mewa girama 4. Iwe onipo giga ti fasiti ☐
8. Iye iwe ti iya yin ka: 1. Won o kawe ☐ 2. Iwe alako bere nikan ☐ 3. Iwe mewa girama

4. Iwe onipo giga ti fasiti ☐

9. Ise wo ni baba yin nse : 1. Onisowo ☐ 2. Onise Ijoba ☐ 3. Agbe 4. Onise owo ☐
   5. Ojogbon ☐
10. Ise wo ni iya yin nse : 1. Onisowo ☐ 2. Onise Ijoba ☐ 3. Agbe 4. Onise owo ☐
    5. Ojogbon ☐
11. Se oti ni ibalopo ri? Beeni ☐ Rara ☐
12. Ojo ori yin nigba ti e ni ibalopo akoko _____
13. Iye awon ti e ti balopo ni osu mefa seyin _____

Abala B: Imo nipa jejere oju opo ibimo

Imoran: Ejowo edahun awon ibeere yii daada

14. Se eti gbo nipa jejere oju opo ibimo ri? Beeni Rara ☐
15. Bawo le se gbo nipa re?
    1. Telefisan ☐
    2. Ayelujara ☐
    3. Awon ore mi ☐
    4. Mo mo eni toti ku latara jejere oju opo ibimo ☐ 8. Ona mi _____(ejo esalaye)
    5. Latodo osise ilera ☐
    6. Ebi mi ☐
    7. Ero asoro magbesi ☐
16. Kini jejere oju opo ibimo?
    1. Siso abaadi ni oju opo ibimo obinrin ☐
    2. Siso abaadi ni ile omo obinrin ☐
    3. Siso abaadi ni oju ara omo obinrin
    4. Ki le yin mosi_____ (ejo esalaye)
17. Arowoto wa fun jejere oju opo ibimo obinrin . 1. Owa 2. Kosi Mi o mo ☐
18. kini awon ami aarun jejere oju opo ibimo obirin ti o mo?

1. Eje dida leyin ibalopo ☐
2. Riru ☐
3. ki omi oju ara ma run ☐
4. yiyun oju ara ☐
5. Ela to n se segesege ☐
6. Irora leyin ajosepo ☐
7. Ela ton dun ni ☐
8. Isale inu rirun ☐
9. Ara gbigbona ☐

19.Kilonfa aarun jejere oju opo ibimo obirin?

1. Nini ibalopo pelu eniyan pupo ☐
2. Nini ibalopo ki a tope pe omo toto balaga ☐
3. Fifa siga ☐
4. Kiko aarun HPV ☐
5. Ti eniyan ninu ebi ba ti ni aarun jejere oju opo ibimo ri
6. Fifun omo loyan ☐
7. Lilo ogun ifeto si omo bibi ☐
8. Nini aarun kogboogun HIV ☐
9. Ki eniyan tete bere nkan osu ☐
10. Nini ibalopo pelu okunrin tiko dako ☐

20. Ona wo la le fi dena aarun jejere oju opo ibimo?

1. sise ayewo omi oju ara ☐
2. Lilo Roba idabobo ☐
3. Sisera fun ibalopo _____(ejo ☐
4. Jijeun to peye ☐
5. Gbigba ajesara ti HPV ☐
6. Ona miran wo le mo esaalaye)

21. Awon ona wo la le fi se ayewo fun jejere oju opo ibimo?

1. omi oju ara ☐
2. Wiwo oju opo ibimo obirin pelu acetic acid ☐
3. Wiwo oju opo ibimo obirin pelu Lugol's Iodine ☐
4. Mi o mo ☐

Abala C: Ero si Aarun jejere oju opo ibimo ati Ajesara HPV

Ejo efi ami (√) han si awon gbolohun yii lati fi han boya egba, e ko gba tabi E o mo

S/N	STATEMENT	Mogba	Mio mo	Mi o gba
22	Aarun jejere oju opo ibimo le pa eniyan			
23	Aarun jejere oju opo ibimo ni ibojuto ti aba teteri			
24	Aarun jejere oju opo ibimo je aarun awon olowo			
25	Emi ko le ni aarun jejere oju opo ibimo			
26	Aarun jejere oju opo ibimo ko kin mu awon sawawu mi			
27	Gbigba ajesara HPV ko to fun idena aarun jejere oju opo ibimo.			
28	Eni ti ko ba tii ni ibalopo ko nilo lati bikita nipa aarun jejere oju opo ibimo			
29	Ajesara HPV ni ipa buburu ti nse lara			
30	Ogun ibile nsise ju ajesara HPV lo			
31	Igbogun ti temi ni aarun jejere oju opo ibimo			
32	Awon onisina ni onilo latigba ajesara HPV			
33	Imoran dokita nikan ni owulo ki eniyan to le gba ajesara HPV			

Ajala D: Isowo gba Ajesara HPV

Ejowo fi ami yi (√) si idahun to baa won ibeere yi lo

34. Se e ti gba ajesara HPV? 1. Beeni ☐ 2. Rara **Tio ba je rara elo si ibeere 41**

35. Ewo le gba? 1. Cervarix ☐ 2. Gardasil ☐ 3. Mi o mo

36. Iwon melo legba? 1. Eyokan ☐ 2. Meji ☐ 3. Meta ☐

37. Nigbawo legba? 1. Osu to koja ☐ 2. Odun to koja 3. Igba miran_____(esalaye)

38. Kini idi ti efi gba? 1. Mo ti ni aarun ibalopo ri

2. Mo ni opolopo abanilopo ☐ 3. Mo ni ibalopo kin to pe odun mejidinlogun ☐

4. Dokita wipe nkin se ☐ 5. Awon obi mi wipe kinse ☐ 6. Idi miiran_____(esalaye)

39. Nibo le ti gba? 1. Ile ise ilera ti agbegbe ☐ 2. Ile ise ilera agba ☐ 3. Ibo miran _____(esalaye)

40. Kilode to o se gba?

1. Mi o mo nipa re ☐
2. Ko si nile ☐
3. Mi o lowo re lowo ☐
4. Idi miran _____(esalaye)

41. Kini idi ti awon obirin egbe re o ni fe gba ajesara HPV?

1. Iye owo ajesara HPV ☐
2. Imo lori ajesara HPV ☐
3. Ifokantan onise eto ilera ☐
4. Idi miran _____ (esalaye)

SECTION E: IFE ATI GBA AJESARA HPV

42. Nje o fe lati gba ajesara yii? 1. Beeni ☐ 2. Rara ☐

43. Nibo lo nife si lati gba ajesara yii?

1. Ile iwosan ☐ 2. Ibi ise ☐ 3. Ile ☐ 4. Ibi miran_____ (esalaye)

Abala F: Awon idi Pataki ton sagbateru imulo Ajesara HPV (√)

Ejo efi ami (√) han si awon gbolohun yii lati fi han boya egba, e ko gba tabi E o mo

S/N	Gbolohun	Mogba	Mi o mo	Mi ogba
44	Ajesara HPV ti won ju			
45	Igba ati akoko lati gba pe ti gun ju			
46	Awon onise ilera ko lasiri bibo			
47	Ile iwosan ti jin ju si mi			
48	Mi o mo nipa ajesara yi nitorina mi ko le gba			
49	Ose koko fun dokita lati fun mi amoran kin to gba			
50	Ajesara HPV ni alebu to buru			
51	Irora gbigba ajesara po			
52	Ajesara HPV o lodi si esin mi			
53	Ti ebi mi ba timileyin, emi yoo gba ajesara na			
54	Asa mi ko gba mi lati gba ajesara HPV			
55	Emi yoo gba ajesara na ti o ba je ofe			

ESE FUN AKOKO YIN ATI KIKOPA NINU AYEWO YII

TELEGRAMS..... TELEPHONE.....

MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION

PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref. No. .....
All communications should be addressed to
the Honorable Commissioner quoting
Our Ref. No. AD 13/479/908

17th September, 2018

The Principal Investigator,
Department of Health Promotion and education,
Faculty of Public Health,
College of Medicine,
University of Ibadan,
Ibadan.

Attention: Akinvelure Aderonke

ETHICS APPROVAL FOR THE IMPLEMENTATION
OF YOUR RESEARCH PROPOSAL IN OYO STATE

This is to acknowledge that your Research Proposal titled: "Knowledge of Cervical Cancer and Willingness to Uptake Human Pappiloma Virus Vaccine among Out-Of-School Female Youths in Ibadan North Local Government Area" has been reviewed by the Oyo State Ethics Review Committee.

2. The committee has noted your compliance. In the light of this, I am pleased to convey to you the full approval by the committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations, in line with this, the Committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of findings as this will help in policy making in the health sector.

4. Wishing you all the best.

Dr. Abbas Gbolahan
Director, Planning, Research & Statistics
Secretary, Oyo State, Research Ethics Review Committee