

Attitude, Perception and Practice Towards Human Papilloma Virus Vaccination Among Nurses in the Federal Medical Centre, Abeokuta, Ogun State, Nigeria

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Abstract:- Human Papilloma Virus vaccination is an effective primary prevention to reduce the risk of HPV transmission which could prevent 70% of cervical cancer in women. For positive achievement of Sustainable Developmental Goal three by UNDP in prevention of maternal mortality and morbidity, nurses play a significant role in dissemination of health information to the general public. However, attitude, perception and practice towards HPV vaccination among nurses have not been satisfactorily investigated. Therefore, this study was designed to assess the attitude, perception and practice towards HPV vaccination among nurses in Federal Medical Centre Abeokuta Nigeria.

A descriptive cross-sectional study was employed using a multistage-stage sampling technique to select 235 participants from eight (8) Departments. Data were collected using a self-administered questionnaire which included questions on socio-demographic, attitude, perception and practice scales respectively. On questions on perceived factors influencing nurses' practice towards HPV, attitude score of < 3 and ≥ 3 were classified as bad and good respectively, perception score of < 3 and ≥ 3 were grouped into bad and good, while practice relating to HPV vaccination score of > 2 and ≥ 2 were divided as bad and good, respectively. Ethical clearance to conduct the study was obtained from Babcock University Ethical Review Committee. Approval to conduct the study was sought from the Federal Medical Centre Abeokuta Ethical Review Committee and informed consent was obtained from participants. Data were analyzed using descriptive statistics and Chi-square test at $p = 0.05$.

Respondents' age was 31-50years (70.2%). Few (12.8%) of the respondents had ever received HPV vaccine. Many (63.4%) were concerned about its reliability and majority (73.2%) had the belief that there is need for more information on efficacy of HPV vaccine and. Socio economic demographic such as years of experience, ward/ clinic and history of STI were significantly associated with uptake of HPV vaccination.

There is a gap in utilization of HPV vaccine, need for information update on efficacy and reliability of HPV vaccine. It is therefore recommended that Nigerian Government should include HPV vaccine as part of free

services in Maternal and Child Health care, also the nurses be further educated on the health benefits and reliability of Human papillomavirus vaccine to promote its uptake.

Keywords:- Human Papillomavirus Vaccine, Cervical Cancer, Human Papillomavirus,

I. INTRODUCTION

Cervical cancer (CC) is a major public health problem throughout the world and is the major cause of cancer related morbidity and mortality among women (Biobaku & Fatusi 2015). The findings from epidemiological studies have established that Human Papilloma Virus (HPV) infection is responsible for the cause of about 70% of all cervical cancer worldwide (IHPV 2018). For the achievement of Sustainable Developmental Goal three (Good health and wellbeing) by UNDP in prevention of maternal mortality and morbidity there is need for early screening of CC through HPV vaccination. According to available studies, there is low uptake of HPV vaccine among nurses in Nigeria (Hassan and Awosan 2018). Female nurses have crucial roles to play in promotion of the uptake of HPV vaccination. There is dearth of information regarding nurse's attitude, perception and practice of the HPV vaccination in Nigeria, especially Ogun State. Therefore, this necessitated the need to investigate related attitude, perception and practice among female nurses at the Federal Medical Center (FMC) Abeokuta, Ogun State, Nigeria.

Human papilloma virus is DNA viruses that infect epithelial cells and is one of the most common sexually transmitted infections (Adesuyi, Ashaka, Idris & Olajide 2016). In addition, HPV includes more than 100 known genotypes and more than 40 of the HPVs are easily spread through direct skin-to-skin contact during vaginal, anal, and oral sex (IHPV & Action Immunization Coalition Programme 2018). More so, the infection occurs in women of all age groups and it is estimated that over 50% of sexually active women are exposed to at least one HPV type (Ortashi, Shallal, Osman & Raheel 2012). Centre for Disease Control (2017) also reported that HPV is one of the main causes of anogenital warts and cervical cancer.

According to the report of WHO (2016) about 291 million women worldwide are infected with HPV DNA, while Bruni, et, al., (2017) reported an estimated HPV prevalence of 11.7% globally and 24% in Sub-Saharan Africa. Approximately 85% of the global HPV burden has been reported in the less developed countries, where it accounts for almost 12% of all cancers in females (WHO, 2016). Although in the United States, an estimated 79 million persons are infected, and an estimated 14 million new HPV infections occur every year among persons' age 15 through 59 years (Mehanna, Beech, Nicholson, et, al. 2013). Approximately half of new infections occur among persons' age 15 through 24 years. First HPV infection occurs within a few months to years of becoming sexually active. (Mehanna et, al. 2013).

In recent Nigerian study of Nejo, Olaleye and Odaibo (2018), Akaralo -Anthony et, al., (2014) was reported that from the review of many documentations in the previous studies from the three (3) geopolitical (Port Harcourt, Ibadan & Abuja) zones, HPV prevalence ranged from 10% to 37%. Furthermore, Hassan & Awosan (2018) mentioned that findings from two population-based cancer registries in the country showed that 11.0% of the 14336 new cancer cases seen from 2012 to 2014 were HPV associated, with cervical cancer being the most common HPV attributable cancer in women (28.3/100,000), and anal cancer being the most common in men (1.2/100,000).

Vinodhini, Shanmughapriya, Das & Natarajaseenivasan (2012) identified some risk factors such as young age, early age (≤ 15 years) at first sexual intercourse, sexual promiscuity and immunosuppression which have been consistently associated with HPV infection in women. This identified risk, increases with increasing number of recent and lifetime sexual partners. In addition, Nejo and his colleagues also identified some contributory risk factors such as divorce, polygamy, illiteracy, unemployment, low income earnings, younger age at sexual debut in their study within Southern part of Nigeria. Also, Yanikkerem & Kokker (2014) reported review of many studies on HPV by Wang & Do, (2012) which stated that risk of HPV related mortality and morbidity was seen in women who had socio-economically disadvantaged.

Perloff, 2016 described attitude as a psychological construct, a mental and emotional entity that inheres in, or characterizes a person and the attitude of a person is determined by psychological factors like ideas, values, beliefs, perception. In addition, Dixon, Mckeever, Holton, Clarke (2015) mentioned important factor that affects attitude as symbolic interactionism, these are rife with powerful symbols and charged with affect which can lead to a selective perception.

Perception is the interpretation of sensory information received through the eyes, ears, nose and the skin (Cook & Polgar 2015). They described further that it is one of the basic cognitive skill that is integrated with higher order cognitive to achieve various skills, such as sequencing the straw required to make carry out on activity. Impairment which affect perception will limit individual's ability to use

information from the environment assist with daily activities, for example an individual with inadequate knowledge of causes and prognosis of cervical cancer may not utilize HPV vaccination services. Practice was being defined in Thesaurus (2013) as expected way of carrying out an action or use of an idea or belief. Practice is the recurring way patterns of human activities mediated by socially shared knowledge object that are grounded in tradition and shared by particular professional knowledge community.

There is emotional relationship between attitude, perception and practice. The way nurse understands and believe function of HPV vaccine is likely to influence the predisposition to respond to HPV vaccination and as a preventive measure to CC and can encourage self and others to uptake of HPV vaccine. Chiang, et, al., (2016) in their study mentioned Janz and Backer who noted that high perceived susceptibility, perceived severity, and perceived benefits may trigger health-promoting behaviours and change people's attitude towards taking health-related. Poor practice of nurses towards HPV vaccination was discovered by Oluwasola, Bello & Odukogbe (2019) from the study carried out among female under graduate student towards HPV vaccination in Ibadan. Hassan and Awosan (2018) also discovered low uptake of HPV vaccine from their study among nurses which revealed that only (2.8%) of the nurses had ever been vaccinated against HPV. In addition, the study of Yanikkaren & Kokker (2014) among nurses reported that majority had positive perception that HPV vaccination could not increase sexual risky behavior.

The U.S Food and Drug Administration, had approved vaccines for prevention against HPV from age 9 – 45 years as stated by Leslie (2018). There are three HPV vaccines which are currently marketed internationally and include the bivalent, the quadrivalent, and the nonvalent. Boskey (2019) explained further that these vaccines can prevent most cases of cervical cancer if given before a girl or woman is exposed to the HPV and can also prevent most vaginal warts and vulvar cancer while Gardasil can prevent genital warts in women and men. Centre for disease and prevention (2014) reported that Alliances for Vaccines and Immunization (GAVI Alliance) has increased the accessibility to these vaccinations.

Good attitude and perception towards HPV vaccination have been found to promote good practice. However, limited studies have documented the attitude and perception of Nigerian nurses towards HPV vaccination. It is therefore pertinent to appraise nurses' attitude, perception and practice towards HPV vaccination. This study assessed the attitude, perception and practice towards HPV vaccination among female nurses in Federal Medical Center, Abeokuta, Nigeria.

II. LITERATURE REVIEW: CONCEPTUAL REVIEW

➤ *Concept of Human Papilloma Virus*

Human papillomavirus is the most common sexually transmitted infection (STI) in the United States with 20 million Americans currently infected and another 6.2 million people estimated to get newly infected annually (Bisi - Onyemaec, Chikani&Nduagubam 2018). From the review of Adesuyi et, al., (2016), it is observed that recurrent infection of HPV in women resulted in cervical, vaginal, and vulvar cancers, whereas in men, it has been associated with genital warts, anal, and penile cancers. Furthermore, HPV infection appears to be a necessary factor in about 75% of sexually active men and women that will acquire genital HPV infection at some point in their lives Bisi-Onyemaec et, al. (2018). According to the reports from USPTF& CDC (2018) HPV infection in women has been associated with genital warts as well as development of almost all cases of cervical cancer. (CDC & ICPHV 2018)

In the report of CDC 2018, the first associations of HPV infections with cervical cancer specimens were made by Hause, Meisels and Fortin. In addition, the carcinogenic risk potential of HPV types is categorized as low or high risk. The high-risk types are classified based on their inclination to be associated with cervical cancer. HPV presents in a variety of clinical appearances classified into benign and oncogenic, of all the types of HPV, HPV 16 and 18 are most aggressively oncogenic (CDC 2018). HPV16 and HPV18 are two important strains of HPV responsible for 70% of cervical cancers ICHPC 2018).

Although the natural immunologic response of HPV infections is poorly understood as reported by USPTF& CDC (2018). The seroconversion in infected patients takes months to detect and these are most often insufficient to prevent reinfection with the same HPV type. The report stated further that this lack of immune recognition allows new infections of the same or different HPV types to be established. New infections occur in the 15-24 years' age group. All women are susceptible to oncogenic HPV infection which may later lead to cervical cancer (CDC 2018).

➤ *Epidemiology of HPV infection*

Human papillomavirus was described by Denny, Adewole, Anorlu, Dreyer & Moodley et, al., (2014) as the Papillomaviridae family of small, non-enveloped, epitheliotropic, double-stranded DNA viruses, which have been shown to be associated with benign and malignant epithelial lesions in humans. Denny et, al., (2014) also commented that the link between HPV infection and cervical cancer has been well established; HPV is found in 99.7% of cervical cancers specimen.

There is a great variation in the prevalence of cervical HPV infection worldwide with some of the highest rates being found in African women (Bruni,et, al. 2017). Bruni et, al. (2017) also reported that about 291 million women worldwide are infected with HPV DNA, of whom 32% are infected with HPV16 or HPV18. From the review of burden

of HPV among women in the study of Adesuyi et, a. (2016), it was mentioned that the global prevalence of HPV infection is about 11-12% worldwide. Adesuyi et, a. (2016) and his colleague explained that there is considerable regional variation in global HPV prevalence with the highest figures in sub-Saharan Africa (24%), Eastern Europe (21%) and Latin America (16%).

Particularly high prevalence is seen in Eastern Africa and the Caribbean, where rates exceed 30%. They also explained further that the burden in African women had the highest prevalence of HPV in women with normal cytology (22.1%), and estimates were consistently high across all African studies. From this study, comparison made with women from other continents, pointed out that early age at first marriage, marriage with older men or with men that have several concomitant partners, and poor hygienic conditions are probably some of the key actors that explain the high prevalence in this region.

According to review of previous data on prevalence studies of HPV among African by Nejo et, al., (2018) the global data on HPV infection shows that Africa has the highest prevalence of 22.1%; HPV prevalence of 2.2% was reported in Sudan (Salih, Safi, Hart, Tobi & Adam (2010); 16.3% in rural Uganda 20.4%; in South African women; 23.5% in the Republic of Congo (Boumba, Assoumou, Hilali, Mambou & Moukassaet, et, al., 2013); 25.4% in Burkina Faso; 33.2% in Benin Republic; 34% in Rwanda (Ngabo, Franceschi, Baussano, Umulisa & Snijders et, al., 2016) and 76% in Morocco.

Report of (Akarolo-Anthony, et, al., 2014& Kennedy, et, al., 2016) on prevalence of HPV in Nigeria from three different geopolitical zones (Port Harcourt, Ibadan& Abuja) revealed the variations of 10%, 26.3% & 37% respectively. Meanwhile the recent study carried out by Nejo et, al., (2018) on Prevalence and Risk Factors for Genital Human Papilloma Virus Infection among Women in Southwest Nigeria found out that HPV prevalence was 18.6%. The HPV prevalence of 18.6% obtained in this study is high, compared to 11- 12% world-wide reported in the review of Adesuyi et, al. (2016). This high rate is an indication of continuous transmission of the infection and hence the importance of implementation of measures for the control of the spread of the virus and its resultant sequel in Nigeria.

The specific age rate for HPV infection as discussed in the study of Adesuyi et, al. (2016) mentioned that in Europe and Northern America, HPV prevalence rates are very high below age 25 years but tend to become much lower in women over the age of 45 years. No such clear decline with age is found in Asian and African populations, although in some Latin America/Caribbean populations, rates decline and then increase again in middle-aged women.

However, In Nigeria, the reports on HPV and age varies significantly, for example, an hospital based preliminary study in Kano Nigeria, revealed a bi-modal appearance for HPV and age, with peak infection rates in ages less or up to 20 years and those in the age group 40 to 49 years (Akarolo-

Anthony, et al., 2014). Akarolo-Anthony and colleagues also observed in their study in an urban area in Abuja, a significant inverse linear association between age and the prevalence of HPV infections. This prevalence was approximately 4 times higher in women aged 18-30 years compared to women who were older than 45 years and younger women were more likely to have carcinogenic HPV types. The data on age specific for HPV obtained from studies in Nigeria is similar to what obtains in many developed countries (Akarolo-Anthony et, al., 2014).

➤ *Nurses attitude towards HPV vaccination*

It was discovered from the study of Rosen, Goodson, Thompson, & Wilson (2015) among school nurses that positive attitudes regarding the HPV vaccination were predicted by higher HPV and vaccination knowledge. Report from Hassan & Awosan (2018) in the study among female health care practitioners in Sokoto, indicated that low level of knowledge of vaccination accounted for negative attitude of nurses towards encouragement of HPV vaccination among clients/ patients/friends and neighbours and only (12.3%) of the respondent encourage HPV vaccination among clients/ patients/friends and neighbours.

Likewise, from the study of Makwe & Anorlu (2011) found out that those that have the willingness to be vaccinated will encourage pre-adolescent age to be vaccinated with HPV vaccination. Although, in the same study, almost all the participant expressed a desire to have more information on HPV vaccinations. Nurses were more concerned about the cost, safety and efficacy of HPV vaccination (Yanikkeren & Koker 2014).

Respondent from Zhang, Zhao & Zhang (2017) study among nurses in China revealed the thought that HPV vaccines are effectively halt the onset and progress of cervical cancer so sex education will strengthen HPV vaccination initiative. Many thought that HPV infection will require treatment (Patel 2017). Also those that are knowledgeable about risk factors of HPV infection and prevention of cervical cancer had positive attitude towards encouragement of HPV Vaccination (Pellulo, Esposito & Di Guiseppe 2019). On the contrary, nurses' respondent from Makwe & Anorlu (2011) study was that adolescent are not at risk of HPV infection and cervical cancer therefore had no need for HPV vaccination.

➤ *Nurses Perception towards HPV vaccination*

Few Nurses were of opined that it is not necessary to vaccinate boys while many nurses' percept that it was necessary to vaccinate boys and in addition, majority disagreed that giving the vaccination would increase sexual risky behaviour and early onset of sexual activity (Yanikkaren & Koker 2014). Likewise, most of the nurses opined that adolescent sex education should be given prior HPV vaccination. However, nurse's perception in the study of Zhang et, al (2015) revealed that vaccination will encourage premarital sex of opinion that vaccination could enhance high risky behaviour.

Donmez, Ozturk, Kiza & Weller (July 2018) found out that only 2.8% believed in the reliability of HPV vaccine and

some considered HPV vaccination useful (Pellulo, et, al., 2019). Shannon (2016) in her study carried out in Texas among nurses, mentioned Mc Reel et, al., and Vadaparampil et, al., 2011, the two researcher discovered nurses' perception of parental hesitance in their studies and perception of teens becoming sexually promiscuous. In addition, nurses were of the opinion that HPV vaccine will cause sex debut which will lead to unprotected sex and less optimistic about its potential benefit (Nilsen, Aasland & Klouman 2017).

➤ *Nurses Practice towards HPV vaccination*

There is very low practice of HPV vaccination among nurses in Nigeria (Hassan & Awosan). Only two nurses reported vaccination of their daughters with HPV vaccine in the study of Yanikkaren & Koer (2014). Likewise from the studies of Awosan & Hassan (2014); Donmez, Ozturk, Kiza & Weller (July 2018) and Pellulo, Esposito & Di Giuseppe (2019). Only few (2.3%) of the respondent have ever had HPV vaccination and had the vaccine administered to their daughters, only 2.8% had been vaccinated 23.9% of respondents reported having undergone HPV vaccination respectively.

Shannon, (2016) also mentioned Vadaparampil et, al., (2011) from the report of study carried out that difficulty in completion of required doses of HPV vaccination and religion belief could affect nurse's practice of HPV vaccination.

III. RESEARCH METHODOLOGY

➤ *Study Design*

Descriptive cross-sectional survey research design was used for the study and this is because descriptive survey research design will help to identify the problems associated with this study, make comparison, evaluate and collect information in the study.

➤ *Research Setting*

This study was carried out among female nurses in FMC, Abeokuta. The Federal Medical Centre Abeokuta came into existence on 21 April, 1993, when the state hospital, Idi-Aba, was handed over to the Federal Government by the then state Governor Chief Olusegun Osoba for development into a Federal Tertiary Health Institution for the people of Ogun State and Nigeria in general. The pioneer Medical Director, was Professor E. O. Otolorin while the present Medical Director, is Prof Adewale Musa-Olomu. This is a 285-bedded regional specialist hospital originally providing medical services. Nursing services comprises of 458 nurses with eight (8) Departments. Medicine Department consist of highest population of nurses which are 90 in number with five different ward/unit followed by Emergency Department with 83 nurses which were divided into three different units. Clinic Department entails 61 nurses with five separate units. There are 59 nurses at Obstetric and Gynaecological Department with 3 wards, Surgical Department was grouped into 3 wards with 57 nurses while Theatre Department comprises of 56 nurses with 3 separate units, Paediatrics consist of 37 nurses with two wards. The last

Department with smallest number which entails 16 nurses is Preventive with only 2 units.

➤ *Target Population*

The study populations are professional female Nurses working at FMC, Abeokuta, majority are females and in their reproductive age. The professional nurses’ cadres ranged between nursing officer II and Deputy Director of nursing with total of 458 nurses in the eight (8) Departments (wards/clinic/units).

➤ *Inclusion Criteria*

All permanent employed professional registered female nurses working at the main FMC, Abeokuta that are willing to participate in the study.

➤ *Exclusion Criteria.*

All contract, intern, national youth coppers and male nurses would be excluded. Nurses working at FMC (Joga and Federal Sectariat) would also be excluded.

➤ *Sample Size Determination.*

The sample size was determined using the use of Taro Yamane’s method:

The total population was 458
N

$$n = \frac{458}{1 + N \times (e)^2}$$

Where N = Population size, e = margin of error which is usually 0.05 and n= sample size. This is more objective and defendable.

$$n = \frac{458}{1 + 45 \times (0.05)^2}$$

$$n = \frac{458}{1 + 1.1425}$$

$$N = 213.5$$

To take care of the attrition, 10% of the calculated sample size will be added to give a new sample of 235

➤ *Sampling technique*

The sampling technique was the multistage sampling technique.

Step 1: the target setting was stratified into eight (8) Departments an all are represented in the study

Step 2: the eight (8) Departments were stratified into 27 wards /units/clinics an all are included in the study.

Step 3: Proportionate sampling technique was used to calculate the number of nurses to be enrolled per ward clinic/ unit (see table below)

Step 4: simple random technique was used to enroll respondents into the study.

Table 3.1: Proportion of Classified Departments

Theatre =56	Medicine =90	Surgical =57	Emergency = 83	Paediatrics =37	Obstetrics/ Gynaecology=59	Preventive =16	Clinic =61
$\frac{56 \times 235}{458}$	$\frac{90 \times 235}{458}$	$\frac{57 \times 235}{458}$	$\frac{83 \times 235}{458}$	$\frac{37 \times 235}{458}$	$\frac{59 \times 235}{458}$	$\frac{16 \times 235}{458}$	$\frac{61 \times 235}{458}$
=29	=46	=29	=43	=19	=30	=8	=31

Table 3.2: Proportionate Sampling Table for Determining the Number of Female Nurses to be selected from the Departments (ward/unit/clinic)

S/n	Department	Ward /clinic/unit	No of nurses in the ward/clinic/unit	Proportionate no of nurses
1	Theatre	Anaesthesia	11	6
2		Perioperative /CSSD	33	17
3		Intensive care	12	6
	Total no		=56	=29
4	Medicine	Male medical	19	10
5		Female medical	20	10
6		Cardio renal	21	11
7		Internal/ Non-invasive	11	6
8		Dialysis	8	4
9		Akinkugbe private	11	6
	Total no		=90	=46
10	Surgical	Male surgical	18	9
11		Female surgical	18	9

12		Orthopaedic/trauma	21	11
	Total no		=57	=29
13	Emergency	Children	22	11
14		Gynaecological	14	7
15		Accident / trauma	47	23
	Total no		=83	=43
16	Paediatrics	Children	16	8
17		Neonatal	21	11
	Total no		=37	=19
18	Obstetric/Gynaecological	Postnatal	24	12
19		Antenatal	17	9
20		Gynaecological	18	9
	Total		=59	=30
21	Preventive	Community preventive	9	5
22		Family planning/creche/pain & palliative	7	3
	Total no		=16	=8
23	Clinic	Staff /NHIS	9	5
24		Specialty I	14	7
25		Specialty II	24	12
26		General out patient	9	5
27		Education/admin	5	3
	Total no		=61	=31
	Total		458	235

➤ Method of Data Collection

• Development of Instrument and Methods of Data Collection

Quantitative data was collected using a semi-structured questionnaire, which was self-administered. This is because the respondents are literate and will allow for individual privacy. The instrument was designed after a review of the literature. Each respondent was given a maximum of 30 minutes to complete the questionnaire after which it was collected. This is to ensure their true responses are collected and also, they will not have the opportunity to read about the topic before giving their responses.

➤ Validity and Reliability

• Validity

Validity is the ability of a test or an instrument to measure what the investigator wants to measure. This will be done by the following steps:

A draft of the questionnaire was constructed by consulting relevant literature.

The draft instrument undergoes an independent review from peers and experts in the field of nursing for face validity. Supervisor's review, was used to fine-tune the instrument and content validity. Special care was taken to monitor the quality of data collected through supervision during collection of data.

➤ Reliability of the Instrument

Reliability is the accuracy or precision of a research measuring instrument. The questionnaire was reviewed for quality and consistency. It was pre-tested (23 which was 10%, at General hospital Abeokuta) to ascertain suitability and appropriateness to field situations determine whether the questions were clear and simple enough for participants' comprehension and determine the trend in the response of the participants and the amount of time it took to administer the questionnaire. At the end of the exercise, questions that were not easily understood are reframed, those that were found to be irrelevant was removed and adequate spaces was provided for responses.

The pretest questions were analyzed by a statistician, using the SPSS version 17. The reliability of the instrument was determined using the split half reliability method. Here the questions in the questionnaire were split into two. The first part of the questionnaire was administered to the first half of the pretest sample population and the second half of the questionnaire to the second half of the pretest sample population at two weeks' interval. After each group has filled their first part of the questionnaires, the second halves were administered and the results were analyzed. The reliability was calculated using the Alpha Cronbach's test. The result is 0.7. The result was interpreted as reliable.

➤ Data collection procedure

Data collection was done by visiting every ward/unit/clinic with the aid of two research assistants who were trained prior to data collection. Several repeated visit was made until desired sample size was attained.

➤ *Data analysis procedure*

Data was collected, coded and analyze by a statistician, using descriptive statistics of frequency and simple percentage. In addition, the three -null hypothesis in the study were tested, using Chi square, at 0.05 level of significance.

➤ *Ethical Consideration*

Ethical approval was obtained from the Babcock University Health Research Ethics Committee (BUHREC) Ilishan Remo for approval and to administer. A letter of introduction and permission from the school was taken to the research and ethical committee of the FMC Abeokuta and an approval to

conduct the study was obtained. The respondents' consent was obtained after provision of adequate, clear and complete information about what the study entails.

A written informed consent was obtained from each participant. Ethical standard principle was adhered to in order to ensure confidentiality. Names of the respondent and any other personal identifiers were not written on the copies of questionnaires. Participants was informed that participation is voluntary and that data collected was mainly for research purposes. Anonymity and confidentiality of responses was ensured.

IV. RESULTS AND FINDINGS

This chapter presents the analysis of information obtained from nurses working at Federal Medical Centre, Abeokuta. Two hundred and thirty-five (235) questionnaires were distributed and all were correctly and completely filled and were used for the analysis. The results of the study were presented on frequency-percentage tables, charts and the hypotheses were tested at 0.5% significance level using Chi-square analysis.

➤ *Socio-demographic characteristics*

Table 4.1a Socio-demographic Characteristics

Variable	Response	Frequency	Percentage (%)
Ethnic group	Yoruba	191	81.3
	Hausa	6	2.6
	Igbo	30	12.8
	Others	8	3.4
Marital status	Single	31	13.2
	Cohabiting	13	5.5
	Married	177	75.3
	Separated	5	2.1
	Divorced/Widow	9	3.8
Age group (years)	21 – 30	40	17.0
	31 – 40	89	37.9
	41 – 50	76	32.3
	Above 51	30	12.7
Religion	Islam	43	18.3
	Christianity	190	80.9
	Traditionalist	2	0.9
Highest education status	RN	1	0.4
	RNM	93	39.6
	First degree	119	50.6
	MSc.	14	6.0
	Others	8	3.4
Year(s) of work experience	0 – 9	58	24.6
	10 – 19	130	55.3
	20 – 29	41	17.4
	30 and above	6	2.6
Ward/Clinic/Unit	Medical	46	19.6
	Surgical	17	7.2
	Paediatrics	19	8.1
	O&G	27	11.5
	89	37.9	
	Clinics	17	7.2

Community medicine	preventive	7	3.0
Theatre		13	5.5
Palliative			

Table 4.1b Socio-demographic Characteristics

Variable	Response	Frequency	Percentage (%)
Cadre	Nursing Officer II	23	9.8
	Nursing Officer I	44	18.7
	SNO	44	18.7
	PNO	32	13.6
	ACNO	38	16.2
	CNO	48	20.4
	ADNS	6	2.6
Number of pregnancy	1	23	9.8
	2	52	22.1
	3	65	27.7
	4	44	18.7
	5	51	21.7
Monthly Income (#'000)	50 - 100	34	14.5
	101 - 150	55	23.4
	151 - 200	46	19.6
	201 - 250	32	13.6
	251 – 300	68	28.9
History of STI	Yes	19	8.1
	No	216	91.9

Table 4.1 reveals that 81.3% of the respondents are Yoruba ethnic group, 75.3% remained married, 70.2% were aged between 31 and 50years, 80.9% were Christianity, 50.6% had first degree, 55.3% had 10 – 19years of work experience, 37.9% were working at clinical unit of the hospital, 49.8% had 2 – 3 pregnancies, 85.5% monthly income was above #100,000 and 91.9% never history of STI.

➤ *Attitude of nurses towards human papillomavirus vaccination*

Table 4.2: Attitude of nurses towards human papillomavirus vaccination (N = 235)

Attitude of nurses towards human papillomavirus vaccination	Agree	Strongly Agree	Undecided	Disagree	Strongly Disagree
I am concerned about effectiveness of HPV vaccine	108 (46.0)	88 (37.4)	13 (5.5)	21 (8.9)	5 (2.1)
I encourage patient as much as possible to get vaccinated	83 (35.3)	107 (45.5)	22 (9.4)	23 (9.8)	0 (0.0)
I think I need an extra information about efficacy of the HPV vaccine	103 (43.8)	69 (29.4)	10 (4.3)	48 (20.4)	5 (2.1)
I think the vaccine is expensive	65 (27.7)	66 (28.1)	35 (14.9)	55 (23.4)	14 (6.0)
I believe the HPV vaccine may not really work	15 (6.4)	10 (4.3)	34 (14.5)	86 (36.6)	90 (38.3)
I don't think the HPV is a big public health problem that we should worry about	38 (16.2)	30 (12.8)	8 (3.4)	68 (28.9)	91 (38.7)

Table 4.3: Respondent's Overall Attitude of nurses towards Human papillomavirus vaccination

Value	Score	Frequency	Percent (%)
Mean score = 2.9±1.3	< 3	72	30.6
	≥ 3	163	69.4
Total		235	100.0

Table 4.2 above reveals that 83.4% agreed that they are concerned about effectiveness of HPV vaccination, 80.8% agreed that they encourage patient as much as possible to get vaccinated, 73.2% they said they need extra information about efficacy of the HPV vaccination, 55.8% thought the vaccination is expensive, 74.9% disagreed on believing that the vaccination may not really work and 67.6% disagreed that they don't think the HPV is a big public health problem that we should worry about. Table 4.3 reveals that the overall attitude of nurses' scores had a mean score = 2.9±1.3, where 69.4% scored the mean and above.

➤ *Perception of nurses towards HPV vaccination*

Table 4.4: Perception of nurses towards HPV vaccination (N = 235)

Perception of nurses towards HPV vaccination	Frequency (%)		
	Yes	No	I don't know
HPV vaccination may encourage unprotected sexual intercourse	46 (19.6)	166 (70.6)	23 (9.8)
Boys should be vaccinated although not recommended	103 (43.8)	91 (38.7)	41 (17.4)
Adolescent education should be given prior to HPV vaccination	215 (91.5)	17 (7.2)	3 (1.3)
HPV vaccine is very expensive so people could not be vaccinated	119 (50.6)	101 (43.0)	15 (6.4)
I am concerned about reliability of HPV vaccine	149 (63.4)	77 (32.8)	9 (3.8)

Table 4.5: Respondent's Overall Perception of nurses towards HPV vaccination

Value	Score	Frequency	Percent (%)
Mean score = 2.9±0.9	< 3	73	31.1
	≥ 3	162	68.9
Total		235	100.0

Table 4.4 reveals that 70.6% of the nurses reported that HPV vaccination may not encourage unprotected sexual intercourse, 43.8% opined that boys should be vaccinated although not recommended, 91.5% opined that adolescent education should be given prior to HPV vaccination, 50.6% reported HPV vaccination is very expensive so people could not vaccinate and 63.4% reported that they were concerned about reliability of HPV vaccination. Table 4.5 reveals that the overall perception of nurses' scores had a mean score = 2.9±0.9, where 68.9% scored the mean and above.

➤ *Practices of nurses towards HPV vaccination*

Table 4.6: Practices of nurses towards human papillomavirus vaccination

Practices of nurses towards human papillomavirus vaccination	Frequency (%)		
	Yes	No	I don't know
I have received HPV vaccine	30 (12.8)	204 (86.8)	1 (0.4)
I have completed the required number of doses of the HPV vaccine with proof (n=30)	26 (86.7)	4 (13.3)	0 (0.0)
I counsel patient/client on importance of HPV vaccine	142 (60.4)	89 (37.9)	4 (1.7)
I have previously administered/ participated in vaccination of HPV vaccine	57 (24.3)	176 (74.9)	2 (0.9)
I have never inform any client /patient of importance of HPV vaccination	43 (18.3)	189 (80.4)	3 (1.3)
My family member never received HPV vaccine	89 (37.9)	123 (52.3)	23 (9.8)

Table 4.7: Respondent’s Overall Practice of nurses towards Human papillomavirus vaccine

Value	Score	Frequency	Percent (%)
Mean score = 2.4±1.3	< 2	43	18.3
	≥ 2	192	81.7
Total		235	100.0

Table 4.6 shows that 86.8% of the nurses have not received HPV vaccination, 86.7% of those been vaccinated have completed the required number of doses of the HPV vaccination with proof, 74.9% have not previously administered/ participated in vaccination of HPV vaccination, 80.4% have never informed client/patient of importance of HPV vaccination and 52.3% reported that their family member never received HPV vaccinations. Table 4.7 reveals that the overall practice of nurses’ scores had a mean score = 2.4±1.3, where 81.7% scored the mean and above.

➤ *Perceived factors influencing nurses practice towards HPV vaccination*

Table 4.8: Perceived factors influencing nurses practice of human papillomavirus vaccination

Perceived factors influencing nurses practice of human papilloma virus vaccination	Frequency (%)		
	Yes	No	I don’t know
Because of financial implication, I have not been immunized	51 (21.7)	175 (74.5)	9 (3.8)
Most women including nurses are not vaccinated because HPV vaccine is not available	106 (45.1)	101 (43.0)	28 (11.9)
Most times parent could be hindrance to their children vaccination	145 (61.7)	57 (24.3)	33 (14.0)
Religious colouration often conflict with HPV vaccination	105 (44.7)	99 (42.1)	31 (13.2)
Some cultures also do not support vaccination	164 (69.8)	55 (23.4)	16 (6.8)
I think level of knowledge of HPV vaccination greatly influence its compliance	208 (88.5)	19 (8.1)	8 (3.4)

Table 4.8 reveals that 21.7% of nurses complained of financial implication as a deterrent to uptake of HPV vaccine, 45.1% complained of unavailability of HPV vaccination, 61.7% reported that most times parent could be hindrance to their children vaccination, 44.7% said religious belief often conflict with HPV vaccination, 69.8% reported that some cultures also do not support vaccination and 88.5% opined that level of knowledge of HPV vaccination greatly influence its compliance.

➤ *Test of Hypotheses*

Hypothesis One: There is no significant relationship between the attitude and practices of HPV vaccination among nurses.

Table 4.9: Cross – tabulation of the attitude and practices towards HPV vaccination among nurses

		Practice towards HPV vaccination		d.f	X ² -value	p-value	Remark
		Poor	Good				
Attitude towards HPV	Bad	14 (32.6%)	58 (30.2%)	1	0.09	0.763	insignificant
	Good	29 (67.4%)	134 (69.8%)				

Table 4.9 above reveals that there was no significant (p=0.763) association between nurse’s attitude towards HPV vaccination and uptake of HPV vaccine.

Hypothesis Two: There is no significant relationship between the perception and practices of HPV vaccination among the nurses.

Table 4.10: Cross – tabulation of the perception and practices towards HPV vaccination among nurses

		Practice towards HPV vaccination		d.f	X ² -value	p-value	Remark
		Poor	Good				
Perception towards HPV vaccine	Negative	18 (41.9%)	55 (28.6%)	1	2.86	0.09	Insignificant
	Positive	25 (58.1%)	137 (71.4%)				

Table 4.10 above reveals that there was no significant ($p=0.09$) association between nurse's perception towards HPV vaccination and uptake of HPV vaccine.

Hypothesis Three: There is no significant relationship between the socio-demographic characteristics and practices of HPV vaccination among nurses.

Table 4.11: Cross – tabulation of the socio-demographic characteristics and practices towards HPV vaccination among nurses

		Practice of HPV vaccination		d.f	χ^2 -value	p-value	Remark
		Poor	Good				
Marital status	Single	4 (9.3%)	27 (14.1%)	5	6.15	0.079	Insignificant
	Cohabiting	2 (4.7%)	11 (5.7%)				
	Married	36 (83.7%)	141 (73.4%)				
	Separated	0 (0.0%)	5 (2.6%)				
	Divorced	1 (2.3%)	0 (0.0%)				
	Widow	0 (0.0%)	8 (4.2%)				
Age group	21 – 30	7 (16.3%)	33 (17.2%)	3	1.02	0.796	Insignificant
	31 – 40	14 (32.6%)	75 (39.1%)				
	41 – 50	15 (34.9%)	61 (31.8%)				
	Above 50	7 (16.3%)	23 (12.0%)				
Highest educational status	RN	0 (0.0%)	1 (0.5%)	4	4.07	0.159	Insignificant
	RNM	18 (41.9%)	75 (39.1%)				
	First degree	24 (55.8%)	95 (49.5%)				
	MSc	0 (0.0%)	14 (7.3%)				
Years of work experience	Others	1 (2.3%)	7 (3.6%)	3	10.19	0.017	Significant
	0 – 9	11 (25.6%)	47 (24.5%)				
	10 – 19	20 (46.5%)	110 (57.3%)				
	20 – 29	8 (18.6%)	33 (17.2%)				
	Above 29	4 (9.3%)	2 (1.0%)				
Ward/Clinic/ Unit	Medical	9 (20.9%)	37 (19.3%)	7	13.72	0.028	Significant
	Surgical	7 (16.3%)	10 (5.2%)				
	Paediatrics	7 (16.3%)	12 (6.2%)				
	O & G	3 (7.0%)	24 (12.5%)				
	Clinics	13 (30.2%)	76 (39.6%)				
	CPM	3 (7.0%)	14 (7.3%)				
	Theatre	1 (2.3%)	6 (3.1%)				
Palliative	0 (0.0%)	13 (6.8%)					
Monthly Income (#'000)	Below 21	16 (38.1%)	35 (38.9%)	4	5.06	0.121	Insignificant
	21 – 40	14 (33.3%)	22 (24.4%)				
	41 – 60	5 (11.9%)	13 (14.4%)				
	61 – 80	0 (0.0%)	8 (8.9%)				
	Above 80	7 (16.7%)	12 (13.3%)				
History of STI	Yes	0 (0.0%)	19 (9.9%)	1	4.63	0.031	Significant
	No	43 (100.0%)	173 (90.1%)				

Note: Fisher's exact result was recorded for small cell

Table 4.11 above reveals that some of the socio-demographic characteristics such marital status ($p=0.079$), age ($p=0.796$), educational status ($p=0.159$), monthly income ($p=0.121$) were not significantly associated with uptake of HPV vaccination while years of work experience ($p=0.017$), ward/clinic/unit of nursing care ($p=0.028$) and history of STI ($p=0.031$) were significant associated with the uptake of HPV vaccination.

V. DISCUSSION

Demographically, the study findings revealed that slightly above three-quarter of the respondents are Yoruba ethnic group and remained married and they were Christianity, slightly below three-quarter were aged between 31 and 50years, approximately half of them had first degree and had 10 – 19 years of work experience. One-third were working at clinical unit of the hospital, about half had 2 – 3

pregnancies, the majority had annual income above #100,000 and majority never history of STI.

➤ Attitude of nurses towards HPV vaccination

The findings revealed that the two-third of nurses had a good attitude towards HPV vaccination. This is as a result majority agreed that they are concerned about effectiveness of HPV vaccination, they agreed that they encourage patient as much as possible to get vaccinated, about three-quarter said they need extra information about efficacy of the HPV

vaccination, slightly above half thought the vaccination is expensive, three-quarter disagreed on believing that the vaccination may not really work and two-third disagreed on thinking the HPV is a big public health problem that need to be worried about. This is similar to Hassan & Awosan (2018) who reported positive attitude of nursing students towards HPV vaccination. Also, Pellulo, Esposito & Di Guiseppe (2019) reported that those that are knowledgeable about risk factors of HPV infection and prevention of cervical cancer had positive attitude towards encouragement of HPV vaccination. Therefore, Zhang, Zhao & Zhang (2017) reported the thought that HPV vaccination are effectively halt the onset and progress of cervical vaccination so sex education will strengthen HPV vaccination initiative.

➤ *Nurses Perception towards HPV vaccination*

On the perception of nurses towards HPV, the study findings revealed that two-third of nurses had positive perception. On this, about three-quarter of the nurses reported that HPV vaccination may not encourage unprotected sexual intercourse, below half opined that boys should be vaccinated although not recommended, almost all of the nurses opined that adolescent education should be given prior to HPV vaccination, half of them reported that HPV vaccination is very expensive so people could not be vaccinated and about two-third reported that they were concerned about reliability of HPV vaccination. This is contrary to Zhang et, al (2015) who reported that vaccination will encourage premarital sex of opinion that vaccination could enhance high risky behaviour. In addition, Nilsen, Aasland & Klouman, (2017) also reported that nurses were of the opinion that HPV vaccination will cause sex debut which will lead to unprotected sex and less optimistic about its potential benefit. Contrarily, Donmez, Ozturk, Kiza & Weller (2018) reported that only 2.8% believed in the reliability of HPV vaccination. This finding might be as a result of being knowledgeable about human papillomavirus since the respondents are professional.

➤ *Nurses Practice towards HPV vaccination*

The study findings revealed that the majority of the nurse had good practice HPV vaccination despite the study revealed that majority (88.2%) of the nurses have not received HPV vaccination though majority of those who have been vaccinated have completed the required number of doses of the HPV vaccination with proof, three-quarter have not previously administered/ participated in vaccination of HPV vaccination, four-fifth (80.4%) have never inform their patient of importance of HPV vaccination and half the nurses reported that their family member never received HPV vaccinations. This is similar to Awosan & Hassan (2014); Donmez, Ozturk, Kiza & Weller (2018) and Pellulo, Esposito & Di Giuseppe (2019) who reported in their separate study that only few of the nurses have ever had HPV vaccination and had the vaccination administered to their daughters even, those been vaccinated reported having undergone HPV vaccination respectively. Also, Zhang, Zhao, & Zhang (2017) reported that a very small percentage of nurses were actually immunized.

➤ *Perceived factors influencing practice of nurses towards HPV vaccination*

On the factors influencing the uptake of HPV vaccination among nurses, the findings revealed that slightly above one-fifth of nurses complained of financial implication as a deterrent to uptake of HPV vaccine, about half complained of unavailability of HPV vaccination and religious belief often conflicting with HPV vaccination, almost two-third reported that most times parent could be hindrance to their children vaccination and that some cultures also do not support vaccination and majority opined that level of knowledge of HPV vaccination greatly influence its compliance. This is similar to Zhang, Zhao, & Zhang (2017) who identified multiple reasons like high cost of the vaccination, limited knowledge about different aspects of the vaccination, and the fear that the vaccination might increase high-risk sexual behaviour. Also, Yanikkerem, & Koker (2014) reported that the main reason noted by nurses were not willing to be vaccinated was cost, doubts about safety and efficacy related to the vaccination. About one-third of nurses declared that they would receive the vaccination for their daughter later. Nilsen, Aasland, & Klouman (2017) reported that nurses were least concerned about side effects of the vaccination and disagreements among experts were most likely to vaccinate their daughter

➤ *Hypotheses*

For Inferentially, the study findings revealed that there was no significant association between nurse's attitude ($p=0.763$), nurse's perception ($p=0.09$) towards uptake of HPV vaccination. Socio-demographic characteristics such marital status ($p=0.079$), age ($p=0.796$), educational status ($p=0.159$), monthly income ($p=0.121$) were not significantly associated with uptake of HPV vaccination while years of work experience ($p=0.017$), ward/clinic/unit of nursing care ($p=0.028$) and history of STI ($p=0.031$) were significant associated with the uptake of HPV vaccination.

➤ *Summary of findings*

In summary, the study was carried out to investigate the attitude, perceptions and practice towards human papillomavirus vaccination among nurses. Several relevant literatures were reviewed on the topic, sub-topics were explicitly explained and Health Belief Model was adopted framework for the study. A descriptive cross-sectional design was adopted for the study where two hundred and thirty-five nurses were randomly selected across the ward/clinic/unit at Federal Medical Centre, Abeokuta, Ogun State. A self-administered questionnaire was used to obtain information on relevant issues and the gathered information was presented on frequency-percentage tables and charts while the hypotheses were tested using chi-square at 5% level of statistical error.

➤ *Implication of findings to nursing*

Nurses have a critical role to play in health education of public on health promotion and prevention of cervical cancer to reduce maternal morbidity and mortality in achievement of Sustainable Developmental growth, according to this study many of the respondent (63.4%) were concerned about reliability of HPV vaccine, majority (73.2%) claimed that

they need additional information on efficacy of HPV vaccine, majority (80.4%) never informed their client on the importance of HPV vaccine and few (12.8%) were vaccinated against HPV infection. If the nurses as an integral part of health team could expressed such concern with low vaccination practices what would have being the concern of non-health care provider? It is therefore important for the nurses to always address psychological and emotional aspects of an individual which had a great influence on attitude, perception and practice towards utilization of health care services. This can be actualized by picking up the tenets of HBM in nursing care of the patient/ client for utilization of health services such as screening and immunization. The Nursing Department must also ensure that regular emotional and psychological aspect of nursing care as major part of in training education for nurses.

VI. CONCLUSION

In conclusion, the study discovered that the two-third of nurses had a good attitude towards HPV vaccination and that same two-third of nurses had positive perception towards HPV vaccination and the majority of the nurse had good practice HPV vaccination despite the study revealed that majority of the nurses have not received HPV vaccination, many were concerned about efficacy of HPV vaccine and majority needed extra information on about its efficacy. The factors highlighted been influencing the uptake of HPV vaccination among nurses, include financial implication, unavailability of HPV vaccination and religious belief, parent hindrance to their children vaccination, some cultural beliefs and majorly level of knowledge of HPV vaccination.

RECOMMENDATIONS

It is widely of note that 63% of the nurses could have expressed concern in the potency of HPV vaccine with this finding among health workers one could envisage the rate (astronomical rate) among the non-health care provider. In this present study, it was found out that a significant (73.2%) of respondent claimed they need further information on HPV vaccine and only (18.3%) ever inform client on importance of HPV vaccine despite they were nurses therefore, I will strongly recommend that authorities and management at various level continue to push a frontier of cervical cancer screening health education among health care providers. Also an intervention study (quasi experimental) that will measure the effect of health education should be carried out in this setting or another setting of similar characteristics. More so, Nigerian Government should include HPV vaccine as part of free services in Maternal and Child Health care.

SUGGESTION FOR FURTHER STUDY

An educational intervention of the quasi-experimental design is needed to determine the relative effects of educational strategies on efficacy, reliability and utilization of HPV vaccine in health care setting.

Investigation to be carried out on the reason for low uptake of HPV vaccine among nurses.

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INFORMED CONSENT FORM

What you are expected to do, as a participant in the study, is to document the level of attitude, perception and practices towards HPV vaccination, you will be expected to fill. Please read this document before you decide to participate in this study. My name is HASSAN RACHEL OLUFUNMILAYO from the department of Nursing Sciences, Babcock University, Ilishan Remo, Ogun State. The title of this research is ATTITUDE, PERCEPTION AND PRACTICE TOWARDS HUMAN PAPILOMAVIRUS VACCINATION AMONG NURSES IN FEDRAL MEDICAL CENTRE, ABEOKUTA.

The purpose of this study to assess attitude, perception and practice towards HPV vaccination among nurses in FMC Abeokuta, an instrument or answer question from an interview guide which will be collected back from you. For example, by ticking the appropriate option provided in the questionnaire.

Be informed that the time you will spent for participating in this study will be only 30 minutes to 1hour. There are no risks in participating in the study. The potential benefits of the study include serving as data base for future references and also serve as guides to nursing education unit, and hospital management.

Please bear with me that there will be no incentive or compensation for participating in the study. You will not be penalized in any way, if you choose not to participate. Should you decide to discontinue participating in the study after you have started, there will be no penalty or loss of benefit, for choosing not to continue to participate.

Please note that your identity will be kept confidential. Any information you give will be assigned a code number which will be kept confidential. When study is completed and the data have analyzed, your response sheet later be destroyed. Your name will not be used in any report or publication. Your participation in this study is completely voluntary. Please note that there is no conflict of interest in this study.

If you have any question about the study, please feel free to contact:

Name: Hassan Rachel Olufunmilayo

Phone number: 08035831688

Department: Nursing Science

Email address: rachelhassan78@yahoo.com

If you wish to participate in this study, please sign in the space provided below. Your signature will indicate willingness to participate

PARTICIPANT NAME.....

SIGNATURE.....

WITNESS'NAME

SIGN/DATE

QUESTIONNAIRE

ATTITUDE, PERCEPTION AND PRACTICE TOWARDS HUMANPAPILLOMA VIRUS VACCINATION, AMONG NURSES IN THE FEDERAL MEDICAL CENTRE, ABEOKUTA, OGUN STATE NIGERIA.

Dear Respondents,

I am a final year student of Babcock University, Ilishan Remo. This questionnaire is designed strictly for researcher purpose. It is to assist the researcher to assess the attitude, perception and practices of nurses towards Human papilloma virus vaccination. All information provided will be treated with utmost confidentiality. The questionnaire will take 30mins and you are free to terminate the interview at any point you wish without any repercussion. For your information ethical approval was obtained at BUHREC. Your response is needed to make researcher work a success.

Thank you.

Hassan, R. O

Date

Serial No

Instruction: Below are the typical questions. Kindly indicate the options you consider appropriate by ticking [] against such option.

SECTION A: SOCIO-DERMOGRAPHIC DATA

1. Ethnic group i. Yoruba [] ii. Hausa [] iii. Ibo [] iv. Others []
2. Marital status i. Single [] ii. Cohabiting [] iii. Married [] iv. Separated [] v. Divorced [] vi. Widow []
3. Age as at last birthday (years) i. 20-25 [] ii. 26-30 [] iii. 31-35 [] iv. 36-40 [] v. 41- 45 [] vi. 46-50 [] vii. 51- 55 [] viii. 55- []
4. Religion i. Islam [] ii. Christianity [] iii. Traditionalist [] iv. others []
5. Highest educational qualifications i. RN [] ii. RN/M [] iii. First Degree [] iv. MSc [] v. PhD [] vi. Others []
6. Years of working experience as registered nurse i. 0-4 [] ii. 5-9 [] iii. 10-14 [] iv. 15-19 [] v. 20-24 [] vi. 25- 29 [] vii. 30- 34 [] viii. 35- 39 []
7. Department (Ward / clinic/unit) i. Medical [] ii. Surgical [] iii. Paediatrics [] iv. Obstetrics/Gynaecological [] v. Clinics [] vi. Community Preventive Medicine [] vii. Theatre [] viii. Emergency []
8. Cadre i. Nursing Officer II [] ii. Nursing Officer I [] iii. Senior Nursing Officer [] iv. Principal Nursing Officer [] v. Assistant Chief Nursing Officer [] vi. Chief Nursing Officer [] vii. Assistant Director of Nursing [] viii. Deputy Director of Nursing []
9. No of Pregnancies i. 1 [] ii. 2 [] iii. 3 [] iv. 4 [] v. Others []
10. Monthly income (Naira) i. 50,000-100,000 [] ii. 101,000-150,000 [] iii. 151,000-200 [] iv 201,000-250,000 [] v 251,000-300,000 []
11. History of Sexually Transmitted Infection i. Yes [] ii. No []

SECTION B: ATTITUDE OF NURSES TOWARDS HUMANPAPILLOMA VIRUS VACCINATION

Tick the appropriate options as indicated below. The keys below signify the following: A=Agree, SA=Strongly Agree, U=Undecided, D=Disagree, SD=Strongly Disagree.

S/N	ATTITUDE OF NURSES TOWARDS HUMANPAPILLOMA VIRUS VACCINATION	S	SA	U	D	SD
12	I am concerned about effectiveness of HPV vaccine					
13	I encourage patient as much as possible to get vaccinated					
14	I think I need an extra information about efficacy of the HPV vaccine					
15	I think the vaccine is expensive					
16	I believe the vaccine may not really work					
17	I don't think the HPV is a big public health problem that we should worry about					

SECTION C: PERCEPTION OF NURSES TOWARDS HUMANPAPILLOMA VIRUS VACCINATION

Tick the appropriate options as indicated in the below. Yes, No and I do not know

S/N	PERCEPTION OF NURSES TOWARDS HUMANPAPILLOMA VIRUS VACCINATION	YES	NO	I DO NOT KNOW
18	HPV vaccine may encourage unprotected sexual intercourse			
19	Boys should be vaccinated although not recommended			
20	Adolescent education should be given prior to HPV vaccine			
21	HPV vaccine is very expensive so people could not be vaccinated			
22	I am concerned about reliability of HPV vaccine			

SECTION D: PRACTICES OF NURSES TOWARDS HUMANPAPILLOMA VIRUS VACCINATION

Tick the appropriate options as indicated below

S/N	PRACTICES OF NURSES TOWARDS HUMANPAPILLOMA VIRUS VACCINATION	YES	NO	I DO NOT KNOW
23	I have received HPV vaccine			
24	I have completed the required number of doses of the HPV vaccine with proof			
25	I counsel client/client on importance of HPV vaccination			
26	I have previously administered/ participated in vaccination of HPV vaccine			
27	I have never inform any client /patient of importance of HPV vaccine			
28	My family member never received HPV vaccine			

SECTION E: PERCEIVED FACTORS INFLUENCING NURSES PRACTICE TOWARDS HUMANPAPILLOMA VIRUS VACCINATION

Tick the appropriate options as indicated below.

S/N	PERCEIVED FACTORS INFLUENCING NURSES PRACTICE OF HUMANPAPILLOMA VIRUS VACCINATION	YES	NO	I DO NOT HAVE
29	Because of financial implication, I have not been immunized			
30	Most women including nurses are not vaccinated because HPV vaccine is not available			
31	Most times parent could be hindrance to their children vaccine			
32	Religious colouration often conflict with HPV vaccination			
33	Some cultures also do not support vaccination			
34	I think level of knowledge of HPV vaccine greatly influence its compliance			