

Assessment of Cervical Cancer Prevention Practice among Female Health Workers at a Level Three Hospital in Port Harcourt, Nigeria.

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Abstract

Background: Cervical cancer though a preventable malignancy is still prevalent in sub-Saharan African and the Human Papillomavirus is recognized as the principal causative agent. Preventive measures have been known to be effective and are provided by healthcare workers.

Objective: To determine the uptake of Human Papillomavirus vaccination and Papanicolaou Smear among female health workers at the University of Port Harcourt Teaching Hospital.

Methods: This was a cross-sectional study to determine the uptake of the Human Papillomavirus vaccine and Papanicolaou smear among female healthcare providers. A self-administered questionnaire was used to obtain relevant information from consenting respondents from the major departments in the hospital. Data obtained were entered and analyzed using SPSS version 21 software package.

Results: The uptake of Human Papillomavirus vaccine was 2.2% with only 11.3% been screened for cervical cancer by Pap smear. Three hundred and fifty-four (95.2%) had good knowledge of Human Papillomavirus vaccine, and 83.1% were aware of the vaccine. The high cost (45.1%) and inability to access (42.1%) the vaccine were the main reasons for the poor uptake of the vaccine. Three hundred and forty-two (94.0%) were willing to take the vaccine if available and affordable.

Conclusion: This study demonstrated a considerable disparity between knowledge and uptake of the Human Papillomavirus vaccine. The low participation in self prevention of cervical cancer may send wrong signals to the general populace, hence reduce community participation. The government at all levels should formulate programmes to ensure availability and utilization of Human Papillomavirus vaccine

Keywords: HPV vaccine, Uptake, Pap Smear, Health care providers, Port Harcourt.

Introduction

Cervical cancer is the second commonest cancer in women worldwide and infection with Oncogenic strains of human papillomavirus (HPV) types 16 and 18 are the most commonly implicated in cervical cancer.^{1,2} More than 450,000 cases of this preventable cancer are diagnosed worldwide each year, resulting in nearly a quarter of a million deaths with Sub-Saharan Africa accounting for 80% of the cases³⁻⁵.

Exact incidence of HPV is unknown, however 75% of individuals (males and females) will experience an HPV infection at least once in their lifetime with the highest rate of infection occurring in individuals under the age of 25.⁶ Over 50% of sexually active women are exposed to at least one HPV type during their lifetime.² In a meta-analysis conducted by researchers in Spain, a global HPV prevalence of 11.7% was reported.⁷ HPV prevalence in North America and Europe was estimated at 11.5% and 14.2% respectively, while the prevalence in Africa is estimated at 21.1% with sub-Saharan Africa topping the list at 24%.^{7,8} The high prevalence of HPV in Sub-Saharan Africa had been attributed to impairment of cellular immunity as a result of chronic cervical inflammation, parasitic infection, micronutrient deficiency, and HIV.⁹ In Nigeria, HPV prevalence is high across all female ages but it is highest among 15-23 years old.¹⁰ Studies carried out in 22 countries, coordinated by the international agency for research on cancer (IRCC) identified HPV DNA in almost all 99.7% cases of cervical cancer.¹

About 40 distinct HPV types are known to infect the genital tract with at least 14 Oncogenic (or high risk) types significantly associated with progression to invasive cervical cancer (ICC).¹¹ Data on HPV type distribution in invasive and pre-invasive

cervical cancer is essential to predict the future impact of HPV16 and 18 vaccines and HPV screening tests.¹²

World health organization projects that without immediate action, the global number of deaths from cervical cancer will increase by nearly 80% over the next decade, mainly in the low and middle-income countries like Nigeria.¹³ Human Papillomavirus vaccines are 90% effective in preventing infection from HPV subtypes 16 and 18, but only in females with no prior HPV 16 and 18 infection and because peak incidence of HPV occurs soon after the sexual debut, vaccination should be initiated before sexual activity is started.¹⁴⁻¹⁷ Therefore, young adolescent girls (aged 9-13) are appropriate target groups for HPV vaccination as recommended by WHO.¹⁸ However, this age group is not usually targeted for vaccination.¹⁸ A study in Zimbabwe, revealed underutilization of HPV vaccines among healthcare providers.¹⁹ This was said to be due to low knowledge of HPV and HPV vaccines, psychosocial, cultural and logistical barriers to successful implementation, including cost, vaccine schedule, and hospital infrastructure. Also, a study in Tanzania revealed that the majority of health workers were aware of cervical cancer, but few were not aware of its cause or HPV vaccination.²⁰ A study in Cameroon revealed the non-accessibility of the HPV vaccine to 59% of a study population, as compared to 14.1% of health workers having access to HPV vaccine in a study done in Enugu (Nigeria).^{21,22}

Healthcare workers are agents that propagate information about various health interventions. Their involvement in any health activity not only increases awareness but will act as a catalyst for other patients to partake in such interventions since they offer first-hand information

based on experience. It is on this premise that this study seeks to determine the uptake of human Papillomavirus vaccination against cervical cancer among health workers at a tertiary health facility in Port Harcourt, Nigeria.

Materials and Methods

This was a cross sectional quantitative study among female health workers of the University of Port Harcourt Teaching Hospital towards the uptake of Human papillomavirus vaccine and Pap smear. The University of Port Harcourt Teaching Hospital is a level three hospital situate at Alakahia, Choba, Rivers State. It serves as a referral facility covering the South -South geographical regions of Nigeria. The investigators and their trained assistants administered well-structured open-ended questionnaires to consenting female health workers who include medical doctors, nurses, medical laboratory scientists, and pharmacists. Participants were from the major Departments of Obstetrics and Gynaecology, Surgery, Internal medicine, Paediatrics, laboratories, and Pharmacy. Four Hundred questionnaires were distributed among consenting female health workers until the required number was reached over two- month period from June 1st to 1st august 2019. Any non-

consenting female health worker is excluded from the study. Data obtained were age, parity, marital status, occupation, awareness of risk factors for cervical cancer, awareness of risk factors for human papilloma virus, awareness of its vaccination, uptake of human papillomavirus vaccines and previous Pap smear uptake. Awareness in this study is defined as the ability to be informed or being conscious of the subject discussed while knowledge is exhibition of facts and information about HPV and cervical cancer. The sample size was calculated from the formula²³ $n = Z^2 P(1-P) / d^2$ using a prevalence of uptake of HPV of 13.5% as reported by Dahlstrom et al²², tolerance error of 5% and an attrition rate of 10%. The determined minimum sample size for the study was 198. Data obtained was entered and analyzed using SPSS version 21 software package (Chicago) and data expressed in simple percentages and frequency tables.

Results

Three hundred and seventy-two questionnaires 372 out of the 400 questionnaires distributed had complete information for analysis.

Table 1: Sociodemographic indices of respondents

Variable	Variable	Frequency	Percentage
Age (years)	20-29	112	30.1
	30-39	148	39.8
	40-49	90	25.8
	50 and above	18	4.8
Parity	0	50	13.4
	1	112	30.0
	2-4	196	52.7
	5 and above	36	9.7
Marital status	Single	76	20.4
	Married	296	79.6

The mean age of the respondents in the study was 34.46 ± 8.59 , with 39.8% (148) aged between 30-39 years. The mean parity was 1.53 ± 0.852 , and 10.2% were grand multipara. Medical doctors constituted 178(47.8%), while 90 (24.2%) were nurses, fifty-four (14.5%) were pharmacists and 50 (13.4%) were medical lab scientists. Christians constituted 344 (92.5), 20 (5.4) were Muslims, while African traditional accounted for 8 (2.2%).

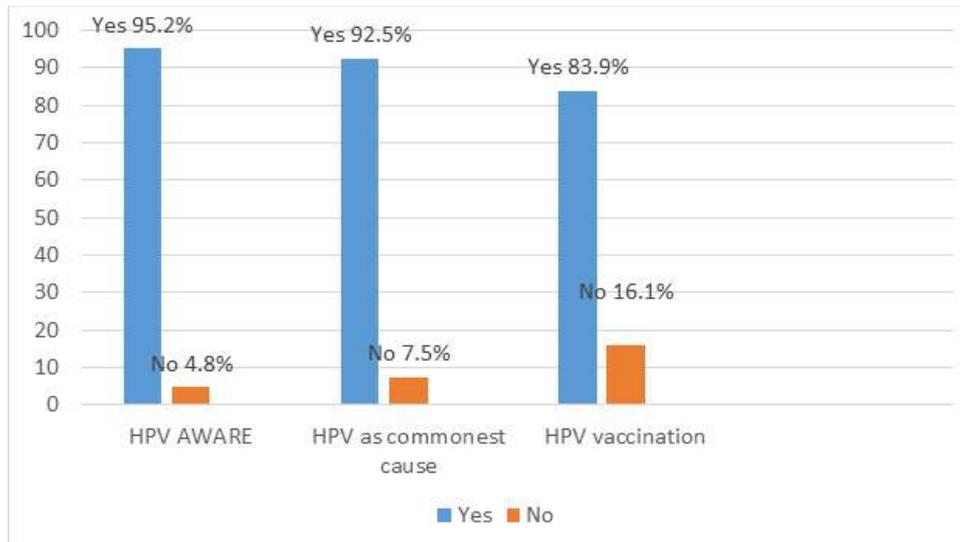


Fig 1: Assessment of HPV and HPV vaccination knowledge

Out of all the respondents, 354 (95.2%) were aware of HPV, whereas, 18 (4.8%) did not have any knowledge of the virus. Figure 1 shows the awareness of HPV. Also, 344 (92.5%) of the individuals are aware that HPV is the most frequent cause of cervical cancer, while 28(7.5%) of the respondents lack such knowledge. Considering awareness of HPV vaccination 312 (83.9%) were aware while 60 (16.1%) were not.

Table 2: Risk factors for HPV infection

Risk factor	Variables	Frequency	Percentage
Coitarche	<14	64	17.2
	15-19	206	55.4
	20-24	90	24.2
	25 and above	8	2.1
Contraceptives	COCP	32	8.6
	Condoms	70	18.8
	Others	266	71.5
	None	4	1.1
No. Sexual partners	None	4	1.1
	One	312	83.8
	Two or more	56	15.1
Previous STI	Yes	83	22.4
	No	352	77.6
Tobacco use	Yes	20	5.4
	No	352	94.6
Multiple Partners	Sexual Yes	69	18.5
	No	260	69.9
	No idea	43	11.5

Four (1.1%) of the respondents had not been sexually exposed while 270 (72.6%) of the respondents had coitarche at less than 20 years with a mean age at coitarche of 18.2±3.72. Seventy (18.8%) of the respondents used condoms consistently for contraception while combined oral contraceptives (COCP) as a risk factor for cervical cancer was used as a form of contraceptive in 32 (8.6%) of respondents.

Table 3: Reasons for non- uptake of HPV vaccines

Reasons	Variables	Frequency	Percentage
Reasons for Non uptake of HPV vaccine	Too Expensive	164	45.7
	Don't know where to get it	82	22.5
	Vaccine not available	68	18.7
	Not necessary	32	8.8
	No reason	18	4.9

Eight (2.2%) of the respondents have been vaccinated, while 364(97.8%) were yet to receive the vaccine. Considering the reasons for poor utilization of the vaccine, 32 (8.8%) believed that it was not necessary, 68 (18.7%) said the vaccines were not always available, 164 (45.1%) felt the vaccines were too expensive, 82 (22.5%) of the respondents claimed not to be aware of where to obtain the vaccine while 18 (4.9%) had no specific reason for not taking the vaccine. A total of 342 (94.0%) were willing to take the vaccines if made readily available and affordable 14 (3.8%) were not interested in the vaccine while 8 (2.2%) were yet undecided as shown in table 3.

Table 4: Pap Smear Uptake and Reasons for non-uptake

	Variables	Frequency	Percentage
Uptake of Pap Smear	Yes	42	11.3
	No	330	88.7
Results of Smears	Positive	8	19.1
	Negative	34	80.9
Reasons for Non Uptake	- Not aware	42	12.7
	Not necessary	94	28.5
	Expensive	194	58.8

Forty-two (11.3%) of the respondents had been screened for cervical cancer using Papanicolaou smear, and 34 (81%) were negative, while 8 (19%) had a positive PAP smear result. Responding to why the majority have not been screened, 42 (12.9%) were not aware, 94 (28.5%) said it was not necessary, while 194 (58.8%) said the screening was too expensive.

Discussion

The role of healthcare providers in the strategy to reducing the burden of cervical cancer had been stressed in several studies.²⁴⁻²⁶ Their role is further strengthened when they are partakers of what they offer to the patients that seek their services. Medical doctors accounted for most of the participants in this study, as they constituted a higher proportion of the

health workers and were more willing to participate in the survey than other health workers.

This study demonstrated a high level of knowledge and awareness of HPV among the female health workers interviewed ; this high level of awareness and knowledge of HPV shown in this study is somewhat not surprising as most of the respondents were doctors and nurses and were likely to be exposed to the knowledge of HPV and cervical cancer as also demonstrated by McCarey et al.²⁷ The findings in this study are at variance with the observations in Botswana and in Latvia among adolescence where reports of awareness of 9% and 21.5% respectively were noted^{28,29} ;although the population studied were not health workers. However higher levels of knowledge and awareness was demonstrated in a general population in a Canadian study.³⁰ The Canadian study showed that 93.0% of the study population were aware of HPV, 64.5% were aware of the vaccine, and 91.0% understood the connection between HPV and cervical cancer³⁰. The above information highlighted the demographic and occupational variations in the knowledge and awareness of an aetiological factor to cervical cancer.

Regarding the risk factors that can predispose to the HPV infection, the mean age of coitarche in this study was 18.2±3.72, which compares favourably with 14.25±2.7 reported in Nnewi, Nigeria and 16.2 years reported in Tanzania.^{31,32} This study showed that 17.2% of the respondents had coitarche at less than 15 years and as high as 72.6% had coitarche at less than 20 years implying that the study population is at higher risk of acquiring HPV infection and possibly cervical cancer. Non-use of barrier methods of contraception have been

associated with increased risk of acquisition of HPV infection and this survey indicates that less than one-fifth of the population practiced the above consistently. This finding was different from that noted in Nnewi, Nigeria and in Tanzania where as high as 56.3% and 50% respectively of the population studied used the male condom as a method of contraception^{31,32}. This is important as consistent use of condoms is known to confer some protection against the acquisition of the virus³³. The use of condoms amongst the respondents that are not married should be encouraged but this may not be practicable amongst the married and those with low parity.

There is an urgent need to emphasize behavioral modification towards sex among the study population as almost all respondents were sexually exposed irrespective of marital status with 12.9% attesting to having multiple sexual partners, 18.9% had spouses with other sexual partners and 22.6% had been treated for STI in the past which are risk factors for HPV infection. These findings place the respondents at significant risk of acquiring the HPV infection. Discouraging early marriage, premarital sexual relationships, and extramarital affairs may reduce the prevalence of HPV infection amongst the study population. Cigarette use is known to increase the risk of progression of various stages of HPV infection to invasive cancer, and it was observed that only 5.4% of the respondents admitted to cigarette smoking. Cigarette smoking is not an acceptable social norm in our society, and thus women who take cigarettes may not be willing to volunteer such information, and this may account for the few numbers of respondents who admitted to smoking in this study. This study revealed a considerable disparity between knowledge of HPV and uptake of vaccination. It is also quite

disheartening to find that only 12.9% of the respondents had had Pap smear screening and as low as 2.2% had ever been vaccinated against HPV. It would have been expected that among health workers, of whom are predominantly doctors and nurses, uptake should have been higher. Health care providers who had been screened and vaccinated are in a better position to share their experiences and to encourage their patients to undergo screening and to receive HPV vaccines. The effort, therefore, to improve HPV vaccination uptake in the general population in Nigeria must start with the education of the health care providers who will, in turn, influence the patients positively.

The poor utilization of HPV vaccines was also corroborated in another study in Nigeria, where 14.1 % was reported while the study in Canada; a developed country reported a high uptake of 84.0%.^{22,29} Potential reasons for the poor uptake of the HPV vaccine were high cost of the vaccine and difficulty in accessing the vaccine. Therefore, subsidizing the cost of the vaccine and ensuring the availability of the vaccine will significantly improve the uptake of HPV vaccine amongst the study population and thus curb the menace of cervical cancer. If given the opportunity to take the vaccine free of charge, the majority indicated interest in receiving the vaccine. This finding is similar to the Kenyan study where 95% were willing to take up the vaccine if given the opportunity³⁴. These observations support the Australian Government's action which launched the national free HPV vaccination program for females between the ages of 12 to 26 years which has significantly improved HPV vaccination in that country³⁵. Similarly, in Denmark, the health insurance plan which covers for HPV vaccines has resulted in

80%, 75% and 62% successful uptake of the first, second and third doses of the vaccines respectively by eligible girls as of 2009.

Conclusion

Even though HPV vaccines are very effective in preventing cervical cancer, this study demonstrated a very low uptake of HPV vaccines among female health care providers in Port Harcourt Nigeria. The high cost of the vaccine and challenge in accessing the vaccines, were cited as the main reasons for the poor utilization of the vaccine. The study highlights the need that health providers themselves should be a target population to improving uptake. There is an urgent need for the hospital management as well as the government to formulate policies that will encourage the uptake of HPV vaccine and screening methods for cervical cancer, especially amongst the workforce of the hospital. These if done, would have a multiplier effect on other health personnel and filtering towards the general population at large

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