

Awareness about Human Papillomavirus as a Risk Factor for Cervical Cancer Occurrences by Female Nigerian Undergraduates

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Abstract: Human Papilloma Virus HPV is a major aetiological agent causing Cervical Cancer CCa with very high mortality rate, particularly, in developing regions. This study investigated the status of awareness about HPV as a risk factor for CCa occurrences by female Nigerian undergraduates and further verified the null hypothesis of no significant differences within variables. The study was based on descriptive research approach and was conducted in five universities in Southeast part of Nigeria from November 2017 to April 2018. A sample size of 420 female undergraduates was studied. The participants, aged 15-26 years were on regular undergraduate programme. The questionnaire was the only instrument used for data collection. Statistical Package for Social Science Version 21 was used for data analysis. Overall, 420 female Nigerian undergraduates received a copy of the questionnaire. Of them, a total of 400 (96%) copies were properly completed and used for data analysis. Majority of the participants were from Faculty of Education 200 (50%), aged 20-24 years 240 (60%) and christians 280 (70%). About 100 (25%) participants indicated been in their second year of study. Only few participants (35%) were aware about HPV as a risk factor for CCa while majority (65%) were not. The participant's status of awareness varied within variables. A statistically significant difference was observed with regards to faculty, age and year of study ($p>0.05$) while none existed on religion ($p<0.05$). There was definite lack of awareness about HPV as a risk factor for CCa by the female undergraduates and thus, might adversely affect HPV vaccine acceptance. The Federal government in collaboration with all the health sectors as well as non-government organisations should increase efforts on public health awareness and enlightenment HPV and its vaccine acceptance.

Key words: Human papillomavirus, cervical cancer, risk factor, awareness, females, Nigerian undergraduates

INTRODUCTION

Human Papilloma Virus HPV is the major aetiological agent causing Cervical Cancer CCa with very high mortality rate (Brinton, 1992; Bosch *et al.*, 1995; Moscicki *et al.*, 2001). As the commonest form of genital malignancy (Park, 2007), CCa is rated the seventh worldwide with about 85% cases occurring in developing countries (Ferlay *et al.*, 2010). Studies indicate that approximately 90% of CCa deaths occur in developing and under-developed countries such as Nigeria (Subramanya and Grivas, 2008; Ferlay *et al.*, 2010). In a comprehensive report, it is indicated that the incidence rate of CCa in Nigeria was estimated at 250/100,000 with 10,000 mortality rates (Adewole *et al.*, 2005), making CCa the second-most common cancer in Nigeria (Goroll *et al.*, 1995; Subramanya and Grivas, 2008; Ferlay *et al.*, 2010). At present, the situation is quite

worrisome in Nigeria and thus, placing huge doubt on people's awareness about the risk factors. The female undergraduates are considered the most vulnerable group for CCa due to their age range (15 years and above) and also the primary target for HPV vaccination (Kim *et al.*, 2009). This period is also indicated as the starting of childbearing process (Emmanuel *et al.*, 2013) that is characterized by increased sexual urge and unique changes in the reproductive organs. However, protecting individuals from contracting diseases is among the utmost priorities of every nation's healthcare system. Indeed, the understanding of the risk factors to any disease would serve as a healthy motivation for the acceptance of its vaccine. There is evidence that population-based cytological screening programme using Pap test and HPV vaccine are reliable in preventing CCa occurrences (Wheeler, 2007; Sehgal and Singh, 2009). This suggests that female individuals who have reached the

recommended age of HPV vaccination should be vaccinated in order to prevent CCA cases. The high incidence rates of CCA occurrences among females in Nigeria and other parts of the world prompted the current research. From the literature reviewed, there is inadequate data on the awareness status about HPV as a risk factor for CCA by the population. It is one of our expectations that the outcome of this study would be useful in planning or designing awareness programmes with regards to risk factors for CCA in Nigeria. Specifically, this study is set to investigate awareness about HPV as a risk factor for CCA among female Nigerian undergraduates and also, to verify the null hypothesis of no significant differences within variables.

MATERIALS AND METHODS

The study was based on descriptive research approach and was conducted in five universities in Southeast part of Nigeria from November 2017-April 2018. This study was approved by the Enugu State Ministry of Health. (Ethical Approval code: ENSRA.03/MH/081). This is one of the Ministries of Health in Nigeria that gives approval for studies of this kind and also, in accordance with the principles of the declaration of Helsinki (World Medical Association, 2013). The confidentiality of the participants was protected and no financial commitment was made to them for participating. No risk or harm was recorded as the data collection process primarily, relied on a descriptive non-invasive questionnaire. A sample size of 420 female Nigerian undergraduates was studied. The sample size was based on the suggestion by Cohen *et al.* (2011). Only female undergraduates within the ages of 15 years and above were studied as it falls within the recommended age for HPV vaccine (Markowitz *et al.*, 2007). The part-time students of the universities within this age cohort were on vacation and thus, not included.

A structured questionnaire was the only instrument used for data collection. The content of the questionnaire was written in English language. Prior to the study, permission was obtained from the sampled universities and a formal introduction to the study was given by the researchers. Informed consent was taken from all the participants before the questionnaire was distributed. The items of the questionnaire were organized to reflect the purpose of the and elicit responses from the participants without any bias. For proper analysis, the data generated was entered into Microsoft Excel and then exported to SPSS 21 for proper analysis using descriptive statistics.

RESULTS AND DISCUSSION

All the participants were Nigerians from different universities. Questionnaire was administered to all with 400 (96%) copies properly filled, leaving only 20 (4.8%) discarded. Of them, 200 (50%) and 120 (30%) were participants from Faculties of Education and Sciences while only 80 (20) were from Arts, respectively. With regards to age, a total of 240 (60%) participants were within the ages of 20-24 years while only 100 (25%) and 60 (15%) were within 15-19 and 25 years plus, respectively. Based on religious affiliation, majority 280 (70%) were Christians while about 100 (25%) and 20 (5%) were Muslims and Pagans. Only 100 (25%) and 60 (15%) of them were in their final and second years of studies. Others: 80 (20), 80(20) and 80(20%) were in first, third and fourth years of studies, respectively. Overall, only few 140 (35%) participants were aware about HPV as a risk factor for CCA while majority 260 (65%) were not (Table 1 and 2).

The demographic differences on the awareness about HPV as a risk factor for CCA and the significant differences within variables were presented. Specifically, greater percentage of the participants in Sciences 70 (58.3%), Arts 60 (70%), 15-19 years 75 (75.0%), Muslim 85 (85%), Pagan 15 (75.0%) and those in the first year of studies 60 (75.0%) were not aware about HPV as a risk factor for CCA, respectively. The participants in education 380 (90.0%), aged 20-24 years 210 (87.5%), 25 years and above 50 (83.3%), Christians 240 (85.7%) and those in

Table 1: Participant's profile (N = 400)

Demographics	F-values	Percentage
Discipline		
Sciences	120	30
Arts	80	20
Education	200	50
Age		
15-19	100	25
20-24	240	60
25+	60	15
Religious affiliation		
Christianity	280	70
Muslim	100	25
Pagan	20	5
Year of study		
First year	80	20
Second year	100	25
Third year	80	20
Fourth year	80	20
Fifth year	60	15

F = Frequency; % = Percentage

Table 2: Participant's awareness (N = 400)

Parameter	Correct		Incorrect	
	F-value	Percentage	F-value	Percentage
Awareness about HPV	140	35	260	65

F = Frequency; % = Percentage; HPV = Human Papillomavirus

Table 3: Presenting demographic differences on awareness about HPV as a risk factor and significant differences within variables (N = 400)

Parameters/Variables	N	True		False		p-values	Decision
		F-values	Percentage	F-values	Percentage		
Faculty							
Sciences	120	50	41.7	70	58.3	0.092	Rejected
Arts	80	20	25.0	60	75.0		
Education	200	180	90.0	20	10.0		
Age							
15-19	100	25	25.0	75	75.0	0.310	Rejected
20-24	240	210	87.5	30	12.5		
25+	60	50	83.3	10	16.7		
Religion							
Christianity	280	240	85.7	40	14.3	0.008	Accepted
Muslim	100	15	15.0	85	85.0		
Pagan	20	5	25.0	15	75.0		
Year of study							
First year	80	20	25.0	60	75.0	0.064	Rejected
Second year	100	95	95.0	5	5.0		
Third year	80	70	87.5	10	12.5		
Fourth year	80	65	81.3	15	18.7		
Fifth year	60	55	91.7	5	8.3		

N = Number of participants; F = Frequency; % = Percentage

second 95 (95.0%), third 70 (87.5%), fourth 65 (81.3%) and fifth 55 (91.7%) years of studies indicated being aware (Table 3). A statistically significant difference was observed with regards to religious affiliation ($p = 0.008 < 0.05$) while none existed on faculties ($p = 0.092 > 0.05$), age ($p = 0.310 > 0.05$) and year of study ($p = 0.064 > 0.05$) (Table 3).

Currently, this study is first descriptive survey to establish the awareness status about HPV as a risk factor for CCA by female Nigerian undergraduates in universities. As shown from the result, there was a definite lack of awareness by the participants. This finding is quite surprising and could be linked with the prevailing increased cases of CCA in developing countries such as Nigeria as documented by previous scholars (Adewole *et al.*, 2005; Subramanya and Grivas, 2008; Ferlay *et al.*, 2010). Although, our research focused on awareness there are some consistencies with the findings of other scholars with regards to CCA and HPV. In a study of 953 undergraduate women aged 17-36 years, it was indicated that 51% of the participants were unaware of HPV (Hsu *et al.*, 2011). In Nigeria, a cross-sectional study involving 260 market women revealed that the participants do not have adequate knowledge (43.5%) of CCA (Ahmed *et al.*, 2013). Also, in a study conducted in Asia, it was indicated that the knowledge regarding CCA risk factors was extremely poor (Wong, 2011). In another study, it was indicated that the participants possess very little knowledge about HPV vaccination (Caskey *et al.*, 2009; Cates *et al.*, 2012). Also, in India, a survey of 2500 students aged 12-22 years indicated that the respondents were not aware about HPV vaccine and its safety (Hussain *et al.*, 2014). These findings are clear indications that a greater proportion of the females do not have comprehensive understanding of CCA as a disease,

the risk factors and available vaccine. Our finding, therefore, suggests that multiple programmes on CCA should be organized and routinely carried out for optimum sensitization, enlightenment and awareness of the public. Similar views were expressed by other researchers including (Sehgal and Singh, 2009). It is believed that a very high level of awareness about CCA and its risk factors would help in reducing the rates of occurrences.

Our research indicates that the awareness about HPV varied within variables. For instance, greater proportion of the participants from Faculties of Sciences, Arts, 15-19 years, Muslim, Pagan and those in their first year of study were not aware about HPV as a risk factor for CCA unlike their counterparts. A statistically significant difference was observed with regards to religious affiliation while none existed on faculties, age and year of study. Educational campaigns are needed to improve the level of awareness particularly among the female Muslims. It is one of our expectations that increasing awareness would improve people's understanding of other risk factors to CCA and subsequent acceptance of the vaccines for prevention.

One of our major limitations was the setting universities. The outcome may not convincingly apply to all the females in Nigeria particularly, those in the market or other sectors. Secondly, the study was restricted to descriptive approach involving questionnaire. Further research is needed employing qualitative measure to showcase indebt knowledge and understanding of the phenomenon. Finally, we conducted the current study within a specific age-group of 15-26 years, it may not be a complete reflection of the awareness of other age-groups of 9-14 years who are included in the recommended age for HPV vaccine.

CONCLUSION

There was definite lack of awareness about HPV as a risk factor for CCa by the female undergraduates. This no doubt would adversely affect HPV vaccine acceptance. The Federal government in collaboration with all the health sectors as well as non-government organisations should increase efforts on public health awareness and enlightenment about HPV and its vaccine acceptance.

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