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Knowledge of HPV, HPV-Induced Cancers, and HPV Vaccine among a Sample of Freshmen in a Northwestern Nigeria Monotechnic

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ABSTRACT

Background: *Human papillomavirus (HPV) is a notorious virus that is responsible for some cancers in the human body. This study aims to explore the knowledge of a sample of freshmen of the Sultan Abdur-Rahman School of Health Technology, Gwadabawa, Sokoto State, Nigeria, on HPV, HPV-induced cancers and HPV vaccines.* ***Methods:*** *This study surveyed 224 freshmen of the Sultan Abdur-Rahman School of Health Technology, Gwadabawa, on HPV, HPV-induced cancers and HPV vaccines, using a paper questionnaire. Data collected were analyzed using SPSS Version 20 Software.* ***Results:*** *The mean (± SD) age of the surveyed freshmen was 22.04 (± 3.42) years. Only 65 (29.0%) of them had ever heard of HPV and the top three sources of their knowledge of the virus were doctor/nurse (16/65), TV/ radio/magazine (15/65), and parents (9/65). However, the majority of those respondents who claimed awareness of HPV lacked adequate knowledge about the virus and the vaccine.* ***Conclusion:*** *They exists a very low awareness rate of HPV, HPV-induced cancers and HPV vaccines among the surveyed freshmen of the Sultan Abdur-Rahman School of Health Technology, Gwadabawa, Sokoto State, Nigeria.*

Keywords: Human papillomavirus, Cancer, Vaccine, Youth, Students, College, Nigeria

INTRODUCTION

Human papillomavirus (HPV) is a DNA virus that belongs to the Papillomaviridae family [1,2]. They exist over 100 types of HPV (some examples include HPV types 6, 11, 16, 18, 31, 33, 35 and 39) [3,4], of which about 30 HPV types are known to cause HPV-induced infections [5].

HPV can be transmitted from man to man through various routes. The virus can be transmitted through sexual intercourse (e.g. oral sex, anal sex, and vaginal sex), skin-to-skin contact, and through parturition (i.e. from mother to child, during labor) [6-10].

Globally, HPV is responsible for about 600,000 cancer cases involving the head and neck, cervix, vagina, vulva, anus, penis; as well as genital warts and recurrent papillomatosis of the lungs [11]. Fortunately, some HPV-induced

infections are vaccine-preventable diseases [12]; however, the sad story is that access to the vaccine is poor as many countries, including Nigeria, are yet to introduce HPV vaccination into their routine immunization programs [13,14]. The Nigerian youth is categorized as a high-risk group when it comes to person-to-person transmission of HPV; this categorization was based on the high rate of promiscuity, sexual violence, and unprotected sex among them [15-21].

After an extensive literature search, we found that they exist very little literature exploring the knowledge of HPV, HPV-induced cancers, and HPV vaccines among Nigerian youth, especially those from the north-western geopolitical zone of Nigeria [22-24]. Based on the afore-mentioned, we conducted this study with the aim of exploring the knowledge of a sample of first-year students of the Sultan Abdur-Rahman School of Health Technology, Gwadabawa, Sokoto State, Nigeria, on HPV, HPV-induced cancers and HPV vaccines.

METHODS

This study was a cross-sectional survey of first-year students of the Sultan Abdur-Rahman School of Health Technology, Gwadabawa, Sokoto State, Nigeria. The study tool was a questionnaire which obtained information on the socio-demographic characteristics (such as sex, age, tribe, religion, and marital status), and knowledge of HPV, HPV-induced cancers and HPV vaccines from the participants. The questionnaire was developed through an extensive literature review [16-24].

As in April 2017 (the period of data collection), this institution had a total of about 800 first-year students. Based on estimation, a sample size of 220 students was used as the minimum sample size for the study. A total of 250 first-year students were approached to participate in the study; they were informed about the aims and objectives of the study; they were also informed that their participation was completely voluntary, harmless, and anonymous. However, only 240 students agreed to participate in the study. After giving verbal informed consent, all participants were issued a paper questionnaire to fill out. Only 224, out of the 240 participating students, had their questionnaire properly filled and returned. Collected data were computed and analyzed using the SPSS version 20 software. The frequency distribution of all variables was determined, and associations between variables were tested using the Chi-square test. A p-value<0.05 was used to determine the level of statistical significance.

RESULTS

The mean (± SD) age of the 224 respondents was 22.04 (± 3.42) years; 76.3% were males; 90.6% were from Hausa ethnic group, and 95.1% were Moslems. Only 65 (29.0%) respondents had ever heard of HPV and the top three sources of their knowledge of the virus were doctor/nurse (16/65), TV/radio/magazine (15/65), and parents (9/65) (Figure 1).

However, those respondents who claimed awareness of HPV lacked adequate knowledge about the virus. For instance: 64.6% of them were of the erroneous belief that boys cannot develop HPV infections; 61.5% believed that HPV is a rare virus; 60% believed that HPV infection can be cured by antibiotics; and more (Table 1). Furthermore, the majority (>70%) of those respondents who claimed to be aware of HPV knew that HPV can cause cervical cancer, and head and neck cancer (Table 2). However, despite this high rate of awareness among them, yet only about one-third (29.2%) of them were aware of: a vaccine that can prevent HPV infection in man; the recommended age for HPV vaccination; and the number of HPV vaccine dose (Table 3).

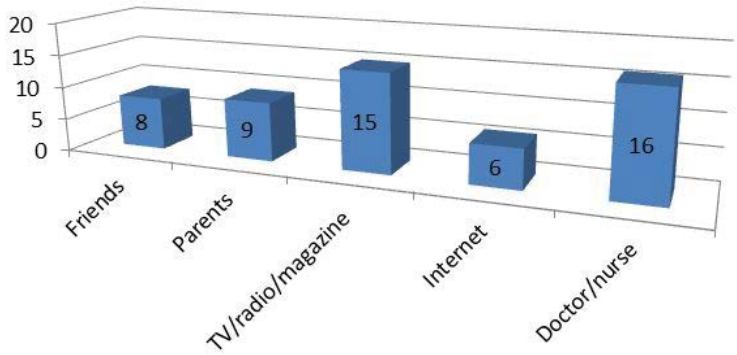

Figure 1 Sources of information on HPV among respondents who were aware of HPV (N=65)

Table 1 Knowledge of HPV among those respondents who were aware of HPV

Variables	Male (N=49)			Females (N=13)			Uncategorized (N=65)		
	True (%)	False (%)	IDK (%)	True (%)	False (%)	IDK (%)	True (%)	False (%)	IDK (%)
Boys cannot develop HPV infections	34 (69.4%)	9 (18.4%)	2 (4.1%)	6 (46.2%)	2 (15.4%)	5 (38.5%)	42 (64.6%)	12 (18.5%)	7 (10.8%)
HPV is very rare	32 (65.3%)	7 (14.3%)	4 (8.2%)	6 (46.2%)	1 (7.7%)	4 (30.8%)	40 (61.5%)	9 (13.8%)	8 (12.3%)
There are many types of HPV	33 (67.3%)	6 (12.2%)	6 (12.2%)	10 (76.9%)	0 (0.0%)	3 (23.1%)	46 (70.8%)	6 (9.2%)	9 (13.8%)
HPV can be found in the mouth	30 (61.2%)	13 (26.5%)	5 (10.2%)	7 (53.9%)	1 (7.7%)	2 (15.4%)	40 (61.5%)	14 (21.5%)	7 (10.8%)
HPV can cause HIV/AIDS	28 (57.1%)	16 (32.7%)	3 (6.1%)	8 (61.5%)	3 (23.1%)	2 (15.4%)	37 (56.9%)	20 (30.8%)	5 (7.7%)
HPV can be transmitted through sexual (vaginal) intercourse	32 (65.3%)	14 (28.6%)	2 (4.1%)	9 (69.2%)	1 (7.7%)	3 (23.1%)	43 (66.2%)	15 (23.1%)	5 (7.7%)
HPV can be passed on through sexual (oral) intercourse	30 (61.2%)	18 (36.7%)	1 (2.0%)	6 (46.2%)	3 (23.1%)	4 (30.8%)	37 (56.9%)	22 (33.8%)	5 (7.7%)
A person infected with HPV usually has symptoms	35 (71.4%)	10 (20.4%)	4 (8.2%)	11 (84.6%)	1 (7.7%)	1 (4.5%)	49 (75.4%)	11 (16.9%)	5 (7.7%)
A person's chances of getting HPV increases with the number of their sexual partners	20 (40.8%)	18 (36.7%)	10 (20.4%)	3 (23.1%)	2 (15.4%)	7 (10.8%)	24 (36.9%)	21 (32.3%)	18 (27.7%)
Most types of HPV infections cannot clear up on their own	28 (57.1%)	12 (24.5%)	6 (12.2%)	5 (38.5%)	2 (15.4%)	5 (7.7%)	34 (52.3%)	15 (23.1%)	12 (18.5%)
HPV infection can be cured by antibiotics	34 (69.4%)	10 (20.4%)	3 (6.1%)	4 (30.8%)	2 (15.4%)	3 (4.6%)	39 (60.0%)	13 (20.0%)	7 (10.8%)
Most sexually active people will get infected with HPV at some point in their lives	24 (49.0%)	17 (34.7%)	6 (12.2%)	9 (69.2%)	2 (15.4%)	2 (3.1%)	34 (52.3%)	19 (29.2%)	8 (12.3%)
Having sex at early age increases the risk of getting HPV	20 (40.8%)	19 (38.8%)	8 (16.3%)	6 (46.2%)	2 (15.4%)	5 (7.7%)	26 (40.0%)	23 (35.4%)	13 (20.0%)
HPV is the same as HIV	20 (40.8%)	26 (53.1%)	2 (4.1%)	2 (15.4%)	9 (69.2%)	2 (3.1%)	23 (35.4%)	36 (55.4%)	4 (6.2%)

Table 2 Knowledge of HPV-induced cancers among those respondents who were aware of HPV

Variables	Male (N=49)			Females (N=13)			Uncategorized (N=65)		
	True (%)	False (%)	IDK (%)	True (%)	False (%)	IDK (%)	True (%)	False (%)	IDK (%)
	Yes	No	IDK	Yes	No	IDK	Yes	No	IDK
HPV causes cervical cancer	37 (75.5%)	8 (16.3%)	2 (4.1%)	9 (69.2%)	1 (7.7%)	2 (15.4%)	49 (75.4%)	9 (13.8%)	4 (6.2%)
HPV causes head and neck cancer	38 (77.6%)	6 (12.2%)	2 (4.1%)	7 (53.8%)	2 (15.4%)	3 (23.1%)	47 (72.3%)	9 (13.8%)	6 (9.2%)

Table 3 Knowledge of HPV vaccine among those respondents who were aware of HPV

Variables	Male (N=49)			Females (N=13)			Uncategorized (N=65)		
	True (%)	False (%)	IDK (%)	True (%)	False (%)	IDK (%)	True (%)	False (%)	IDK (%)
	Yes	No	IDK	Yes	No	IDK	Yes	No	IDK
There is an HPV vaccine that can prevent cancer in both men and women	13 (26.5%)	4 (8.2%)	32 (65.3%)	5 (38.5%)	1 (7.7%)	7 (53.8%)	19 (29.2%)	5 (7.7%)	41 (63.1%)
HPV vaccine requires 3 doses	12 (24.5%)	11 (22.4%)	25 (51.0%)	3 (23.1%)	2 (15.4%)	8 (61.5%)	16 (24.6%)	13 (20.0%)	35 (53.8%)
HPV vaccine offers protection against all STIs	15 (30.6%)	16 (32.7%)	18 (36.7%)	1 (7.7%)	4 (30.8%)	7 (53.8%)	7 (10.8%)	21 (10.8%)	26 (40.0%)
The recommended age for getting HPV vaccine is 11 to 26 years	14 (28.6%)	10 (20.4%)	25 (51.0%)	2 (15.4%)	3 (23.1%)	7 (53.8%)	17 (26.2%)	14 (21.5%)	33 (50.8%)

STIs: Sexually Transmitted Infections

DISCUSSION

HPV is a notorious virus that is responsible for some chronic infections in the human body [5]. Sadly, some types of HPV have been confirmed, through scientific methods, that they are carcinogenic [5,25]. Sadly, thousands of people lose their life on account of HPV-induced cancers every year. However, the good news about HPV is that HPV infection can largely be prevented through vaccination and abstinence from unprotected/risky sexual activity [6,12].

In this study, we surveyed a sample of first-year Nigerian students on their knowledge of HPV, HPV-induced cancers and HPV vaccine; however, based on our study data, we found them to have inadequate knowledge on the surveyed items. First of all, the majority (more than six-tenth) of our respondents had never heard of HPV. This finding is closely similar to that reported among tertiary school students in the southern parts of Nigeria [22-24]. However, those of our respondents (29.0%) who were aware of HPV obtained their information on the virus from diverse sources. However, media and health practitioners were their two main sources of information on HPV; interestingly, these two sources had been earlier reported in some literature to be among the most utilized sources of information among Nigerian students [15,26].

After probing those respondents who claimed awareness of HPV further, we found out that quite many of them had erroneous knowledge/beliefs about HPV, HPV-induced cancers, and HPV vaccines. For instance, some of them reported that HPV is the same as HIV; this is very erroneous. Similarly, the majority of them, especially the males, wrongly believed that boys cannot develop HPV infections. The other erroneous beliefs on HPV-related matters could be seen in Tables 1-3. This poor knowledge level on HPV infections among our respondents reveals a serious public health problem that needs to be urgently tackled; the reason being that our respondents were young adults and many of them, probably, might be sexually active. Furthermore, after comparing the sources of HPV information of our respondents with their knowledge of HPV, HPV vaccine and HPV-induced cancers, we could conclude that they were most probably fed with inadequate information on HPV. Hence, this calls for the need to give them in-depth and accurate information about the virus.

This study has its own limitations. This study surveyed only a population of freshmen who were in a single institution; those students in higher academic classes and in other academic institutions were not included in this study. Hence, it is difficult to make generalizations based on our study data. However, we have a recommendation to make from this study: academic institutions need to introduce effective sexual health programs into the orientation programs for their freshmen; by doing so, this will create more awareness of HPV among new students on campus.

CONCLUSION

They exist a very low awareness rate of HPV, HPV-induced cancers and HPV vaccines among the surveyed freshmen of the Sultan Abdur-Rahman School of Health Technology, Gwadabawa, Sokoto State, Nigeria.

DECLARATIONS

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Conflicts of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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