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The level of awareness of cervical cancer and its prevention among adolescents of public high schools in a high risk Nigerian population

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ABSTRACT:
Background: Globally, cervical cancer is a major public health problem. The high prevalence of cervical cancer, especially among women in developing nations, has a strong link with their reproductive health status in adolescence. Thus, it is in order to carry out studies that would assess the awareness of cervical cancer and its prevention among this highly susceptible adolescent age group. **Objective**: This study aimed at assessing the awareness of cervical cancer, HPV infection and anticipated improved acceptance of HPV vaccination for cervical cancer prevention among adolescents in southwest Nigeria. **Materials and Methods**: This was a cross-sectional cohort study involving 192 senior public high students across all the 16 local government areas in Ekiti State, Nigeria. Self-administered structured questionnaires were used to obtain data from participants during a summer youth camp in August, 2019. The questionnaire assessed their knowledge on sexual history; cervical cancer, its preventive measures including the HPV vaccination. **Results**: Majority (83.9%) had never had sex before; while 16.1% had sex before the age of 10years with peno-vaginal sex commoner with a frequency of 87.1%. More than 70% of the respondents believed cervical cancer was linked to multiple sexual partners and that it could kill. Majority (83.3%) of the respondents believed that human papillomavirus was a cause of cervical cancer. However, only 6.3% of the adolescents had had HPV vaccination despite the fact that majority (84.9%) had the knowledge of HPV vaccination. **Conclusion**: The result of this study showed a good understanding of health implication of cervical cancer and HPV, its mode of transmission and prevention. However, uptake of HPV vaccination among the respondents was low. It is suggested that there is a need to include HPV vaccines not only in the National Programme on Immunization (NPI) but also mount strategies that will increase its coverage and acceptance in the environment of study.

Keywords: Cervical cancer, prevention, adolescents, Nigeria.

INTRODUCTION:

Globally, cervical cancer is a major public health problem[1]. It ranks second among reproductive tract cancers in women and is also a major cause of cancer morbidity and mortality[2,3]. There is a disproportionately higher burden of this preventable disease in developing countries. Out of the approximately 529,800 new cases diagnosed annually, 89% occur in developing countries[4] and about 25% rise in deaths may be recorded in 10 years if current trend persists[5]. Deaths from cervical cancer occur in women in their prime when they are expected to contribute to the economic wellbeing of their families and communities[6].

The sub-Saharan Africa has an incidence of 19.1/100,000 women while the global average is 15.2[7]. Cervical cancer in Nigeria is associated with age-

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standardized incidence and mortality rates of 36 per 100,000 and 17.5 per 100,000 respectively[8,9]. The high burden of cervical cancer in this region is largely due to lack of adequate screening measures that allow detection of precancerous and early stage cervical cancer[10]. While about 75% of cases present early in developed countries thereby making expectation of cure realistic, in developing countries, the majority of cases present with advanced disease[11]. Justus et al[12] found out that 56.1% of the patients studied in Abakaliki, Nigeria presented with advanced cervical cancer.

Persistence of predominantly sexually transmitted high risk human papillomavirus (HPV) is the main aetiological factor for cancer of the cervix in more than 99% of cases[13,14]. Spontaneous resolution of the virus is recorded in 90% of immune competent women over a two year period[15]. Majority of HPV infections acquired in the twenties are cleared by the immune system while a second small peak at 45-50 years is seen in some countries[16,17].A study by Magaji et al[18] in Northern Nigeria detected high risk HPV in 66.6% samples of cervical scrapping and the HPV types detected were 16, 18, 31 and 45; while Gage et al[19] in a population based study in rural south-western Nigeria found that 14.7% of the women had detectable carcinogenic HPV, a proportion that did not decline with age and showed slight peaks in the 15-29 and 60-69 age groups.

Epidemiologic risk factors for cervical cancer include multiple sexual partners, early age at sexual debut, high risk sexual partner, immune suppression from HIV infection or other causes, etc[15]. These major risk factors have been shown to be prevalent in Nigeria[6].

The clinical features of cervical cancer include abnormal vaginal bleeding (post-coital, intermenstrual, post-menopausal bleeding) in majority of cases, offensive vaginal discharge, and pain from nerve entrapment. Majority of the cases (75%–86%) tend to present very late with advanced disease[20]. Weight loss, backache, leg pain, edema, and haematuria may present in those with advanced disease.

The introduction of the HPV vaccination to prevent cervical cancer in low and middle-income countries is obviously a strategic approach to meet global health targets on women´s health[21].

HPV vaccination for younger adolescents is primarily driven by parental decision and health care provider recommendation. Vaccination of adolescents can be influenced by them when they provide their parents with vaccine information[22]. The prohibitive cost of HPV vaccine limits its usefulness in the high-burden setting of low- and middle-income countries[23]. Girls are encouraged to receive the vaccine prior to their sexual debut. The vaccine is available in Nigeria at a cost. While the current high cost of the vaccine is a known barrier not only in Nigeria but also in developed countries[24], it is important to note that even the cost free vaccines do not yet enjoy optimum coverage due to many identified barriers to immunization uptake[25].

Adolescent age group has peculiar characteristics which may be barriers to optimum uptake of the vaccine. They tend to resist any dominant source of authority such as parents and they prefer to socialize more with friends than with family[26]. This may affect their uptake of HPV vaccine.

This study aimed at assessing the awareness of cervical cancer, HPV infection and anticipated improved acceptance of HPV vaccination for cervical cancer prevention among adolescents in southwest Nigeria. Most studies conducted on cervical cancer and its prevention have focused on young adults and older age group, relatively excluding the adolescents[1,2,6]. Recent studies have revealed that more adolescents have sexual debut at early age with multiple sexual partners in the face of unprotected sexual intercourse[27,28,29]. Studies have also shown that HPV and HIV infections are prevalent among adolescent and young adults[30,31]. Therefore, the high prevalence of cervical cancer, especially among women in developing nations, has a strong link with their reproductive health status in adolescence. Thus, it is in order to carry out studies that would assess the awareness of cervical cancer and its prevention among this highly susceptible adolescent age group.

MATERIALS AND METHODS:

Data from this cross-sectional cohort survey of senior students in public high schools in Ekiti State, Nigeria was obtained during a youth Camp meeting designed by Eyelua Leadership and Gender Development Initiative, in collaboration with Ekiti State's Ministries of Education, Youth & Development; and a Non-governmental Organisation tagged, Adolescent Friendly Research Initiative and Care (ADOLFRIC) during the summer vacation of August, 2019. The youth camp was a maiden edition of leadership-training, capacity-building and reproductive health-awareness camp for adolescents in Ekiti State, Southwest Nigeria. Ekiti State, in southwest Nigeria, has a human population of 2,398,957. It has a fertile vegetation and agriculture-friendly climate, and thus a centre for trading in yams, cassava, cocoa, grains and cotton. The indigenes are mainly of Yoruba extraction, and practise Christianity and Islam. The State has one hundred and ninety-seven public high schools spread across its sixteen (16) local government areas, most of which are co-educational (mixing both males and females for educational activities).

Due to the constraints of funds, the organizing body purposively chose a population of two hundred (200) students for the camp. In order to ensure even spread of

participants across the state, six (6) schools were randomly selected from each of the sixteen local government areas, making a total of 96 invited schools. To ensure gender balance, each school presented one male and one female participant. With the invitation of one male and one female senior high student from each school, 192 students were expected at the camp. To account for possible attrition, 10% of the expected number was added, making a total of 212 students. Two hundred and one students however attended the youth camp. The study was approved by the Ekiti State Ministry of Education; which had earlier, through the respective schools, communicated the purpose of the youth camp meeting to parents with the aim of seeking their consent especially in the area of getting reproductive health information data from the students.

The study's objectives were communicated to the students, and they were assured that the survey was strictly for research purposes. Having assured them of the anonymity and confidentiality of their responses, they were encouraged to opt out of the survey whenever they chose to, or to leave unanswered any questions they were uncomfortable with. Verbal consent was also obtained from each participant. Inclusion criteria for the survey were being a senior high school student (that is, tenth to twelfth graders), recommendation by the school and with an official invite to attend the camp.

A self-administered structured questionnaire was used to obtain information from the participants. Sociodemographic information of the respondents, including their age, sex, class, religious inclination, and ethnic tribe were obtained. A section of the questionnaire assessed their knowledge on sexual history; with the last section assessing their knowledge on cervical cancer, its preventive measures including the HPV vaccination.

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) versions 20 by IBM Corp. Results were presented as frequencies and percentages.

The study was approved by the Ekiti State Ministry of Education; which had earlier, through the respective schools, communicated the purpose of the youth camp meeting to parents with the aim of seeking their consent especially in the area of getting reproductive health information data from the students.

RESULTS:

All the 192 participants at the workshop adequately filled and returned the questionnaires to the research team. Thirteen (6.8%) of the respondents were less than 15 years old, while most of them, 175 (91.1%), were between 15 and 19 years. Two (1%) of the participants did not claim any religious inclination; 104 (54.2%) were females, 189(98.4%) were 12th graders, while 19 (9.9%) were non-Yoruba (table 1).

Table 2 shows the sexual history of the respondents. Majority (83.9%) had never had sex before; while 16.1% had sex before the age of 10years with peno-vaginal sex commoner with a frequency of 87.1%.

The knowledge of cervical cancer and preventive vaccine is displayed on table 3. More than 70% of the respondents believed cervical cancer was linked to multiple sexual partners and that it could kill. Majority (83.3%) of the respondents believed that human papillomavirus was a cause of cervical cancer. However, only 6.3% of the adolescents had had HPV vaccination despite the fact that majority (84.9%) had the knowledge of HPV vaccination.

DISCUSSION:

Overall, knowledge about cervical cancer and its prevention was high among the adolescents, with 87% of them having heard of cervical cancer, while 84.9% believed that cervical cancer could be prevented and recognizing vaccination as the main strategy to prevent it. Also, the level of awareness about HPV infection was high, with 83.3% having heard about this infection. However, despite the high knowledge of HPV vaccine, only 6.3% had been vaccinated, this is unacceptably low.

In this study, 16.1% of respondents had had sex; this is comparable to 16.2% reported by Durowade[32] and colleagues in another part of the State but lower than 24.8% found by Oljira et al[33], and much lower than 53.3% reported by Fayemi et al in a larger survey conducted in the State[27]. About 48% of the respondents in this study could be regarded as 'early starters' concerning sexual debuts, having started having sex at age less than 14 years. This is comparable to the finding of 45.5% by Yaya et al[34] but less than 57.6% reported by Durowade et al[32].

This present study revealed that 87% of the respondents were aware of cervical cancer, 83.3% recognized HPV as a cause while 79.7% identified multiple sexual partners as a risk factor. These were at variance with the findings of Sadohet al[35] who reported 14.5%, 2.4% and 28.4% respectively. Rashid et al[36] found 82.5% of their respondents had knowledge of cervical cancer which is comparable to the finding from this study, but the 45.6% who recognized HPV as a cause in their study is much lower than 83.3% found in this study. Majority (84.9%) of our respondents agreed that HPV could be prevented by vaccination, this is almost twice what was reported 44.8% by Khan et al[37]. HPV vaccine uptake in this study was very low (6.3%), this is similar to the finding of Rashid et al[36] but slightly higher than 2.6% reported by Oluwole et al[38].

Tables

Table 1: socio-demographic characteristics of the respondents

Variables	FREQUENCY (%)
Age (years)	
Less than 15	13 (6.8)
15-19	175(91.1)
>19	4 (2.1)
Sex	
Male	88 (45.8)
Female	104 (54.2)
Religion	
Christianity	180 (93.8)
Islam	10 (5.2)
Traditional	2 (1)
Grade in high school	
Less than 12th grade	3 (1.6)
12th grade	189 (98.4)
Tribe	
Yoruba	179 (90.1)
Igbo	2 (1)
Others	17 (8.9)

TABLE 2: Sexual history of respondents

	FREQUENCY	PERCENTAGE
Have you ever had sex?		
Yes	31	16.1
No	161	83.9
Age at coitarche (years)(n=31)		
< 10	5	16.1
10-14	10	32.3
15-19	16	51.6
Class of sexual debut (age in years)		
'Early starters' (≤ 14)	15	48.4
'Late starters'	16	51.6
Route of sexual contact (n=31)		
Vagina	27	87.1
Anus	3	9.7
Mouth	1	3.2

Table 3: knowledge of cervical cancer and preventive vaccine

	FREQUENCY	PERCENTAKE
Cervical cancer kill		
Yes	167	87
No	25	13
Cervical cancer is linked with multiple sexual partners		
Yes	153	79.7
No	39	20.3
Cervical cancer caused by human papilloma virus		
Yes	160	83.3
No	32	16.7
Knowledge of HPV vaccine		

Yes	163	84.9
No	29	15.1
Have you had HPV vaccine?		
Yes	12	6.3
No	180	93.8

CONCLUSION:

The result of this study showed a good understanding of health implication of cervical cancer and HPV, its mode of transmission and prevention. However, uptake of HPV vaccination among respondents was low. It is suggested that there is need to include HPV vaccines not only in the National Programme on Immunization (NPI) but also mount strategies that will increase its coverage and acceptance in Ekiti State. It has also become necessary to carry out quantitative and qualitative studies on the concept of incorporating male adolescent into HPV vaccination; as this is an identified gap in HPV vaccination programme[39].

Conflicts of Interest: Authorsdeclare no conflict of interest.

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