



# Awareness of Cervical Cancer Vaccination Amongst Female Adolescents In South and Eastern Nigeria.

Owhonda G<sup>1</sup>, Eli S<sup>2</sup>, Okagua KE<sup>3</sup>, Nonye-Enyindah E<sup>2</sup>, Iwo-Amah RS<sup>2</sup>, Kua P<sup>2</sup>, Nnoka VN<sup>4</sup>, West B<sup>5</sup>

Department of Community Medicine, Rivers State University.<sup>1</sup>

Mother, Baby and Adolescent Care Global Foundation.<sup>2</sup>

Department of Obstetrics and Gynaecology, Rivers State University Teaching Hospital.<sup>3</sup>

Department of Pharmacology and Therapeutics, Rivers State University.<sup>4</sup>

Department of Paediatrics, Rivers State University Teaching Hospital.<sup>5</sup>

Correspondence: Dr Eli S MBBS, FWACS Email: [elisukaime@gmail.com](mailto:elisukaime@gmail.com)

## Abstract;

### Background:

By the advent of cervical cancer vaccines Mortalities and morbidities from cervical cancer have been reduced significantly globally. Due to the fact that cervical cancer is the commonest genital tract malignancy in the developing countries of the world.. The vaccines are more effective before exposure to high risk Human Papilloma Virus (HPV) which is the prime aetiological factor for cervical cancer.

### Aim:

To determine the awareness of cervical cancer and vaccination among adolescents in south and eastern, Nigeria.

### Method:

The survey was a cross sectional study conducted among 240 female adolescents attending a camp meeting in Rivers state. The subjects were from ten secondary schools in the state and undergraduates from five universities in South and Eastern Nigeria. Permission for the study was granted by office of the Director of Public Health, Rivers State Ministry of Health. The information was coded and analysed using SPSS version 25.

### Results:

The study involved 240 subjects. The mean age was 15 years. Forty-three (17.9%) of the adolescents were below 13 years, 124 (51.6%) were between age 14 – 16 years, 73 (30.5%) were between ages 17 – 19 years. Thirty-six (15%) of the adolescents were in their junior secondary while 134 (55.8%) were in senior secondary and undergraduates were 70 (29.2%) of the adolescents. cervical cancer vaccination amongst the subjects was 96 (40%). The distribution of cervical cancer vaccination according to educational categories of the adolescents were as follows, undergraduates were 54 (22.5%), senior secondary 23 (9.6%) and junior secondary 19 (7.9%). The commonest means of information about the vaccination against cervical cancer was the media 120 (50%), followed by school 72 (30%), hospital 24 (10%) and others 24 (10%).

**Conclusion:**

The study showed the awareness of cervical cancer vaccination was below average amongst female adolescents in south and eastern Nigeria. The media was the commonest means of propagating the information, with 50% coverage. More work needs to be done through enlightenment and advocacy amongst adolescents in these regions and in Nigeria generally.

**Keywords:** awareness, cervical cancer vaccination, adolescents, Nigeria.

**Introduction:**

Cervical cancer is the second leading women specific cancer in Nigeria and globally.<sup>1</sup> Vaccination with the human papilloma virus (HPV) has been shown to be effective in the prevention of cervical cancer.<sup>1,2</sup>

Adolescents are vulnerable group of persons within the age bracket of 11years to 19 years they are expectedly still cared for by their parents who ensure they are in good health.<sup>1,2</sup>

There have been some challenges in the introduction of HPV vaccine in some African countries with routine vaccination example of which are Nigeria, Botswana, Lesotho just to mention a few due to misconception of about HPV vaccines.<sup>2,3</sup> In addition there have also been some concerns and hesitancy about HPV vaccine in the West African countries.<sup>2-4</sup> Researchers have shown that Nigeria has the highest population of adolescents in Africa and has a study history of vaccine hesitancy.<sup>1-4</sup> These findings makes behavioural research about HPV vaccination to be important in Nigeria.<sup>4-5</sup>

Since HPV vaccine is yet to be included in the routine vaccination schedule in Nigeria, the choice of creating the awareness of vaccination against cervical cancer amongst adolescent is paramount in prevention of cervical cancer.

Parents are saddled with the responsibilities of taking important health decisions on behalf of the adolescents,<sup>2,3</sup> at various times with or without their input.<sup>2,3</sup> This includes decisions about uptake of the HPV vaccine.<sup>2-3</sup> Parental involvement in this regard is important to access to HPV vaccine and because most adolescents are legally minors in many countries and parents are expected to act on their behalf.<sup>2</sup> For this reason parents have important roles to play for the HPV vaccination of adolescent to be a success.<sup>4,5</sup> Our study was however peculiar in the sense that these adolescents attended a holiday camp in Port Harcourt, Rivers state from ten secondary schools from southern and eastern Nigeria and undergraduate from five universities from the southern and eastern regions of Nigeria consent were given from their parents for those that were minors. The study focused on awareness campaign for school health programme with regards to cervical cancer prevention through vaccination with HPV vaccines. Hence the essence of the study.

**Aim:**

To determine the awareness of cervical cancer and vaccination amongst adolescents in south and eastern, Nigeria.

**Study Materials and Methods:**

The survey was a cross sectional study conducted among 240 female adolescents attending a camp meeting in Rivers state. The subjects were from ten secondary schools in the state and undergraduates from five universities in South and Eastern Nigeria. Permission for the study was granted by office of the Director of Public Health, Rivers State Ministry of Health. The information was coded and analysed using SPSS version 25.

**Study site:**

The study was conducted in a private secondary school in Port Harcourt, Rivers state. Ten secondary schools and five universities in south and eastern Nigeria enrolled for the holiday camp. This was organised by non- governmental organization in partnership with the Public Health department of the Rivers state ministry of health.

**Study Population:**

These were adolescents from 10 secondary schools and 5 universities in south and eastern Nigeria.

**Data Collection:**

There was only English version of the questionnaire since these adolescents communicated with English language in their various schools. The data was collected by trained research assistants. Human Papilloma Virus (HPV) was introduced as an injection that is mainly transmitted sexually which can result in cervical cancer. The symptoms were used to describe the disease rather than the word cervical cancer this was to ensure that the adolescents understood the disease. The adolescents were also educated on vaccines and the number of doses to be taken - Gardasil (4) doses and cervanx (2) doses which was commoner in Nigeria.

**Data analysis**

After collection of information. The data were computed and analysed using SPSS version 25. The level of significance for all statistical analysis was  $P < 0.05$ .

**Results:**

The study involved 240 subjects. The mean age was 15 years. Forty-three (17.9%) of the adolescents were below 13 years, 124 (51.6%) were between age 14 – 16 years, 73 (30.5%) were between ages 17 – 19 years. Thirty-six (15%) of the adolescents were in their junior secondary while 134 (55.8%) were in senior secondary and undergraduates were 70 (29.2%) of the adolescents. Cervical cancer vaccination amongst the subjects was 96 (40%). The distribution of cervical cancer vaccination according to educational categories of the adolescents were as follows, undergraduates were 54 (22.5%), senior secondary 23 (9.6%) and junior secondary 19 (7.9%). The commonest means of information about the vaccination against cervical cancer was the media 120 (50%), followed by school 72 (30%), hospital 24 (10%) and others 24 (10%).

**Table 1**

Showing the number of female adolescents recruited for the study, their mean age, the level of awareness of cervical cancer vaccination and the commonest means of awareness of awareness of cervical cancer vaccination and educational category with highest awareness

<b>Number of Adolescents recruited</b>	<b>240</b>
<b>Mean age</b>	15 years
<b>Level of awareness</b>	96 (40%)
<b>Commonest mode of information media</b>	120 (50%)
<b>Level of awareness of cervical cancer vaccination by undergraduates</b>	54 (22.5%)

**Table 2**

**Distribution of age and frequencies of female adolescents**

Age (years)	Frequency (n)	Percentage (%)
< 13	<b>43</b>	<b>17.9</b>
14 - 16	<b>124</b>	<b>51.6</b>
17 - 19	<b>73</b>	<b>30.5</b>
	<b>240</b>	<b>100</b>

**Table 3**

**Distribution of female adolescents according to their educational categories**

Educational category	Frequency (n)	Percentage (%)
Junior secondary	<b>36</b>	<b>15</b>
Senior secondary	<b>134</b>	<b>55.8</b>
Undergraduate	<b>70</b>	<b>29.2</b>
	<b>240</b>	<b>100</b>

Table 4

**Distribution of awareness of cervical cancer vaccination amongst female adolescents with respect to their educational categories**

Educational category	Frequency (n)	Percentage (n)
Undergraduate	54	22.5
Senior secondary	23	9.6
Junior secondary	19	7.9
	96	40

Table 5

**Means of information of cervical cancer vaccination awareness amongst female adolescents**

Mode of information	Frequency (n)	Percentage (n)
Media	120	50
School	72	30
Hospital	24	10
Others	24	10
	240	100

**Discussion:**

Our study revealed the level of awareness of cervical cancer vaccination amongst adolescent as 54%. Though above average but taking into consideration the morbidity and mortality from cervical cancer in the developing countries of the world, it is however worrisome. Undergraduate that were Adolescents were more aware of Cervical cancer vaccination, represented by 22.5% of the respondents compared to those in Senior Secondary ( 9.6%) and Junior Secondary ( 7.9%) respectively. This was not in agreement with a study by Egbon M et al though not of the cervical cancer vaccination but its prime aetiological factors – the Human Papilloma Virus (HPV) level of awareness in Kebbi State, Nigeria.<sup>5</sup> The study by Egbon M et al showed the mean knowledge score amongst junior secondary school aged girls was 66.05% while for the senior secondary was 96.25%.<sup>5</sup>

In a research by Marlow elal in 2013 conducted an international online survey to explore levels of HIV knowledge and HPV vaccination knowledge in 2409 men and women across the UK, Australia and the US. Sixty-two (62%) of UK women (marriage 41.8) had heard of HPV through in their study not high but however higher than the awareness of from our study which was 45% (table 1).

Furthermore, more Sherman and Nailor (2018) explored knowledge about HPV in a sample of parents of teenage boys, in the UK found that 63.6% of parents who also had daughter had previously heard of HPV, this study was also not in agreement with our study of 40% though not the vaccine but with the causative organism. Previous research in the UK exploring the impact of mothers attitudes on HPV vaccination uptake has focused on screening in history.<sup>6</sup>

In the chance study by Fagbule A et al in Nigeria 23-30% of the projected cumulative cases of cervical cancer by 2050 were prevented in their simulations, compared to 13% with single age cohort vaccination. This study was conducted among secondary school students in Nigeria. The implication of the “CHANCE STUDY” emphasized on cancer prevention strategies. For this reason, our awareness of cervical cancer vaccination needs to be stepped (up especially with respect to) at the federal, state and local government level; especially in the rural communities where there are vaccine resistance ideologies taking into consideration the level of awareness as 40% from our study (see table 4).

The means of information of cervical cancer vaccination among female adolescent revealed that the media was the most common means by which the adolescent were had information of (see table 5). In majority of studies, information on the awareness of cervical cancer vaccination was through the internet.

## Conclusion:

This study revealed the awareness of cervical Cancer vaccination to be below average. Taking into consideration that cervical cancer is the commonest genital tract malignancy in Nigeria. Prevention is always the key - awareness of cervical cancer vaccination is on one hand, and the other hand vaccinating the adolescent based in our sub-region with thus reducing the morbidity and mortality associated with cervical cancer.

## Reference

1. WHO IARC marks cervical cancer awareness month 2022. <https://www.iarc.WHO.irt>iarc-mark> (accessed 20/9/2022)
2. Giuseppe GDi et al. HPV vaccination and cervical cancer screening Assessing and Adherence in Detained women Vaccines 2022; 10(8):1280
3. Drokow EK et al Awareness of Cervical cancer and Attitude towards Human Papilloma using and it's vaccine Among Ghanaians. <https://doi.org/10.3509/fonc.2020.01651>
4. Paddy S et al. Association of human papillomavirus vaccination with Cervical cancer screening Asystematic review and meta-analysis. Medicine 2022; 101 (28):e29329.
5. Egbon M, Ojo T, Aliyu A, Bagudu ZS. Challenges and lessons from a school - based human papilloma ( HPV) Vaccination program for Adolescents girls in a rural Nigerian Community. BMC Public Health 2022; 22: 61.
6. Patrick L, Bakeer-Kitaka S, Rujumbi J, Maladu OO Encouraging improvement in HPV vaccination coverage among adolescent girls in Karsala, Uganda. PLOS One 2022; 7(6):e0269655.
7. Taylor J et al HPV vaccination and cervical screening the knowledge and attitude of adolescent girls. <https://www.tandfonline.com> (accessed 7/10/2022)
8. Byazin et al. knowledge and attitude about human papilloma vaccine among female high school students at Jimma town, Ethiopia Human vaccines & Immunotherapeutics 2022; 18:1
9. FUSCH p1 Ness LR. Are we there yet? Data saturation in qualitative research. The qualitative Report 2015;20(a):1408.
10. Griffioen AM et al. Perspective on decision making about human papillomavirus vaccination among 12years old girls and their mother. Childinical pediatric 2012; 51(6) 560-568
11. Henderson L et al. A false sense of security? Understanding the role of the HPV vaccine on future cervical screening behavior: a qualitative study of UK parent and girls of vaccination age, town of medical screening 2011;18(1):41-45.
12. Marlow LA, Zimef GD MC Cafery KJ, Ostinic R, Walter J. knowledge of human papilloma virus (HPV) and HPV vaccination; an international comparison. Vaccine 2013;31(5):
13. McRee AL, Gottlieb SL, Brearer NT. Mother daughter communication about HPV vaccine. The journal of Adolescent Health 2011;48:(3)
14. Petro J, Gilhan C, Fletcher O, Matthew F E. The cervical cancer epidemic that screening has prevented in the UK. The Lancet 2004; 364(9430): 249-256
15. Sherman SM, Nailer E. Attitude towards and knowledge about Human Papilloma virus (HPV) and the HPV vaccination in parents of teenage boys in the UK PLoS one 2018; 13(4): e0195801
16. Sherman SM et al. Awareness and knowledge of HPV and cervical cancer in female student. A survey (with centenary note). Journal of the Institute of Obstetrics and Gynaecology 2016;36(1): 76-80
17. Spencer AM Roberts SA, Brabin L, Patrick J, Verma A. sociodemographic factor predicting mother's cervical screening and daughter HPV vaccination uptake. J Epidemiol Community Health 2014; 86(6): 57-57.

18. Bosch FX et al. Comprehensive control of human papillomavirus infections and related diseases. *Vaccine* 2013;31:f1-31
19. Black E, Richmirid R. Prevention of cervical cancer in sub-saharan Africa: the advantage and challenges of HPV vaccination vaccine (Basel)2018:6(3):61
20. Howard N et al. What works for Human Papillomavirus vaccine introduction in low and middle income countries? *Papillomavirus. Res.* 2017; 4:22-5
21. Osawa S, Wonodi C, Babolola O, Ismail T, Bridget J. Using best-worst Scaling to rank factors affecting vaccination demand in Northern Nigeria. *Vaccine* 2017;35(47):6429-37.
22. Wilson R, HPV vaccine accptable in West Africa Systematic literature remain. *Vaccine* 2021;(37):5277-84
23. Fagbule O F et al. Knowledge of HPV and HPV vaccine among senior secondary School students in Nigeria. Implication on cancer prevention strategies, the chance study. *Populmed.*
- 24.. Rabin KA et al. Parented accystence of human papilloma virus vaccination for adolescent girls in Lagos, Nigeria. *J Family Med Prim care* 2020; 9(6)2950-7
25. Turiho AK et al. effect of school based human papillomavirus (HPV) vaccination on adolescent girls. Knowledge and acceptability of the HPV vaccine in Ibandu District in Uganda Afri *J Reprod Health* 2014; 18(4): 45-53.

**Acknowledgement:**

Mother, Baby and Adolescent Care Global Foundation

