





Knowledge of Human Papillomavirus Infections and Level of Vaccination among Women Attending Antenatal in Tertiary Hospitals in Rivers State

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Abstract	Article History
<p>The study is aimed at ascertaining the knowledge of Human Papillomavirus infections and level of vaccination among women attending antenatal in tertiary hospitals in Rivers State. A descriptive survey design was adopted for the study. The study used simple random sampling technique to select 100 women attending antenatal from a population of 400 pregnant women in tertiary hospitals in Rivers State. A self-structured validated instrument was used to collect data. Statistical Package for Social Science version 22.0 was used to analyze the data. Descriptive statistics was used as data analysis method. The study revealed that the level of knowledge of HPV infections and vaccination among pregnant women was low. The study revealed that the level of HPV vaccination among pregnant women was also low. This could be attributed to lack of enough sensitization, fear of the unknown, non-availability/cost of the vaccines, religion among others. The study therefore recommends that there is urgent need to improve awareness and enlightenment on HPV infections and vaccination among women as it's a very important reproductive health issue.</p> <p>Keywords: Vaccination, Infection, Human Papillomavirus, Knowledge.</p>	<p>Received: 17 May 2023 Accepted: 30 May 2023 Published: 09 June 2023</p> <p>Scan QR code to view*</p>  <p>License: CC BY 4.0*</p>  <p>Open Access article.</p>
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Introduction

Cervical cancer is one of the world's major public health issues, as well as the most common sexually transmitted infection among women. Over 99% of cervical cancer cases are associated with genital infection with certain human papillomaviruses (Okunade, 2020). Cervical cancer is the second most common female malignant tumours worldwide. The necessary cause of cervical cancer has been identified as persistent infection with high-risk human papillomavirus (HPV) (Mattiuzzi & Lippi, 2020). Cancer is estimated to account for approximately 5.8% of total national mortality in Nigeria. The most common cancers in Nigerian's adult population are breast cancer (30.2%), cervical cancer (13.4%), and colorectal cancer (5.7%) (Weaver, 2016).

Human Papillomavirus is the most common sexually transmitted infection (STI). Approximately 75% of sexually active people are infected with HPV during their lifetime (Chan *et al.*, 2019). More than 100 HPV genotypes are known. Of these, at least 13 genotypes are the cause of cervical cancer and genital and pharyngeal cancers. HPV types (16 and 18) are known to cause 70% of cervical cancers. HPV types 16 and 18 can also cause cancer in other parts of the body, including the vulva, vagina, penis, and anus and 90% of cases of genital warts are caused by HPV types 6 and 11 (Bruni, 2016). The vast majority of HPV

infections are asymptomatic or sub-clinical, which has contributed to the rapid transmission and spread of the virus (Sockerider & Krishnan, 2021). The human papillomavirus vaccine is one of the most effective ways to prevent HPV infections in women who have never been infected with HPV (Alene *et al.*, 2020). The HPV vaccine was first developed by the University of Queensland in Australia and the final form was made by Georgetown University medical center, the University of Rochester, and the United States (U.S) national cancer institute (Sinshaw *et al.*, 2022). Food and drug agencies approved the first preventive HPV vaccine under the trade name Gardasil, thereby 64 countries nationally implemented HPV immunization programs (Trucchi *et al.*, 2020).

One of the primary prevention strategies for HPV infection is vaccination. HPV vaccination can prevent more than 90% of these cancers (Mattiuzzi & Lippi, 2020). Two HPV vaccines (Gardasil and Cervarix) protect against the two strains of HPV types 16 and 18 (Alene *et al.*, 2020). The quadrivalent vaccine is also highly efficacious in preventing genital warts, which are caused by infection with HPV type 6 causes anogenital warts and HPV type 11 causes oropharyngeal cancer (Alene *et al.*, 2020). Gardasil works by stimulating the immune system to attack HPV types 6, 11, 16, and 18. Once Gardasil is administered, the body's immune system recognizes the viral proteins in Gardasil as foreign, and develops

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antibodies against them, thus providing immunity from future infections (Bruni, 2016).

The vulnerability of young, sexually active women is recognized and steps are planned in many countries to implement HPV vaccination. The world health organization recommends that the primary target group for HPV vaccination is girls aged 9–14 years and secondary target populations are females aged ≥ 15 years. The HPV vaccine can prevent infection and cancer at an early age before any exposure to the virus. The HPV vaccine is recommended for everyone through the age of 26 years. Vaccination usually begins at 11 or 12 years of age, but can be given as early as 9 years of age. The decision to vaccinate should be individualized and discussed with the health care provider for older than 26 years of age (Sockrider & Krishnan, 2021). The Advisory Committee on Immunization Practices now recommends a 2-dose series starting at 11 to 12 years (Bruni, 2016). Vaccinating girls before initiation of sexual activity is an important primary prevention intervention in a comprehensive cervical cancer prevention and control program. Exposure to HPV during adolescence and young adulthood may cause cervical cancer in later years. Because of this, Nigeria had initially planned to introduce the HPV vaccine through a routine immunization program (Alene *et al.*, 2020).

The HPV vaccine has been widely introduced in the vaccination programs of Nigeria, however, is not popularly accepted in Nigeria at present. In addition, despite the numerous published studies focusing on the topic of HPV and vaccination in recent years, there is no comprehensive information concerning the acceptance and obstacles associated with vaccination among the population of Rivers State. In order to develop a practical vaccination program in the future, it is imperative to assess the level of awareness and knowledge about HPV, and the general attitude towards HPV vaccination among the Rivers State population, as they are important behavioral determinants that will ultimately affect the acceptance of vaccination among them. Therefore, we conducted a study to ascertain knowledge of human papillomavirus infections and level of vaccination among women attending antenatal in tertiary hospitals in Rivers State, Nigeria.

Methodology

This study used a descriptive cross-sectional survey approach. The research includes all attending antenatal in tertiary hospital in Rivers State. There are 400 women attending antenatal in tertiary hospital in Rivers State, according to a pilot study. The study used a simple random sampling technique. The ballot mechanism was used to choose the ladies at random. 400 women attended prenatal care, of which 100 women made up the sample size. The researcher created a self-structured questionnaire as the tool for gathering data. Version 22.0 of the Statistical Package for Social Science was employed. While chi-square statistics was used to test the hypothesis, while mean and simple percentages were used to respond to the research questions.

Results

Table 1 shows that 100% of the respondents were females, 25% of the respondents were between the age of 21 – 30 years, 75% were between the age of 31 – 40 years, 10% of the respondents were single, 80% were married, 5% were divorced while 5% were widows.

Table 1: percentage and frequency of demographic data

Gender	Percentage
Male	0
Female	100
Age	
20 -30	25
31- 40	75
Marital status	
Single	10
Married	80
Divorced	5
Widow	5

Table 2 shows the mean ratings and standard deviations of the level of knowledge of HPV infections and vaccination among women attending antenatal in tertiary hospital in Rivers State. The mean value ranges from 1.02 to 2.23 with a grand mean value of 1.19 which is below the criterion mean of 2.5 thereby showing that the level of knowledge HPV infections and vaccination among women attending antenatal in tertiary hospital in Rivers State is low.

Table 2: mean and standard deviation of Knowledge level of the HPV among women attending antenatal in tertiary hospital in Rivers State.

S/N	ITEMS	Mean	Std. Deviation
1	I am aware that HPV exist	1.02	0.774
2	I have heard of HPV but I have not tested myself if I'm carrier	2.23	.673
4	I know that HPV infection leads to cervical cancer	2.13	.497
5	I know HPV can be sexually transmitted	1.96	.176
6	I have also heard that HPV has a vaccine	2.10	.192
7	I was told that HPV vaccine prevents cervical cancer	2.03	.837
Average Mean and Standard deviation		1.91	.524

Table 3 shows the mean ratings and standard deviations of level of HPV vaccination among women attending antenatal in tertiary hospitals in Rivers State. The findings revealed that the mean value ranges from 1.50 to 3.91 with a grand mean value of 2.41 which is below the criterion mean of 2.5 thereby showing that the level of HPV vaccination among women attending antenatal in tertiary hospitals in Rivers State is low.

Table 3: Mean and standard deviation of the level of vaccination among women attending antenatal in tertiary hospital in Rivers State.

N	Items	Mean	SD
1	I can pay to receive the vaccination even if it requires financial commitment	2.2	.1
2	I voluntarily recommend that my children take the vaccine	1.7	.41
3	I voluntarily recommend my child and others to take the vaccine only if they are sexually active	1.5	.13
4	I have not seen anyone that has taken the vaccine.	2.4	.90
5	I only recommended the vaccine to my child for the fear of cervical cancer in the future	1.9	.63
6	Lack of enough sensitization is the reason why most women have refused to take the vaccine	3.9	.42
7	I do not trust the vaccine that is why I have not given my children	3.8	.38
8	I was told that there are too many side effect to the vaccine that is why I refused to take it	3.1	.33
9	I personal asked for reservation of the vaccine	2.1	.51
10	When I asked to be vaccinated, I was told that the vaccine is not available in the facility.	3.2	.12
Average mean and standard deviation		2.41	.235

Table 4 show that the Pearson chi square statistic is 48.000 and the p value is 0.216. The likelihood chi-square is statistic is 18.005 and the p-value is 0.854. Therefore, at a significant level of 0.05, we reject H_0 and accept the H_3 , hence we conclude that there is a significant relationship between knowledge and willingness to accept the HPV vaccines among women attending antenatal in tertiary hospitals in Rivers State.

Table 4: Relationship between Knowledge of HPV vaccines and willingness to accept the HPV vaccines among women attending antenatal in tertiary hospital in Rivers State.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	48.000 ^a	9	.216
Likelihood Ratio	18.005	9	.854
Linear-by-Linear Association	3.698	1	.030
N of Valid Cases		9	

Discussion

The purpose of the study is to determine the level of vaccination and knowledge of HPV infections among women receiving antenatal care at tertiary hospitals in Rivers State. The study's results showed that women undergoing antenatal care at tertiary hospitals in Rivers State had a poor level of knowledge about HPV infections and vaccination. This was comparable to a research by Hassan and Awosan (2018) in Sokoto, Nigeria, and one by Desaraju and Kodey (2021), which found that women had little understanding of the causes of cancer and how to screen for it. The results of the study by Ebu *et al.* (2021) among Ghanaian women also indicated that while basic knowledge of HPV facts was adequate, more in-depth and, in some cases, fundamental information was inadequate.

The women were well aware that HPV infection results in warts in humans, but they were less aware that HPV infection also causes cervical cancer. This is comparable to a research by Ezebialu *et al.* (2017) among women at Chukwuemeka Odumegwu Ojukwu University Teaching Hospital in South-Eastern Nigeria, which found that while awareness of cervical cancer was generally high, understanding of its etiology was relatively low. Less than half of the respondents in a research by Hassan and Awosan (2018) among female healthcare workers in Sokoto, Nigeria, had a strong understanding of HPV infection, and only a small number of them had a good understanding of HPV vaccine, which led to low adoption of the HPV vaccination.

The result also revealed that the willingness to accept the HPV vaccines was also low. The findings of the study is in line with that of Jain *et al.*, (2018) who opined that the main reason given by many of the women for not accepting the HPV vaccines or recommending them for preadolescent girls was insufficient information about the efficacy and safety of the vaccines. Another reason given was that preadolescent girls were not at risk for HPV infection or cervical cancer and therefore had no need for the vaccines. Other studies have also identified these factors as barriers to effective HPV immunization (Christian *et al.*, 2014).

The outcome further demonstrated low level of HPV vaccination. This is consistent with the findings of other studies that found poor vaccination rates for HPV (Elit *et al.*, 2012; Ndikom and Oboh, 2017). Only 13.3% of undergraduate students in a Hong Kong study had received the HPV vaccine, according to the study's findings (Oguntayo *et al.*, 2011). Only a small number of nurses reportedly received the vaccination in Turkey (Park *et al.*, 2015). Despite the fact that these studies were carried out in various contexts, the results strongly imply that the issue of low vaccination rates against HPV infection is a global one.

The study also identified other factors such as insufficient sensitization, mistrust of the vaccination, religion, fear of the unknown, unavailability, expense, and others. This study, which focused on the attitudes of health professionals, is comparable to one that Nguyen *et al.* (2020) carried out

in a Nigerian community. According to the survey, perceived challenges to HPV vaccination include lack of knowledge, vaccine accessibility and cost. Additionally, Zhang *et al.*'s (2017) study in Henan Provincial People's Hospital found that most people were reluctant to get immunized due to the vaccine's high cost, their religious beliefs, and a lack of confidence in the vaccine. In order to increase the adoption of HPV, it is necessary to dispel the myths and misconceptions about vaccinations against HPV.

Conclusion and Recommendations

The study concludes that the level of knowledge of HPV infections and vaccination was low among pregnant women. Based on the findings of the study, the study recommends the following:

1. There is urgent need to improve awareness and enlightenment on HPV infection and vaccination among women as it a very important reproductive health issue.
2. The HPV vaccines should be included in the nation's immunization schedule and should be made free just like other vaccines.
3. The cost of cervical screening test should be subsidized by the government and policy on cervical cancer screening should be developed as that will increased the awareness and acceptability.
4. There should be policy on HPV infection/uptake of HPV vaccine in the primary schools and uptake of cervical screening test among the public by way of making it compulsory for workers.
5. The sensitization programme on HPV infection and vaccination should be intensified in the schools, churches, markets and to the general public.

References

- Alene T, Atnafu A, Mekonnen ZA, Minyihun A. (2020). Acceptance of Human Papillomavirus Vaccination and Associated Factors Among Parents of Daughters in Gondar Town, Northwest Ethiopia. *Cancer Management and Research*. 12:8519. pmid:32982444.
- Bruni L., (2016). Global estimates of human papillomavirus vaccination coverage by region and income level: a pooled analysis. *The Lancet Global Health*, 2016. 4(7): p. e453–e463. pmid:27340003.
- Chan S. S. C., Ng B. H. Y., Lo W. K., Cheung T. H., & Chung T. K. H. (2019). Adolescent girls' attitudes on human papillomavirus vaccination. *Journal of Pediatric and Adolescent Gynecology*, 22(2), 85–90. pmid:19345913.
- Mattiuzzi C. and Lippi G., (2020). Cancer statistics: a comparison between world health organization (WHO) and global burden of disease (GBD). *European journal of public health*, 30(5): p. 1026–1027. pmid:31764976.
- Okunade K.S., (2020). Human papillomavirus and cervical cancer. *Journal of Obstetrics and Gynaecology*, 40(5): p. 602–608. pmid:31500479.
- Onowhakpor AO, Omuemu V., Osagie OL, Odili CG. (2016). Community medicine and primary health care human papilloma virus vaccination: knowledge, attitude and uptake among female medical and dental students in a tertiary institution. *J Community Med Prim Heal Care*. 28:101–08.
- Sinshaw M.T., Berhe S., and Ayele S.G., (2022). Knowledge and Attitude Towards Human Papillomavirus Vaccine and Associated Factors Among Mothers Who Have Eligible Daughters in Debre Markos Town, Northwest Ethiopia. *Infection and Drug Resistance*, 15: p. 781. pmid:35264861.
- Sockrider M. and Krishnan J.A., (2021). How Vaccines Work to Prevent Infections. *American Journal of Respiratory and Critical Care Medicine*, 203(6): p. P16–P17. pmid:33565920.
- Trucchi C, Amicizia D, Tafuri S, Sticchi L, Durando P, Costantino C, (2020). Assessment of knowledge, attitudes, and propensity towards HPV vaccine of young adult students in Italy. *Vaccines*. 8(1):1–16.
- Weaver BA. (2016). Epidemiology and natural history of genital human papillomavirus infection. *J Am Osteopath Assoc*. 106(3 suppl 1): S2–S8. pmid:16729554.

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