Original Article

KNOWLEDGE OF HUMAN PAPILLOMA VIRUS AMONG COLLEGE OF NURSING STUDENTS AT THE UNIVERSITY OF BENIN TEACHING HOSPITAL, NIGERIA

Isikhuemen M, Esene V, Kubeyinje W

Department of Obstetrics and Gynaecology, University of Benin Teaching Hospital, Edo State, Nigeria

Corresponding author: Maradona Isikhuemen; maradona4real2002@yahoo.com

Abstract

Background: Human papillomavirus (HPV) is a double-stranded DNA virus that commonly infects humans. Infection with HPV is common after sexual initiation, but the majority of infections do not cause symptoms or disease and are usually cleared by the body's immune system. A small fraction of those infected may progress to invasive disease.

Objective: To assess the knowledge of HPV among college of nursing students at the University of Benin Teaching Hospital, Nigeria.

Methodology: Data was collected from 378 consenting participants, using a questionnaire. A random sampling technique was used to identify participants. Collected data was validated and carefully analyzed. Ethical clearance was obtained from the Research and Ethics Committee of the University of Benin Teaching Hospital.

Result: Most respondents (85.4%) have received previous education about human papillomavirus. In this study, 94.4% of the respondents correctly identified vaccination as the most effective method to prevent HPV infection. Only 14.6% have been vaccinated against the human papilloma virus.

Conclusion: Most respondents demonstrated awareness of the human papillomavirus. Although study participants recognized the importance of vaccination, only a few have been vaccinated against the human papillomavirus.

Keywords: Papillomavirus, Transmission, Cancer, Vaccination.

Cite this article: Isikhuemen M, Esene V, Kubeyinje W. Knowledge of human papilloma virus among college of nursing students at the University of Benin Teaching Hospital, Nigeria. Niger Delta J Med Med Res. 2026;5(2):63–69.

INTRODUCTION

Human papillomavirus (HPV) is a common sexually transmitted infection that can lead to cancer and other health problems. It is the most common sexually transmitted viral infection worldwide [1]. The main population affected by this virus is women of reproductive age; therefore, their knowledge of HPV is crucial for adopting preventive measures. There are different HPV genotypes, some of which affect the anogenital region, while others affect the oropharynx. The virus may cause malignant transformation of affected cells. These potentially devastating consequences underscore the relevance of HPV in clinical practice. Most genital HPV infections are asymptomatic, transient, and resolve spontaneously without causing invasive disease. However, persistent infection is responsible for most cases of cervical cancer. Other cancers associated with HPV

include penile, vulvar, vaginal, anal, and oropharyngeal cancers [2]. The prevalence of HPV infection among women aged 24–45 years is 16.4%, ranging from 7.6% in the Philippines to 29.2% in France [1].

The prevalence of HPV infection in West Africa is high and may be attributed to human immunodeficiency virus (HIV) co-infection, sexual behaviour, and limited access to healthcare. The burden is particularly high in Ghana and Nigeria, with prevalence rates of 22% and 18%, respectively [3]. There is, therefore, a need to further evaluate the factors contributing to persistent HPV infection among these populations. Assessing knowledge of HPV infection and its vaccination is an important step in planning interventions aimed at reducing the burden of the disease. The high prevalence of HPV infection in Nigeria suggests that knowledge of HPV infection, vaccination, and the acceptability of HPV vaccines among the general public may not be optimal. Fortunately, HPV infection is preventable through vaccination.

Women of reproductive age may hold misconceptions about HPV, such as believing that it is transmitted only through penetrative sexual intercourse or that it affects only women. Such misconceptions may result in inadequate preventive practices and poor participation in screening programmes. Diverse cultural backgrounds may also constitute barriers to understanding HPV infection and accepting vaccination.

The eradication of HPV-related diseases can be achieved if there is adequate knowledge of the disease and its consequences, particularly among healthcare workers. Healthcare workers play a major role in raising community awareness about the importance of vaccination. Evaluating the perceptions of healthcare workers regarding HPV infection and its vaccination is therefore an important step towards identifying knowledge gaps and providing appropriate education, which can subsequently be disseminated to various communities. The aim of this study was to assess knowledge of human papillomavirus among College of Nursing students at the University of Benin Teaching Hospital.

MATERIALS AND METHODS

Study Design and Setting: The study was conducted among College of Nursing students at the University of Benin Teaching Hospital, Edo State, Nigeria. The University of Benin Teaching Hospital is a tertiary healthcare facility where nursing students are exposed to clinical practice. The study was conducted from January 1, 2025, to June 30, 2025.

Inclusion and Exclusion Criteria: Consenting women of reproductive age in the college were included in this study. Those who were unwilling to participate were excluded.

Sample Size Determination: The sample size was determined using the formula:

$n = Z^2Pq/d^2$

Using a prevalence of 33.8% [1] (respondents who knew that sexually active males and females are at risk of acquiring HPV infection in a previous study), a minimum sample size of 344 was calculated. Ultimately, a total of 378 questionnaires were retrieved and analysed. The margin of error was set at 5%.

Sampling Technique: Respondents were selected using a random sampling technique.

Instrument for Data Collection: A questionnaire containing both open-ended and closed-ended questions was designed and self-administered. All completed questionnaires were collected and securely stored until analysis.

Data Analysis: Data were analysed using the IBM Statistical Package for the Social Sciences (SPSS) software.

Ethical Approval: Ethical approval was obtained from the Ethics and Research Committee of the University of Benin Teaching Hospital. Participation in the study was voluntary and anonymous. Confidentiality and privacy were maintained throughout the study. Informed consent was obtained from each participant before administration of the questionnaire.

RESULTS

The sociodemographic characteristics of the study participants are presented in Table 1. The age group with

the highest frequency was 19–35 years (55.3%). A significant proportion of respondents identified as Christians (84.7%). Most respondents were nulliparous (71.7%) and single (68.5%).

The results indicate that the majority of respondents (85.4%) reported having received previous education about HPV (Table 2). About half of the respondents learned about HPV through classroom lectures (49.7%). An overwhelming majority recognised HPV as a common sexually transmitted infection (97.1%). Regarding transmission routes, 61.1% believed that HPV could be transmitted through non-sexual contact. Only 5.6% of participants recognised genital warts as a possible outcome of HPV infection, while 4.2% acknowledged that HPV infection could cause anal cancer.

Remarkably, 94.4% of respondents recognised that HPV vaccination is the most effective method of preventing HPV infection. When asked whether HPV vaccination is only for females, 17.2% answered in the affirmative. Participants also demonstrated good knowledge of the association between HPV and cervical cancer, with 89.2% identifying HPV as the causative agent. Most respondents (91.5%) believed that HPV can be transmitted through oral sex (Table 3).

Only 14.6% of respondents reported having received the HPV vaccine, while 20.9% had undergone HPV screening. A significant majority (87.7%) acknowledged that HPV can be transmitted through the sharing of sex toys. Regarding condom effectiveness, 43.1% (163) believed that condoms provide complete protection against HPV infection. Concerning the efficacy of HPV vaccination, 65.4% (244) believed that the vaccine is effective against all HPV types, while 34.6% disagreed. Regarding the natural resolution of HPV infection, only 47 (12.9%) respondents believed that HPV infections could resolve spontaneously without treatment (Table 4).

Table 1: Socio-Demographics of Respondents

Variable	Frequency (N=378)	Percentage (%)
Age		
15-18	142	37.6
19-35	209	55.3
>36	27	7.1
Religion		
Christianity	320	84.7
Islam	58	15.3
Parity		
0	271	71.7
1-2	76	20.1
3-5	31	8.2
Current level		
100	65	17.2
200	121	32
300	95	25.1
400	97	25.7
Marital status		
Single	259	68.5
Married	108	28.6
Divorced	11	2.9

Table 2: Knowledge of Human Papilloma Virus among Study Participants

Variable	Frequency(N=378)	Percentage (%)
Previous HPV education		
Yes	323	85.4
No	55	14.6
Sources of education		
Classroom instruction	188	49.7
Online resources	75	19.8
Healthcare provider	35	9.3
Peer discussion	50	13.2
Others	30	7.9
HPV means human papilloma virus		
Yes	373	98.7
No	5	1.3
HPV common sexual transmitted infection		
Yes	367	97.1
No	11	2.9
Can HPV be transmitted through non sexual contact		
Yes	231	61.1
No	147	38.9
HPV is transmitted through skin to skin		
Yes	348	92.1
No	30	7.9

Table 3: Knowledge and Practice of Human Papilloma Virus Prevention among the Study Participants

Variable	Frequency (N=378)	Percentage (%)
HPV vaccination is most effective way to prevent HPV		
Yes	357	94.4
No	21	5.6
HPV vaccination is only for females		
Yes	65	17.2
No	313	82.8
HPV can cause cervical cancer		
Yes	337	89.2
No	41	10.8
HPV is contagious through sharing of personal items		
Yes	236	62.4
No	142	37.6
HPV can be transmitted through oral sex		
Yes	346	91.5

No	32	8.5
Have you received HPV vaccine		
Yes	55	14.6
No	323	85.4
Do you practice safe sex		
Yes	333	91.7
No	30	8.3
Have you been screened for HPV		
Yes	79	20.9
No	299	79.1

Table 4: Knowledge of Human Papilloma Virus Transmission and Prevention

Variable	Frequency (N=378)	Percentage (%)
HPV can be transmitted through sharing sex toys		
Yes	327	87.7
No	46	12.3
Condom provide complete protection against HPV		
Yes	163	43.1
No	215	56.9
HPV vaccination is effective against all HPV		
Yes	244	65.4
No	129	34.6
HPV can cause other cancer beside cervical cancer		
Yes	211	58.1
No	152	41.9
HPV infection can resolve on his own		
Yes	47	12.9
No	316	87.1

DISCUSSION

The survey, which involved 378 participants, provided valuable demographic information as well as insights into knowledge and awareness of HPV transmission, prevention, and vaccination. The findings showed that the majority of respondents had previously received education about HPV. Remarkably, most respondents recognized HPV vaccination as the most effective method of preventing HPV infection. However, when asked about the effectiveness of condoms, approximately half of the respondents believed that condoms provide complete protection against HPV infection. Despite the high level of awareness, vaccine uptake was poor.

Among healthcare workers, awareness and knowledge of HPV are particularly important because they facilitate the dissemination of accurate health information to community members who often rely on them for guidance on health-related issues. Increasing awareness and knowledge of HPV among the general population is a critical step towards reducing the burden of the infection and preventing its associated complications. In this study, 85.4% of respondents reported having received prior education about HPV, mainly through classroom lectures and online resources. This reliance on formal education highlights the important role of educational institutions in disseminating information about HPV. Medical curricula should therefore include dedicated components that

educate trainees on diseases of public health importance, including HPV infection and its consequences. However, the finding that 14.6% of respondents had not received prior education on HPV indicates an important knowledge gap that requires attention. Repeated exposure to public health information may improve understanding and retention of knowledge. Most respondents also correctly identified HPV as a sexually transmitted infection, which is encouraging given that sexual contact is the primary mode of transmission of the virus [1].

In this study, 94.4% of respondents correctly identified vaccination as the most effective method of preventing HPV infection. Similar findings of high levels of knowledge regarding HPV and its vaccination have been reported in other studies [4,5]. This contrasts with previous studies that reported poor knowledge of HPV infection and vaccination [6–10]. These differences may be attributable to variations in study populations. The present study was conducted among nursing students in a medical institution, a factor that may have contributed to the relatively high level of awareness observed.

Despite the high level of knowledge, there remains a substantial unmet need regarding HPV vaccination. Only 14.6% of respondents reported having received the vaccine, indicating a significant gap between awareness and uptake. Although the study was conducted in an urban setting within a healthcare institution, this did not translate into high vaccination coverage. This finding is particularly important because healthcare workers are expected to play a leading role in educating the public about the benefits of vaccination. Therefore, the low vaccination rate observed among this population is concerning. Factors that may contribute to poor vaccine uptake include limited availability, cost, and vaccine hesitancy. Providing reassurance regarding vaccine safety and addressing concerns about potential side effects may help improve uptake [11]. Investigating these factors is especially relevant in the context of ongoing nationwide HPV vaccination campaigns. Educational interventions should not only increase awareness of the benefits of vaccination but also address barriers that hinder vaccine access and acceptance. Furthermore, HPV vaccination is recommended for both males and females; therefore, efforts should be directed towards promoting vaccination among both sexes. As future healthcare providers, nursing students require continuous education and training to strengthen their knowledge of HPV infection and vaccination and to enhance their capacity to promote preventive health practices.

This study is not without limitations. First, it was a hospital-based study conducted among women with a medical background, which may limit the generalizability of the findings to the wider population. Second, the study did not explore the determinants of HPV awareness and vaccine uptake among the participants. Future studies should investigate these factors to provide a more comprehensive understanding of the barriers to HPV vaccination.

CONCLUSION

The findings of this study indicate a good level of knowledge and awareness of HPV and its health implications among the respondents. Most participants demonstrated an understanding of the role of HPV vaccination in preventing HPV-related diseases and recognized the importance of screening. However, a significant gap exists between awareness and vaccine uptake, as only a small proportion of respondents had received the HPV vaccine. To bridge this gap, targeted educational and behavioural interventions are required. Such initiatives should focus on correcting misconceptions, promoting the benefits of vaccination and regular screening, addressing barriers to vaccine uptake, and engaging diverse communities through tailored health promotion strategies.

Competing Interest: The authors declare no competing interests.

REFERENCES

1. Lawal AF, Issa A, Ibrahim OR, Ogunkunie TO, Omokunie TO, Saka MJ. Knowledge of human papillomavirus (HPV) infection and human papillomavirus vaccine among undergraduate students at a Nigerian university. *Discover Public Health.* 2025;22:260. doi:10.1186/s12982-025-00655-x.

2. Okunowo AA, Gabriel-Raji FO, Yusuf-Awesu SA, Salawu-Giwa R, Familusi OE. Predictors of knowledge of human papillomavirus infection and its related diseases: a study of women in a Nigerian tertiary institution. *Asian Pac J Cancer Care*. 2022;7(2):219-230.
3. Magagi LH, Lagare A, Bowo-Ngandji A, Hassane F, Maiga AZ, Issa M, et al. Prevalence and genotype distribution of human papillomavirus (HPV) infections among West African populations: a systematic review and meta-analysis. *Infect Agent Cancer*. 2025;20(1):62. doi:10.1186/s13027-025-00659-x.
4. Ohaeri B, Adefolaju AO, Onyeneho CA. Knowledge, attitudes and perceptions of Nigerian parents towards human papillomavirus (HPV) vaccines. *Eur J Midwifery*. 2020;4:1-8. doi:10.18332/ejm/114886.
5. Nzisa I, Kamenwa R, Orwa J, Samia P. Knowledge of human papillomavirus vaccine as a determinant of uptake among guardians of adolescent girls: a single hospital experience in Nairobi, Kenya. *Glob Pediatr*. 2025;12:100249. doi:10.1016/j.gpeds.2025.100249.
6. Florkiewicz M, Tobolska A, Bączek G. Knowledge of prevention and treatment of human papillomavirus (HPV) infections among young men. *Med Sci Pulse*. 2021;15(3):24-30.
7. Oboro IL, Alex-Wele MA, Ogaji DS. Human papillomavirus, risk factors and sequelae: how much do female adolescents in Port Harcourt metropolis know? *Niger Health J*. 2023;23(1):452-459.
8. Isara A, Osayi N. Knowledge of human papillomavirus and uptake of its vaccine among female undergraduate students of Ambrose Alli University, Ekpoma, Nigeria. *J Community Med Prim Health Care*. 2021;33(1):64-75.
9. Ezeanochie M, Olasimbo P. Awareness and uptake of human papillomavirus vaccines among female secondary school students in Benin City, Nigeria. *Afr Health Sci*. 2020;20(1):45-50.
10. Ken-Amoah S, Blay Mensah LB, Eliason S, Anane-Fenin B, Agbeno EK, Essuman MA, et al. Poor knowledge and awareness of human papillomavirus and cervical cancer among adult females in rural Ghana. *Front Trop Dis*. 2022;3:971266. doi:10.3389/fitd.2022.971266.
11. Husain Y, Alalwan A, Al-Musawi Z, Abdulla G, Hasan K, Jassim G. Knowledge towards human papillomavirus (HPV) infection and attitude towards its vaccine in the Kingdom of Bahrain: cross-sectional study. *BMJ Open*. 2019;9(9):e031017. doi:10.1136/bmjopen-2019-031017.