International Journal of Trends on OncoScience
Content Available at www.ijtos.com ISSN-2583-8431

AN ASSESSMENT OF KNOWLEDGE ATTITUDE AND PRACTICE OF CERVICAL CANCER SCREENING AND VACCINATION AMONG WOMEN IN GWAGWALADA AREA COUNCIL, ABUJA NIGERIA

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Abstract
Background: Cervical cancer remains a major public health concern in Nigeria, with low uptake of screening and Human Papillomavirus (HPV) vaccination contributing to its high morbidity and mortality. Understanding the knowledge, attitude, and practice (KAP) of women regarding cervical cancer prevention is essential for designing effective interventions. The objective of the study was to assess the knowledge, attitude, and practice of cervical cancer screening and HPV vaccination among women in Gwagwalada Area Council, Abuja, Nigeria.
Methods: A descriptive cross-sectional study was conducted among 244 women aged 18–49 years in Gwagwalada Area Council who were selected by using both cluster sampling techniques. Data were collected using a pretested semi-structured, interviewer-administered questionnaire assessing socio-demographic characteristics, knowledge of cervical cancer and HPV, attitudes toward screening and vaccination practices. Data were analyzed with SPSS Statistic version 21 using descriptive statistics and chi-square tests to determine associations between variables. A p-value < 0.05 was considered statistically significant
Results:The study revealed low knowledge of cervical cancer and HPV vaccine (54.5%). A good number of the respondent (78.7%) had good attitude towards screening and vaccination, 6.1% of these have been vaccinated. A few respondents (26) with negative attitude had also been vaccinated. This study revealed that only 15(6.1%) of the respondents had had HPV vaccination.
Conclusion: There is a significant gap between knowledge, attitude, and practice regarding cervical cancer prevention among women in Gwagwalada. Despite positive attitudes, actual uptake of screening and vaccination remains low. There is a critical need for targeted health education to improve screening and HPV vaccine uptake. There is also a need to subsidized services, and integration of cervical cancer prevention into primary health care services.
Keywords: Cervical cancer, HPV vaccination, screening, knowledge, attitude, practice, Nigeria, Gwagwalada.

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DOI: https://doi.org/10.22376/ijtos.v3i3.77

Article History
Received: 15.05.2025
Revised: 03.06.2025
Accepted: 28.07.2025

INTRODUCTION

Cervical cancer is the fourth most common cancer affecting women worldwide after breast, colorectal and lung cancer with about 500,000 new cases diagnosed every year and has been shown to cause 266,000 death annually [1] and is the third leading cause of cancer death worldwide. It is a malignant tumour of the cervix, which is the lowermost part of the uterus. The occurrence of cervical cancer has been closely associated with the presence of a virus, the Human Papilloma Virus (HPV) [2]. Human Papilloma Virus are a small non-enveloped double stranded DNA viruses that belong to the papillomaviridae family. They form a large group of family and new types are being continuously found [3]. Human Papilloma Virus is a virus that affects the skin and mucosa of

cells [4]. It is the most common sexually transmitted infection and most sexually active men and women are exposed to it at some point in their life. There are various types of HPV and they are associated with various forms of genital diseases and some associated with some types of cancers [5]. It can be spread via oral, vagina or anal sex. It can also be sometimes spread during birth to an infant causing infections. There is currently no cure for the infection but various vaccines have been produced and effective vaccination is recommended [6].
There are more than 100 known HPV genotypes which cause cervical cancer and cancer of other sites of the body5. HPV 16 and 18 are the two most common oncogenic types and they have been implicated in the occurrence of about 70% of all cervical cancer while genotype 6 and 11 are the commonest cause of genital warts. About 80% of all women infected with the virus are usually negative to colposcopy for a period of time [7]. A disease caused by HPV includes all cervical cancersmost anal cancers, some vaginal, penile, vulva and oropharyngeal cancer. It can be gotten from having unprotected vaginal, anal or oral sex and can sometimes be transferred from mother to baby during pregnancy, labour or nursing [8].
Due to all of these HPV based technologies has been the center of novel primary and secondary cervical prevention strategies by the introduction of HPV vaccines in pre-adolescent girls and young women and if properly implemented it can lead to the eradication of cervical cancer.
Risk factors associated with the contraction of HPV includes having multiple sexual partners, having sex with someone who has multiple sexual partners, compromised immune system, bruises and cuts on the skin especially of the genital area, having personal contact with warts or surfaces where HPV exposure has occurred such as touching someone's open warts without appropriate protection and sharing showers or public pool and age, mainly occurs in children [9].
It has been shown that upon entry into the body of individuals, it can sometimes resolve or result in cervical cancer in others and the primary reason for this discrepancy is not known although various factors such as individual susceptibility, immune status, nutrition, endo and exogenous hormones, tobacco smoking, parity and co-infection with other sexually transmitted agents such as HIV, herpes simplex virus type 2 and chlamydia trachomatis have been attributed [10,11]. So women with multiple sexual partners and early age at first intercourse are at high risk of developing the disease and that frequent intercourse at early age also increase the risk of this development there by supporting the hypothesis of 'vulnerable period of the cervix'. Factors such as cigarette smoking and oral contraceptive use also predisposes one to having cancer but it is still unclear if this factor acts alone or alongside infection with HPV. A study done in Owerri, South Eastern Nigeria it was discovered that HIV and AIDS is a predisposing factor to the occurrence of cervical cancer [12].
Disease caused by HPV infection includes Genital warts, Common warts, planter warts, Flat warts and cervical, oropharyngeal, anal, penile, and vaginal or vulva cancer [13,14]. Due to the close relationship between cervical cancer and human papillomavirus it has been shown that with proper vaccination and regular screening this condition can be prevented. HPV vaccines are vaccines that protect against infection with HPV. They are best effective when started before individuals begin to engage in sexual activities and they produce up to 100% protection. If sufficient amount of people gets vaccinated, the herd immunity will help reduce the risk of those not vaccinated getting the disease. Studies have shown that wide spread vaccination can decrease the prevalence of the disease by as much as 90% [15,16,6].
Women that have already gotten the virus are encouraged to still get vaccinated since it protects them from other high risk types but it doesn't cure the present infection. Women that have been vaccinated are also supposed to still be screened for cervical cancer since there are other risk factors for getting the disease beside the presence of the virus [17,18]. Regular cervical screening has been shown to be able to detect and remove abnormal cells and tissues in the cervix before cervical cancer develops.

Methods and Materials

Study Area

Gwagwalada area council is located in the federal capital territory of Nigeria. It is one of the six Local Government Area Councils of the Federal Capital Territory of Nigeria, together with Abaji, Kuje, Bwari, Kwali and Abuja Municipal. Gwagwalada has an area of 1069.589 km2 and a density of 384.4/km2, it's geographical coordinates are 8° 56' 29" North and 7° 5' 31" East.22,23It has a population of 157,770 at the 2006 census24, with an annual growth rate of 5.4% in 202425, this put the projected population of Gwagwalada for 2025 at 431,666. Gwagwalada is divided into 10 administrative wards which are Zuba, Ibwa, Dobi, Kutunku, Tunga Maje, Gwako, Paikon-kore, Ikwa, Quarters and Central.26Climate of the area is that of the tropics having the wet and dry season. The temperature of the area ranges from 300c to 370 yearly with highest temperature experienced in the month of March.

Study Design

A descriptive cross-sectional study

Study population

Women aged 18–49 years

Sample Size Determination

The sample size was calculated using the Leslie kish formula: 27 n= Zα2Pq/d2, where n is the desired sample size, Zα is the standard normal deviationtaken as 1.96, p is prevalence(proportion),q is taken as 1-p, and d is precision. The prevalence 17.7%, was gotten from previous studies in reviewed literature.28In addition to 10% as the non-response rate, total sample size (n) of 244 was gotten.

Sampling Technique

A cluster sampling technique was adopted. An initial listing and selection of two (2) wards from the ten wards using a simple random sampling technique was done. Gwagwalada central and Quarters wards were selected and al consenting participants were interviewed.

Data Collection

Data were collected by the researchers and research assistants over a period of 2 weeks. Data were collected using a pre-tested, semi-structured questionnaire covering socio-demographic characteristics, knowledge of cervical cancer and HPV, attitudes towards screening and vaccination, and reported practices. Reliability and content validity were ensured through pre-testing of the instrument.

Data Analysis

The data collected was entered into a Microsoft Excel and analyzed using the IBM SPSS Statistic version 25 software. Categorical variables were described using frequencies and percentages. The knowledge was assessed by scoring each component, with a total knowledge score of 20. The score was then graded as, 1-10 for poor knowledge and 11-20 for good knowledge. Frequencies and percentages were then run to determine good or poor knowledge. Pearson's Chi-squared test was used to determine association between knowledge level and practice. The attitude was assessed using Likert scale and analyzed by grouping responses of strongly disagree, disagree and undecided as negative attitude. Agree and strongly agree responses were grouped as positive attitude. Pearson's Chi-squared test was used to determine association between categorical variables. A p value of <0.05 was considered as statistically significant with 95% confidence level and 5% margin of error.

Ethical considerations

The ethical approval for the study was obtained from Health Research Ethical Committee of the University of Abuja Teaching Hospital, Abuja. All eligible and willing participants signed an informed consent form, after explaining the objectives and benefits of the research to them, and confirming that they understand, and voluntarily consented. Participants were informed that they are free to discontinue their participation in the study at any time and at no cost and confidentiality was assured.

Results

Socio-demographic characteristics of respondents

Among the 244 female respondents aged 15–49 years, the largest age group was 20–24 years (99; 40.6%), followed by 15–19 years (52; 21.3%), 30–34 years (27; 11.1%), 25–29 years (21; 8.6%), 45–49 years (18; 7.4%), 35–39 years (14; 5.7%), and 40–44 years (13; 5.3%). The majority were Christians (212; 86.9%), with 31 (12.7%) Muslims and 1 (0.4%) of other religions. Most were single (172; 70.5%), while 70 (28.7%) were married and 2 (0.8%) separated. In terms of occupation, 148 (60.7%) were skilled workers, 62 (25.4%) unskilled, 29 (11.9%) students, and 5 (2.0%) unemployed. Regarding education, 163 (66.8%) had tertiary education, 63 (25.8%) secondary, 15 (6.1%) primary, and 3 (1.2%) no formal education.

Table 01: Socio-demographic characteristics of respondents

Variables	N (%)
Age	
15 - 19	52(21.3%)
20 – 24	99(40.6%)
25 – 29	21(8.6%)
30 – 34	27(11.1%)
35 – 39	14(5.7%)
40 – 44	13(5.3%)
45 – 49	18(7.4%)
Religion	
Christianity	212(86.9%)
Islam	31(12.7%)
Others	1(0.4%)
Level of Education	
No Formal Education	3(1.2%)
Primary	15(6.1%)
Secondary	63(25.8%)
Tertiary	163(66.8%)
Occupation	
Unemployed	5(2.0%)
Students	29(11.9%)
Unskilled Labour	62(25.4%)
Skilled Labour	148(60.7%)
Marital Status	
Single	172(70.5%)
Married	70(28.7%)
Separated	2(0.8%)

Knowledge of cervical cancer and HPV vaccine

Out of 244 respondents, 54.5% demonstrated good knowledge of cervical cancer and HPV, while 45.5% had poor knowledge. Lower levels of knowledge were observed in the 25–29 (38.1%) and 40–44 (38.5%) age groups. Skilled workers had the highest proportion of respondents with good knowledge (58.8%), followed by students (65.5%). Unskilled laborers and the unemployed had poor knowledge.

Respondents with secondary education also showed a lower level of knowledge, with less than half (46%) demonstrating good understanding.

Table 02: Knowledge of cervical cancer and HPV vaccine

	Knowledge level			
	Good 133(54.5 %)	**Poor 111(45.5 %)**	**Total 244(100 %)**	**p-value**
Age				
15 – 19	30(57.7%)	22(42.3%)	52(21.3%)	0.600

20 – 24	57(57.6%)	42(42.4%)	99(40.6%)	
25 – 29	8(38.1%)	13(61.9%)	21(8.6%)	
30 – 34	15(55.6%)	12(44.4%)	27(11.1%)	
35 – 39	6(42.9%)	8(77.1%)	14(5.7%)	
40 – 44	5(38.5%)	8(61.5%)	13(5.3%)	
45 – 49	12(66.7%)	6(33.3%)	18(7.4%)	
Occupation				
Unemployed	1(20%)	4(80%)	5(2%)	0.936
Students	19(65.5%)	10(34.5%)	29(11.9%)	
Unskilled Labour	26(41.9%)	36(58.1%)	62(25.4%)	
Skilled Labour	87(58.8%)	61(41.2%)	148(60.7%)	
Level of Education				
No Formal Education	1(33.3%)	2(66.7%)	3(1.2%)	0.049
Primary	5(33.3%)	10(66.7%)	15(6.2%)	
Secondary	29(46%)	34(54%)	63(25.8%)	
Tertiary	98(60.1%)	65(39.9%)	163(66.8%)	

Statistical significant at p-value < 0.05.

Attitudes towards screening and vaccination

Among the 244 respondents, a majority demonstrated a positiveattitude toward cervical cancer screening and HPV vaccination. The highest proportion of positive attitudes was seen in the 15–19 age group (86.5%), closely followed by those aged 20–24 (81.8%). Positive attitudes were generally high across most age groups, though they declined with increasing age, especially in the 40–44 age group, where only 61.5% had a positive attitude.

Respondents with tertiary education had the highest proportion of positive attitudes (60.1%), whereas those with no formal education and only primary education showed predominantly negative attitudes (66.7% in both cases). The unemployed group showed the most negative attitudes, with only 20% having a positive outlook on screening and vaccination.

Table 03: Attitudes towards screening and vaccination

Attitude level				
	Positive	**Negative**	**Total**	**p-value**
Age				
15 – 19	45(86.5%)	7(13.5%)	52(21.3%)	0.049
20 – 24	81(81.8%)	18(18.2%)	99(40.6%)	
25 – 29	14(66.6%)	7(33.4%)	21(8.6%)	
30 – 34	19(70.4%)	8(29.6%)	27(11.1%)	
35 – 39	11(78.6%)	3(21.4%)	14(5.7%)	
40 – 44	8(61.5%)	5(38.5%)	13(5.3%)	
45 – 49	14(77.8%)	4(22.2%)	18(7.4%)	
Level of Education				
No Formal Education	1(33.3%)	2(66.7%)	3(1.2%)	0.067
Primary	5(33.3%)	10(66.7%)	15(6.2%)	
Secondary	29(46%)	34(54%)	63(25.8%)	
Tertiary	98(60.1%)	65(39.9%)	163(66.8%)	
Occupation				
Unemployed	1(20%)	4(80%)	5(2%)	0.936
Students	19(65.5%)	10(34.5%)	29(11.9%)	
Unskilled Labour	26(41.9%)	36(58.1%)	62(25.4%)	
Skilled Labour	87(58.8%)	61(41.2%)	148(60.7%)	

Statistical significant at p-value < 0.05.

Practice of HPV vaccination among respondents

This study revealed that only 15(6.1%) of the respondents had had HPV vaccination. The highest number of vaccinated individuals was found in the 20–24 age group, while some age groups, such as 25–29 and 40–44, and recorded no vaccinated individuals. The majority of those who had received the vaccine were skilled workers (65.4%), while vaccination was least common among the unemployed and unskilled laborers. Notably, no unemployed respondents reported being vaccinated. None of the respondents with no formal or only primary education reported having been vaccinated. Those with secondary education made up 21.8 % of the vaccinated group.

Table 04: Practice of HPV vaccination among respondents

Vaccination against HPV (Practice)				
	Yes	**No**	**Total (n= 244)**	**p-value**
Age				
15 – 19	5(86.5%)	47(6.3%)	52(21.3%)	0.754
20 – 24	6(42.9%)	93(16.2%)	99(40.6%)	
25 – 29	0(6%)	21(6.3%)	21(8.6%)	
30 – 34	2(11.3%)	25(7.2%)	27(11.1%)	
35 – 39	1(4.5%)	13(2.7%)	14(5.7%)	
40 – 44	0(3.8%)	13(4.5%)	13(5.3%)	
45 – 49	1(9%)	17(3.6%)	18(7.4%)	
Occupation				
Unemployed	0(0.8%)	5(3.6%)	5(2%)	**0.000**
Students	3(14.3%)	26(9%)	29(11.9%)	
Unskilled Labour	2(19.5%)	60(32.4%)	62(25.4%)	

Skilled Labour	10(65.4%)	138(55%)	148(60.7%)	
Level of Education				
No Formal Education	0(0.8%)	3(1.8%)	3(1.2%)	0.231
Primary	0(3.8%)	15(9%)	15(6.2%)	
Secondary	7(21.8%)	56(30.6%)	63(25.8%)	
Tertiary	8(73.7%)	155(58.6%)	163(66.8%)	

Discussion

Socio-demographic characteristics of respondents

The study was conducted with the objectives of assessing the knowledge of cervical cancer, the attitude towards cervical cancer screening and the practice of HPV vaccination among females in Gwagwalada Area Council. Majority of the respondents were within the age group of 20-24 years (40.6%) which is similar to that conducted by Chigozie Mbakweet al. [29].

There were more Christians 212(86.9%) than Muslims 32(13.1%). This is similar to the study by Ezem where the Christians were about 94.8% of the study population12and lower than that of Eze30 where 81.9% of the respondent were Christians. Also majority of the respondents had tertiary level of education 163(66.8%) similar to the study by Ezem where the bulk of the respondent had tertiary level of education (74.5%) 12 this is however in contrast to that found in a study conducted by Justus where only 25.0% had tertiary education30; followed by secondary level of education 63 (25.8%), some had primary level of education 15(6.1%) and some had no formal education 3 (1.2%).

Knowledge of Cervical Cancer and HPV vaccine

About half of the respondents (133) had good knowledge of Cervical Cancer and the HPV vaccine. This is however lower than the 78.7% respondents who were found to have good knowledge in a study done by Frehiwot [31]. It is however higher than the 14.4% by Christian et al [29], this is not surprising because even though HPV infection is a relatively common condition however, very few people have a sound knowledge about it.

Though the age range with the best knowledge was 45 – 49 years (66.7%), this study has established that age is not a determinant of knowledge level. Knowledge level was highest among women who were students 19 (65.5%) followed by those who had skilled jobs (58.8%). This suggests that the more education one gets the higher one's knowledge. Similarly, students with tertiary level of education had the highest level of education and students with No formal education 1(33.3%) and those with Primary level of education 5(33.3%) had the least level of education thus further proving the point that knowledge increases with level of education.

Attitude towards HPV Vaccination

The study reported majority of the respondents (78.7%) having positive attitude towards the cervical cancer screening and uptake of the HPV vaccine. This is similar to the finding in Northern Nigeria with 74% acceptance of HPV vaccination [32]. This shows that if the testing and HPV vaccination services are made more available and accessible more people would get tested and vaccinated.

Practice of HPV vaccination

This study revealed that only 15(6.1%) of the respondents had had HPV vaccination, indicating a generally low level of vaccine uptake. Association between knowledge and vaccination status was established ($p = 0.041$) as the study found that among those with good knowledge, 12 were vaccinated, while 121 were not and in contrast, 3 respondents with poor knowledge were vaccinated. This suggests that better knowledge about cervical cancer and HPV is significantly linked to a higher likelihood of receiving the HPV vaccine. On the other hand, attitude towards screening and vaccination was not significantly associated with actual vaccination ($p = 0.058$). Although those with a positive attitude accounted for all 15 vaccinated individuals, the group with negative attitudes still had 26 individuals who reported being vaccinated. This implies that while attitude may influence willingness, it does not necessarily predict actual vaccination behavior in this sample. Thus improving knowledge could improve attitude and improve practice. Possible causes of poor practice could be lack of will power, lack of access to vaccination facilities, lack of incentive etc. It is worthy of note that even though the practice level is low in this study, it is significantly higher than that (1.9%) what was observed in Ilorin, Kwara state [33] and also that in Afikpo [30] where only 0.6% have been screened.

Conclusion

This study has been able show that while there is a relatively high level of awareness of cervical cancer among women in Gwagwalada Area Council, comprehensive knowledge about risk factors, screening methods, and the preventive role of HPV vaccination remains low. Despite the generally positive attitude toward screening and vaccination, actual practice is poor, indicating a gap between knowledge, attitude, and behavior. Socio-demographic factors such as educational level significantly influence knowledge and practice.

Bridging this gap will require multifaceted public health efforts aimed at increasing awareness, reducing structural barriers, and improving accessibility to screening and vaccination services.

Funding

Nil

Ethical Approval

Ethical clearance has been obtained from the University of Abuja Teaching Hospital.

Inform Consent
Taken from Study Participants.

Acknowledgement
Not Applicable.

Author Contribution
Both Authors contributed equally

Conflict of Interest
None Declared

Recommendations
1. Health Education Campaigns: the federal and state ministries of health and other relevant stakeholders should implement sustained community-based education programs focused on the importance of early screening, and the availability and safety of the HPV vaccine.
2. Integration into Primary Health Care, cervical cancer screening and HPV vaccination for women of reproductive age, should be routinely integrated into existing reproductive and maternal health services at primary health care centers.
3. Training of health care workers on counseling techniques and motivate women to utilize screening and vaccination services.

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