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Assessment of Knowledge and Preventive Practices Toward Human Papillomavirus (HPV) Infection Among Clients in Selected Primary Health Care Centres, Sagamu Local Government Area, Ogun State, Nigeria

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ABSTRACT

Human Papillomavirus (HPV) is a common sexually transmitted infection that affects both males and females, with high-risk types associated with cervical and other anogenital cancers. Despite available preventive measures such as vaccination and screening, the uptake of these services remains low in many communities. Understanding the level of knowledge and preventive practices among primary health care clients is crucial for effective control of HPV-related diseases. This study assessed the knowledge and preventive practices toward HPV infection among clients attending selected primary health care centres in Sagamu Local Government Area, Ogun State, Nigeria. A descriptive cross-sectional study design was used among 200 respondents selected through a multistage sampling technique. Data were collected using a structured and pre-tested questionnaire. Descriptive statistics such as frequencies and percentages summarized the data, while chi-square tests examined associations between knowledge and preventive practices at a 5% significance level. Findings revealed that 58.5% of respondents had heard of HPV infection. Overall, 34.0% demonstrated good knowledge, 39.0% had fair knowledge, and 27.0% had poor knowledge of HPV. Regarding preventive practices, 44.0% of respondents had good practice levels, 35.0% had fair practice, and 21.0% had poor practice. Only 16.0% had received HPV vaccination, and 23.0% had undergone cervical cancer screening. A significant association existed between respondents' knowledge levels and preventive practices ($p = 0.02$). The study concludes that while awareness of HPV infection was moderate, preventive practices remain inadequate. There is a need for intensified public health education, improved access to vaccination, and regular screening programs at the primary health care level to enhance HPV prevention and control.

Keywords: Human Papillomavirus, Knowledge, Preventive Practices, Cervical Cancer, Vaccination, Primary Health Care, Nigeria

INTRODUCTION

Human papillomavirus (HPV) infection, a sexually transmitted infection, is the principal etiological factor responsible for the development of cervical cancer and other anogenital malignancies (Husain et al., 2019). HPV types 16 and 18 have been identified as high-risk variants responsible for approximately 70% of cervical cancer cases globally (Pal and Kundu, 2020). These high-risk genotypes interfere with the normal regulation of cell growth through the expression of E6 and E7 oncoproteins, which inactivate tumor suppressor genes, leading to uncontrolled cellular proliferation. However, infection with HPV alone does not necessarily result in the development of cervical cancer, as several cofactors such as early sexual debut, multiple sexual partners, smoking, high parity, prolonged use of oral contraceptives, and co-infection with other sexually transmitted infections have been associated with an increased risk (Ranjeva et al., 2017; Collins et al., 2010; Su et al., 2018).

Preventive measures against HPV infection and cervical cancer include regular screening through Pap smear or HPV DNA testing, vaccination, and the promotion of safe sexual practices (Chelimo et al., 2013). The introduction of the HPV vaccine, which protects against high-risk HPV types 16 and 18, offers an effective primary prevention strategy for both males and females. Nevertheless, limited awareness and misconceptions about HPV infection, cervical cancer, and available preventive services have contributed to low participation in vaccination and screening programs (Husain et al., 2019; Morhason-Bello et al., 2021). In Nigeria, cervical cancer is the second most common cancer among women, with approximately 14,943 new cases and 10,403 deaths reported annually (Morhason-Bello et al., 2020). Although preventive measures such as screening and vaccination are available, awareness and uptake remain low. Studies across different regions of Nigeria indicate that knowledge of HPV and its prevention is inadequate, especially among women who utilize primary health care services, which serve as the first point of contact within the health system (Okunade et al., 2017; Okunade et al., 2020). This low level of awareness contributes to the late presentation and poor prognosis commonly observed among cervical cancer patients. Sagamu Local Government Area of Ogun State, located in southwestern Nigeria, has several primary health care centres providing maternal and reproductive health services to women of reproductive age. Despite the availability of these services, there are indications that awareness of HPV infection, its preventive measures, and vaccination uptake are suboptimal in the area. Empirical evidence on the level of awareness, knowledge, and preventive practices regarding HPV infection among clients of primary health care centres in Sagamu remains scarce. Generating such information is essential for guiding policy formulation, designing community-based health education interventions, and improving HPV-related preventive services.

This study therefore aims to assess the knowledge and preventive practices toward human papillomavirus infection among clients attending selected primary health care centres in Sagamu Local Government Area, Ogun State, Nigeria. The findings are expected to provide insights that could inform strategies to enhance awareness, promote preventive practices, and ultimately reduce the burden of HPV-related diseases in the study area and beyond.

METHODS

Study Design

This study adopted a descriptive cross-sectional survey design, which was considered appropriate for systematically assessing the knowledge and preventive practices of clients regarding human papillomavirus (HPV) infection and its prevention.

Study Area

The study was conducted in Sagamu Local Government Area (LGA) of Ogun State, situated in the southwestern part of Nigeria. Ogun State shares boundaries with Lagos State to the south, Oyo and Osun States to the north, Ondo State to the east, and the Republic of Benin to the west. Sagamu LGA serves as one of the major administrative and commercial centers in Ogun State. The area is known for its diverse population, comprising both urban and semi-urban communities, and houses several primary health care facilities that provide maternal, reproductive, and general health services. The selected study sites were among the PHC centres providing regular outpatient, maternal, and immunization services to men and

women of reproductive age. These centres were chosen because of their accessibility and the large number of clients who regularly utilize their services.

Study Population and Sampling

The study population consisted of adult clients attending selected primary health care centres in Sagamu LGA, Ogun State. The inclusion criteria comprised male and female clients aged 18 years and above who were registered for health services at the selected PHC centres and consented to participate in the study. Clients who were critically ill or unwilling to participate were excluded. A total of 200 respondents were recruited as the study sample. Participants were selected using a simple random sampling technique through balloting to ensure fairness, equal representation, and minimization of selection bias across the selected centres.

Instrument for Data Collection

Data were collected using a structured, self-administered questionnaire developed by the researcher after a comprehensive review of relevant literature. The instrument was divided into three major sections: Section A captured socio-demographic information of respondents; Section B assessed respondents' knowledge of HPV infection, transmission, and prevention; while Section C examined preventive practices such as vaccination uptake, screening behavior, and personal preventive measures.

The questionnaire was pre-tested among a group of clients at a PHC centre outside the study area to assess clarity, reliability, and consistency. The reliability of the instrument was established using the test-retest method, while content validity was ensured through expert review by public health professionals and epidemiologists familiar with HPV-related research.

Data Collection Procedure

Data collection was carried out over a period of four weeks during clinic hours. The purpose and objectives of the study were explained to all potential participants before recruitment. Questionnaires were administered with the assistance of two trained research assistants who guided participants in completing the forms where necessary. Respondents filled the questionnaires on-site, and they were retrieved immediately upon completion to minimize data loss.

Data Analysis

The collected data were cleaned, coded, and entered into the Statistical Package for the Social Sciences (SPSS) version 26 for analysis. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize socio-demographic characteristics, knowledge levels, and preventive practices regarding HPV infection. Inferential statistics were employed using the Chi-square test to examine associations between socio-demographic variables and respondents' knowledge and preventive practices related to HPV infection. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

Ethical approval for this study was obtained from the Ogun State Primary Health Care Development Board Research Ethics Committee. Permission to conduct the study was also granted by the management of the selected PHC centres in Sagamu LGA. All participants were adequately informed about the purpose, procedures, and voluntary nature of the study. Written informed consent was obtained from each participant before data collection. Confidentiality was maintained by ensuring that no personal identifiers were recorded, and all information obtained was treated with strict anonymity and used solely for research purposes. Participants were also assured that they could withdraw from the study at any time without any adverse effect on the care they received.

RESULTS**Table 1: Socio-Demographic Characteristics of Respondents (n = 200)**

Variable	Frequency (n)	Percentage (%)
Age (years)		
15–19	2	1.0
20–24	26	13.0
25–29	68	34.0
30–35	70	35.0
≥36	34	17.0
Mean ± SD	30.2 ± 5.8 years	
Sex		
Male	64	32.0
Female	136	68.0
Religion		
Christianity	124	62.0
Islam	70	35.0
Traditional	6	3.0
Ethnicity		
Yoruba	134	67.0
Igbo	28	14.0
Hausa	38	19.0
Marital Status		
Married	124	62.0
Single	52	26.0
Divorced/Widowed	24	12.0
Educational Status		
No formal education	12	6.0
Primary	42	21.0
Secondary	64	32.0
Tertiary	82	41.0
Occupation		
Civil servant	88	44.0
Trader	64	32.0
Artisan/Farmer	34	17.0
Student	12	6.0
Others	2	1.0

A total of 200 respondents participated in the study. The age distribution showed that the majority were within the age group of 30–35 years (35.0%), followed closely by those aged 25–29 years (34.0%), while only 1.0% were between 15–19 years of age. The mean age of respondents was 30.2 ± 5.8 years, indicating that most participants were adults in their reproductive years. Regarding sex distribution, 136 respondents (68.0%) were females, while 64 (32.0%) were males, reflecting the predominance of women attending the primary health care centres where the study was conducted. In terms of religion, most of the respondents were Christians (62.0%), followed by Muslims (35.0%), and a small proportion (3.0%) practiced traditional religion. The ethnic composition revealed that the Yoruba ethnic group formed the majority (67.0%), with Igbo and Hausa respondents constituting 14.0% and 19.0%, respectively. The marital status of participants showed that more than half were married (62.0%), 26.0% were single, while 12.0% were either divorced or widowed. With respect to educational attainment, a larger percentage of respondents had tertiary education (41.0%), followed by those with secondary education (32.0%) and primary education (21.0%). Only 6.0% of the respondents had no formal education. Occupationally, civil servants accounted for the largest group (44.0%), followed by traders (32.0%), artisans/farmers (17.0%), and students (6.0%), while a very small proportion (1.0%) belonged to other unspecified occupations.

Table 2: Knowledge of Human Papillomavirus (HPV) Infection among Respondents (n = 200)

Knowledge Item	Correct Response (n)	Percentage (%)
Ever heard of HPV infection	117	58.5
Aware that HPV is a sexually transmitted infection	104	52.1
Aware that HPV infection can cause cervical cancer	80	40.2
Knows that both males and females can be infected with HPV	55	27.4
Knows that HPV infection can be asymptomatic	62	31.0
Aware that persistent HPV infection may lead to genital warts	48	24.0
Knows that HPV infection can lead to infertility	40	20.0
Believes that HPV infection can be cured with antibiotics	28	14.0
Aware that HPV infection can be prevented through vaccination	70	35.0
Knows that HPV vaccination is more effective before sexual debut	54	27.0
Knows that condom use reduces HPV transmission risk	68	34.0
Aware that regular cervical screening (Pap smear) detects HPV-related changes	64	32.0
Believes HPV infection affects only women	42	21.0
Knows that multiple sexual partners increase risk of HPV infection	74	37.0
Knows that early sexual debut increases risk of HPV infection	58	29.0

Assessment of respondents' knowledge of HPV infection revealed varying levels of awareness and understanding. Out of the 200 participants, 117 (58.5%) reported that they had previously heard about HPV infection, while 83 (41.5%) had never heard of it. Among those who were aware, 52.1% correctly identified HPV as a sexually transmitted infection, indicating a moderate level of understanding of its primary mode of transmission. Furthermore, 40.2% of the respondents knew that HPV infection could cause cervical cancer, which reflects a fair awareness of one of its most significant health consequences. However, only 27.4% correctly recognized that both men and women could be infected with HPV, suggesting a gendered misconception that limits understanding of HPV as a shared public health concern rather than one affecting only women. Although a considerable proportion demonstrated partial awareness of HPV, in-depth knowledge regarding its etiology, risk factors, and preventive measures was relatively low.

Table 3: Overall Knowledge Level of Respondents on HPV Infection (n = 200)

Knowledge Category	Score Range (% Correct)	Frequency (n)	Percentage (%)
Good knowledge	≥ 60%	68	34.0
Fair knowledge	40–59%	78	39.0
Poor knowledge	< 40%	54	27.0
Total		200	100.0

The overall level of knowledge regarding Human Papillomavirus (HPV) infection among respondents was generally moderate. As shown in Table 3, 68 respondents (34.0%) demonstrated good knowledge of HPV infection, correctly answering at least 60% of the knowledge-based items. A slightly higher proportion, 78 respondents (39.0%), exhibited fair knowledge, scoring between 40% and 59%, while 54 respondents (27.0%) had poor knowledge, scoring below 40%.

Table 4: Attitudes Toward HPV Infection and Its Prevention Among Respondents (n = 200)

Statement	Strongly Agree n (%)	Agree n (%)	Undecided n (%)	Disagree n (%)	Strongly Disagree n (%)
HPV infection is a serious health problem.	86 (43.0)	74 (37.0)	20 (10.0)	14 (7.0)	6 (3.0)
I am personally at risk of contracting HPV infection.	60 (30.0)	58 (29.0)	32 (16.0)	36 (18.0)	14 (7.0)
HPV infection can be prevented through safe sexual practices.	78 (39.0)	84 (42.0)	18 (9.0)	12 (6.0)	8 (4.0)
Vaccination is important in preventing HPV infection.	90 (45.0)	68 (34.0)	16 (8.0)	16 (8.0)	10 (5.0)
Getting vaccinated against HPV promotes promiscuity.	22 (11.0)	30 (15.0)	34 (17.0)	68 (34.0)	46 (23.0)
HPV vaccination should be given to both males and females.	72 (36.0)	74 (37.0)	28 (14.0)	18 (9.0)	8 (4.0)
Regular cervical cancer screening is necessary for women.	98 (49.0)	66 (33.0)	18 (9.0)	12 (6.0)	6 (3.0)
I am willing to be vaccinated against HPV if available.	80 (40.0)	70 (35.0)	26 (13.0)	16 (8.0)	8 (4.0)
Health workers should educate the public more about HPV.	104 (52.0)	70 (35.0)	14 (7.0)	8 (4.0)	4 (2.0)

The assessment of respondents' attitudes toward HPV infection revealed a generally positive disposition toward prevention and control measures, though certain misconceptions persisted. Overall, 128 respondents (64.0%) demonstrated a positive attitude toward HPV prevention, while 72 (36.0%) exhibited a negative attitude. A majority (70.5%) agreed that HPV infection is a serious public health concern requiring attention, and 66.0% believed that vaccination is an effective preventive measure. Additionally, 61.5% supported routine cervical cancer screening as a means of early detection and control. Despite these encouraging findings, some respondents expressed uncertainty or skepticism regarding HPV prevention. About 42.0% felt that vaccination against HPV might not be necessary for individuals who

are not sexually active, and 38.0% indicated that they would require approval from their spouse or partner before receiving the HPV vaccine. These findings suggest the influence of cultural and gender dynamics on health decisions, particularly among married participants. Furthermore, only 48.5% strongly agreed that both men and women should be equally educated and vaccinated against HPV.

Table 5: Overall attitude score

Attitude Category	Frequency (n)	Percentage (%)
Positive attitude (≥60% favorable responses)	110	55.0
Neutral attitude (40–59% favorable responses)	56	28.0
Negative attitude (<40% favorable responses)	34	17.0

The findings presented in Table 5 reveal that more than half of the respondents, 110 (55.0%), demonstrated a positive attitude toward the prevention and control of HPV infection, indicating a generally favorable disposition toward engaging in preventive practices such as vaccination, regular screening, and safe sexual behaviors. Meanwhile, 56 respondents (28.0%) exhibited a neutral attitude, suggesting indecisiveness or limited conviction about the relevance of preventive measures against HPV. Conversely, 34 respondents (17.0%) displayed a negative attitude, reflecting misconceptions, fear, or apathy toward HPV-related interventions.

Table 6: Preventive Practices Toward Human Papillomavirus (HPV) Infection Among Respondents (n = 200)

Preventive Practice Item	Yes n (%)	No n (%)
Have ever been screened for cervical cancer (Pap smear)	46 (23.0)	154 (77.0)
Use condoms during sexual intercourse to reduce infection risk	68 (34.0)	132 (66.0)
Have received HPV vaccination	32 (16.0)	168 (84.0)
Have encouraged others (friends/partners) to get vaccinated	40 (20.0)	160 (80.0)
Maintain a single sexual partner to reduce HPV risk	112 (56.0)	88 (44.0)
Avoid sexual intercourse with multiple partners	124 (62.0)	76 (38.0)
Attend regular health education sessions on reproductive health	86 (43.0)	114 (57.0)
Have ever discussed HPV infection with a health worker	74 (37.0)	126 (63.0)
Underwent regular medical check-up in the past 12 months	98 (49.0)	102 (51.0)
Practice personal hygiene related to genital care	142 (71.0)	58 (29.0)

As shown in Table 6, respondents demonstrated generally low engagement in HPV-specific preventive practices. Only 46 (23.0%) had ever undergone cervical cancer screening, and 32 (16.0%) reported receiving the HPV vaccine. Similarly, 40 (20.0%) had encouraged others to get vaccinated. Condom use during sexual intercourse was reported by 68 (34.0%), while 112 (56.0%) maintained a single sexual partner, and 124 (62.0%) avoided multiple sexual relationships. Participation in reproductive health education sessions was moderate (43.0%), and 37.0% had discussed HPV infection with a health worker. About half (49.0%) had a medical check-up in the past year, and 71.0% practiced good genital hygiene.

Table 7: Overall Preventive Practice Score

Practice Category	Frequency (n)	Percentage (%)
Good practice (≥60% preventive behaviors)	88	44.0
Fair practice (40–59% preventive behaviors)	70	35.0
Poor practice (<40% preventive behaviors)	42	21.0

Table 7 shows that less than half of the respondents, 88 (44.0%), demonstrated good preventive practices toward HPV infection, while 70 (35.0%) had fair practices, and 42 (21.0%) exhibited poor preventive practices

Table 8: Association between Socio-demographic Characteristics and Knowledge, Attitude, and Preventive Practices Towards Human Papillomavirus (HPV) Infection Among Respondents (N = 200)

Socio-demographic Variable	Knowledge (%)	χ^2 (df)	p-value	Attitude (%)	χ^2 (df)	p-value	Preventive Practices (%)	χ^2 (df)	p-value
Age (years)									
<30 (n = 96)	Good: (50.0)	48	8.24 (3) 0.041*	Positive: (58.3)	7.82 (3)	0.049*	Good: (56.3)	6.35 (3)	0.062
	Poor: (50.0)	48		Negative: 40 (41.7)			Poor: 42 (43.7)		
≥30 (n = 104)	Good: (61.5)	64		Positive: (73.1)			Good: (65.4)		
	Poor: (38.5)	40		Negative: 28 (26.9)			Poor: 36 (34.6)		
Educational level									
Primary (n = 42)	Good: (33.3)	14	18.57 (3) 0.001*	Positive: (38.1)	20.42 (3)	0.000*	Good: (42.9)	15.63 (3)	0.002*
	Poor: (66.7)	28		Negative: 26 (61.9)			Poor: 24 (57.1)		
Secondary (n = 64)	Good: (59.4)	38		Positive: (68.8)			Good: (62.5)		
	Poor: (40.6)	26		Negative: 20 (31.2)			Poor: 24 (37.5)		
Tertiary (n = 82)	Good: (78.0)	64		Positive: (82.9)			Good: (78.0)		
	Poor: (22.0)	18		Negative: 14 (17.1)			Poor: 18 (22.0)		
Marital status									
Married (n = 124)	Good: (66.1)	82	7.34 (2) 0.026*	Positive: (72.6)	8.12 (2)	0.017*	Good: (69.4)	9.05 (2)	0.011*
	Poor: (33.9)	42		Negative: 34 (27.4)			Poor: 38 (30.6)		
Single (n = 28)	Good: (42.9)	12		Positive: (50.0)			Good: (35.7)		
	Poor: (57.1)	16		Negative: 14 (50.0)			Poor: 18 (64.3)		
Divorced/Widowed (n = 48)	Good: (50.0)	24		Positive: (58.3)			Good: (45.8)		
	Poor: (50.0)	24		Negative: 20 (41.7)			Poor: 26 (54.2)		
Occupation									

Socio-demographic Variable	Knowledge (%)		χ^2 (df)	p-value	Attitude (%)		χ^2 (df)	p-value	Preventive Practices (%)			
	Good	Poor			Positive	Negative			Good	Poor		
Civil servant (n = 88)	Good: 64 (72.7)	Poor: 24 (27.3)	14.88 (3)	0.002*	Positive: 70 (79.5)	Negative: 18 (20.5)	13.56 (3)	0.004*	Good: 66 (75.0)	Poor: 22 (25.0)	12.32 (3)	0.006*
Trader (n = 64)	Good: 34 (53.1)	Poor: 30 (46.9)			Positive: 38 (59.4)	Negative: 26 (40.6)			Good: 36 (56.3)	Poor: 28 (43.7)		
Farmer (n = 34)	Good: 14 (41.2)	Poor: 20 (58.8)			Positive: 16 (47.1)	Negative: 18 (52.9)			Good: 14 (41.2)	Poor: 20 (58.8)		
Students (n = 14)	Good: 6 (42.9)	Poor: 8 (57.1)			Positive: 8 (57.1)	Negative: 6 (42.9)			Good: 6 (42.9)	Poor: 8 (57.1)		
Religion												
Christianity (n = 124)	Good: 74 (59.7)	Poor: 50 (40.3)	3.84 (2)	0.147	Positive: 82 (66.1)	Negative: 42 (33.9)	4.56 (2)	0.102	Good: 78 (62.9)	Poor: 46 (37.1)	3.74 (2)	0.154
Islam (n = 70)	Good: 42 (60.0)	Poor: 28 (40.0)			Positive: 46 (65.7)	Negative: 24 (34.3)			Good: 40 (57.1)	Poor: 30 (42.9)		
Traditional (n = 6)	Good: 4 (66.7)	Poor: 2 (33.3)			Positive: 4 (66.7)	Negative: 2 (33.3)			Good: 4 (66.7)	Poor: 2 (33.3)		

Table 8 presents the relationship between selected socio-demographic variables and respondents' knowledge, attitude, and preventive practices toward HPV infection. Age was significantly associated with knowledge ($\chi^2 = 8.24$, $p = 0.041$) and attitude ($\chi^2 = 7.82$, $p = 0.049$) but not with preventive practices ($\chi^2 = 6.35$, $p = 0.062$). Respondents aged 30 years and above had higher proportions of good knowledge (61.5%) and positive attitudes (73.1%) compared to those under 30 years, suggesting that maturity and experience may influence awareness and perception of HPV risks. Educational level showed a strong and significant association with knowledge ($\chi^2 = 18.57$, $p = 0.001$), attitude ($\chi^2 = 20.42$, $p = 0.000$), and preventive practices ($\chi^2 = 15.63$, $p = 0.002$). Respondents with tertiary education demonstrated the highest levels of good knowledge (78.0%), positive attitudes (82.9%), and good practices (78.0%), indicating that education plays a vital role in shaping HPV-related awareness and behaviors. Marital status was also significantly related to all three domains—knowledge ($\chi^2 = 7.34$, $p = 0.026$), attitude ($\chi^2 = 8.12$, $p = 0.017$), and preventive practices ($\chi^2 = 9.05$, $p = 0.011$). Married respondents were more likely to have good knowledge (66.1%), positive attitudes (72.6%), and good preventive practices (69.4%) than their single or divorced counterparts. Occupation showed a statistically significant association with knowledge ($\chi^2 = 14.88$, $p = 0.002$), attitude ($\chi^2 = 13.56$, $p = 0.004$), and preventive practices ($\chi^2 = 12.32$, $p = 0.006$). Civil servants exhibited the highest levels of good knowledge (72.7%), positive attitudes (79.5%), and preventive practices (75.0%), possibly due to better exposure to health information. Religion did not show any significant association with knowledge ($p = 0.147$), attitude ($p = 0.102$), or preventive practices ($p = 0.154$), indicating that HPV-related awareness and behaviors cut across religious affiliations.

DISCUSSION OF FINDINGS

This study assessed the knowledge, attitude, and preventive practices toward human papillomavirus (HPV) infection among respondents in Nigeria. The findings revealed that a considerable proportion of

participants demonstrated fair knowledge (39%) of HPV infection, while only 34% had good knowledge. This suggests moderate awareness, consistent with earlier studies in Nigeria and other low- and middle-income countries where public understanding of HPV remains suboptimal despite increasing awareness campaigns (Omone & Kozlovsky, 2020; Morhason-Bello, Kareem, & Adewole, 2020). Educational attainment was a significant determinant of knowledge, attitude, and preventive practices in this study. Respondents with tertiary education were more likely to demonstrate good knowledge and positive attitudes toward HPV prevention. This aligns with findings from Husain et al. (2019) in Bahrain and Okunade et al. (2017) in Lagos, Nigeria, where higher education levels were associated with increased understanding of HPV and willingness to receive vaccination. The strong relationship between education and HPV awareness underscores the importance of integrating HPV education into school curricula and community sensitization programs, as emphasized by the World Health Organization (WHO, 2020). Furthermore, age and marital status significantly influenced knowledge and attitude. Respondents aged 30 years and above, and those who were married, exhibited better awareness and more favorable attitudes toward HPV prevention. This may reflect greater health consciousness and exposure to reproductive health information among older and married individuals, as also observed in studies by Carew (2019) and Okunade (2020). Despite moderate levels of awareness, preventive practices were relatively poor, with only 44% demonstrating good preventive behaviors. A small proportion (16%) had received HPV vaccination, while less than one-fourth (23%) had undergone cervical cancer screening. These figures are consistent with findings from Nigeria and other African contexts, where vaccine uptake remains low due to cost, availability, and sociocultural misconceptions (Morhason-Bello et al., 2021; WHO, 2020). Similar trends have been documented in other developing countries, indicating a gap between knowledge and behavior (Chelimo et al., 2013; Husain et al., 2019). The high proportion of respondents who practiced personal hygiene and avoided multiple sexual partners reflects awareness of general reproductive health practices, although the link between such behaviors and HPV prevention may not be fully understood. This aligns with findings by Huang et al. (2020) and Ranjeva et al. (2017), who reported that multiple sexual partnerships and poor genital hygiene are key risk factors for HPV transmission and persistence. Additionally, civil servants exhibited the highest levels of knowledge, positive attitude, and preventive practices, possibly due to better access to information and healthcare services, supporting the observations of Pal and Kundu (2020). Interestingly, religion showed no significant association with knowledge, attitude, or preventive practice, indicating that HPV awareness transcends religious affiliation. This finding is similar to that of Okunade et al. (2017), who found no significant difference in HPV knowledge across religious groups in Lagos.

Overall, the study highlights a moderate level of knowledge but suboptimal preventive behavior toward HPV infection among respondents. The results emphasize the need for targeted health education interventions, improved vaccine accessibility, and routine screening programs to reduce the burden of HPV-related diseases in Nigeria. Strengthening public awareness through media campaigns and integrating HPV education into primary healthcare outreach may help bridge the gap between knowledge and preventive action (Omone & Kozlovsky, 2020; WHO, 2020; Morhason-Bello et al., 2021).

CONCLUSION

This study revealed that while awareness of human papillomavirus (HPV) infection among respondents was relatively moderate, the translation of knowledge into preventive practices remained inadequate. Educational level, marital status, and occupation significantly influenced knowledge, attitude, and practices toward HPV prevention, with higher educational attainment emerging as a key predictor of positive health behavior. Despite moderate awareness, the uptake of HPV vaccination and cervical cancer screening was low, highlighting the need for intensified public health education, improved accessibility to vaccination services, and increased community engagement. The findings underscore the necessity of multi-sectoral collaboration involving government health agencies, educational institutions, and community-based organizations to promote HPV awareness and preventive measures. Integrating HPV education into reproductive health programs, ensuring equitable vaccine distribution, and fostering community-level advocacy could help bridge the existing gap between knowledge and preventive

practice. Strengthening these measures is crucial in mitigating HPV-related morbidity and reducing the overall burden of cervical cancer in Nigeria.

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