P-ISSN: 2811-1516
E-ISSN: 2811-1524

AL-HIKMAH JOURNAL OF HEALTH SCIENCES (AJOHS)

Official Publication of Faculty of Basic Medical Sciences

Al-Hikmah University Ilorin, Nigeria

https://alhikmahuniversity.edu.ng/AJOHS/index.php/journal

Original Article

Knowledge, Attitude and Perception Towards Human Papillomavirus and Vaccination Among Female Undergraduate Students in Al-Hikmah University, Ilorin, Kwara State, Nigeria

Abdus-samad Adebayo Rasheed, Hamzat Abdulraheem, Shukurat Opeyemi Tijani and Abdulbasit Tijani

Department of Public Health, Faculty of Basic Medical Sciences, Al-Hikmah University, Ilorin, Kwara State, Nigeria.

ARTICLE INFO

Article History
Received: 25th December, 2025
Accepted: 10th January, 2026
Available online: 30th January, 2026

Keywords:
Human Papillomavirus
Knowledge
Perception
Attitude
Cervical Cancer

Corresponding Author:

Abdus-samad Adebayo Rasheed
Department of Public Health, Faculty of Basic Medical Sciences, Al-Hikmah University, Ilorin, Kwara State, Nigeria.
Phone number: +2348140601949
Email: abdussamadadebayo@gmail.com

ABSTRACT

Background: Human Papillomavirus (HPV) is the most common sexually transmitted infection and the leading cause of cervical cancer worldwide. Despite high cervical cancer mortality in Nigeria, knowledge about HPV and vaccination remains inadequate, particularly among university students who are at increased risk due to sexual behaviors and misconceptions.

Objective: To evaluate HPV knowledge, attitudes, and perceptions among female undergraduates at Al-Hikmah University, Ilorin, Nigeria.

Methods: A descriptive cross-sectional study of 395 female undergraduate students using multistage sampling. Data were collected via structured, self-administered questionnaires. Analysis was performed using SPSS version 20, and the Relative Importance Index (RII) was used to assess knowledge, attitudes, and perceptions.

Results: HPV awareness was high (82.8%), with 85.3% linking it to cervical cancer. However, only 14.9% correctly identified HPV as incurable, versus 60.3% believing it was curable. Vaccination acceptance was high (81.0%). Faculty differences were significant ($\chi^2 = 42.18$, $p<0.001$): Health Sciences students showed the best knowledge (54.4%), Natural Sciences the poorest (23.3% poor knowledge).

Conclusion: High vaccination acceptance coexists with critical knowledge deficits regarding curability and male health impacts. Educational interventions must address these gaps.

Please cite this article as: Rasheed, A.A., Abdulraheem, H., Tijani, S.O. & Tijani, A. (2026) Knowledge, Attitude, And Perception Towards Human Papillomavirus and Vaccination Among Female Undergraduate Students in Al-Hikmah University, Ilorin, Kwara State, Nigeria. *Al-Hikmah Journal of Health Sciences, 5*(1), 77-82.

Introduction

Human Papillomavirus (HPV) is the most common reproductive tract viral infection and the leading cause of cervical cancer. Globally, 50–80% of sexually active women are exposed to HPV within 5–10 years of sexual debut (Duangmani et al., 2010; Makwe & Anorlu, 2011; WHO, 2015). Cervical cancer, almost entirely HPV-attributable, remains a major burden in sub-Saharan Africa, where screening and prevention are limited.

In Nigeria, cervical cancer is the second most common cancer among women (~12,000 new cases, 8,000

P-ISSN: 2811-1516
E-ISSN: 2811-1524

deaths annually). Low HPV awareness and limited vaccination coverage exacerbate this burden (WHO, 2021). University students are particularly vulnerable due to risky behaviors and knowledge gaps (Yacobi et al., 1999; Gerend & Magloire, 2008; Sandfort & Pleasant, 2009).

Limited research exists on private faith-based universities where religious beliefs and cultural norms may distinctly influence health knowledge and vaccination attitudes. Al-Hikmah University provides a unique setting to examine how curricula across faculties intersect with HPV awareness and vaccine acceptance.

International studies show HPV awareness ranges from 13–78% (Yacobi et al., 1999; Gerend & Magloire, 2008; Sandfort & Pleasant, 2009), vaccine awareness from 10–87% (Hoglund et al., 2009; Wong & Sam, 2009; Wong et al., 2009), and perceived infection risk from 12.7–42% (Moreira et al., 2006; Di Giuseppe et al., 2008).

Thus, this study assessed the level of knowledge, attitudes, and perceptions towards HPV and vaccination among female undergraduate students in Al-Hikmah University, Ilorin. The findings are expected to provide baseline data necessary for developing targeted health education programs to improve HPV awareness and vaccination uptake, ultimately contributing to cervical cancer prevention efforts in Kwara State and Nigeria.

Methodology

Study Design

A descriptive cross-sectional study was conducted among female undergraduate students in Al-Hikmah University, Ilorin, Kwara State, Nigeria.

Study Population

The target population comprised female undergraduate students aged of 16–35 years.

Ethical Consideration

Ethical considerations were observed throughout the study. This study did not involve the collection of personal identifiers. Informed consent was obtained from all participants after explaining the study's scope and objectives. Participation was voluntary, with no coercion or undue influence. All questionnaires were anonymous to ensure confidentiality. Participants were informed of their right to withdraw at any time without penalty.

Sample Size Determination

Cochran's formula: $n=z^2\times pq/d^2$, where z=1.96 (95% CI), p=0.312 (Onowhakpor et al., 2016), q=0.688, d=0.05, yielding n=330. Adjusted for 10% non-response: 367. A total of 395 participants were recruited for this study, exceeding the minimum requirement and strengthening the study's statistical power.

Sampling Technique

Multistage sampling: five faculties purposively selected (Basic Medical Sciences, Natural Sciences, Humanities, Education, Management Sciences); simple random sampling of female students aged 16–35.

Data Collection Tool

Structured, self-administered questionnaire: 32 questions refined to 24 items after expert validation and pilot testing (n=20).

Data Analysis

SPSS 20: descriptive statistics, chi-square tests ($p<0.05$ significant). Relative Importance Index ($RII=\Sigma W/(A\times N)$) identified factors influencing vaccination opinions (Elbarkouky, 2012; Gündüz et al., 2012); W=weight (1–5), A=5, N=respondents. Knowledge scored via 10 items (yes/no/no idea): 1 point per correct answer. Categories: Good (7–10, ≥70%), Moderate (4–6, 40–69%), Poor (0–3, <40%).

Results

A total of 395 female students participated. Results cover socio-demographics, HPV knowledge, attitudes, misconceptions, and faculty-specific variations.

Socio-Demographic Characteristics

Table 1 presents the socio-demographic characteristics of participants. The majority were aged 21-25 years (47.3%), followed by 16-20 years (36.2%). Most participants were single (68.6%), and the largest proportion was in 300 level (30.6%). Over half of the respondents (52.2%) were from Health Sciences departments.

P-ISSN: 2811-1516
E-ISSN: 2811-1524

Table 1: Socio-Demographic Characteristics of Participants

Variable	Category	Frequency	Percent (%)
Age	16-20 years	143	36.2
	21-25 years	187	47.3
	26-30 years	51	12.9
	31-35 years	13	3.3
	Total	395	100.0
Marital Status	Single	271	68.6
	Married	94	23.8
	Divorced	25	6.3
	Widowed	4	1.0
	Total	395	100.0
Department	Health Sciences	206	52.2
	Humanities & Social Sciences	51	12.9
	Natural & Applied Sciences	46	11.6
	Education	38	9.6
	Law	22	5.6
	Management Sciences	14	3.5
	Agriculture	8	2.0
	Total	395	100.0

HPV Knowledge Assessment

Table 2 presents the assessment of HPV knowledge among participants. While awareness of HPV was high (82.8%), significant knowledge gaps were identified, particularly regarding curability.

Table 2: HPV Knowledge Assessment

Knowledge Item	Yes n(%)	No n(%)	No Idea n(%)
Before this study, have you heard of HPV?	327 (82.8)	68 (17.2)	-
Is HPV sexually transmitted?	302 (76.5)	29 (7.3)	64 (16.2)
Are HPV infections common?	238 (60.3)	52 (13.2)	105 (26.6)
Does HPV affect men?	175 (44.3)	133 (33.7)	87 (22.0)
Can HPV cause cervical cancer?	337 (85.3)	13 (3.3)	45 (11.4)
Is there a cure for HPV?	59 (14.9)	238 (60.3)	98 (24.8)
Can HPV cause genital warts?	282 (71.4)	35 (8.9)	78 (19.7)
Does HPV cause other cancers?	195 (49.4)	67 (17.0)	133 (33.7)
Can HPV affect reproductive health?	309 (78.2)	23 (5.8)	63 (15.9)

Attitudes Towards HPV and Vaccination

Table 3 shows attitudes toward HPV vaccination. Despite knowledge gaps, attitudes were overwhelmingly positive, with 81.0% willing to be vaccinated.

Table 3: Attitude Towards HPV and Vaccination

Attitude Statement	Strongly Agree n(%)	Agree n(%)	Neutral n(%)	Disagree n(%)	Strongly Disagree n(%)
HPV vaccination is important for health	187 (47.3)	142 (35.9)	51 (12.9)	12 (3.0)	3 (0.8)
I would recommend HPV vaccination	178 (45.1)	148 (37.5)	56 (14.2)	11 (2.8)	2 (0.5)
HPV vaccination should be mandatory	89 (22.5)	134 (33.9)	118 (29.9)	42 (10.6)	12 (3.0)
I am willing to get vaccinated	195 (49.4)	125 (31.6)	58 (14.7)	14 (3.5)	3 (0.8)

P-ISSN: 2811-1516
E-ISSN: 2811-1524

Common Misconceptions About HPV Vaccination

Table 4 presents common misconceptions about HPV vaccination. Notable misconceptions included beliefs that the vaccine causes infertility (17.0% agreed) and encourages promiscuity (22.5% agreed).

Table 4: Common Misconceptions About HPV Vaccination

Misconception	Agree n(%)	Disagree n(%)	Unsure n(%)
HPV vaccine causes infertility	67 (17.0)	234 (59.2)	94 (23.8)
HPV vaccine encourages promiscuity	89 (22.5)	198 (50.1)	108 (27.3)
HPV vaccine is only for sexually active individuals	112 (28.4)	201 (50.9)	82 (20.8)
HPV vaccine has dangerous side effects	98 (24.8)	156 (39.5)	141 (35.7)
Natural immunity is better than vaccination	76 (19.2)	189 (47.8)	130 (32.9)

Knowledge Level by Faculty

Table 5 shows significant variations in knowledge levels across faculties ($\chi^2 = 42.18$, df = 8, $p < 0.001$). Health Sciences students demonstrated the highest proportion of good knowledge (54.4%), while Natural Sciences students had the highest proportion of poor knowledge (23.3%).

Table 5: Knowledge Level by Faculty

Faculty	Good Knowledge n(%)	Moderate Knowledge n(%)	Poor Knowledge n(%)	Total n(%)
Education	12 (52.2)	8 (34.8)	3 (13.0)	23 (100.0)
Health Sciences	118 (54.4)	89 (41.0)	10 (4.6)	217 (100.0)
Humanities	15 (31.9)	24 (51.1)	8 (17.0)	47 (100.0)
Management Sciences	6 (33.3)	9 (50.0)	3 (16.7)	18 (100.0)
Natural Sciences	17 (18.9)	52 (57.8)	21 (23.3)	90 (100.0)
Total	168 (42.5)	182 (46.1)	45 (11.4)	395 (100.0)

$\chi^2 = 42.18$, df = 8, $p < 0.001$

Summary of Key Findings

1. General Awareness: 82.8% of participants had heard of HPV, and 85.3% linked it to cervical cancer.
2. Knowledge Gaps: Critical curability misconception—60.3% believed curable; only 14.9% correct. Low awareness of non-cervical cancers (49.4%).
3. Attitudes: 81.0% willing to vaccinate.
4. Faculty Variation: Health Sciences best (54.4% good); Natural Sciences poorest (23.3% poor).
5. Misconceptions: 17.0% of respondents believed the vaccine causes infertility.

Discussion

This study highlights a 'Knowledge-Attitude Paradox': high vaccine acceptance (81.0%) alongside critical knowledge deficits, with implications for HPV vaccination programs and cervical cancer prevention in Nigeria.

Knowledge-Attitude Paradox

High HPV-cervical cancer awareness (85.3%) suggests basic messages reach students. However, the curability misconception (60.3%) is dangerous, potentially reducing perceived risk and promoting unsafe practices. Positive attitudes may not stem from complete information, risking unstable health behaviors.

Gender-Related Knowledge Gaps

Only 44.3% awareness of male HPV impact reinforces the 'women-only' narrative, hindering herd immunity and male vaccination. Education must address that HPV affects both sexes equally.

Faculty-Specific Variations

The poor performance of Natural Sciences students (23.3% poor knowledge) is particularly concerning and suggests that scientific curricula in non-medical fields do not adequately cover essential public health topics. This finding challenges the assumption that students in science-related fields automatically possess better health literacy. It highlights the need for faculty-specific educational interventions tailored to the unique characteristics and curricula of different academic disciplines.

P-ISSN: 2811-1516
E-ISSN: 2811-1524

Implications for Stakeholders

1. Policymakers: National campaigns targeting university students with evidence-based information addressing misconceptions. Integrate HPV/sexual health into national curricula. Develop faculty-specific strategies.
2. University Administrators: Implement mandatory sexual health modules. Establish campus HPV information centers. Develop faculty-specific programs, especially for Natural Sciences.
3. Public Health Educators: Target curability misconception (60.3%). Emphasize male HPV infection. Conduct myth-busting campaigns addressing infertility and promiscuity concerns.

Study Limitations

Limitations: reliance on 1999–2015 literature with limited recent sub-Saharan African references; single private Islamic university limiting generalizability; cross-sectional design precluding causality. Future longitudinal studies could assess intervention impacts.

Conclusion

This comprehensive study of university students' knowledge, attitudes, and perceptions regarding HPV reveals a complex picture of public health potential and challenges. While students demonstrated positive vaccination attitudes and basic HPV understanding, critical knowledge gaps persist that could jeopardize prevention efforts.

The key discrepancy between high vaccination acceptance (81.0%) and information gaps regarding curability (14.9% correct), male health (44.3% correct), and broader cancer links requires significant educational initiatives for long-term informed decision-making.

The knowledge-attitude paradox suggests current positive attitudes may be unsustainable without addressing foundational gaps. Interventions must simultaneously leverage attitudes while correcting misconceptions.

Recommendations

1. Educational Initiatives: Develop specialized, faculty-specific curricula, particularly for the Faculty of Natural Sciences where knowledge deficits were most pronounced.
2. Curriculum Integration: Include comprehensive HPV and sexual health education in the core curriculum requirements for all students, regardless of faculty or discipline.
3. Combat Misinformation: Target campaigns to debunk myths and emphasize HPV affects both genders.

Public Health Impact

Positive attitudes provide a foundation for interventions, but programs must address gaps regarding curability and male health impacts. Faculty knowledge variations suggest universal programs are insufficient; faculty-specific interventions are needed for equitable health literacy.

Conflict of Interest

The authors declare no conflict of interest

References

Di Giuseppe, G., Abbate, R., Liguori, G., Albano, L., & Angelillo, I. F. (2008). Human papillomavirus and vaccination: Knowledge, attitudes, and behavioural intention in adolescents and young women in Italy. British Journal of Cancer, 99(2), 225-229. https://doi.org/10.1038/sj.bjc.6604454

Elbarkouky, M. M. A. (2012). Multi-criteria prioritization framework (MCPF) to assess infrastructure sustainability objectives. Journal of Sustainable Development, 5(9), 1-13. https://doi.org/10.5539/jsd.v5n9p1

Gerend, M. A., & Magloire, Z. F. (2008). Awareness, knowledge, and beliefs about human papillomavirus in a racially diverse sample of young adults. Journal of Adolescent Health, 42(3), 237-242. https://doi.org/10.1016/j.jadohealth.2007.08.022

Gündüz, M., Nielsen, Y., & Özdemir, M. (2012). Quantification of delay factors using the relative importance index method for construction projects in Turkey. Journal of Management in Engineering, 29(2), 133-139. https://doi.org/10.1061/(ASCE)ME.1943-5479.0000129

Hoglund, A. T., Tyden, T., Hannerfors, A. K., & Larsson, M. (2009). Knowledge of human papillomavirus and attitudes to vaccination among Swedish high school students. International Journal of STD & AIDS, 20(2), 102-107. https://doi.org/10.1258/ijsa.2008.008200

Moreira, J. E. D., Oliveira, B. G., Ferraz, F. M., Costa, S., Costa Filho, J. O., & Karic, G. (2006). Knowledge and attitudes about human papillomavirus, Pap smears, and cervical cancer among young women in Brazil:

P-ISSN: 2811-1516
E-ISSN: 2811-1524

Implications for health education and prevention. International Journal of Gynecological Cancer, 16(2), 599-603. https://doi.org/10.1111/j.1525-1438.2006.00377.x

Onowhakpor, E. A., Olomo, B. O., & Odebode, D. O. (2016). Knowledge of human papillomavirus infection and uptake of Pap smear test among female undergraduates in a Nigerian university. International Journal of Research Studies in Medical and Health Sciences, 1(1), 48-55.

Sandfort, J. R., & Pleasant, A. (2009). Knowledge, attitudes, and informational behaviors of college students in regard to the human papillomavirus. Journal of American College Health, 58(2), 141-149. https://doi.org/10.1080/07448480903221368

World Health Organization. (2021). Vaccines and immunization. https://www.who.int/health-topics/vaccines-and-immunization

World Health Organization. (2022). Human papillomavirus vaccines: Position paper (2022 update). Weekly Epidemiological Record, 97(50), 645-672. https://hdl.handle.net/10665/365351

Yacobi, E., Tennant, C., Ferrante, J., Pal, N., & Roetzheim, R. (1999). University students' knowledge and awareness of HPV. Preventive Medicine, 28(6), 535-541. https://doi.org/10.1006/pmed.1999.0486