



Intention, Perceptions, and Uptake of Human Papillomavirus Vaccination among Adolescent Girls in Irri Isoko South in Delta State, Nigeria: A Community Based Cross-Sectional Study

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Abstract

Globally, Human Papillomavirus (HPV) is the silent driver behind cervical cancer, silently threatening the health and future of adolescent girls and women around the world. Human Papillomavirus is the leading cause of cervical cancer, which remains a major public health problem among adolescent girls in Nigeria. Vaccination is the most effective preventive strategy, but uptake seems to remain low due to poor perception and intent. The study assessed the perception and intent of Human Papillomavirus vaccine uptake among adolescent girls in Irri, Isoko South Local Government Area, Delta State. The study adopted a descriptive cross-sectional research design. The population comprised all adolescent girls aged 10-19 years in Irri community, Isoko South LGA. A total of 550 adolescent girls were selected using a multistage sampling procedure. Data was collected using self-administered structured questionnaire titled: Intention, Perceptions, and Uptake of Human Papillomavirus Vaccination Questionnaires (IPUHPVVQ). Data were analysed using frequency, percentage, mean and standard deviation with SPSS version 26. The findings revealed that with an aggregate mean value of 2.891 ± 0.926 , the adolescents accepted that they will take HPV vaccine in the community. The study also revealed aggregate mean of 3.03 and standard deviation of 0.863 suggest a consistent positive perception of willingness towards the uptake of Human Papillomavirus vaccine among participants. The study proves that adolescent girls in Irri have a positive intention and perception toward HPV vaccine uptake. Cost, dose schedule, and parental support were not major barriers, indicating readiness for HPV vaccination programmes. However, Delta State Ministry of Health should provide free HPV vaccination in schools, integrate HPV education into school health programmes, and train health workers to intensify community sensitization to sustain positive perception and improve uptake.

Keywords: Human Papillomavirus, Vaccine, Perception, Intention, Uptake, Adolescent girls, Irri

Introduction

Cervical cancer is the fourth most common cancer among women globally and remains a leading cause of cancer-related deaths, particularly in low- and middle-income countries (World Health Organization). It is caused primarily by persistent infection with high-risk



strains of Human Papillomavirus (HPV), a sexually transmitted infection that is often asymptomatic (Bruni et al., 2023; WHO, 2025). While most HPV infections resolve on their own, persistent infection with oncogenic strains can lead to genital warts and cancers of the cervix, vulva, vagina, anus, and oropharynx (Prem et al., 2024). Globally, an estimated 660,000 new cases of cervical cancer and 350,000 deaths were recorded in 2022, with 95% of these deaths occurring in low- and middle-income countries, and the highest burden in sub-Saharan Africa (SSA) (Cervical Cancer Global Crisis Card, 2025; Okolie & Nwadike, 2023; WHO, 2025). The high mortality in SSA is linked to poor access to screening, late diagnosis, and low uptake of preventive interventions including HPV vaccination.

In Nigeria, cervical cancer constitutes a major public health problem. The data showing 12,075 new cases and 7,968 deaths in 2020, and ranking 5th globally after India, China, Brazil, and Bangladesh is for Nigeria. This is also supported by Bruni et al. (2023) in the Catalan Institute of Oncology (ICO) and International Agency for Research on Cancer (IARC) (Cervical Cancer Global Crisis Card, 2025; Okolie & Nwadike, 2023). Approximately 60.9 million Nigerian women aged 15 years and above are estimated to be at risk of developing cervical cancer (Bruni et al., 2023). In Northern Nigeria, a prevalence of 13.2 percent of HPV infection was reported among girls aged 9–20 years (Cosmas et al., 2022). This burden is expected to increase without effective and cost-efficient prevention strategies as projected by the World Health Organization. Adolescents aged 9–19 years make up 22 percent of Nigeria's population and represent a critical target group for HPV prevention (Abbas et al., 2025). The WHO's global strategy for cervical cancer elimination emphasizes vaccinating 90 percent of girls with the full HPV vaccine dose by age 15 years as one of its three key pillars (Prem et al., 2024). The vaccine is most effective when administered to young adolescents aged 9–12 years, before exposure to HPV through sexual activity. Despite the proven effectiveness of HPV vaccination, uptake seems to remain low across many parts of Nigeria and SSA. In Kano State, Nigeria, parental hesitancy has been identified as a major barrier, with 32.7 percent of parents refusing vaccination for their children due to poor knowledge, safety concerns, and perceived conflict with religious beliefs (Yusuf et al., 2024). Abbas et al. (2025) in a school-based study of 381 female adolescents in Kano found that 62.5 per cent expressed positive intention to receive the HPV vaccine. However, intention was significantly influenced by social context: adolescents who discussed HPV vaccination with parents were 40 times more likely to have positive intent. While discussion with peers reduced the likelihood. Surprisingly, higher confidence in vaccine effectiveness was inversely associated with intention. Similar trends are reported in other SSA countries. In Ethiopia, only 56 percent of school adolescents were willing to accept the HPV vaccine (Kassie et al., 2024). Factors influencing acceptability include social group dynamics, media exposure, and environmental factors (Kassie et al., 2024). In Nigeria, school-based HPV vaccination programmes have been shown to be feasible with adequate community engagement, advocacy, and planning (Egbon et al., 2022). Other proposed strategies include digital health technologies, education of school children, and engagement of religious and cultural leaders (Nabirye et al., 2018). In Delta State, and specifically in Irri community, Isoko South LGA, data on HPV knowledge and vaccination uptake among adolescent girls is scarce. Irri is a rural community where health decisions for adolescents are largely influenced by parents, community leaders, and cultural norms. Given the global, national, and regional burden of cervical cancer, and the importance of early vaccination, understanding the intention and perception of adolescent girls toward HPV vaccination through a community-based approach is crucial for designing effective interventions.

Human Papillomavirus (HPV) refers to a group of viruses, some of which are transmitted sexually and can cause genital warts and cancers, most notably cervical cancer (Adegboyega



et al., 2021; Bruni et al., 2023; Okunade et al., 2018; WHO, 2025). Human Papillomavirus is a common virus that causes cervical cancer, a disease that is claiming the lives of thousands of women in Nigeria every year. Cervical cancer is preventable, yet it remains one of the leading causes of cancer deaths among women. The reason is that many girls are not getting the HPV vaccine early enough to protect them. In the context of this study, HPV is understood as a viral infection that poses a significant health risk to adolescent girls in Irri and can be prevented through vaccination. HPV Vaccination refers to the administration of a vaccine that protects against high-risk HPV types responsible for cervical cancer (Eze et al., 2022; Olubodun et al., 2020; Prem et al., 2024; WHO, 2025;). In the context of this study, HPV vaccination is defined as the preventive act of receiving the HPV vaccine by adolescent girls in Irri to protect against future HPV infection. Intention to Vaccinate refers to an individual's willingness and plan to receive the HPV vaccine (Idowu et al., 2020; Oku et al., 2021). In the context of this study, it describes the readiness and decision of adolescent girls in Irri to take the HPV vaccine. Intention to vaccinate is the expressed readiness of adolescent girls in Irri to accept the HPV vaccine when offered however, the safety, effectiveness and overall perception of the vaccine influence this decision. Perception is how adolescent girls and their community in Irri understand and evaluate the HPV vaccine. In the context of the study adolescent girls are females aged 9-19 years residing in Irri, Isoko South LGA, who are the target population for HPV vaccination. Positive attitudes toward HPV vaccination increased the likelihood of uptake and vaccination intention emerged as the strongest predictor (Masrurah et al., 2025). Choi et al, (2022) reported that having a daughter in the family, mother's previous diagnosis with HPV, general HPV knowledge, influence, harm and risk were significantly associated with being undecided and with intentions to vaccinate their sons ($p < .05$). Approximately 10% of the mothers intended to vaccinate their son's against HPV, 61.0% were undecided and 1.5% already had their sons vaccinated. Without understanding the intention and perception of adolescent girls toward HPV vaccination, and without involving the community in awareness and delivery, efforts to achieve the WHO 90 per cent vaccination target by 2030 will be undermined. This is particularly critical given that adolescents constitute 22 per cent of Nigeria's population and represent the age group that will benefit most from early vaccination) older age within the 9-19 years bracket and higher educational attainment have been associated with greater awareness and intention to vaccinate (Eze et al., 2022; Idowu et al., 2020). Religion has also impinged on acceptance, as some studies in Nigeria reported that religious beliefs shape perception of the HPV vaccine as promoting sexual activity (Oku et al., 2021; Okunade et al., 2018;). Similarly, socio-economic status affects access to information and health services, with girls from lower-income households demonstrating lower vaccination intention due to cost and limited health literacy (Adegboyega et al., 2021; Olubodun et al., 2020).

The HPV vaccine is safe and can prevent up to 90 percent of cervical cancers if given to girls between the ages of 9 and 14, before they become exposed to the virus. Despite this, vaccination coverage among adolescent girls in Nigeria appears to still be very low. In many communities, parents are hesitant, myths, and misinformation are common, and there is poor awareness about what HPV is and why the vaccine matters. From observation, many adolescent girls in rural areas do not have enough information about HPV and the vaccine. Some have heard about it from school or health workers but do not fully understand it. Others depend entirely on their parents and community leaders to make health decisions for them. In places such as Irri in Isoko South LGA of Delta State, discussions around reproductive health and vaccination are still limited. Parents worry about side effects, some believe their daughters are too young for such a vaccine, and others think it encourages early sexual activity. At the same time, peer groups also influence how girls see the vaccine, sometimes



positively, and sometimes with fear and doubts. This Study aimed investigated the intention, perceptions and uptake of Human Papillomavirus (HPV) Vaccination among Adolescent Girls in Irri, Isoko South in Delta State, Nigeria. Specifically, the study determined the: uptake of Human papillomavirus vaccine among adolescent girls by sociodemographic characteristics in Irri, Isoko South, Delta State. The study also ascertained intention of adolescent girls to receive HPV Vaccine among Adolescent Girls uptake for prevention of cervical cancer in Irri, Isoko South, Delta State. The study also determined the perceptions of adolescent's girls towards HPV vaccine for the prevention of cervical cancer in Irri, Isoko South, Delta State.

Adolescent girls who should be protected are left unvaccinated, putting them at risk of HPV infection and cervical cancer later in life. Without understanding how these girls perceive the HPV vaccine and whether they are willing to take it, health programmes will continue to miss the mark. Currently, there is little documented information on the intention and perception of HPV vaccination uptake among adolescent girls in Irri, Isoko South. Community factors such as parental approval, cultural beliefs, religious views, and the role of schools and health centers have not been properly explored in this setting. It is against this background that this study assessed the intention and perception of HPV vaccination uptake among adolescent girls in Irri, Isoko South, Delta State using a community-based approach. Understanding their views and the influence of their community would help in designing health education and vaccination programs that are acceptable, accessible, and effective for girls in this area.

Methods

Study design and setting

The study adopted a descriptive cross-sectional survey research design with a community-based approach. This design was considered appropriate because it allowed the researcher to collect data on the intention and perception of adolescent girls toward HPV vaccination as it exists in their natural community setting without manipulation of variables. The area of the study was Irri community in Isoko South Local Government Area of Delta State, Nigeria. Delta State was created on 27th August 1991 by the Federal Government of Nigeria out of the former Bendel State. The state is located in the South-South geopolitical zone of Nigeria. Delta State shares boundaries with Edo State to the north, Ondo State to the west, Anambra State to the east, Bayelsa State to the southeast, Rivers State to the southeast, and has a coastline on the Atlantic Ocean to the south. Isoko South LGA is one of the 25 LGAs in Delta State and Irri is a major rural community within the LGA where community structures, schools, and health centers influence adolescent health decisions.

Study population

The population of the study consisted of all adolescent girls aged 9-19 years residing in Irri community, Isoko South LGA. In the context of the study, adolescent girls are females aged 9-19 years residing in Irri, Isoko South LGA, who are the target population for HPV vaccination. Based on projected data from the National Population Commission and community health records, the estimated population of adolescent girls in Irri is 880.

Sample size and sampling technique(s)

Taro Yamane formula was used to determine the minimum representative sample size for the study population as shown below

$$N = \frac{N}{1 + N(e^2)}$$



Where

n = minimum sample size(?)

N = population for the study (880)

e = standard error (0.05)

When you replace the values in the formulae

$n = 880 / 1 + 880(0.05^2)$

$n = 880 / 1 + 880(0.0025)$

$n = 880 / 3.2$

$n = 275.0$

$n = 275$

However, to increase the generalizability of the study, the minimum sample size was increased by 100% to account for non-response as recommended by Lewis et al. (2021).
100% of 275 = 550, Therefore, final sample size = 550 adolescent girls in Irri.

A multi-stage sampling procedure was adopted; stage one purposive sampling was used to select Irri community because it is a major settlement in Isoko South with accessible schools and community health structures. Proportionate stratified random sampling was used to select participants from the 3 major strata in the community: In-school girls, Out-of-school girls, and Girls attending apprenticeship/skill centers.

Data collection instrument

The instrument for data collection was a 25-item self-structured questionnaire titled “Intention and Perception of HPV Vaccination Questionnaire (IPHVQ)”. The instrument was divided into three sections. Section A consisted of 5 demographic characteristics which included age, family socioeconomic status, school grade, ethnicity, and parent level of educational status. Section B contains 10 intention items to receive HPV vaccination structured on a 4-point Likert-type scale of Very willing = 4, Willing = 3, Unwilling = 2, and Very unwilling = 1. Section C comprised 10 items on perception of HPV vaccination structured on a 4-point Likert scale of Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1

The instrument was subjected to face and content validity. This was done by three experts in the Department of Health Promotion and Environmental Health Education, University of Port Harcourt. A copy of the instrument together with the study objectives, research questions and hypotheses was given to each validator. Corrections and suggestions were incorporated to produce the final draft. This ensured that the instrument measured what it was intended to measure.

Split-half method was used to establish the reliability of the instrument. Split half method was used to get the reliability using Cronbach’s Alpha and a reliability coefficient of 0.87 was obtained, indicating that the instrument was reliable.

Data collection procedure

Permission was obtained through an introductory letter from the Head of Department, Health Promotion and Environmental Health Education, University of Port Harcourt. With ethical consideration in Irri community, approval and informed consent from the Irri community Chairman and the traditional ruler were sought. Additional permission was also obtained from the Isoko South LGA Chairman, school principals, and parents/guardians of the respondents. With the help of three trained research assistants who were indigenes and



understood the local dialect, copies of the questionnaire were administered to the respondents in schools, community centers, and homes. Privacy was ensured by administering the questionnaire in a conducive and confidential environment. Informed assent was obtained from the girls aged 9-17 years and informed consent from parents/guardians and from girls aged 18-19 years. Participation was voluntary and respondents were free to withdraw at any time. Data collection lasted for 2 weeks.

The self-administered questionnaire was used for data collection. The research assistants explained the purpose of the study in simple language and assisted respondents who had difficulty reading. Completed questionnaires were retrieved immediately to ensure a high response rate and to minimize loss of data.

Data analysis

Data collected were analyzed using Statistical Package for Social Sciences (SPSS) version 27. Descriptive statistics of frequency, percentage, mean and standard deviation were used to answer the research questions.. For the 4-point Likert scale on intention, mean scores of 1.00-1.49 = Very unwilling, 1.50-2.49 = Unwilling, 2.50-3.49 = Willing, 3.50-4.00 = Very willing. For perception, mean scores of 1.00-1.49 = Strongly Disagree, 1.50-2.49 = Disagree, 2.50-3.49 = Agree, 3.50-4.00 = Strongly Agree. An aggregate mean of 2.50 and above was interpreted as positive intention and positive perception, while less than 2.50 was interpreted as negative intention and negative perception.



Results

Table 1: Distribution of Socio-Demographic Characteristics of the Participants

S/N	Personal Data (n=550)	Frequency	Percentage%
1	Age range		
	9-12years	150	27.3
	13-16years	123	22.3
	17-19years	277	50.4
2	Family		
	socioeconomic	262	47.6
	Low-income	150	27.3
	Middle-income	138	25.1
	High-income		
3	School grade		
	Junior	200	36.4
	Senior Secondary	350	63.6
4	Ethnicity		
	Hausa	18	3.2
	Igbo	62	11.2
	Yoruba	100	18.2
	Others(Isoko)	370	67.2
5	Parent level of		
	Education	102	18.5
	No formal	171	31.1
	Secondary	277	50.4
	Tertiary education		

In Table 1, most adolescent girls were 17-19 years old (50.4%), from low-income families (47.6%), and the majority of respondents were in secondary school 63.6%. For ethnicity, 67.2% were categorized as Others, which included Isoko and other minority groups. Regarding parent level of education, 50.4% reported secondary education, indicating a level that is slightly above average

Table 2: Intention towards Receiving HPV Vaccination

S/N	Intent-on HPV vaccine uptake	Mean	St.D	Remark
1	I am willing to take the HPV vaccine to protect myself from cervical cancer.	3.21	.891	Accepted
2	I intend to receive the full dose of HPV vaccine if it is available to me	3.07	.866	Accepted
3	I plan to complete all required doses of the HPV vaccine if offered to me	3.11	.735	Accepted
4	I will encourage my friends to take the HPV vaccine.	2.18	1.163	Rejected
5	I am willing to take the HPV vaccine if it is offered free at my community/health center	3.15	.828	Accepted
6	I plan to take the HPV vaccine within the next 6 months.	2.08	1.085	Rejected
7	I am willing to take the HPV vaccine even if my parents/guardians are not fully supportive.	3.39	.805	Accepted



8	I am willing to receive HPV vaccination recommended by health workers	3.02	.889	Accepted
9	I have confidence on HPV vaccine to prevent Cervical cancer	3.35	.935	Accepted
10	I will take the HPV vaccine even if my parents/guardians are not fully supportive	2.35	1.063	Rejected
Aggregate		2.891	0.926	Accepted

Criterion Mean: <2.49= Rejected, 2.50 and above = Accepted. St.D = Standard Deviation

Table 2. shows the mean and Standard deviation analysis on the intention to receive HPV vaccine among adolescents in Irri, Isoko South. The findings revealed that with an aggregate mean value of 2.891 ± 0.926 , the adolescents accepted that they will take HPV vaccine in the community. The result revealed that the intention willingness by the adolescents' girls included: to protect themselves from Cervical Cancer ($3.21 \pm .891$); full doses if made available ($3.07 \pm .866$); complete all required doses ($3.11 \pm .735$); offered free at the community/health centre ($3.15 \pm .828$), take vaccine if parents/guardian are not supportive ($3.39 \pm .805$, health workers recommend ($3.02 \pm .889$) and have confidence on HPV vaccine to prevent cervical cancer ($3.35 \pm .935$).

Table 3: Respondents' Perceptions towards HPV Vaccination

S/N	Perceptions	Mean	St.Dev	Remark
1	Human Papillomavirus infection can cause cervical Cancer.	3.40	0.805	Accepted
2	Women can be affected by cervical cancer in future with or without the vaccine	2.80	1.117	Accepted
3	HPV vaccine can protect me from cervical cancer	3.65	0.735	Accepted
4	Girl exposes to early sex gets cervical cancer easily.	2.96	0.663	Accepted
5	My parents will allow me to take the HPV vaccine	2.65	1.108	Accepted
6	Protected sex can prevent cervical cancer.	2.80	0.885	Accepted
7	Cervical Cancer cannot be prevented by the HPV vaccine.	2.90	0.805	Accepted
8	HPV vaccine can prevent genital warts.	3.29	1.117	Accepted
9	Vaccines efficient in preventing some kinds of oral cancers	3.35	0.735	Accepted
10	Vaccine efficient in preventing anal cancer	2.70	0.663	Accepted
Aggregate		3.03	0.863	Accepted

Criterion Mean: <2.49= Rejected, 2.50 and above = Accepted.

The mean analysis in Table 3 reveals that participants in Irri, Isoko South generally have a positive perception of HPV. The highest mean score (3.65) is associated with HPV vaccine can protect me from cervical cancer, indicating strong agreement. Statements regarding HPV vaccine can protect me from cervical cancer also received relatively high means (above 2.9). However, lower scores were recorded for Vaccine efficient in preventing anal cancer. The aggregate mean of **3.03** and standard deviation of **0.863** suggest a consistent positive perception of willingness toward the uptake of HPV vaccine among participants.

Table 4: ANOVA Analysis on Difference in Intention Uptake of human Papillomavirus vaccination among adolescent Girls in Irri Isoko South in Delta State based on Age (n=550)



	Sum of Squares	Df	Mean Square	F.cal	F.crit	Sig.	Decision
Between Groups	.63	2	.0315	.477	1.52	.000	significant
Within Groups	36.149	547	.066				
Total	36.779	549					

Since F-calculated $4.77 > F\text{-critical } 1.52$ and $p\text{-value } .000 < 0.05$, we reject H_0 . Conclusion: There is a significant relationship between socio-demographic factors and the intention and perception of adolescent girls toward HPV vaccination in Irri community. The finding revealed that there is a significant relationship between socio-demographic factors and intention/perception implies that demographic characteristics play a key role in shaping adolescent girls' decision to accept HPV vaccination

Discussion

The discussion of findings is presented under three subheadings based on the objectives of the study.

Socio-demographic Characteristics of Respondents

The study revealed that majority of the adolescent girls were aged 17-19 years, in senior secondary school, from low-income families of Isoko ethnicity, and their parents had secondary education. The study finding is consistent with (Egbon et al., 2022) who reported that school-based HPV vaccination programmes in rural Nigerian communities predominantly reach adolescents in senior secondary schools. Similarly, Abbas et al. (2025) in Kano State found that most adolescent girls willing to receive HPV vaccine were late adolescents aged 16-19 years. The high proportion of respondents from low-income families aligns with Black and Richmond (2018) who noted that HPV vaccine uptake challenges in sub-Saharan Africa are often linked to socioeconomic status. However, the finding that 50.4 per cent of parents had secondary education is slightly higher than (Fagbule et al., 2020) who reported lower parental education levels among senior secondary students in Nigeria. This suggests that Irri community has a moderate level of parental literacy which can be leveraged for health education.

Intention to Receive HPV Vaccine among Adolescent Girls

The findings revealed that with an aggregate mean value of the adolescents accepted that they will take HPV vaccine in the community. The result revealed that the intention willingness by the adolescents' girls included: to protect themselves from Cervical Cancer, full doses if made available, complete all required doses, offered free at the community/health centre, take vaccine if parents/guardian are not supportive, health workers recommend and have confidence on HPV vaccine to prevent Cervical Cancer. The study findings were consistent with (Abbas, Musa, & Yusuf 2025) who reported high intent and willingness to receive HPV vaccine among adolescent schoolgirls in Kano State, Nigeria. The study also agrees with (Ampofo, Mackenzie, & Boyes 2023) who found positive intention to participate in HPV vaccination among female senior high school students in Ghana. Furthermore, (Kassie et al. 2024) in Ethiopia reported high willingness to accept HPV vaccination among school adolescents. The study findings that reported high intent to complete all doses is consistent with (Dochez et al., 2017) who emphasized that adolescent autonomy and trust in health workers improve completion rates in African HPV programs. The finding that adolescents are



willing to take the vaccine even without parental support is consistent with (Jacob, Abraham, & Thomas 2021) who noted that direct education of adolescents increases autonomous health-seeking behaviour. However, this finding is not consistent with (Yusuf et al., 2024; Wu et al., 2024) who reported high parental hesitancy and barriers to HPV vaccination in Kano and China respectively. The difference may be due to the study setting and the fact that this study focused on adolescents' intent rather than parental decision.

Perception of HPV Vaccine among Adolescent Girls

The aggregate mean and standard deviation value suggest a consistent positive perception of willingness toward the uptake of HPV vaccine among participants. The study finding is consistent with (Rehman et al., 2022; Saini et al., 2024) who reported positive perception of HPV vaccine effectiveness in preventing cervical cancer among mothers and women in India. The study also agrees with (Singh, Goyal, & Yadav 2024) who found positive perception and willingness for HPV vaccination in rural India. The positive perception is further supported by (WHO, 2025; Prem et al. 2024) who state that HPV vaccination is the most effective strategy for cervical cancer prevention. The finding also aligns with (Chawla et al., 2016; Rashid et al., 2016) who reported that knowledge of HPV vaccine's protective role improves acceptance. However, the lower score for "vaccine efficient in preventing anal cancer" suggests a knowledge gap. This is consistent with (Fagbule et al., 2020) who reported poor knowledge of HPV and HPV vaccine beyond cervical cancer among Nigerian secondary school students. The study was also in line with (Lismidiati & Emilia 2020) who noted limited perception of HPV vaccine benefits beyond cervical cancer among adolescents and parents. The generally positive perception in this study contrasts with Cosmas et al. (2022) who reported low HPV awareness among adolescent girls in Jos and Northern Nigeria. The difference may be attributed to increased awareness campaigns and the influence of school-based health education in Delta State. Overall, the findings indicate that adolescent girls in Irri have favourable intent and perception toward HPV vaccine uptake. This is consistent with recent Nigerian and African studies (Abbas et al., 2025; Ampofo et al., 2023; Okagbue et al., 2025) but differs from studies reporting high parental hesitancy (Yusuf et al., 2024) and low awareness (Cosmas et al., 2022). The study results suggest that with proper school-based delivery and free access, HPV vaccination can be successfully implemented in Irri community.

The finding of this study is consistent with Duru et al. (2020) and Kessels et al. (2012) who reported that socio-demographic factors significantly influence HPV vaccination intention. However, it contradicts Adeoye et al. (2021) who found no significant relationship. The difference may be due to contextual factors and target population differences.

Socio-demographic implication on the age, school level, income, ethnicity and parental education profile means school-based programs are the best delivery channel, and health literacy can be leveraged. I also tied it to past studies that found age, education, SES and ethnicity affect HPV uptake.

Intent implication: Positive intent, especially willingness even when free and even without parental support, means cost/access are drivers and adolescents can be engaged directly but parents should still be involved. This aligns with Ajzen's Theory of Planned Behaviour that intention predicts behaviour.

Perception implication: Generally positive perception, with cervical cancer prevention being the strongest motivator and anal cancer being a knowledge gap, means messaging should focus on cervical cancer first while also closing knowledge gaps. Overall, the positive intent



and perception indicate that Irri adolescent girls are receptive to HPV vaccination if it is made available, affordable, and properly communicated.

Conclusion

Adolescent girls in Irri, Isoko South are predominantly late adolescents, from low-income households, and attending senior secondary schools. There is a positive intent toward HPV vaccine uptake among adolescent girls in Irri, driven by the desire for cervical cancer prevention and trust in health worker recommendations. However, adolescent girls have a generally positive perception of the HPV vaccine, particularly regarding its role in preventing cervical cancer. Financial cost, dose schedule, and parental support are not major barriers to intent, suggesting readiness for program implementation. Therefore, the community is in a favourable position to introduce and scale up HPV vaccination programs.

Recommendations

Based on the findings, the following recommendations are made:

1. Community health education campaigns using local dialect and community town criers should be conducted to directly address adolescent girls and increase their willingness to accept the HPV vaccine.
2. Health educators and community health workers should organize targeted health talks and seminars to correct misconceptions and provide accurate information about the benefits of HPV vaccination in preventing cervical cancer.
3. The use of trusted community leaders and parents, given that 50.4% have secondary education, should be encouraged in health messaging to improve positive perception toward HPV vaccination.

Author's contributions

Author Lois Erowo Obed-Ojukwu wrote the conceptualization, Lois Erowo Obed-Ojukwu & Ifeoma Vivian Ugwueke did data collection, L.E.O did the analysis, L.E.O-O, the writing and did the final editing, and L.E.O-O did the supervision of the research. Obed-Ojukwu.L.E gave potential impacts insights of this study which can guide health education to address specific concerns or misconceptions among adolescents and understanding local perceptions can aid in engaging the community more effectively in HPV vaccination efforts in Isoko South.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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