**KNOWLEDGE AND ATTITUDES OF JSS1-SS1 STUDENTS (9-14 YEARS) OF DEMONSTRATION SECONDARY SCHOOL TOWARDS THE HUMAN PAPILLOMA-VIRUS VACCINATION.**

**CHAPTER ONE**

**INTRODUCTION**

**BACKGROUND OF THE STUDY**

Human Papillomavirus (HPV) is a significant public health concern worldwide, with a high prevalence among adolescents. The virus is a leading cause of cervical cancer, as well as other anogenital and oropharyngeal cancers. Adolescents aged 9-14 years are a critical target group for HPV vaccination, as they are more likely to be protected against HPV-related diseases if vaccinated before exposure to the virus.

According to the World Health Organization (WHO), HPV is the most common sexually transmitted infection (STI) globally, with approximately 630 million people infected (WHO, 2020). The virus is a leading cause of cervical cancer, as well as other anogenital and oropharyngeal cancers.

In Nigeria, the burden of HPV-related diseases is substantial. According to the International Agency for Research on Cancer (IARC), cervical cancer is the second most common cancer among women in Nigeria, accounting for approximately 14,000 new cases and 9,000 deaths annually (IARC, 2020).

Delta State, in particular, has reported a high prevalence of HPV infection. A study conducted in Delta State found that out of 955 participants, 238 (24.9%) were HPV positive, with varied prevalence across different sites in the state. Furthermore, the study revealed that HPV infection was highest among women with unknown marital status (35.9%), followed by single women (33.8%), widowed/divorced/separated women (30.3%), and married/cohabiting women (19.6%). The research also found a significant association between education and HPV prevalence, with women without education (75%) and those with primary education (54%) working as unskilled personnel having the highest HPV prevalence. Occupation was also found to be a significant factor, with unskilled personnel having the highest HPV infection rate. Unfortunately, the study reported that only 6% of participants confirmed vaccination with HPV vaccines, indicating a need for increased awareness and access to vaccination (Ezechi et al., 2018).

The introduction of the HPV vaccine has been a crucial step in preventing HPV-related diseases. However, vaccine uptake remains suboptimal, particularly for adolescents aged 9-14 years students.

Adolescents aged 9-14 years are a critical target group for HPV vaccination. The WHO recommends that girls and boys in this age group receive the HPV vaccine to protect against HPV-related diseases (WHO, 2020). However, vaccine uptake remains suboptimal, particularly in low- and middle-income countries like Nigeria.

Two HPV vaccine types are now available for the prevention of HPV-related diseases. The quadrivalent vaccine targets HPV types 6, 11, 16, and 18, and the bivalent vaccine targets HPV types 16 and 18. Both the quadrivalent and the bivalent vaccines have high efficacy against HPV types 16- and 18-related cervical intraepithelial neoplasia (CIN) and cervical cancers. The HPV vaccine was licensed in Nigeria in 2008.

The Centers for Disease Control and Prevention (CDC) suggests routine HPV vaccination at age 11 or 12. The ideal age for vaccination is before a person is sexually active. Research has shown that receiving the vaccine at a young age isn't linked to an earlier start of sexual activity. People younger than age 15 can be vaccinated with two doses, 6 to 12 months apart. People who start the vaccine series later, at ages 15 through 26, should get three doses of the vaccine. These shots are given over six months.

Several factors contribute to the low uptake of HPV vaccine among adolescents in Nigeria. These include inadequate knowledge and awareness about HPV and the vaccine, cultural and social barriers, and limited access to healthcare services (Ogunsola et al., 2018). Furthermore, parents/guardians play a significant role in influencing their children's decision to receive the HPV vaccine. However, many parents/guardians lack adequate knowledge and awareness about the vaccine, which can hinder vaccine uptake (Adekanle et al., 2017).

**STATEMENT OF PROBLEM**

Despite the availability of effective vaccines, Human Papillomavirus (HPV) remains a significant public health concern in Nigeria, particularly among adolescents and young adults. A systematic review and meta-analysis estimated the pooled prevalence of HPV among Nigerian women to be **32%**, with higher rates among younger populations (Adebamowo et al., 2017). Specifically, in Delta State, a study conducted at the Federal Medical Center in Asaba found a high prevalence of HPV infection among women of reproductive age (Okunade et al., 2022).

**OBJECTIVES OF THE STUDY**

1. To determine the level of knowledge among JSS1-SS1 students of Demonstration Secondary School about the Human Papillomavirus Vaccine.

2. To determine the attitudes of JSS1-SS1 of Demonstration Secondary School towards being vaccinated with the HPV Vaccine.

3. To access the sources of information for JSS1-SS1 students of Demonstration Secondary School about the HPV Vaccine.

4. To examine the social norms that may affect their attitudes towards HPV vaccination.

**RESEARCH QUESTIONS**

1. What is the level of awareness of the JSS1-SS1 students of Demonstration Secondary School about HPV vaccines?

2. What are the attitudes of JSS1-SS1 students of Demonstration Secondary School towards being vaccinated?

3. What are the sources of information on HPV of the JSS1-SS1 students of Demonstration Secondary School?

1. What are the social norms that may affect their attitudes towards being vaccinated with the HPV vaccine?

**SIGNIFICANCE OF THE STUDY**

**TO THE HEALTH CARE SECTOR**

The study of adolescents' knowledge and attitudes toward Human Papillomavirus (HPV) vaccination is crucial for the health sector as it helps improve vaccination coverage by identifying barriers such as misinformation and cultural concerns. By understanding these factors, healthcare organizations can develop targeted awareness campaigns that enhance vaccine acceptance. Increasing HPV vaccination rates leads to a significant reduction in HPV-related diseases, including cervical cancer, thereby lessening the burden on the healthcare system and reducing long-term medical costs. Additionally, the study provides valuable insights that guide public health strategies, enabling policymakers to design effective school-based or community-driven vaccination programs. Addressing misinformation and vaccine hesitancy among adolescents ensures that accurate information is disseminated, fostering trust in vaccination initiatives. The findings from such studies also inform government policies on HPV vaccine mandates and funding, ensuring evidence-based interventions. Moreover, ensuring widespread adolescent vaccination contributes to long-term population immunity and protects future generations from HPV-related complications. Since HPV affects both males and females, studying attitudes toward vaccination helps address gender disparities in vaccine uptake and promotes equal protection for all. Overall, this research plays a vital role in shaping public health policies, improving vaccine accessibility, and enhancing disease prevention efforts within the healthcare system.

**TO THE COMMUNITY**

The study of adolescents' knowledge and attitudes toward Human Papillomavirus (HPV) vaccination is highly significant to the community as it helps promote awareness and acceptance of the vaccine, ultimately reducing the prevalence of HPV-related diseases such as cervical cancer, genital warts, and other HPV-associated conditions. By understanding the level of knowledge and attitudes among adolescents, community health programs can be tailored to address misconceptions, combat vaccine hesitancy, and encourage early vaccination. Increased awareness within the community leads to higher vaccination rates, fostering herd immunity and protecting not only vaccinated individuals but also those who are vulnerable, such as immunocompromised individuals and those who cannot receive the vaccine due to medical reasons. Furthermore, widespread HPV vaccination contributes to overall public health improvements by reducing the long-term financial burden of treating HPV-related illnesses. It also empowers adolescents and their families with the knowledge to make informed health decisions, promoting a culture of preventive healthcare. Additionally, gender inclusivity in HPV vaccination campaigns ensures that both males and females are protected, reducing the transmission of the virus within the community. By fostering trust in vaccination programs and enhancing community health education, the study plays a vital role in strengthening public health efforts, reducing disease incidence, and ultimately improving society’s overall well-being.

**TO THE GOVERNMENT**

The study of adolescents' knowledge and attitudes toward Human Papillomavirus (HPV) vaccination is of great significance to the government as it provides essential data for developing effective public health policies and vaccination programs. By understanding the level of awareness, misconceptions, and acceptance of the HPV vaccine among adolescents, the government can design targeted educational campaigns to promote vaccine uptake and address misinformation. This research also aids in evaluating the effectiveness of existing immunization initiatives, allowing policymakers to make informed decisions about funding, resource allocation, and policy adjustments. A higher vaccination rate leads to a reduction in HPV-related diseases, such as cervical cancer and other HPV-associated conditions, ultimately decreasing the economic burden on the healthcare system. Additionally, widespread vaccination contributes to improved public health outcomes, reducing long-term healthcare costs associated with treating HPV-related illnesses. The study also helps the government implement school-based vaccination programs, ensuring that more adolescents receive the vaccine at the appropriate age. Furthermore, gender-inclusive HPV vaccination strategies can be developed to protect both males and females, preventing the spread of the virus within the population. By prioritizing HPV vaccination and addressing knowledge gaps among adolescents, the government can strengthen disease prevention efforts, enhance public trust in immunization programs, and work toward achieving national and global health goals related to cancer prevention and reproductive health.

**SCOPE OF STUDY**

The scope of the study covers JSS1-SS1 students of Demonstration Secondary School, Edjeba, Delta State.

**OPERATIONAL DEFINITION OF TERMS**

For the purpose of this study, the following terms should be defined and further explained.

**Knowledge:** awareness or familiarity gained by experience or education of a fact or situation.

**Attitudes**: attitude, refers to sets of emotions, beliefs, and behaviors toward a particular object, person, thing, or event.

**Human Papilloma Virus (HPV):** An infection that causes warts in various parts of the body, depending on the strain. Human papillomavirus (HPV) is the most common sexually transmitted infection (STI). Some strains of HPV are high-risk and can lead to cancers, like cervical, vulva, and vaginal cancers. Early detection (with a Pap smear or HPV screening) and treatment of precancerous cells can usually prevent this from happening.

Many people with HPV don't develop any symptoms but can still infect others through sexual contact. Symptoms may include warts on the genitals or surrounding skin. There's no cure for the virus and warts may go away on their own. Treatment focuses on removing the warts. A vaccine that prevents the HPV strains most likely to cause genital warts and cervical cancer is recommended for boys and girls.

Vaccination: Vaccination is the administration of a vaccine to help the immune system develop immunity from a disease.

Uptake: Uptake refers to the act of accepting, using, or adopting something, especially in the context of medicine, technology, or ideas.

Adolescence: Adolescence is the transitional stage of development between childhood and adulthood, typically occurring between the ages of 10 and 19 (as defined by the World Health Organization)

**CHAPTER 2**

**LITERATURE REVIEW**

Introduction

Adolescents, particularly those between the ages of 9-14 years, are a key target group for Human Papillomavirus (HPV) vaccination due to their higher likelihood of benefiting from early immunization before potential exposure to the virus (World Health Organization, 2020). HPV is a widespread infection that can lead to severe health complications, including cervical cancer, genital warts, and other anogenital cancers (Centers for Disease Control and Prevention, 2021). Despite the vaccine's availability and effectiveness in preventing these diseases, knowledge and attitudes toward HPV vaccination among secondary school students remain inconsistent (Kessels et al., 2012). This study seeks to assess the awareness, perceptions, and acceptance of the HPV vaccine among JSS1-SS1 students of Demonstration Secondary School, focusing on how their knowledge levels and attitudes influence vaccine uptake and health-seeking behavior.

**CONCEPTUAL REVIEW**

Human papillomavirus (HPV), a ubiquitous sexually transmitted infection, poses a significant threat to global health, particularly through its association with various cancers, most notably cervical cancer (WHO, 2021). HPV vaccination, a cornerstone of primary prevention, offers a powerful tool for mitigating this burden (CDC, 2020). Adolescence, the recommended age window for vaccination, presents a critical opportunity to establish long-term protection (Bruni et al., 2019). However, the successful implementation of HPV vaccination programs hinges on the knowledge and attitudes of adolescents themselves. This review delves into the complex interplay of factors influencing adolescent knowledge and attitudes towards HPV vaccination within the specific context of Nigeria, a nation grappling with unique sociocultural and healthcare challenges (Okunade et al., 2020). Adolescents, particularly those between the ages of 9-14 years, are a key target group for HPV vaccination due to their higher likelihood of benefiting from early immunization before potential exposure to the virus (World Health Organization, 2020). Despite the vaccine's availability and effectiveness in preventing these diseases, knowledge and attitudes toward HPV vaccination among secondary school students remain inconsistent (Kessels et al., 2012).

### Knowledge of HPV and the HPV Vaccine Among Adolescents

### Adolescents' awareness of HPV and its vaccine is often limited due to various factors such as lack of health education, misinformation, cultural beliefs, and limited access to credible sources of information (Patel et al., 2016). Studies have shown that school-aged children, particularly in developing countries, have low knowledge of HPV and its associated risks (Okunade et al., 2020).

### Research indicates that many adolescents do not fully understand the mode of transmission, the risks associated with HPV, or the benefits of vaccination (Olubodun et al., 2019). Misconceptions and fears surrounding vaccine safety, potential side effects, and its association with sexual activity further contribute to reluctance toward uptake (Adepoju et al., 2022). School-based awareness programs play a crucial role in bridging this knowledge gap by providing scientifically accurate information to students, parents, and educators (Eze et al., 2021).

### The role of parental influence and peer perception is also crucial in shaping adolescent knowledge and attitudes toward HPV vaccination. Parents who are well-informed about HPV and its consequences are more likely to encourage their children to get vaccinated (Nnodu et al., 2020). In contrast, cultural and religious beliefs that discourage discussions about sexual health can limit adolescent exposure to relevant HPV information (Odetola et al., 2018). Peer discussions and school health campaigns have shown to positively impact adolescent awareness and willingness to receive the vaccine (Omotosho & Ibrahim, 2023).

### The importance of HPV vaccination cannot be overstated, as it is a proven method for preventing cervical cancer and other HPV-related diseases (WHO, 2021). Studies indicate that early vaccination significantly reduces the risk of developing HPV infections later in life (CDC, 2020). Despite this, gaps in knowledge continue to hinder vaccination efforts, especially in developing countries (Bruni et al., 2019). By improving awareness through school programs, parental education, and health campaigns, adolescent vaccine uptake can be enhanced, ultimately contributing to better public health outcomes (Abiodun et al., 2021).

### Understanding how much JSS1-SS1 students know about the vaccine can help in identifying gaps in their knowledge and determining the effectiveness of existing awareness programs in schools (Abiodun et al., 2021). A comprehensive approach involving schools, healthcare providers, and parental engagement can enhance vaccine literacy and promote higher uptake rates among adolescents.

### Key Knowledge Domains:

### Understanding the causal link between HPV and various cancers, particularly cervical cancer.

### Awareness of the vaccine's target population, specifically adolescents.

### Knowledge of the vaccine's safety profile and efficacy in preventing HPV infection.

### Understanding the importance of completing the recommended vaccination series for optimal protection.

### Knowledge of the various routes of HPV transmission, including sexual contact.

### Factors Influencing Knowledge:

### Socioeconomic Status: Adolescents from higher socioeconomic backgrounds often have greater access to information and healthcare resources, leading to improved knowledge (Akinyemi et al., 2020).

Educational Level: Formal education plays a crucial role in disseminating health information. Adolescents with higher levels of education are more likely to possess accurate knowledge about HPV and its vaccine (Oladapo et al., 2019).

Access to Healthcare Information: Reliable information from healthcare providers, school-based health programs, and community outreach initiatives is essential for knowledge dissemination (Ezeh et al., 2021).

Cultural and Religious Beliefs: Misconceptions and cultural taboos surrounding sexual activity can hinder access to and understanding of HPV-related information, particularly in conservative societies (Iliyasu et al., 2017).

Parental Knowledge: The level of parental knowledge about HPV directly impacts the level of adolescent knowledge. Parents are the largest decison makers for adolescent health in Nigeria (Adedokun et al, 2016).

**Importance of HPV Vaccination for Adolescents**

Administering the HPV vaccine before exposure to the virus is crucial, making adolescence the optimal period for vaccination. Immunization during this stage significantly reduces the risk of HPV-related diseases in adulthood. Globally, HPV vaccination is integrated into school health programs to enhance accessibility and uptake. However, in Nigeria, challenges such as low awareness, parental concerns, and cultural perceptions hinder vaccine acceptance.

### Attitudes of JSS1-SS1 Students Towards HPV Vaccination

While knowledge plays a critical role in HPV vaccine acceptance, attitudes toward vaccination are equally influential. Adolescents' attitudes are shaped by multiple factors, including personal beliefs, peer influence, parental approval, perceived risks, and trust in the healthcare system (Bruni et al., 2019).

A positive attitude towards vaccination is often linked to an increased likelihood of uptake, whereas hesitancy or resistance can result from misconceptions about vaccine safety, religious concerns, or misinformation from social media (Adepoju et al., 2022). Fear of needles, concerns about potential side effects, and lack of perceived vulnerability to HPV infections also contribute to vaccine hesitancy among adolescents (Eze et al., 2021).

School-based vaccination programs, parental encouragement, and endorsement from healthcare professionals have been identified as significant motivators for vaccine acceptance (Nnodu et al., 2020). Adolescents who perceive the vaccine as essential for their health are more likely to accept it, whereas those who associate it with negative connotations may be reluctant (Odetola et al., 2018). Addressing these concerns through targeted awareness campaigns, educational initiatives, and trusted advocacy from teachers and parents can help improve adolescent attitudes toward HPV vaccination.

Understanding the attitudes of JSS1-SS1 students towards HPV vaccination is crucial for designing interventions that address hesitancy, reinforce positive perceptions, and ultimately increase vaccine uptake in Nigeria.

**Attitudes Towards HPV Vaccination:**

Attitudes, encompassing beliefs, values, and perceptions, significantly influence an individual's willingness to receive the HPV vaccine. Negative attitudes, often rooted in misconceptions and fears, can impede vaccine uptake.

* **Key Attitudinal Factors:**
  + Perceived susceptibility to HPV infection and its associated cancers.
  + Perceived benefits of the vaccine in preventing HPV-related diseases.
  + Concerns about vaccine safety and potential side effects.
  + Beliefs about the vaccine promoting or condoning sexual activity.
  + Influence of peers, parents, and community leaders on vaccination decisions.
  + Religious and cultural beliefs regarding sexuality and healthcare practices.
* **Factors Influencing Attitudes:**
* **Parental Influence**: Parental attitudes play a pivotal role in shaping adolescent vaccination decisions. Parents are gatekeepers for adolescent health in Nigeria (Ukwuani et al, 2013).
* **Peer Influence**: Peer norms and opinions can significantly influence adolescents' perceptions of the vaccine, particularly during this developmental stage (Akinyemi et al, 2017).
* **Media Influence:** Media coverage, both positive and negative, can shape public perception of the vaccine and influence attitudes (Akinyemi et al, 2019).
* **Trust in Healthcare Providers:** Trust in healthcare providers and their recommendations is crucial for vaccine acceptance (Ezeh et al, 2020).
* **Cultural Context**: In Nigeria, cultural and religious beliefs regarding sexuality can create significant barriers to HPV vaccination, requiring culturally sensitive approaches (Iliyasu et al, 2016).
* **Cost of Vaccine**: In a country like Nigeria, the cost of healthcare is a large factor, and the cost of the vaccine will greatly influence the attitudes of citizens (Onwujekwe et al, 2010).

### Sources of Information on the HPV Vaccine for JSS1-SS1 Students

### The sources of information that JSS1-SS1 students rely on to learn about the HPV vaccine play a crucial role in shaping their knowledge and attitudes toward vaccination. Key sources include:

* **Parents and Guardians:** Adolescents often receive health-related information from their parents. Parents who are informed about HPV and its vaccine can positively influence their children's willingness to get vaccinated. However, parental misconceptions and cultural barriers may hinder vaccine acceptance (Nnodu et al., 2020).
* **School-Based Health Education:** Schools are an essential avenue for providing structured and evidence-based information on HPV vaccination. Integration of HPV education in the curriculum, health talks, and peer education programs can help increase students' knowledge levels (Olubodun et al., 2019).
* **Healthcare Providers:** Doctors, nurses, and other medical professionals are trusted sources of information. School health programs that include visits from healthcare professionals have been shown to increase awareness and correct misconceptions about vaccines (Abiodun et al., 2021).
* **Media and Social Media**: Television, radio, newspapers, and online platforms contribute significantly to health awareness. Social media, in particular, has become a major source of information for adolescents, although it also serves as a platform for misinformation and vaccine hesitancy (Eze et al., 2021).
* **Peer Influence:** Friends and classmates play a role in shaping adolescent perceptions of health interventions. Positive peer discussions and role modeling can encourage vaccine acceptance, while negative peer perceptions may foster hesitancy (Omotosho & Ibrahim, 2023).

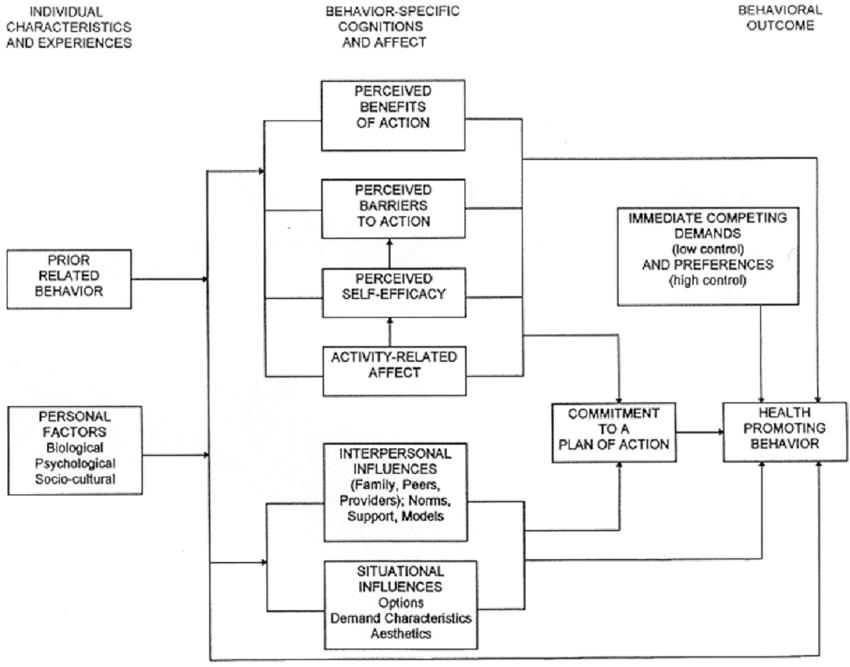
Understanding the primary sources of information among JSS1-SS1 students can help policymakers, educators, and health officials design effective communication strategies to promote accurate and positive messaging about HPV vaccination.

**THEORETICAL FRAMEWORK**

This theoretical framework aims to elucidate the complex interplay of factors influencing adolescents' knowledge and attitudes toward HPV vaccination, utilizing a multi-theory approach anchored by Nola J. Pender's Health Promotion Model (HPM).

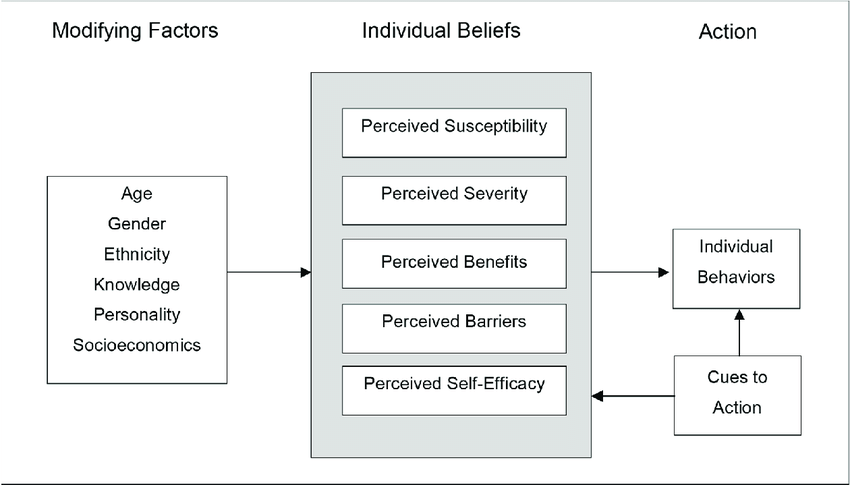
**Pender's Health Promotion Model (HPM):**

* **Core Concepts:** 
  + Individual Characteristics and Experiences: Prior related behavior, personal factors (biological, psychological, sociocultural).
  + Behavior-Specific Cognitions and Affect: Perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences, situational influences.
  + Behavioral Outcome: Commitment to a plan of action, immediate competing demands and preferences, health-promoting behavior.
* **Application to HPV Vaccination:**
  + The HPM provides a framework for understanding how adolescents' individual characteristics, experiences, and perceptions influence their health-promoting behaviors, specifically HPV vaccination.
  + Perceived benefits (e.g., cancer prevention) and perceived barriers (e.g., fear of side effects, cost) directly impact vaccine acceptance.
  + Perceived self-efficacy (confidence in obtaining the vaccine) is crucial for translating intentions into action.
  + Interpersonal influences (e.g., parental support, peer norms) and situational influences (e.g., access to healthcare) play significant roles.



**Integrated Framework:**

**1. Health Belief Model (HBM):**

* **Core Constructs:** 
  + **Perceived Susceptibility:** Adolescents' beliefs about their risk of contracting HPV.
  + **Perceived Severity:** Adolescents' beliefs about the seriousness of HPV-related diseases.
  + **Perceived Benefits:** Adolescents' beliefs about the effectiveness of the HPV vaccine in preventing HPV infection and related diseases.
  + **Perceived Barriers:** Adolescents' beliefs about the obstacles to getting vaccinated (e.g., side effects, cost, fear of needles).
  + **Cues to Action:** Factors that trigger adolescents to get vaccinated (e.g., recommendations from healthcare providers, parental encouragement, media campaigns).
  + **Self-Efficacy**: Adolescents' confidence in their ability to get vaccinated.
* **Application to HPV Vaccination**: The HBM helps explain how adolescents' perceptions of risk, benefits, and barriers influence their decision to get vaccinated. For example, if adolescents perceive themselves as highly susceptible to HPV and believe the vaccine is effective and safe, they are more likely to get vaccinated. Conversely, if they perceive the vaccine as having significant side effects or believe they are not at risk, they may be hesitant (Rosenstock, 1974).

**2. Theory of Planned Behavior (TPB):**

* **Core Constructs:**
  + Attitude**: Adolescents' positive or negative evaluations of getting the HPV** vaccine.
  + **Subjective Norms:** Adolescents' perceptions of social pressure to get vaccinated (e.g., from parents, peers, healthcare providers).
  + **Perceived Behavioral Control:** Adolescents' beliefs about their ability to get vaccinated (e.g., access to healthcare, parental consent).
  + **Intention**: Adolescents' motivation to get vaccinated.
  + **Behavior**: The actual act of getting vaccinated.
* **Application to HPV Vaccination:** The TPB emphasizes the role of social influence and perceived control in shaping adolescents' vaccination intentions. Subjective norms, such as parental and peer support, can significantly influence adolescents' attitudes and intentions. Perceived behavioral control, such as access to healthcare and parental consent, is also crucial (Ajzen, 1991).

**3. Social Cognitive Theory (SCT):**

* **Core Constructs:**
  + **Observational Learning:** Adolescents learn about HPV and the vaccine through observing others (e.g., parents, peers, media).
  + **Reciprocal Determinism:** The dynamic interaction between personal factors (e.g., knowledge, attitudes), behavioral factors (e.g., vaccination), and environmental factors (e.g., social norms, healthcare access).
  + **Self-Efficacy**: Adolescents' confidence in their ability to overcome barriers and get vaccinated.
* **Application to HPV Vaccination:** SCT highlights the importance of social influence and modeling in shaping adolescents' vaccination behaviors. Observational learning, such as seeing others get vaccinated, can increase adolescents' confidence and willingness to get vaccinated. Reciprocal determinism emphasizes the ongoing interaction between personal, behavioral, and environmental factors (Bandura, 1986).

**INTEGRATION AND APPLICATION OF THESE MODELS TO THE STUDY**

This theoretical framework provides a comprehensive understanding of the factors influencing adolescents' knowledge and attitudes towards HPV vaccination. By integrating the HBM, TPB, SCT, Diffusion of Innovation Theory, and the Socio-Ecological Model, researchers and practitioners can develop targeted interventions that address the multiple levels of influence on vaccination behaviors.

* Interventions should focus on increasing adolescents' knowledge about HPV and the vaccine, addressing their concerns about safety and side effects, and promoting positive attitudes towards vaccination.
* Engaging parents, peers, and community leaders is crucial for shaping social norms and increasing social support for vaccination.
* Strengthening healthcare provider training and improving access to healthcare services are essential for facilitating vaccination uptake.
* Public health campaigns should utilize effective communication strategies to disseminate accurate information and address misconceptions.
* Policy changes to make the vaccine affordable, and easily accessible are also very important.

By utilizing this multi-theory framework, it will be possible to create more effective interventions to increase HPV vaccine uptake in adolescent populations.

**EMPERICAL REVIEW**

Empirical studies provide valuable insights into adolescents' knowledge, attitudes, and perceptions regarding HPV vaccination. This section examines research conducted in Nigeria and globally to highlight trends, challenges, and best practices in promoting HPV vaccine acceptance among secondary school students.

#### 1. Knowledge of HPV and HPV Vaccination Among Adolescents

#### A study by Olubodun et al. (2019) examined knowledge levels among secondary school students in Lagos, Nigeria, and found that only 32% of respondents had heard about HPV, while less than 20% understood its link to cervical cancer. This low awareness was attributed to the lack of structured health education on HPV within school curricula. Similarly, Adepoju et al. (2022) discovered that students who had received health education sessions or guidance from healthcare providers had significantly higher knowledge scores than those who relied on peers or the internet for information.

#### Research in sub-Saharan Africa by Abiodun et al. (2021) highlighted that cultural and religious influences shaped students' understanding of HPV. The study found that misconceptions about the vaccine's purpose, such as fears that it promotes sexual promiscuity, were prevalent in over 40% of respondents. This misinformation underscores the need for culturally sensitive awareness campaigns to promote vaccine uptake.

#### Additionally, a study by Odetola et al. (2018) assessed knowledge levels among adolescents in rural and urban areas of Nigeria. The results showed that urban students demonstrated higher knowledge levels (45%) compared to rural students (18%), likely due to better access to information through schools, healthcare facilities, and media exposure. These findings suggest a gap in health education accessibility between rural and urban populations.

#### 2. Attitudes Towards HPV Vaccination

#### Attitudes towards HPV vaccination are shaped by personal beliefs, parental influence, and community perceptions. A study conducted by Omotosho and Ibrahim (2023) revealed that while 60% of students expressed willingness to get vaccinated, only 25% had actually received the vaccine. The main barriers cited included parental refusal, fear of side effects, and uncertainty about the vaccine's necessity.

#### Kessels et al. (2012) conducted a meta-analysis of HPV vaccine attitudes in low-income countries, including Nigeria, and found that concerns about infertility (reported by 30% of participants) and religious prohibitions (20%) contributed to hesitancy. These misconceptions were more prevalent among female students than males.

#### A Nigerian study by Nnodu et al. (2020) examined how school-based interventions influenced vaccine attitudes. After implementing an HPV awareness program in selected schools, positive attitudes towards vaccination increased from 42% to 78%, highlighting the importance of structured health education in influencing adolescent perceptions.

#### 3. Sources of Information on HPV Vaccination

#### The way adolescents receive information about HPV significantly impacts their perceptions. A survey by Eze et al. (2021) found that 62% of students learned about the vaccine through school programs, 21% from parents, 10% from healthcare providers, and 7% from social media. The study noted that students who received information from healthcare professionals had more accurate knowledge and were more likely to support vaccination.

#### Another study by Patel et al. (2016) emphasized the role of parental influence in vaccine uptake. In families where parents were aware of HPV and its vaccine, children were twice as likely to be vaccinated compared to those whose parents lacked awareness. This finding reinforces the need for parent-inclusive health education strategies.

#### Social media has also emerged as a key information source for adolescents. However, Okunade et al. (2020) warned about misinformation, stating that 30% of students who relied on social media encountered misleading claims about the vaccine, including conspiracy theories and exaggerated side effect reports. This underscores the need for fact-checking and reliable health communication strategies.

#### Conclusion

#### Empirical research highlights that knowledge gaps, cultural beliefs, parental influence, and misinformation play significant roles in shaping adolescents' attitudes toward HPV vaccination. Structured school-based education, healthcare provider engagement, and parental involvement are critical strategies for improving vaccine awareness and acceptance. Addressing these barriers will help enhance HPV vaccine uptake and reduce HPV-related diseases in Nigeria.

Previous

Next

**CHAPTER 3**

**RESEARCH METHODOLOGY**

This chapter discusses the following headings as it was important in order to assess the level of knowledge and attitudes of JSS1-SS1 students of Demonstration Secondary School toward the Human Papillomavirus vaccine. They include:

* Research design
* Setting of study
* Target population
* Sample and sampling technique
* Instrument for data collection
* Validity of instrument
* Reliability of instrument
* Method of data collection
* Method of data analysis
* Ethical consideration

**RESEARCH DESIGN**

The research design adopted in this research work is the survey research design which involves the usage of a self-constructed questionnaire in the collection of data. Under the survey research, primary data of this study will be collected from JSS1-SS1students of Demonstration secondary school Edjeba, in order to determine the level of knowledge and attitudes of the adolescents(9-14 years) attending Demonstration secondary school. The design was chosen because it enables the researcher to collect data without manipulation of any variables of interest in the study. The design also provides an opportunity for an equal chance of participation in the study for respondents.

**SETTING OF THE STUDY**

The setting of the study was carried out in Demonstration Secondary School, Edjeba, Warri South, Delta state.

The Demonstration Secondary School which came into existence In October 1992 was born out of the Extra Mural Department of the College Of Education, Warri. It is located in the College Of Education, Edjeba, Warri South, Delta State

**POPULATION**

Demonstration secondary school (DSS)is made up of about 2000 students in general ranging from JSS1-SS3. Each class is subdivided into arms(eg JSS1a, JSS1b, JSS1c, etc). The school is headed by the principal and assisted by two vice principals (VP academics and VP administration), several form teachers, several teachers, a guidance counselor, a librarian, and many others.

The JSS1-SS1 is estimated to be around 800 with about 200 students in each class.

**Roads:** The major roads leading to the school are the Edjeba road and the Ekpan link road which ends at the college gate and another tarred road leading from the

gate down to the secondary school which is situated at the far end of the college compound.

**Existing facilities:** A big school field, the library, the chemistry and physics laboratories, the Emmanuel Hall where the hold general meetings.

**TARGET POPULATION**

The target population for this study is mainly JSS1-SS1students of Demonstration Secondary School which has an approximate number of 800 students.

**SAMPLING**

Out of the population of 800 students, the researcher selected 200 students as sample size. The sample size was statistically determined by Taro Yamane and

stratified random sampling for a finite population.

Firstly I identify my strata in the study which are;

JSS1students

JSS2 students

JSS3 students

SS1 students

Then i’ll determine my population size for each stratum which includes;

JSS1 - 250

JSS2- 220

JSS3- 190

SS1- 180

using Yamane formula

n=

Where n represents the sample size

N represents the population of the study

e represents the margin of error

When N is 250

n=

n=

n=

n=

When N is 220

n=

n=

n=

n=

When N is 190

n=

n=

n=

n=

When N is 180

n=

n=

n=

n=

Total n= 549

Desired n = 200

Now I will allocate the sample proportionally using this formula;

where sample from each stratum

Population of each stratum

Total student population

Total sample size

JSS1=

JSS2=

JSS3=

SS1 =

Total = 200

**SAMPLING TECHNIQUE**

The researcher will use simple random method in the selection of the students who will be present at the school. The sample element for this study is 200 students who were present at school. The questionnaire will be administered to the students through random picking and selection of students.

**INSTRUMENTS FOR DATA COLLECTION**

The instrument that will be used in this study is the self-developed questionnaire to get relevant data. the questionnaire will be classified into four (4) sections;

**Section A;** To elicit information on the demographic data of the respondents.

**Section B;** To elicit information on the knowledge and understanding of the HPV Vaccine of the respondent.

**Section C;** To. elicit information on the concerns and attitudes of the respondents on receiving the vaccine.

**Section D;**  To elicit information on the sources of information and possible recommendations to promote awareness.

**VALIDITY OF INSTRUMENT**

A copy of the questionnaire will be submitted to the research supervisor for corrections and evaluations. The researcher will make sure to accept all corrections and suggestions made on the questionnaires and thus validate the questionnaire in the content.

**RELIABILITY OF INSTRUMENT**

To ascertain the reliability of the questionnaire, the instruments were designed in a way that will focus on the research problems and questions. Extensive efforts were ensured that it does not deviate from the intended points that will be carried out. The efforts include carrying out a pilot study and re-designing the instruments to address observed inadequacies. The final refined questionnaires were eventually used to collect the data required. The self-designed instruments will be administered as intended and will remain highly valid and reliable with the possibility of high reproducibility of the result. The sample selection will also follow agreed sampling principles and formulas.

**METHOD OF DATA COLLECTION**

The questionnaire will be administered to the respondents by the researcher after obtaining consent from participants and explanations on how questions should be answered. Time will be given to collect the questionnaires from the respondents at the end of the study.

**METHOD OF DATA ANALYSIS**

The collected data will be analyzed by descriptive frequency distribution table and percentage.

**ETHICAL CONSIDERATION**

The researcher obtained a letter of permission from the research coordinator, Delta State College Of Nursings Sciences Warri as protocol demands. This will be given to the principal of Demonstration Secondary School. Adequate information will made available to the respondent in the school.

Confidentiality will be maintained as no name will be displayed regarding data collection for the study. The respondents voluntarily participated and thus there will be no form of intimidation to them. This will make the responses free from bias

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**QUESTIONNAIRE**

SECTION A: Demographic Information

This section gathers basic background information about the students.

Age: \_\_\_\_

Gender: ( ) Male ( ) Female

Class: ( ) JSS1 ( ) JSS2 ( ) JSS3 ( ) SS1

Have you heard of HPV before? ( ) Yes ( ) No

Have you received the HPV vaccine? ( ) Yes ( ) No ( ) Not sure

SECTION B: Knowledge of HPV and HPV Vaccination

This section assesses students’ awareness and understanding of HPV and its vaccine.

1. Have you ever heard of the Human Papilloma Virus (HPV)?

a. ( ) Yes

b. ( ) No

c. ( ) Not sure

2. What do you think HPV is?

a. ( ) A type of disease

b. ( ) A vaccine

c. ( ) A type of bacteria

d. ( ) I don’t know

3. How is HPV transmitted? (Select all that apply)

a. ( ) Through sexual contact

b. ( ) Through the air like flu

c. ( ) Through sharing clothes

d. ( ) I don’t know

4. Can HPV cause cancer?

a. ( ) Yes

b. ( ) No

c. ( ) Not sure

5. Do you think HPV can be prevented with a vaccine?

a. ( ) Yes

b. ( ) No

c. ( ) Not sure

SECTION C: Attitudes Towards HPV Vaccination

This section evaluates students’ opinions and feelings about the HPV vaccine.

1. Do you think getting vaccinated against HPV is important?

a. ( ) Yes

b. ( ) No

c. ( ) Not sure

2. Would you be willing to receive the HPV vaccine if offered?

a. ( ) Yes

b. ( ) No

c. ( ) Not sure

3. What are your concerns about the HPV vaccine? (Select all that apply)

a. ( ) It may have side effects

b. ( ) I don’t know enough about it

c. ( ) I don’t think I need it

d. ( ) My parents might not allow it

4. Who do you think should decide if a student gets the HPV vaccine?

a. ( ) Parents

b. ( ) Teachers

c. ( ) Doctors

d. ( ) The student

SECTION D: Sources of Information and Recommendations

This section identifies how students learn about HPV and their suggestions for increasing awareness.

1. Where did you first hear about HPV and its vaccine?

a. ( ) Parents

b. ( ) Teachers

c. ( ) Friends

d. ( ) Social media

e. ( ) Health professionals

2. Do you think schools should educate students more about HPV and its vaccine?

a. ( ) Yes

b. ( ) No

c. ( ) Not sure

3. What do you think is the best way to educate students about HPV vaccination?

a. ( ) School lessons

b. ( ) Health talks by doctors

c. ( ) TV and social media

d. ( ) Pamphlets and posters