

Assessing the Awareness of Human Papilloma Virus (HPV) Among Women in Their Reproductive Age in Amassoma, Bayelsa State

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ABSTRACT

Human Papilloma Virus (HPV) is a highly prevalent sexually transmitted infection and a significant public health concern, particularly among women of reproductive age and it is a leading cause of cervical cancer and other malignancies. This study aimed to assess the awareness and knowledge of HPV among women aged 18-49 years in Amassoma, Bayelsa State, Nigeria. A community-based, cross-sectional study was conducted using a structured questionnaire administered to 385 women, with a response rate of 96.4% (371 respondents). Majority of the participants were women in their mid-reproductive age of 26-35 (38.54%) years. In this study the single women made up a larger number (45.55%) than others. Majority of the respondents (46.36%) had secondary school certificates as their highest educational level. Only 44.47% of respondents/participants from this study had heard of HPV. Over half of the participants (54.18%) were uncertain about whether HPV could resolve spontaneously without treatment. A significant proportion (55.80%) did not know how HPV is transmitted or its clinical symptoms. Furthermore, 38.54% of the respondents recognized the link between HPV and the development of genital warts and cervical cancer. The findings revealed a concerning lack of awareness and knowledge about HPV, its transmission, symptoms, and associated health risks. Therefore, there is an urgent need for targeted educational interventions and awareness campaigns to improve HPV knowledge, promote vaccination, and encourage regular screening among women in Amassoma, ultimately reducing the burden of HPV-related diseases.

Keywords: Human Papiloma Virus, Sexually Transmitted Infection, Genital Warts, Cervical Cancer, Reproductive Age Women.

Introduction

Human Papilloma Virus (HPV) is one of the most common sexually transmissible infection (STI), belonging to the Papillomaviridae family, a small, double-stranded DNA virus classified into two categories: low-risk HPVs (LR-HPVs) responsible for anogenital and cutaneous warts, and high-risk HPVs (HR-HPVs) responsible for oropharyngeal (oral, tonsil, and throat areas) cancers and anogenital cancers, including cervical, anal, vulvar, vaginal, and penile cancers (Buchanan *et al.*, 2019). Overall, the epidemiologic distribution of HPV infection and HPV-associated burden vary significantly across the world.

The morbi-mortality-associated factors include geographic, socioeconomic, cultural, and genetic factors related to viral genome variability as well as intrinsic individual factors such as age, gender, anatomic site, and state of health (LeConte *et al.*, 2018). HPV is estimated to cause about 5% of human cancers (Ahmed *et al.*, 2019), including anogenital cancers (cervical, vaginal, vulvar, penile, and anal) and oropharyngeal cancer (CDC, 2021). The prevalence of HPV among general population is unknown in Nigeria but studies have reported 42.9% of women in a state in the northern region and 26.3% of the general population in Southern Nigeria had HPV- IgG antibodies (Park *et al.*, 2019).

Furthermore, the age-specific prevalence revealed that 52% of Nigerian women who are ≤ 30 years have had an HPV infection compared to 23% of women who were older than 45 years.

HPV infection is responsible for more than 90% of cervical cancers (CDC, 2021), and Nigeria has one of the most extensive epidemics of cervical cancer in sub-Saharan Africa (Gheit, 2019). On average, one Nigerian woman dies of cervical cancer every hour (Scheller *et al.*, 2020). The age-standardized incidence rate of cervical cancer is 34.5 per 100,000 (Scheller *et al.*, 2020). There is an upsurge in invasive cases, as retrospective studies in three tertiary hospitals in three different regions; Jos, Zaria, and Nnewi in Nigeria and found that more than 70% of the patients presented with advanced stage cervical cancer (Musa *et al.*, 2016). Each year there are 14 million new cases of HPV infections, with 79 million people currently infected (CDC, 2021). Despite the high prevalence of HPV infection and its disease burden in our environment, there is still a significant awareness and knowledge gap about HPV infection and its associated diseases among the populace, and among women in their childbearing age in rural areas or communities which pose a significant public health concern. Therefore, there is a need to assess the awareness of HPV among women in their childbearing age in Amassoma in Bayelsa State which is a rural area as to develop and design targeted effective interventions to reduce the incidence of cervical cancer.

Materials and Methods

Study Area

The study area was Amassoma in Southern Ijaw Local Government Area, Bayelsa State, with the coordinates of 4.9703°N, 6.1092°E and a population of about 2.9 million (James, 2023).

Study Design and Data Collection

A community based cross-sectional study design was used for the study. A well-structured questionnaire was used as the survey tool for the data collection. These questionnaires were distributed among females only in the community by using simple random sampling, to ascertain their knowledge and awareness of HPV infection.

The questionnaires were designed to collect data in four areas: Socio-demographic characteristics, Awareness of HPV, knowledge about HPV, and source of information. Socio-demographic characteristics studied were; age, educational level, marital status, and occupation. These questions have two options: Yes and No. Other questions used to assess general knowledge about HPV included; knowledge about the mode of transmission, clinical symptoms, and health problems associated with HPV infection.

Sample Population and Sample Size

The study population consisted of females in the community, both indigenes and non-indigenes who consented to be included in the study. The study was considered for females between the ages of 18 years and 49 years, grouped and designated as early reproductive (18-25 years), middle reproductive (26-35 years), late reproductive (36-49 year), who were willing and able to give consent. A total of 385 respondents were sampled. Sample size was calculated using the Cochran's formula (Cochran, 1977).

Data Analysis

The data from the information obtained from the survey was structurally arranged in Microsoft Excel, into a database developed for the study and analyzed using SPSS Version 22, frequencies and percentages were calculated to summarize qualitative data. Other aspects of the data were presented in Tables and percentages using MS Excel 20.0

Results

Upon the completion of the data collection process, 371(96.4%) of these questionnaires were successfully retrieved from the participants, while 14(3.6%) questionnaires remained unretrieved. The percentage response rate of 96.4%, indicates that a substantial proportion of the participants completed and returned the questionnaires, thereby providing valuable data for the study, which is considered to be a very high response rate. The age distribution of participants in this study, as shown in Table 1, reveals insightful patterns within the three defined age groups.

The largest age group, comprising 38.54% of the total sample, were individuals aged 26-35 years. Following closely were those within the ages of 18-25 (36.66%) years. Meanwhile, individuals aged 36-49 years make up 24.80% of the study population, representing a smaller yet significant segment.

Table 1: Age Distribution of the Respondents

Age Group	Frequency	Prevalence (%)
18-25years	136	36.66
26-35 years	143	38.54
36-49 years	92	24.80
Total	371	100.00

The largest group of respondents with respect to marital status as shown in Table 2, were unmarried women, making up 45.55% of the sample. Married women formed a substantial segment at 32.61%, representing about a third of the participants and divorced women formed a 21.83%.

Table 2: Marital Status of the Respondents

Marital Status	Frequency	Prevalence (%)
Single	169	45.55
Marrried	121	32.61
Divorced	81	21.83
Total	371	100.00

The education level distribution of the participants as shown in Table 3, reveals a range of credentials, with the most common being the Senior Secondary School Certificate (SSSC), held by 46.36% of respondents. About a quarter (27.76%) had earned a Bachelor's degree. Holders of a Higher National Diploma comprised 13.21% of the sample. At the postgraduate level, 8.36% had obtained their Master's, representing a modest fraction. Doctorates were the least common at just 4.31%.

The occupation distribution of the respondents revealed that, students made up the largest group at 28.03%, while civil servants made up 15.90%. Farming and fishing livelihoods contributed to diverse employment, together making up 13% of participants. Self-employed women accounted for 23.18%. However, unemployment was also noticeable in the sample, with 19.95% denoting unemployed status, as indicated in Table 4.

Table 3: Educational Qualification of Respondents

Education level	Frequency	Prevalence (%)
Senior Secondary School Certificate (SSSC)	172	46.36
Higher National Diploma (HND)	49	13.21
Bachelors Degree	103	27.76
Masters Degree	31	8.36
Doctoral Degree (PhD)	16	4.31
Total	371	100.00

Table 4: Occupation Distribution of Respondents

Occupation	Frequency	Prevalence (%)
Student	104	28.03
Civil servant	59	15.90
Farmer	32	8.63
Fishing	16	4.31
Self employed	86	23.18
Unemployed	74	19.95
Total	371	100.00

The data on the level of awareness about HPV among participants revealed that, out of the respondents, 165 (44.47%) indicated they have heard of HPV, while 206 (55.53%), representing the majority, answered "No," indicating they had not heard of HPV prior to this survey as shown in Table 5.

Table 5: General HPV Awareness

Have you heard of HPV before?	Frequency	Prevalence (%)
Yes	165	44.47
No	206	55.53
Total	371	100.00

The data on the relationship between age and awareness as presented in Table 6 shows the youngest age group, comprising women aged 18-25 years, demonstrated the highest level of HPV awareness, with 61.0% (83 out of 136). In the 26-35 years' age cohort, the awareness level dropped to 45.5%, as only 65 out of 143. The age group 36-49 years, exhibited the lowest level of HPV awareness with 18.5% (17 out of 92). The vast majority (81.5%) of women in this age group reported a lack of awareness regarding HPV.

Table 6: Age Versus Awareness of HPV

Age (Years)	Heard of HPV (YES)	Heard of HPV (NO)	Total
18-25	83(61.0)	53(39.0)	136
26-35	65(45.5)	78 (54.5)	143
36-49	17 (18.5)	75(81.5)	92
Total	165	206	371

Knowledge of HPV transmission, symptoms, prevention and associated health risks revealed that, out of the respondents, 28.03% knew that HPV is transmitted through sex, 8.36% knew about congenital transmission, and 7.82% were aware of skin contact transmission, while the majority, 55.80%, did not have any knowledge about the modes of HPV transmission, as shown in Table 7.

Table 7: Distribution of Knowledge about HPV Transmission

Mode of Transmission	Frequency	Prevalence (%)
Sex	104	28.03
Congenital Transmission	31	8.36
Skin contact	29	7.82
I don't Know	207	55.80
Total	371	100.00

A significant lack of awareness among the respondents regarding the clinical symptoms of HPV as shown in Table 8, with 55.80% of participants responding with not knowing the clinical symptoms of HPV. Among those who provided responses, 27.76% mentioned fever, and 16.44% mentioned warts/cancer as clinical symptoms.

Table 8: Distribution of Knowledge about Clinical Symptoms of HPV

Clinical symptoms of HPV	Frequency	Prevalence (%)
Fever	103	27.76
Warts/ Cancer	61	16.44
I don't know	207	55.80
Total	371	100.00

Among the participants, a significant portion 54.18% responded with "I don't know," indicating a lack of clarity on this aspect, 38.81% think HPV can resolve on its own, while 7.01% think it cannot resolve on its own as shown in Table 9.

Table 9: Perception about Spontaneous Resolution of HPV

HPV Resolution	Frequency	Prevalence (%)
Yes	144	38.81
No	26	7.01
I don't Know	201	54.18
Total	371	100.00

Out of the respondents, 38.54% think that HPV can cause warts/cervical cancer, while 5.93% do not think that HPV can cause warts/cervical cancer, and 55.53% have no idea if HPV causes warts/cervical cancer as shown in Table 10.

Table 10: Opinion of respondents on HPV being the cause of Genital Warts/Cervical Cancer

Genital Warts/ Cervical Cancer	Frequency	Prevalence (%)
Yes	143	38.54
No	22	5.93
No idea	206	55.53
Total	371	100.00

Discussion

The findings of this present study have revealed the level of awareness and knowledge of Human Papilloma Virus (HPV) among women of reproductive age (aged 18-49 years) in the rural community of Amassoma in Bayelsa State, Nigeria. This study involved a total of 385 participants, with a remarkable response rate of 96.4% (371 out of 385 questionnaires retrieved). This high response rate indicates the commitment and cooperation of the participants, ensuring the reliability and representativeness of the data. This rate agrees with the cross-sectional descriptive study conducted by Okunowo *et al.* (2022) among women attending Lagos University Teaching Hospital (LUTH), Lagos, Nigeria showed that out of 500 questionnaires that were administered, 468 (93.6%) were appropriately filled and used for analysis. The high response rates in both studies could be attributed to several factors.

Participants may have felt a sense of importance or relevance to the research topic, trust in the researchers or the institution conducting the study, or a desire to contribute to the advancement of knowledge in their respective fields.

The socio-demographic data showed that the majority of the participants were women in their mid-reproductive age of 26-35 (38.54%) years, followed by young women in their early reproductive age of 18-25 (36.66%) years. This agrees with a cross-sectional survey conducted by Oyedele (2023) in which 50.2% of the participants were aged 25-34 years. From this study, it is suggested that younger individuals are getting more informed earlier than in the past and that younger individuals might be more responsive or accessible.

In this study the single women made up a larger number (45.55%) than the married women (32.61%). This study agrees with a cross-sectional survey involving students, non-academic staff, and academic staff of Ibrahim Badamasi Babangida University in Lapai, Niger State, Nigeria, by Ogbolu and Kozlovsky (2024) in which the marital status varied with a higher percentage being single (58.2%) while 37.2% were married. It suggests that the similarity in marital status trends across these two studies could be due to the fact that single women may be able to express themselves and associate freely than married women which may be due to socio-cultural factors.

The findings of this study showed the varying levels of education. Majority of the respondents (46.36%) had secondary school certificates as their highest educational level while post graduate degrees were least common at just 12.67%. This findings disagree with a cross-sectional survey involving students, non-academic staff, and academic staff of Ibrahim Badamasi Babangida University in Lapai, Niger State, Nigeria, by Ogbolu and Kozlovsky (2024) in which 76.0% had a bachelor's degree, 18.1% had obtained a post-tertiary level of education, and 5.9% had completed high school. This suggested being due to the difference in the study setting of the two studies in which Ogbolu and Kozlovsky focused specifically on individuals affiliated with Ibrahim Badamasi Babangida University which is an educational institution unlike in Amassoma which is a community with people of various educational backgrounds.

The findings of this study revealed a concerning lack of awareness and knowledge about HPV among the participants. 44.47% of the respondents had heard of HPV before, while the majorities (55.53%) were unaware of the virus. This disagrees with a cross-sectional study conducted by Oluwasola *et al.* (2019) among women attending a tertiary hospital in Osun State, Nigeria, revealed that only 31.8% of the participants had heard of HPV. Similarly, a study by Ntekim *et al.* (2021) in Calabar, Cross River State, reported that only 38.3% of the participants were aware of HPV, showing a lower awareness rate than that found in this study, where 44.47% of the participants had heard of HPV. It suggests that, higher levels of education among the respondents or greater awareness due to better access to information through schools, universities, and other educational institutions may be responsible for a higher level of awareness as discovered in this study. This also suggests that this could be responsible for the lower level of awareness as discovered in this study.

Notably, in this study, it is suggested that age seem to have effect on the awareness of HPV, since younger participants (18-25 years) exhibited a higher level of awareness (61.0%) compared to older age groups (26-35 years: 45.5%, 36-49 years: 18.5%). This study agrees with a cross-sectional descriptive study by Okunowo *et al.* (2022) conducted among women attending Lagos University Teaching Hospital (LUTH), Lagos, Nigeria, in which younger women (18-30 years) exhibited higher levels of awareness compared to older age groups. This trend suggests that younger individuals might be more exposed to health education or they could be more active in seeking health information online, where HPV awareness campaigns are prevalent since they are more social media inclined.

The level of knowledge regarding HPV transmission, clinical symptoms, and potential resolution without treatment in this study was alarmingly low. A significant portion of the participants (55.80%) reported not knowing how HPV is transmitted or its associated clinical symptom. Over half of the participants (54.18%) were uncertain about whether HPV could resolve spontaneously without treatment, underscoring the lack of clarity regarding the natural course of the infection, 38.81% believe that HPV can resolve on its own, and 7.01% think it cannot.

Furthermore, 38.54% of the respondents recognized the link between HPV and the development of genital warts and cervical cancer, while 55.53% had no idea about this connection. This study had a higher level compared to a cross-sectional descriptive study by Okunowo *et al.* (2022) conducted among women attending Lagos University Teaching Hospital (LUTH), Lagos, Nigeria in which only 26.3% of participants had a good level of knowledge. Worse still, only 21.4% believed that they were at risk of acquiring the virus and its associated risks. It suggests that access to information about HPV and its related risks may have improved over time, increased availability of healthcare resources, and greater access to the internet and social media.

Conclusion

The lack of knowledge about HPV among women in their reproductive age is a matter of public health concern, and concerted efforts are required to bridge this gap. This is because HPV is a common and serious infection that can lead to cervical cancer, which is one of the leading causes of death among women in Nigeria. Therefore, increasing the awareness and knowledge of HPV among the women can help them to prevent, detect, and treat the infection, and reduce the burden of cervical cancer in the country.

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