

Cross-Sectional Study Of Genital Wart Risk Factors Among HIV-Positive And HIV-Negative Patients In Nigeria

***Paul Idoko, Siyaka Onah**

University of Maiduguri, Maiduguri, Borno State, Nigeria.

***Corresponding Author**

Received: May 12, 2025; Revised: Jul 30; Accepted: Aug 4; Published: Aug 12, 2025

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CITATION: Idoko P, Onah S. Cross-Sectional Study Of Genital Wart Risk Factors Among HIV-Positive And HIV-Negative Patients In Nigeria. *Recent Adv Biol Med.* 2025; 11(3): 9800045. <https://doi.org/10.18639/RABM.2025.9800045>

ABSTRACT

There is a lack of research on low-risk HPV infections like genital warts among vulnerable women, especially their HIV serology, because research focuses on high-risk strains of HPV associated with cervical cancer. The interplay between genital warts, HIV status, and sociocultural factors is crucial to understanding targeted prevention to alleviate the burden of genital warts in vulnerable populations. In this study, we investigate the prevalence and risk factors of genital warts among women with HIV serostatus. Women seeking gynecological consultation at a public hospital in Nigeria were studied cross-sectionally. A survey and medical records were used to collect data, which was then analyzed using SPSS 18.0. The majority of the women who had genital warts (63.33%) were HIV positive. For the first time, 67% of these women sought gynecological consultations for genital warts. Women with HIV were more likely to experience papule genital warts, while women without HIV were more likely to experience acuminata warts. Moreover, HIV-positive women with multiple sexual partners were found to have an increased risk of developing genital warts. Self-medication (75%) and traditional medicine (85%) were also prevalent. Healthcare-seeking behavior must be enhanced, early detection and treatment must be facilitated, and HIV and genital warts must be alleviated by addressing socio-cultural barriers. Traditional medicine should be integrated into healthcare systems, and awareness-raising efforts should be prioritized.

KEYWORDS: HIV; Genital warts; Behaviour; Risk factors; Women; Nigeria.

ABBREVIATIONS: PPAR: Peroxisome Proliferator Activated Receptor; VEGFR: Vascular Endothelial Growth Factor; DDR1: Discoidin Domain Receptor 1; HPV: Human Papillomavirus; HIV: Human Immunodeficiency Virus; GKR: GlucoKinase Regulatory Protein.

1. INTRODUCTION

In Africa, cervical cancer remains a significant public health challenge due to a high prevalence [1]. Low-risk HPV infections, such as genital warts, are poorly understood, especially among women with different HIV serostatus [2]. Human Papillomavirus types 6 and 11 are primarily responsible for 90% of cases of genital warts. Anxiety and psychological distress can arise as a result of these warts, causing a negative impact on patients' well-being [3]. A patient's immunity determines whether genital warts will recede. People infected with the Human Immunodeficiency Virus (HIV) are more likely to contract HPV infection [3]. As well as causing AIDS (acquired immunodeficiency syndrome), HIV makes the body more susceptible to other diseases or viruses such as HPV [4,5]. HIV-positive individuals are more susceptible to HPV infection, one of the most prevalent sexual transmitted viral infections in Nigeria [6]. In Nigeria, 43.1% of women have HIV, and 8.02 million are at risk for cervical cancer [7,8]. Antiretroviral drugs and HPV vaccine awareness, however, are challenging to access in developing countries [9]. As a result of a lack of understanding of social determinants of health, access to appropriate care, and HPV vaccination in developing countries, the burden of HPV-related infections, including genital warts, is further exacerbated, particularly among HIV-positive populations [9,10]. HPV-related conditions are influenced by a variety of factors, including medical and socio-cultural factors [11]. Sexually transmitted infections, including HPV, are stigmatized, particularly among vulnerable populations such as HIV-infected individuals [11]. Underreporting of HPV-related symptoms can be a result of this stigma and may prevent people from seeking appropriate medical care. Further, genital warts have been relatively understudied and underappreciated in developing countries' healthcare systems despite their significant impact on patients' well-being [2,12]. In view of this gap, it is necessary to conduct more comprehensive studies and campaigns to raise awareness of the wider range of HPV-related illnesses, including genital warts [11]. Women's healthcare in many African regions is also dominated by traditional medicine practices [13]. Traditional remedies and treatments may be used due to cultural beliefs, accessibility issues, or a lack of trust in conventional healthcare systems [14]. A comprehensive approach to HPV prevention and management requires an understanding of how traditional and modern healthcare practices interact. Sociocultural factors play a significant role in women's health in Africa [15], so it is important to identify exposure behavior associated with genital warts among women with different HIV serologies. This study aims to determine the prevalence and risk factors of genital warts among women based on their HIV status. To inform targeted

prevention and management strategies designed to mitigate the burden of genital warts in vulnerable populations by understanding the relationship between genital warts, HIV status, and socio-cultural factors.

2. METHOD(S)

The study was conducted at a public hospital in the central region of Nigeria using a cross-sectional design. Women diagnosed with genital warts aged 18 and over were included in the study. Among the 257 women receiving gynecological consultations between January and October 2023, 60 were diagnosed with genital warts. They were included in the survey using non-probability.

Based on literature and recommendations about HPV infection in developing countries, the researchers developed a questionnaire. This study examined sociodemographic characteristics, HIV status, location and type of genital warts, as well as factors involved in the development of genital warts.

Combined review of medical records and a clinical examination performed by a gynecologist provided information on HIV serology status and clinical characteristics of genital warts. HIV status, types and locations of genital warts, and factors associated with condyloma are some of the key areas examined. Using the questionnaire developed for the study, socio-demographic data, behavioral characteristics, and characteristics associated with the condition were collected from patients.

SPSS version 18.0 was used to analyze the collected data. To analyze the data, descriptive statistics were employed, including percentages, frequencies, means, and standard deviations. To determine relationships among variables, parametric tests, such as one-way ANOVA (Analysis of Variance), were employed, along with non-parametric tests, such as the Kruskal-Wallis test.

3. RESULTS

There was a mean age of 26 among the 60 participants diagnosed with genital warts. Participants ranged in age from 15 to 62 years old, with the youngest participant being 15 and the oldest being 62. Women in the 26-30 age group comprised almost half of the sample (49.8%), and the majority of them were single (58.33%). In addition, 41.1% of participants had graduated from university, and 88.33% had three or more children.

Sixty (23%) of the 257 women consulted with a gynecologist had genital warts according to this study. HIV positivity was found in 38 out of 22 women with genital warts (63.33%), while HIV negativity was found in 22 out of 22 women ($p=0.039$).

61% of women noticed their genital warts themselves, and 67.14 % consulted a gynecologist after they noticed warts. Over 80% of women hadn't seen a gynecologist for more than three months. There were also substantial numbers of people (85%) who used traditional medicine or homemade remedies, and 75% of those who self-medicated.

The location of genital warts and HIV serology showed a statistically significant association ($p \leq 0.05$). Most genital warts are found on the vagina (60%), with the vulva being the second most common site (35%). HIV-infected women showed vaginal presentation more frequently (63.2%) than women who were HIV-negative (54.5%). Women who were HIV-negative were more likely (0.90 ± 0.31) to have a condyloma on the vulvar than HIV-positive women (0.85 ± 0.36).

In terms of genital wart type, papule genital warts were statistically significantly associated with HIV serology ($p \leq 0.05$). Indeed, HIV-positive women were more inclined (0.9 ± 0.29) to present with papule genital warts than non-infected women (0.21 ± 0.41). There was also a higher prevalence of acuminate genital warts (55%). In contrast, women without HIV showed a lower incidence (52.6%) of acuminate genital warts than HIV-negative women (59.1%).

As a result of a survey of HIV-positives, smoking (70.8%) and having multiple sexual partners (60.5%) were found to be the most prevalent risk factors. Contrary to popular belief, smoking (66.7%) and early intercourse (59.1%) were the most prevalent risk factors among women who did not have HIV. As a risk factor for HIV-positive serology, smoking was statistically significant ($p=0.00$). It was critical to note, however, that smoking was not significantly associated with negative HIV serology results in women ($p>0.05$). Having multiple sexual partners was also statistically associated with being HIV-positive.

4. DISCUSSION

Women aged 26 to 30 were more likely to have genital warts than other groups in this study, emphasizing the importance of targeted prevention and screening efforts. Based on similar studies conducted in developing countries [16, 17], tailored interventions are necessary. There is a possibility that this results from women in this age group being more likely to engage in sexual activity, thus putting them at a greater risk for HPV exposure [17]. Women who are educated are more likely to seek healthcare and be aware of preventive measures, such as HPV vaccination [16-18]. High parity is associated with a higher risk of HPV infection, which has been confirmed in previous research [19]. During pregnancy and childbirth, the cervix may undergo changes that may contribute to this association. Moreover, being single may indicate a higher likelihood of unprotected sexual activity. The barriers to healthcare access and socioeconomic status are among the broad social and economic factors that contribute to this issue. Nigerian women's high prevalence of genital warts requires targeted prevention and screening measures. The broader social and economic factors that contribute to equity in healthcare access and the reduction of HPV-related conditions must also be addressed.

There was a significant association between HIV serology and genital warts among women in Nigeria in this study. The findings indicate that HIV-positive individuals are more likely to develop genital warts. As a result of HIV infection, immune regression is a major risk factor for HPV infection, which can exacerbate HPV-related symptoms [20,21]. A recent study found that HIV-positive women are more likely to develop genital warts than non-HIV-positive women [22]. As a result, HIV-positive individuals are more likely to acquire high-risk HPV, which suggests that HIV may contribute to genital cancer risk [12,20,23]. Due to a weakened immune system, HIV facilitates HPV replication and progression, resulting in cervical intraepithelial lesions and genital warts [24]. According to the study, there is a high concentration of HIV target cells in the outermost skin layer of anogenital warts. The observed association between HIV and genital warts may have an explanation in this regard [7]. The co-expression of low-risk HPV with genital cancer is not directly associated with the development of genital cancer, but it can increase DNA damage due to somatic mutations [25-27]. In developing countries, particularly among vulnerable populations, HPV and HIV infections are strongly associated, which calls for comprehensive prevention and management strategies.

There are distinct differences between genital warts in women with positive and negative HIV status, according to this study. HIV-positive women are more likely to develop genital warts on their vaginal surface, while HIV-negative women are more likely to develop genital warts on their vulvar surface. As a result of counseling and screening, HIV-positive individuals may adopt safer sexual practices, explaining the disparity in sexual behavior. HIV-positive women were also found to have higher rates of vaginal warts in a previous study [7]. The correlation between positive HIV serology and vaginal condyloma was notable, whereas the correlation between negative HIV serology and vulvar localization was not significant ($p=0.037$). HIV-positive individuals tend to adopt safer sexual practices following counselling and screening, contributing to the disparity. It seems that acuminate genital warts tend to regress with a normal immune response in HIV-negative women, whereas papule warts, which tended to be more prevalent in HIV-infected women, do not regress as readily [26]. While limited studies have compared the types of genital warts between the two groups, the results suggest that papule genital warts affect the mucosa more, which is similar to cervical intraepithelial neoplasia at low grade [7,8].

In developing countries, social determinants of health have a significant impact on HPV and HIV infection risks. Among HIV-positive and HIV-negative women, this study identified distinct risk factors, with sexual behavior emerging as the most significant. Early oral contraceptive use was identified as a prominent risk factor among HIV-positive women, presumably due to its impact on hormonal concentrations, increasing the risk of genital warts [8]. There is a high prevalence of early oral contraception use among HIV-positive women, while smoking and multiple sexual partners are significant risk factors for HIV-negative women [28]. HIV-positive women who smoked, had multiple sexual partners, and acquired genital warts in this study reinforce the complex interaction between HPV and HIV [21]. These women have high rates of genital warts and HIV, underscoring the need to understand and address them within a socio-cultural context. Women were more likely to notice genital warts themselves (60%), suggesting that they were proactive in taking care of themselves. There may also be a lack of knowledge about preventative measures or the importance of gynecologist visits. Further, 67.14% of women sought a consultation with a gynecologist after noticing warts, indicating a reactive rather than proactive approach to healthcare. Several factors may contribute to this delay in seeking medical attention, including cultural taboos, stigma, or limited access to healthcare. A significant percentage of women had not visited their gynecologist in over three months (80%). It may be related to socio-economic factors, such as financial constraints, transportation issues, or cultural beliefs regarding healthcare utilization, that women receive inconsistent gynecological care. In addition, 85% of women use traditional medicine or homemade remedies for healthcare purposes, emphasizing the influence of socio-cultural beliefs. There is a possibility that traditional medicine may be viewed as more affordable, accessible, or culturally acceptable, leading to its widespread use despite potential dangers [29]. The high rate of self-medication (75%) among women reflects either limited access to healthcare or a lack of trust in the system. In addition to the need for improved access to quality healthcare services and public health education initiatives, self-medication can lead to improper treatment, delayed diagnosis, and adverse health outcomes [30].

5. CONCLUSION

Increasing healthcare-seeking behavior, promoting early detection and treatment, and reducing genital warts and HIV burdens require the elimination of socio-cultural barriers. To effectively implement traditional medicine practices, awareness should be raised, healthcare access improved, and traditional medicine practices integrated into comprehensive healthcare systems. Through the development of prevention strategies, the incidence of HPV and HIV can be effectively reduced in developing countries, leading to a positive effect on vulnerable populations' health outcomes. The results of this study may not be generalizable to other regions or countries because it was conducted in a single region of Nigeria. The psychological and social impact of genital warts on women in Nigeria could be explored in future studies.

ETHICAL APPROVAL

The research received ethics clearance from the Institutional Ethics Committee for Human Health at the University of Maiduguri. Participants were provided with information regarding anonymity, confidentiality, and their rights, and they gave free and informed consent.

ACKNOWLEDGEMENT

We greatly appreciate the women who participated in our interviews.

AUTHOR CONTRIBUTIONS

Both authors contributed equally to this study.

CONFLICT OF INTEREST

None.

ORCID

PI – not available.

SO – not available.

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