CERVICAL CANCER SCREENING AMONG WOMEN LIVING WITH HIV IN ZAMFARA STATE: KNOWLEDGE, ATTITUDES, AND ASSOCIATED FACTORS

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ABSTRACT

Background: Cervical cancer is a leading cause of morbidity and mortality among women in sub-Saharan Africa, with women living with HIV (WLHIV) at higher risk due to immunosuppression. This study assessed knowledge, attitudes, and factors influencing cervical cancer screening uptake among WLHIV in Zamfara State, Nigeria. A cross-sectional survey was conducted between June 2024 and January 2025 among 216 WLHIV aged 25–49 years enrolled in ACE3-supported HIV facilities across three Local Government Areas. Participants were randomly selected, and data were collected through structured questionnaires. Descriptive statistics, chi-square tests, and bivariate analyses were performed. Of 216 respondents, 55% had awareness of cervical cancer screening, yet only 41% had ever been screened. Despite this, all participants (100%) expressed willingness to undergo screening if available. Nearly all (99%) acknowledged that early screening and treatment of precancerous lesions could prevent cervical cancer. Reported barriers included lack of awareness (45%), painfulness (31%), stigma (3%), and shyness (5%). Knowledge and positive attitudes were significantly associated with uptake ($p < 0.05$).Screening uptake among WLHIV in Zamfara State is low despite high willingness. Integrating cervical cancer screening into HIV care, raising awareness, and addressing stigma are essential strategies to improve uptake. Strengthening screening within HIV platforms can reduce the burden of cervical cancer in high-risk populations.

Keywords: Cervical cancer, HIV, Screening uptake, Knowledge, Attitudes, Nigeria, ACE3

1.0 INTRODUCTION

Cervical cancer remains a major contributor to morbidity and mortality among women in Nigeria, and it is the second most common cancer among women in the country. Mafiana e tal 2022

Cervical cancer constitutes a significant public health problem and ranks the fourth most common cause of cancer incidence and mortality in women worldwide. Although a decline has been observed in its ranking globally, there is still an upsurge in the incidence and mortality rate. It was the second most common cancer in 2000 with 468,000 new cases and 233,000 deaths; in 2008, it

ranked third with 530,000 cases and 275,000 deaths; while in 2018, over 570,000 cases and 311,000 deaths occurred globally. Based on current statistics, most regions of the world have experienced a decline in the incidence of cervical cancer[5]. Conversely, it is still a leading cause of cancer-related death among women in Western Africa, with an approximate estimate of 84% cases and 88% deaths[4].

Nigeria has the highest number of incident cases and deaths from cervical cancer in Africa, with 12,075 new cases and 7968 deaths, making it one of the eight countries with the largest number of incident cases in the world. Cervical cancer disproportionately affects low and middle-income countries (LMICs), further worsening the prevailing health inequity. Lawal Qudus O e tal 2023

The age-specific incident rate is in some parts of Africa. Persistent infection with high-risk human papillomavirus (HPV) is a necessary cause of cervical cancer and HIV is a known co-factor that enhances the oncogenic potential of HPV. Sub-Saharan Africa has the highest number of people living with HIV. In Nigeria there are about 4.5 million people living with HIV/AIDS; more than half are women. Women infected with HIV are at greater risk of persistent HPV infection and consequently at greater risk of the associated premalignant disease and cervical cancer. Rose Anorlu 2010

According to the World Health Organization (2021), cervical cancer can be eliminated within a generation via a comprehensive approach consisting of three interdependent evidence-based interventions to reduce the burden of the disease. Screening for and treating pre-cancer is a secondary approach targeted at asymptomatic women aged 30–49 years (or ages determined by national standards) to identify precancerous lesions. The goal is to decrease the incidence and mortality associated with cervical cancer by intercepting the progress from pre-cancer to invasive cancer. The recommended screening methods are HPV testing, Papanicolaou (Pap) smear or Cytology and Visual inspection with acetic acid (VIA).

Based on the findings of the World Health Organization (2012) study, VIA and cryotherapy “see and treat” or “single visit” approach is a feasible and effective method that can be implemented in countries with low resource settings like Nigeria. It ensures adherence to treatment soon after diagnosis and can be implemented in a primary healthcare facility. However, Nigeria is still faced with the challenge of low uptake of cervical screening and treatment of precancerous lesions.

Hence, women at the precancer stage are undiagnosed but later detected at advanced stages of invasive cervical cancer. A similar case was observed in Oguntayo et al. study, where 78% of the patients diagnosed with cervical cancer were at the third stage of the disease. Sequel to this background, it is imperative to understand the knowledge, attitudes and associated factors inhibiting women from utilizing cervical screening services. To our knowledge, no previous systematic review on barriers to the uptake of cervical cancer screening among women in Zamfara has been conducted. Therefore, the review aims at offering a comprehensive synthesis of studies that assessed the knowledge, attitudes and associated factors preventing women from utilizing cervical cancer screening services in Zamfara.

Women living with HIV (WLHIV) are especially vulnerable: HIV-associated immune suppression impairs the ability to clear high-risk human papillomavirus (hrHPV) infections, increasing both the risk of persistent hrHPV and the progression from precancerous lesions to invasive cervical cancer.

Several epidemiological studies in Nigeria have documented a higher prevalence of squamous intra-epithelial lesions (SIL) among HIV-positive women compared to HIV-negative controls. For example, a study in Enugu found an HIV+ SIL prevalence of 12.6% vs 4.6% among HIV negatives.

Despite the elevated risk, uptake of cervical cancer screening (CCS) in Nigeria remains low. Barriers identified include lack of awareness or knowledge about cervical cancer and screening modalities, fear of disease or test outcomes, cost, poor access, and limited recommendations by healthcare providers. Iheanyi U. 2021 e tal For example, in an urban community in Lagos, only ~18.4% of women had ever screened, with lack of awareness of methods being one of the most frequently cited barriers.

Given these gaps, especially among high-risk groups such as WLHIV, understanding the knowledge, attitudes, and other factors associated with screening uptake is critical. In settings supported by ACE3 and similar programs, this knowledge can help inform interventions such as integration of screening into HIV care, community education, support for cost removal, improving provider recommendations, and reducing structural barriers

2.0 METHODOLOGY

2.1 Study Design and Setting:

A cross-sectional survey was conducted between June 2024 and January 2025 in three Local Government Areas of Zamfara State: Gusau, TalataMafara, and Gumi Local government area. These LGAs host -supported HIV treatment facilities.

2.2 Participants: The study included WLHIV aged 25–49 years attending ART clinics. Exclusion criteria were refusal of consent and severe illness.

2.**3 Sampling**: A total of 216 participants were randomly selected from facility records using simple random sampling.

2.4 Data Collection: Structured questionnaires were administered through mWater, capturing socio-demographic characteristics, knowledge of cervical cancer and screening, attitudes toward screening, and perceived barriers.

2.5 Data Analysis: Descriptive statistics summarized findings. Associations between knowledge, attitudes, and screening uptake were tested using chi-square and bivariate analysis.

3.0 RESULTS AND DISCUSSION

3.1.1 Socio-Demographic Characteristics Of Participants

The socio- demographic characteristics of the respondents is summarized in Table 1

A total of 216 participants completed the questionnaire (response rate: 100%). 98 respondents (45.4%) were between the ages of 25 – 34 and 118 respondents (54.6 %) were between the age range of 35 – 49. 164 (75.9%) were married and 52 respondents representing 24.1% were not married (single, divorced or widowed)

Table 1: Socio-Demographic Characteristics of Participants.

Variable	Frequency (n=216)	Percentage (%)
Age 25–34	98	45.4
Age 35–49	118	54.6
Married	164	75.9
Single/Divorced/Widowed	52	24.1

3.1.2 Knowedowledge, Attitudes, And Screening

55% reported awareness of cervical cancer screening, while only 41% had ever been screened. All participants (100%) expressed willingness to undergo screening if available, and 99% believed early screening prevents cervical cancer

Indicator	Yes (%)	No (%)
Knowledge/Awareness of screening	55	45
Ever screened	41	59
Attitudes/ \believe early screening prevents cancer	99	1
Attitudes/Willingness to screen	100	0

3.1.3 Reported Barriers To Cervical Cancer Screening Among WLHIV.

Reported barriers included lack of awareness (45%), painfulness (31%), stigma (3%), and shyness (5%). Knowledge and attitudes were significantly associated with uptake ($p < 0.05$).

Reported Barrier	Yes (%)	No (%)
Lack of awareness	55	45
Painfulness	31	69
Stigma	3	97
Shyness	5	95

3.2 Discussion

This study highlights a critical gap between the high level of willingness and the relatively low actual uptake of cervical cancer screening among women living with HIV (WLHIV) in Zamfara State. Despite a majority of participants demonstrating adequate knowledge and positive attitudes toward cervical cancer prevention, the translation of this awareness into screening behavior remains suboptimal. This finding underscores the persistent challenge of moving beyond awareness to sustained health-seeking practices within HIV care programs.

The observed discrepancy between willingness and actual screening uptake aligns with findings from other sub-Saharan African contexts. For instance, Erku et al. (2017) in Northwest Ethiopia and Ononogbu et al. (2013) in Nigeria both reported that even when women were aware of cervical cancer and expressed readiness to be screened, only a small proportion had ever undergone screening. These studies, like the present one, suggest that knowledge alone is insufficient to overcome the practical and psychosocial barriers that inhibit screening behavior.

Several barriers identified in this study—such as limited awareness of screening availability, fear of pain during the procedure, perceived stigma, and shyness—reflect deeply rooted socio-cultural and structural factors. The perception that screening is painful or invasive may discourage women, especially those who have previously faced stigmatization related to their HIV status. Moreover, cultural norms around modesty and gender dynamics often prevent women from freely discussing or seeking reproductive health services. These findings are supported by earlier research in Nigeria and Kenya, which identified embarrassment, low risk perception, and misconceptions about screening as major deterrents to uptake **(**Abiodun et al., 2014; Rosser et al., 2015**).**

Importantly, the integration of cervical cancer screening services into existing HIV care platforms—such as antiretroviral therapy (ART) refill clinics—emerges as a promising strategy to improve uptake. Integrating screening within routine HIV services can leverage existing patient-provider relationships, minimize stigma, and reduce logistical barriers such as transportation costs and time constraints. Evidence from similar interventions in Uganda and Tanzania demonstrates that co-locating screening with ART clinics significantly increases participation rates among WLHIV (Huchko et al., 2018; Kahesa et al., 2012).

The implications of these findings are twofold. First, there is a need to strengthen health education and counseling components within HIV clinics to address misconceptions and fears about cervical cancer screening. Tailored messaging that emphasizes the simplicity, safety, and preventive benefits of screening could enhance acceptance. Second, health systems should prioritize the decentralization and integration of screening services into community-level HIV care structures. Task-shifting approaches, where trained nurses or community health workers conduct visual inspection with acetic acid (VIA) or HPV testing, could further expand coverage, especially in resource-limited settings.

While this study provides valuable insights, it is important to note that addressing socio-cultural barriers requires a multi-sectoral approach that goes beyond the health system. Engaging community leaders, peer educators, and women's support groups can foster an enabling environment for behavior change and normalize cervical cancer screening as part of women's overall health maintenance.

In conclusion, bridging the gap between willingness and actual screening uptake among WLHIV in Zamfara State demands an integrated, culturally sensitive, and health system–embedded approach. Strengthening community awareness, dispelling myths, and institutionalizing cervical cancer screening within routine HIV care will be essential to improving coverage and ultimately reducing morbidity and mortality associated with cervical cancer in Nigeria.

4.0 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

Despite high willingness to be screened, cervical cancer screening uptake among WLHIV in Zamfara State remains low.

4.2 **Recommendations**

i Strategies to improve uptake should focus on raising awareness, reducing stigma, and integrating screening into HIV care services.

Ii Strengthening prevention programs within HIV platforms can help reduce the burden of cervical cancer in high-risk populations.

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