Socio-Economic Determinants of Vulnerability to HIV/AIDS in Eastern Benue State

[1]James Ikyernum, [2]Rhoda Mundi, [3]Samuel Panse Dakyes & [4]Joseph Enefu
[1,4]Department of Geography, Rev. Fr. Moses Orshio Adasu University, Makurdi
[2,3]Department of Geography and Environmental Management, University of Abuja-Nigeria
Corresponding Author: Email: jenefu@bsum.edu.ng Phone: 08068303323
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Abstract
This study examines the socio-economic determinants of HIV/AIDS vulnerability in Eastern Benue State, Nigeria. Using a mixed-methods cross-sectional design, data was collected from 397 respondents across seven local government areas via questionnaire and focus group discussion. The study used descriptive statistical techniques (tables and charts) for results presentation while quantitative analysis (logistic regression) revealed that individuals with no formal education were over three times more likely to be vulnerable to HIV (OR = 3.02, p = 0.001), while low-income earners (₦<10,000/month) and women also showed significantly higher odds (OR = 2.67 and 2.11 respectively). Although 100% of respondents reported having heard of HIV/AIDS, not all could accurately identify transmission routes. Gender disparities were pronounced, with only 37% of women able to negotiate condom use. Qualitative findings highlighted structural barriers such as stigma, traditional practices, and poor access to healthcare. These results reinforce that HIV vulnerability in Eastern Benue is not primarily driven by individual behavior but by intersecting socio-economic and structural factors. The study calls for multi-sectoral interventions that integrate education, gender equity, economic empowerment, and healthcare access to effectively reduce vulnerability and improve outcomes.

Keywords: *HIV/AIDS, gender vulnerability, Structural and Cultural Barriers, logistic regression, Eastern Benue State.*

1.0 Introduction

HIV/AIDS remains one of the most significant public health challenges in sub-Saharan Africa, where over two-thirds of the global population living with the virus reside. According to Payagala and Pozniak, (2024), an estimated 25.6 million people in the region are living with HIV, highlighting the persistent burden of the epidemic despite notable advances in treatment and prevention. In Nigeria, the disease continues to be a major health concern, with notable regional disparities in prevalence. The North-Central zone, particularly Benue State, consistently ranks among the states with the highest HIV prevalence rates nationally (Dennis et al., 2024). While biomedical efforts have helped reduce incidence rates in some areas, the socio-economic contexts in which people live continue to shape their risk of exposure and ability to manage the disease.

A growing body of literature emphasizes that HIV vulnerability is not merely a function of individual behavior, but rather the outcome of structural inequalities and socio-economic deprivation (Waqas et al., 2025). Variables such as income level, employment status, educational attainment, gender dynamics, and access to reproductive health services have all been shown to

influence how different populations experience and respond to the risk of HIV infection. In regions like eastern Benue, these factors are further compounded by weak healthcare infrastructure and socio-cultural norms that can inhibit preventive behaviors, particularly among women and young people.

Despite this, there is a notable lack of localized research that explores how these socio-economic determinants manifest in specific communities within eastern Benue. National and State-level statistics provide a useful overview but often fail to capture the nuanced realities on the ground. This study seeks to fill that gap by examining the socio-economic characteristics that influence vulnerability to HIV/AIDS in eastern Benue State. It aims to identify the socio-economic profiles of those most at risk, explore how these conditions facilitate the spread of the disease, and offer insights into how interventions can be better tailored to address the root causes of vulnerability.

Understanding these dynamics is critical for designing effective and sustainable public health responses. By highlighting the link between socio-economic factors and HIV vulnerability in a high-prevalence area, this research will contribute valuable knowledge to the field and support the development of more context-specific, equity-focused strategies for HIV prevention and care.

2.0 Literature Review

Understanding the socio-economic determinants of HIV/AIDS vulnerability requires a theoretical lens that goes beyond individual behavior to account for broader structural conditions. This study draws on a combination of the Social Determinants of Health (SDH) framework and Structural Violence Theory to illuminate how health outcomes are shaped by social and economic contexts. The SDH framework, widely endorsed by the World Health Organization emphasizes that access to income, education, healthcare, and safe living conditions significantly influences health behaviors and risks (Amzat, Aminu and Muchabveyo, 2023). Applied to HIV, this perspective suggests that individuals living in poverty, with limited education or poor healthcare access, are not only less likely to receive information and services but may also be structurally positioned in ways that increase their exposure to infection.

Complementing this, Structural Violence Theory, originally proposed by Galtung (1969) and later advanced by Farmer and Aguinis, (2005), draws attention to the ways in which institutionalized social and economic inequalities systematically harm certain populations by limiting their access to rights, opportunities, and health resources. In rural and marginalized settings like Eastern Benue State, these forces are particularly evident in the persistence of gender inequality, the absence of quality healthcare services, and traditional norms that shape individual choices in constrained environments.

Empirical studies across sub-Saharan Africa have consistently shown that poverty and low educational attainment are strongly associated with heightened HIV risk. For instance, Corburn and Sverdlik, (2019) observed that individuals in poor urban and rural communities often lack basic knowledge of HIV transmission and have limited access to preventive tools like condoms or voluntary counseling and testing (VCT) services. In the Nigerian context, Odeigah et al., (2019) found that young people in rural areas with low levels of formal education were more likely to engage in high-risk sexual behavior, a consequence not of ignorance alone, but of broader socio-economic pressures and limited life opportunities.

Gender inequality has also emerged as a persistent and powerful driver of vulnerability. Women and girls often face cultural and structural barriers that limit their ability to negotiate safe sex or access health services. Research by Okonkwo et al. (2020) revealed that in many parts of Nigeria, including Benue, women are subjected to harmful traditional practices, early marriage,

and domestic violence, all of which heighten their exposure to HIV. Moreover, stigma remains a critical barrier; Maulia, (2022) noted that many individuals, particularly women, avoid seeking testing or treatment due to fear of ostracization or community backlash.

Access to healthcare services or the lack thereof, is a recurring theme in HIV vulnerability literature. Many rural communities in Eastern Benue are served by poorly equipped clinics, with long distances and high costs acting as additional barriers. According to the World Health Organization (2021), such structural limitations undermine not just prevention efforts but also the timely diagnosis and treatment of those already living with the virus. Oladepo and Fayemi (2011) further argued that health-seeking behavior is significantly influenced by socio-economic status, with poorer individuals less likely to visit health centers or adhere to antiretroviral therapy (ART) regimens.

Despite the growing body of research on HIV vulnerability in Nigeria, few studies have provided localized insights specific to Eastern Benue State. Much of the existing data is aggregated at national or state levels, which often masks significant intra-regional disparities. Oke, et al., (2024) called for more granular analyses that capture the nuanced experiences of rural and semi-urban populations, where poverty, cultural practices, and gender norms interact in complex ways to shape risk environments.

The conceptual framework guiding this study integrates these empirical insights and theoretical perspectives. It posits that socio-economic variables, such as income level, educational attainment, gender dynamics, and access to healthcare, interact with structural forces like stigma, cultural norms, and institutional neglect to produce varying levels of vulnerability to HIV/AIDS. By exploring how these factors manifest in specific communities across Eastern Benue, the study seeks to provide a more grounded, context-sensitive understanding of the epidemic that can inform both policy and intervention strategies aimed at addressing the root causes of HIV vulnerability.

3.0 Materials and Methods

3.1 The Study Area

The research was carried out across all Local Government Areas (LGAs) in Eastern Benue, namely Katsina-Ala, Konshisha, Ushongo, Vandeikya, Kwande, Logo, and Ukum. This region was chosen based on the relatively high HIV prevalence and rural or semi-urban characteristics, as reported by the National Agency for the Control of AIDS (2024) and Federal Ministry of Health (2024).

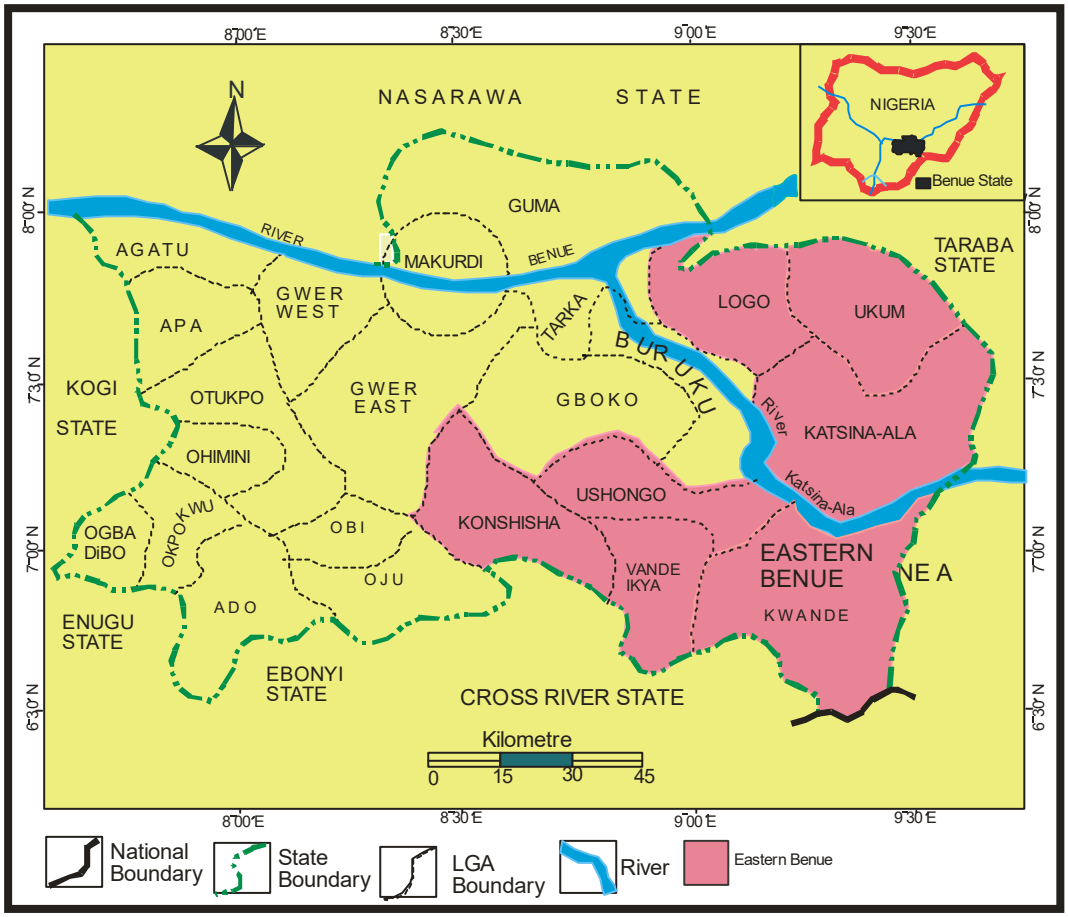

Figure 1: Benue State Showing Eastern Benue
Source: Ministry of Lands and Survey, Makurdi (2025)

3.2 Research Design

This study employed a mixed-methods cross-sectional design to explore the socio-economic determinants of vulnerability to HIV/AIDS in Eastern Benue State. By combining both quantitative and qualitative approaches, the research aimed to capture not only statistical associations but also the lived experiences and contextual realities influencing HIV risk in the region.

3.3 The Study Population

The study comprises of people who are HIV/AIDS positive (PLWHA), and who are currently undergoing treatment and care at various health care centres (St Thomas Hospital Ihugh, General Hospital Vandeikiya, St Monica Hospital Adikpo, General Hospital Katsina-Ala, St Anthony Hospital Zaki-Biam, NKST Hospital Zaki-Biam, NKST Hospital Tor-Ayim as well as General Hospital Lesel) to obtain and extract data on issues of interest to the research.

3.4 Sample Size

The study sampled both the hospital and the HIV/AIDS patients respectively. The study select 8 (60%) hospitals out of the 13 health facilities that currently provide screening, care, and treatment for HIV/AIDS positive persons in the study area as indicated on table 1. This coverage

was considered adequate enough. Besides, Gupta (2013) state that a minimum sample size of 5-10% of a parent population is good for any study.

The HIV/AIDS patients sample size was determined using the Yamane (1967) formula for finite population (n) as follows:

$$n = \frac{N}{1+N(e)^2} \quad \text{equation (i)}$$

Where,

n = the targeted sample size.

N = total number of HIV positive cases among the study hospitals (61,679 people)

1 = constant

e = level of probability at 0.05

By substituting the variables of the equation:

$$n = \frac{61679}{1+61679(0.05)^2}$$

n = 397

The required sample size is three hundred and ninety-seven (397) respondents. This 397 sample size was divided among the study hospitals proportionately according to the population of the HIV positive individuals in the hospitals under study. This therefore, produced the sample size in table 1.

3.5 Sampling Techniques

Simple random sampling technique was used for selecting eight (8) hospitals that were used as a base for data collection to ensure balanced representation among PLWHA. Finally, data was collected via questionnaire administered to the PLWHA which were selected through purposive and willingness sampling.

Table 1: Healthcare Centre involved in Screening, Testing, Treatment and Care for HIV/AIDS Positive Persons in the Study Area

S/No	Name of Hospitals	L.G.A	Selected Hospital	Patients Screened	Positive Cases	Proportional Sample Size
1.	St. Thomas Hospital,	Vandeikya	✓	45,291	7,768	50
2.	General Hospital	Vandeikya	✓	18,783	7,877	51
3.	St. Monica Hospital,	Kwande	✓	26,787	5,324	34
4.	General Hospital,	Katsina-	✓	27,594	11,290	73
5.	St. Anthony Hospital,	Ukum	✓	20,256	8,071	52
6.	NKST Hospital, Zaki-	Ukum	✓	21,226	9,553	61
7.	NKST Hospital, Tor	Logo	✓	23,397	8,305	53
8.	General Hospita,l Lesel,	Ushongu	✓	26,192	3,491	23
	Total		**8**	**209,526**	**61, 679**	**397**

Source: Authors field work, 2024.

3.6 Data Collection Techniques

Data collection relied on both the questionnaire and focus group discussion. The questionnaire adapted from validated instruments and translated into Tiv for participants who preferred the local language, gathered data on income, education, access to health services, gender roles, and

HIV-related knowledge and behaviors. Qualitative data was obtained through focus group discussions with the healthcare workers, and the PLWHA. These sessions explored themes such as stigma, cultural norms, healthcare access, and structural inequalities that contribute to vulnerability.

3.7 Techniques of Data Analysis

Descriptive statistics (tables, charts, frequencies and percentages) summarized the socio-economic characteristics of respondents, while chi-square tests and logistic regression were used to identify significant associations between variables and HIV vulnerability. The qualitative data were analyzed thematically, allowing for a richer interpretation of the structural context behind the numbers.

Data collectors received comprehensive training to ensure consistency and ethical engagement with participants. Triangulation of data sources enhanced the credibility of findings, while ethical clearance was obtained from a recognized Institutional Review Board. Informed consent was sought from all participants, and measures were taken to maintain confidentiality and protect respondents' identities. Participation was entirely voluntary, and respondents were free to withdraw from the study at any point. Through this integrated methodological approach, the study aimed to capture both the structural patterns and human experiences that define vulnerability to HIV/AIDS in this high-prevalence region.

4.0 Results and Discussion

This section presents and interprets the major findings of the study on the socio-economic determinants of vulnerability to HIV/AIDS in Eastern Benue State. The results are organized thematically to align with the study's objectives and are integrated with relevant discussion.

4.1 Demographic and Socio-Economic Characteristics of Respondents

The study sample comprised 397 respondents as shown in table 2. From the table, the gender distribution shows a higher proportion of females (63.2%) compared to males (36.8%), indicating that women were more represented in the sample, which aligns with patterns observed in community-level health studies where women are often more available and willing to participate. This finding is similar to a research conducted by Anyebe, Hellandendu and Gyong (2013) who relate that 64.8% of the HIV/AIDS patients in Benue State were females. More so, Nwali (2018). also found that HIV/AIDS is more common among women (61.9%) in Ebonyi State. The respondent's marital status showed that 65% of the respondents were married. Being HIV/AIDS positive will not only affect their chances of having healthy children but also reduce the quantity and quality of labour supply and productivity in the study area.

These statistics reveal that PLWHA cut across all age group though predominantly among the youthful population (52.4%) aged 25–34 years and with relatively low educational levels as indicated by majority (58%) having either primary or no formal education. Income levels seem relatively low among the respondents with 42.1% earning between ₦20-29,999 in a month while 32.7% earned between ₦30-39,999. These demographic trends are critical, as they intersect with known vulnerability factors. The result also agreed with Anyebe, Hellandendu and Gyong (2013) who opined that only few (2%) of the HIV/AIDS patients earned monthly income above ₦40, 000. The high proportion (48.6%) of respondents engaged in farming or informal economic activities also points to the region's subsistence economy.

Table 2: Demographic and Socio-Economic Characteristics of PLWHA in the Study Area

Variables	Category	N=397	%(100)	Variables	Category	N=397	%(100)
				Marital Status			
Sex	Male	146	36.8		Single	79	19.9
	Female	251	63.2		Married	258	65.0
					Divorced	31	7.8
Age (in Years)							
	< 15	5	1.3		Separated	9	2.3
	15-19	18	4.5		Widowed	20	5.0
	20-24	55	13.9				
	25-29	61	15.4	**Education**	No Formal	142	35.8
	30-34	147	37.0		Primary	88	22.2
	35-39	27	6.8		Secondary	128	32.2
	40-44	45	11.3		Tertiary	39	9.8
	45-49	17	4.3				
					Casual		
	50-59	16	4.0	**Occupation**	Labourer	2	0.5
	> 60	6	1.5		Civil Service	63	15.9
					Industrial Worker	1	0.3
Monthly Income	0 - 9,999	23	5.8		Business/Trade	98	24.7
	10,000-19,999	69	17.4		Farming	184	46.3
	20,000-29,999	167	42.1		Sex Worker	2	0.5
	30,000-39,999	130	32.7		Commercial Driver	3	0.8
	40,000 & above	8	20		Unemployed	36	9.1
					Others	8	2.0

Source: Authors Field work, 2024.

4.2 HIV/AIDS Awareness and Knowledge

Data on awareness revealed that, most respondents (100%) reported having heard of HIV/AIDS. However, not all respondents could correctly identify all major transmission routes. The primary sources of HIV/AIDS information are shown in Figure 2. Majority cited radio (92.6%) and hospital (76.7%) as the main information sources. This supports findings by Ezeh et al. (2019), who highlighted that while awareness is high in rural Nigeria, comprehensive knowledge remains low, often due to poor educational attainment and misinformation. The gaps in understanding transmission underscore the need for more localized, culturally tailored educational interventions.

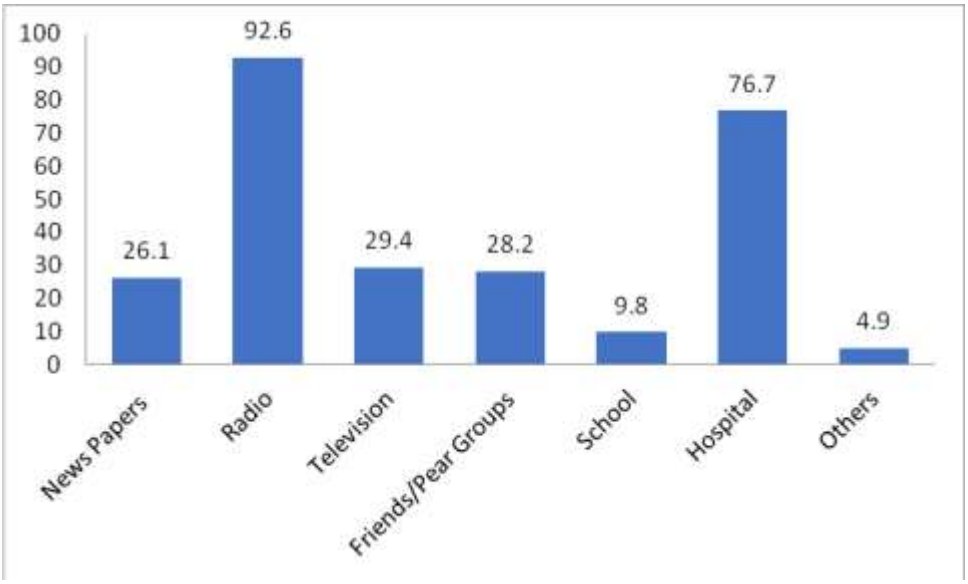

Figure 2: Sources of HIV/AIDS Respondents Information among
Source: Authors field work, 2024.

4.3 Socio-Economic Profiles Associated with HIV Vulnerability

4.3.1 Education and Access to Laboratory Test

Table 3 indicates that educational status correlates with HIV/AIDS test uptake. Across all levels of education, the respondents who willingly participated in the test (79%) were more than those who failed to do so. Participants with secondary education had the highest HIV/AIDS Uptake rate (29.7%).

Table 3: Cross Tabulation between educational status and HIV/AIDS Test Uptake

Education	HIV Laboratory Test (N=390)			
	Yes		No	
	F	%	F	%
No Formal	72	18.4	68	17.4
Primary	84	21.5	2	0.5
Secondary	116	29.7	9	2.3
Tertiary	36	9.2	3	0.8
Total	308	79	82	21

Source: Authors field work, 2024.

4.3.2 Monthly Income and Engagement in Risky Behaviors

The overall trend indicated on table 4 shows that prostitution is the most common risky behavior, with 88.7% individuals reporting engagement while having multiple partners is the second most common risky behavior, with 55.2% individuals reporting engagement. The respondents with income category ₦ 20,000-29,999 consistently shows the highest percentages across various risky behaviors (prostitution (38.3%), having multiple partners (19.6%), and homosexuality (21.9%)) whereas the lowest income category (₦ 0-9,999) generally shows lower percentages of engagement in risky behaviors compared to the middle-income category. The study conclude that

established that the middle-income categories where more involved in risky behaviors compared to the low and high income category.

Table 4: Cross Tabulation between Monthly Income and Engagement in Risky Behaviors

Monthly Income	Engagement in Risky Behavior				
	Prostitution	Having Multiple Partner	Homo Sexuality	Masturbation	Others
0 - 9,999	20(5.0%)	10(2.5%)	18 (4.5%)	0(0%)	0(0%)
10,000-19,999	62(15.6%)	48(12.1%)	25(6.3%)	0(0%)	2(0.5%)
20,000-29,999	152 (38.3%)	78(19.6%)	87(21.9%)	6(1.5%)	0(0%)
30,000-39,999	111(28%)	79(19.9%)	57(14.4%)	0(0%)	7(1.8%)
40,000 & above	7(1.8%)	4(1.0%)	4(1.0%)	0(0%)	0(%)
Total	352(88.7%)	219(55.2%)	191(48.1%)	6(1.5%)	9(2.3%)

Source: Authors field work, 2024.

4.3.1 Occupation and Access to HIV Services

The most common HIV/AIDS services accessed are consultation/laboratory test, consultation/treatment, and counseling/information while major occupation includes farming having the highest access to HIV services, particularly consultation/laboratory test (46.1%), consultation/treatment (46.6%), and counseling/information (31.7%). Individuals in business/trade also have significant access to HIV services, including consultation/laboratory test (22.8%), consultation/treatment (21.7%), and counseling/information (13.8%). Whereas civil servants have moderate access to HIV services, particularly consultation/laboratory test (16.5%) and consultation/treatment (16.5%) as presented on table 5.

More so, access to specific services indicates that consultation/laboratory test is more common among farmers (46.1%) and business/trade individuals (22.8%) have the highest access to this service. In addition, consultation/treatment indicates that farmers (46.6%) and business/trade individuals (21.7%) also have high access to this service. Also, counseling/information shows that farmers (31.7%) and business/trade individuals (13.8%) have significant access to this service. Some occupation has limited or no access to services; this includes casual labourers, industrial operators whereas only (6.6%) individuals reported purchasing drugs, with the majority being farmers. An overall trend indicates that farmers and business/trade individuals have the highest access to HIV services while consultation/laboratory test and consultation/treatment are the most common services accessed.

These varied socio-economic profiles confirm that vulnerability is not randomly distributed. Education, income, and occupation independently shape an individual's access to information, ability to act on that information, and general exposure to risk. This reinforces both the social determinants of health and structural violence Theory frameworks, underscoring the role of broader systemic factors in shaping HIV outcomes.

Table 5: Cross Tabulation between Occupation and Access to HIV Services

Occupation	HIV/AIDS Services					
	Consultation	Laboratory Test	Consultation/ Treatment	Counseling/ Information	Purchase of Drugs	Others
Casual Labourer	0 (0%)	0 (0%)	2 (0.5%)	0 (0%)	0 (0%)	0 (0%)
Civil Servant	0 (0%)	1 (0.3%)	63 (16.5%)	63 (16.5%)	44 (11.6%)	1 (0.3%)
Industrial Operator	0 (0%)	0 (0%)	1 (0.3%)	1 (0.3%)	1 (0.3%)	0 (0%)
Business/Trade	9 (2.4%)	9 (24%)	87 (22.8%)	83 (21.7%)	52 (13.8%)	0 (0%)
Farming	4 (1.1%)	2 (0.5%)	176 (46.1%)	178 (46.6%)	120 (31.7%)	0 (0%)
Sex Worker	2 (0.5%)	2 (0.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Commercial Driver	0 (0%)	0 (0%)	3 (0.8%)	3 (0.8%)	1 (0.3%)	2 (0.5%)
Others	0 (0%)	0 (0%)	32 (8.4%)	34 (8.9%)	31 (8.2%)	0 (0%)
Unemplyed	0 (0%)	0 (0%)	1 (0.3%)	1 (0.3%)	1 (0.3%)	0 (0%)
Total	15 (4.0%)	14 (3.7%)	365 (95.5%)	363 (95%)	25 (66.1%)	3 (0.8%)

Source: Authors field work, 2024.

4.4 Gender-Based Vulnerabilities

Gender disparities in the ability to negotiate safe sex were apparent. Only 37% of female respondents said they could negotiate condom use with their partners, compared to the males (72%) as indicated on figure 3. This indicates that, women in the study area face limited agency in sexual relationships negotiations. This may be associated with well known cultural expectations, economic dependency, and patriarchal norms which severely constrain women's autonomy to negotiate sex in African societies where woman can't say no if her husband wants sex, even without condom. This is consistent with Okonkwo, et al. (2020) and aligns with Structural Violence Theory, where embedded social hierarchies systematically deny women control over reproductive decisions, exposing them to higher risk.

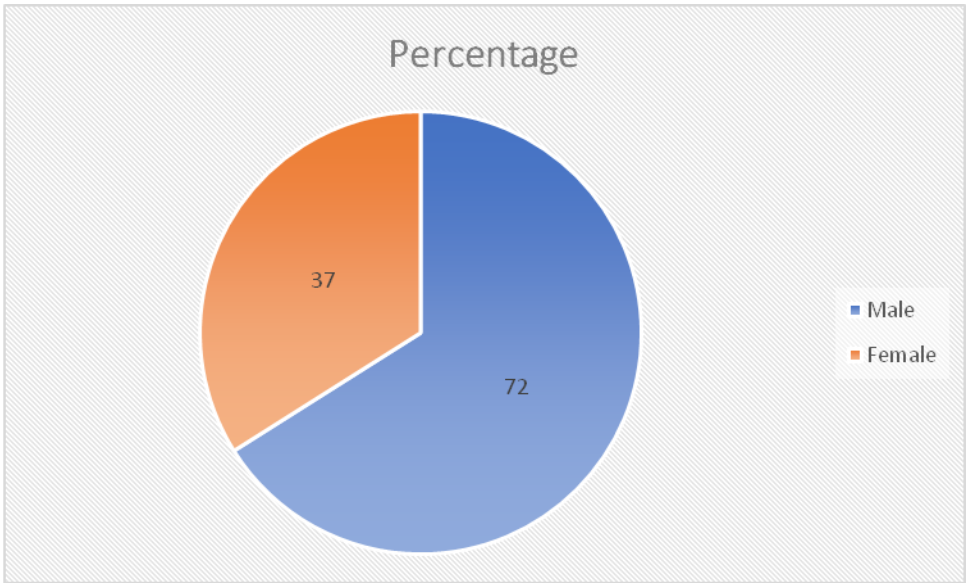

Figure 2: Ability to Negotiate Condom Use by Gender
Source: Authors field work, 2024.

4.5 Economic Factors and HIV Risk Behavior

Economic hardship emerged as a significant driver of risky behavior. Thus, the study applied logistic regression to assess how different socio-economic factors influence the likelihood of HIV vulnerability, defined here as engagement in risky sexual behavior such as multiple partners, inconsistent condom use, or transactional sex. The odds ratio (OR) quantifies how the likelihood (or odds) of an outcome (in this case, HIV vulnerability, such as engaging in risky sexual behavior) changes with each predictor variable. An OR > 1 means the predictor increases the odds of vulnerability; OR < 1 means the predictor decreases the odds while, an OR = 1 means the predictor has no effect on the odds. The strongest predictor (table 6) in this model is lack of formal education, with an OR of 3.02, suggesting that individuals without formal schooling are over three times more likely to be vulnerable compared to those with tertiary education. Female gender and low income also significantly increase vulnerability, reinforcing the importance of targeted socio-economic interventions. These findings align with both the Social Determinants of Health framework and Structural Violence Theory, which emphasize how intersecting disadvantages structurally position certain groups, particularly poor, rural women, at heightened risk of HIV infection. These structural factors compound individual risk and justify multi-sectoral intervention approaches.

Table 6: Logistic Regression Predicting HIV Vulnerability (N = 397)

Predictor variable	Odds Ratio (OR)	p-value	Significant?
Female (vs. Male)	2.11	0.006	✅ Yes
No formal education (vs. Tertiary)	3.02	0.001	✅ Yes
Income <₦10,000 (vs. >₦30,000)	2.67	0.004	✅ Yes
Rural location (vs. Urban)	1.88	0.082	❌ No
No access to HIV testing	2.40	0.071	❌ No

Source: Authors field work, 2024.

The p-value on the other hand, indicates whether the relationship between a predictor and the outcome is statistically significant. If $p < 0.05$, the predictor is considered statistically significant. The reverse is the case if $p \geq 0.05$ (i.e., could be due to chance). Thus, female gender, lack of education and Low income were significant predictors of HIV vulnerability while rural residency and lack of access to HIV testing were not significant. These findings echo Adebayo and Fagbemi (2021), who reported that socio-economically disadvantaged women are more likely to engage in high-risk survival strategies.

4.6 Structural and Cultural Barriers to HIV Prevention and Care

Thematic analysis of qualitative data from focus group discussions (FGDs) revealed a complex interplay of structural and cultural factors that significantly contribute to vulnerability to HIV/AIDS in Eastern Benue State. Chief among these is the persistent issue of stigma and discrimination, which remains a formidable barrier to both prevention and care. Numerous respondents noted that fear of social exclusion discourages individuals from accessing HIV testing and treatment services. A participant state that *"some family members don't eat from the same plate with me because I am positive"* (Female, age 39, Ukum). Also, a participant opined that "*one of my friend avoid hand shake with me due to my AIDS situation"* (Male age 48, Konshisha). The stigma associated with HIV/AIDS continues to perpetuate silence, denial, and delayed health-seeking behavior, ultimately increasing the risk of undetected infections and continued transmission within the community.

Additionally, certain deep-rooted cultural practices were repeatedly cited as exacerbating the risk of HIV spread. These include widow inheritance, early marriage, and polygamy, all of which reinforce gender inequality and limit women's autonomy in sexual and reproductive decision-making. These traditions, while socially accepted in many parts of the study area, inadvertently sustain patterns of vulnerability, particularly among adolescent girls and young women. For example, a participant noted that "*being polygamous increases the chances of accidentally contracting AIDS"* (Female age 55, Katsina-Ala). Also, a participant state that "*sexual promiscuity through polygamy is one of the way people easily contact HIV"* (Male age 43, Kwande).

From a structural perspective, significant health infrastructure gaps were identified across the communities studied. Respondents expressed that health facilities were either too distant or lacked essential services. The burden of transportation costs and the scarcity of accessible, adequately equipped clinics discouraged timely diagnosis and consistent treatment adherence. One participant noted: *"sometimes, I missed clinic days due to lack f transport fare"* (Female, age 51, Vandeikya). Another participant opined that *"we use herbal medicine because the hospital is far, and we don't have money"* (Male age 41, Logo), underscoring the economic and geographic barriers to care. More so, a participant pined that "sometimes, some patients failed appear at the clinic for their drugs on the ground that things are difficult. When asked how, they said no money for transportation". (Female age 50, health worker at Ushongo).

These findings align with broader regional patterns noted by the World Health Organization (WHO, 2021), which states that rural and underserved populations often face a dual challenge: cultural conservatism and infrastructural neglect. Together, these conditions undermine the effectiveness of biomedical interventions and the implementation of evidence-based HIV/AIDS strategies. Without addressing these socio-structural determinants, prevention and care efforts are unlikely to achieve sustainable impact in communities like those in Eastern Benue State.

5.0 Conclusion and Recommendations

This study has provided robust evidence that HIV/AIDS vulnerability in Eastern Benue State is driven by a combination of socio-economic disadvantages, gender inequalities, and systemic structural barriers. The findings support the argument that HIV prevention and control strategies must move beyond biomedical models and instead integrate social, economic, and cultural dimensions of risk.

Poverty, limited education, gendered power dynamics, and weak healthcare infrastructure and engagement in risky sexual behaviors (prostitution and particularly having multiple sexual partners) all contribute to the heightened vulnerability observed in this region. Women and rural populations face compounded risks due to lack of autonomy, poor access to information, and fewer economic opportunities. Moreover, structural violence, expressed in the form of stigma, traditional practices, and institutional neglect, continues to shape negative health outcomes and limit the impact of existing interventions.

Recommendations

Based on the study's findings, the following concise and actionable recommendations are directed at key stakeholders to address the drivers of HIV vulnerability in Eastern Benue State.

i. Based on the findings of this study, majority of the respondents were not highly educated. So, Government and other agencies interested in HIV/AIDS matters should endeavour to package HIV/AIDS programmes in Tiv language to enhance better understanding and assimilation towards combating the disease.
ii. The study recommend that the residents of the study area should be empowered especially in vocational education for them to obtained additional income for themselves and love ones apart from income from farming which happened to be the major occupation of the people in the study area. This can be achieved through community-oriented programmes such as Age-group Support Clubs and philanthropic support from wealthy persons. Local Governments Authorities should support income-generating schemes to reduce transactional sex and enhance economic resilience.
iii. Primary Health Care Board and Development Partners should create and expand more community-based HIV testing and treatment units to ease access to HIV/AIDS treatment in remote locations.
iv. Benue State Government should adequately equipped the existing HIV/AIDS counselling, treatment, care and support centres with latest toolkits for effective service delivery to meet the needs of the people in the face of ongoing HIV/AIDS epidemic.
v. Ministry of Women Affairs and Advocacy Groups should promote gender-transformative programs that empower women's reproductive decision-making.
vi. Government, NGOs and private individuals should ensure agricultural mechanization by providing modern farm tools that can ease farming and tripled food production since agriculture which is the major occupation and source of livelihoods has been exposed to HIV/AIDS epidemic in the study area.
vii. NACA and policy makers should integrate HIV prevention with broader development goals in education, agriculture, and employment.

By addressing these interconnected socio-economic and structural issues, it is possible to reduce HIV vulnerability and promote more equitable health outcomes in Eastern Benue and similar rural contexts across sub-Saharan Africa. The results collectively underscore that HIV vulnerability in Eastern Benue State is not only a function of individual behavior, but a reflection

of deeply embedded socio-economic inequalities and structural barriers. Interventions must therefore adopt an integrated approach, addressing knowledge gaps, empowering women, reducing poverty, and expanding access to health services in rural communities.

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