

Socio-Economic Factors Associated with Structural Violence Behaviors against People Suspected of Living with HIV in Nigeria

Ikenna Obasi Odii^{1*}, Edson Chipalo², Binol Rajesh Balachandar³

¹College of Nursing and Health Sciences, Metropolitan State University, Saint Paul, USA

²School of Social Work, College of Allied Health Sciences, University of Cincinnati, Ohio, USA

³College of Nursing and Health Professions, Arkansas State University, Jonesboro, USA

Email: *ikenna.odii@metrostate.edu

How to cite this paper: Odii, I.O., Chipalo, E. and Balachandar, B.R. (2026) Socio-Economic Factors Associated with Structural Violence Behaviors against People Suspected of Living with HIV in Nigeria. *Advances in Infectious Diseases*, 16, 59-72. <https://doi.org/10.4236/aid.2026.161004>

Received: December 19, 2025

Accepted: January 20, 2026

Published: January 23, 2026

Copyright © 2026 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Background: Structural violence is a trigger for behavioral violence. Addressing behavioral vulnerabilities such as social discrimination and unequal opportunities using specific survival strategies influences people's susceptibility to structural violence and the likelihood of encountering health disparities or inequities. Existing studies have not examined socio-demographic factors in the context of structural violence behaviors against people suspected of living with HIV in Nigeria. This study examines the existing socio-contextual factors associated with structural violence behaviors against people suspected of living with HIV in Nigeria. **Methods:** This is a cross-sectional secondary data study based on the men's dataset of the 2018 Nigeria Demographic and Health Survey ($N = 13,311$). Using the IBM statistical package for the social sciences (SPSS version 29), descriptive characteristics were summarized using frequencies and proportions. Three multivariate logistic regression models examined the relationship between independent and dependent variables. **Results:** The results indicate that 50.5% of the participants would not buy vegetables from a trader, 54% would be afraid of getting HIV from saliva, while 21.4% thought that HIV could be transmitted by sharing food with people living with HIV, respectively. The logistic regression results suggest that socio-demographic differentials such as region, residence, marital status, religion, age, employment, wealth status, and education are significantly associated with higher odds of one or more structural violence behaviors in men. **Conclusion:** Recognizing the impact of socio-economic factors on structural violence behaviors against suspected HIV-positive individuals in Nigeria, underscores the need for HIV prevention efforts to address behavioral vulnerabilities that undermine health equity in the general population.

Keywords

HIV, Structural Violence Behaviors, People Living with HIV, Men, Nigeria

1. Introduction

Recent estimates indicate that Nigeria accounts for more than three million HIV/AIDS cases out of an estimated total current population of 223,804,632 million people [1]. More conservative estimates suggest that approximately 1.8 million people are currently living with HIV in Nigeria [1]. With a 1.3% adult HIV prevalence rate resulting in 51,000 AIDS-related deaths among adults and children, Nigeria ranks fourth globally in HIV burden and leads in West and Central Africa, despite currently implementing a strategic framework from 2021 to 2025 to improve HIV testing access by 90% by 2025 [1].

Globally, structural dimensions of violence have gained increasing attention among diverse disciplines including behavioral health research, but fewer people have cared to realize that the most audacious violence is often the form that appears invisible and yet perpetuates suffering in everyday life for the victims [2]. The perpetrators are often unaware of this violence since it could very well be condoned as the norm or dismissed as ordinary life challenges. Structural violence is defined as a type of harm inflicted by social structures or institutions that prevents individuals from fulfilling their basic needs [3]. Social structures are constructs of the prevailing way of life and power dynamics which can be seen in beliefs and behaviors that stigmatize, isolate, and victimize people suspected of living with HIV. Despite its subtlety, structural violence stands as the most destructive manifestation of violence, leading to excess deaths that would not occur in more egalitarian societies [4]. This could offer some insight as to why the HIV ravaged many communities in Sub-Saharan African where socio-economic inequities are more common, and power imbalances contribute to the creation of increasingly unequal socio-economic structures.

Structural violence behaviors and the vulnerabilities that they trigger can be mitigated using behavioral interventions [5]. A recent study conducted among young persons in Nigeria indicated that age, wealth index, previous knowledge about pregnancy and geographical location/setting were significant predictors of comprehensive HIV knowledge [6]. Similarly, a study conducted in south western Nigeria found poverty, illiteracy, inadequate and location of health facilities as prevalent sociocultural factors influencing AIDS care [7]. Owing to fear of social exclusion, HIV infection, discrimination and HIV stigma, non-disclosure of HIV status were prevailing findings in prior Nigerian studies [8] [9]. Nevertheless, existing Nigerian studies have not examined socio-contextual factors impacting structural violence behaviors against people with HIV using a nationally representative sample.

The Purpose of the Study

Given empirical evidence that supports the existence of structural violence as a catalyst for behavioral violence behaviors that could result in fatal consequences such as suicidal ideation for the people living with HIV, it is imperative that HIV prevention and control studies highlight this germane concern [2] [4]. Individual-level indicators serve as valid proxies for, or direct consequences of, macro-level structural violence. Hence, structural violence behaviors are operationalized as discriminatory attitudes such as responses to buying food, vegetables or even the simple understanding of how HIV is transmitted. In this study, the focus is directed at behaviors that may trigger structural violence against people suspected of living with HIV in Nigeria. These behaviors are unpalatable and prevent the victims from leading a meaningful life devoid of victimization. In order to fill the gaps in existing knowledge, the current study raises the research questions: Are there significant socio-demographic factors associated with structural violence behaviors against people suspected of living with HIV in Nigeria, and what are ways of mitigating these behavioral vulnerabilities among men in Nigeria?

2. Materials and Methods

2.1. Data Source

The dataset for this study was derived from the nationally representative sample survey entitled the 2018 Nigeria National Demographic and Health Survey (NDHS) which offers current insights into demographic and health trends in Nigeria [10].

2.2. Study Design and Sampling

This is a cross-sectional descriptive-correlational secondary data study based on the 2018 Nigeria Demographic and Health Survey (NDHS) dataset. The survey adopted a stratified, two-stage cluster design, using enumeration areas (EAs) as the first-stage sampling units. In the second stage, a comprehensive listing of households was conducted in each of the 1400 selected EAs and 42,000 households. For this study, 13,311 male participants aged 15 to 59 were interviewed. Beyond presenting national estimates, the report includes key indicators for rural and urban areas, Nigeria's six geopolitical zones, all 36 states, and the Federal Capital Territory (FCT).

2.3. Inclusion and Exclusion Criteria

Inclusion Criteria:

Men aged 15 to 59 years living in Nigeria.

Exclusion Criteria:

Women of all age groups in Nigeria, men less than 15 years or older than 59 years in Nigeria.

3. Measures

3.1. Dependent Variables

Individual discriminatory attitudes are interpreted as structural violence behav-

iors in this study owing to the social exclusion and discrimination they trigger. Structural violence behaviors were measured by asking the participants: 1) “Can you get HIV by sharing food with a person who has AIDS?” 2) “Would you buy vegetables from a vendor with HIV?” and 3) “Would you be afraid to get HIV from contact with saliva from an infected person?” All these variables were measured dichotomously as “yes” and “no”.

3.2. Independent Variables

In this study, sociodemographic variables examined included region, resident type, age, marital status, education, religion, and wealth index, which were assessed through specific questions and recoded accordingly.

3.3. Data Analysis

The IBM statistical package for the social sciences (SPSS version 29) were utilized for data analysis. For the descriptive statistics, the frequencies and proportions of socio-demographic variables were computed and tabulated. Chi-square was used to determine the association and prevalence estimates between socio-demographic factors and structural violence behaviors. A multivariate logistic regression was subsequently conducted to further explore the relationship between the dependent and the independent variables while controlling for gender, and to predict the odds of each socio-demographic factor associated with structural violence behaviors in this sample. The statistical significance was set at the p -value of 0.05.

3.4. Ethical Considerations

Ethical approval to utilize the Nigeria Demographic and Health Survey (NDHS) was obtained from the Department of Health and Human Services (DHHS) Inner City Fund International (ICF) on November 27th, 2023 through approval number 193342. To ensure strict confidentiality, personal identifiers such as names or addresses have been removed, geographic identifiers are limited to regional levels, locations of participants have been redacted, data usage is solely limited to statistical reporting and for registered research purposes, requiring registration of new projects for alternative uses, prohibiting efforts to identify respondents, and disallowing redistribution of micro-level data in any form. The DHS terms of use can be further referenced at: <https://dhsprogram.com/Data/terms-of-use.cfm>.

4. Results

4.1. Descriptive Characteristics of the Participants (Table 1)

Table 1 provides descriptive characteristics of the participants. The total sample size included 13,311 Nigerian men aged 15 to 59 years. By *region*, the participants were distributed across different regions of the country, with the highest representation in the North West (22.2%), followed by the North East (18.4%) and North Central (18.1%). In terms of *ethnicity*, the majority of participants belong to the “Others” category (37.3%) which represents minority tribes, followed by

the Hausa/Fulani ethnic group (33.1%), Igbo (16.0%), and Yoruba (13.6%). More than half of the participants (58.6%) lived in rural areas, were between 15 to 34 years old (55.6%) and were married (58.1%). About 63.5% of the participants had at least secondary or higher education, and only 36.2% were currently working, and belonged to the “rich” by wealth status (41.9%). About half of the participants identified as Islam (50.1%). Regarding behaviors associated with structural violence, 54% of the participants would be afraid to get HIV from contact with saliva from an infected person while 50.5% would not buy vegetables from a vendor suspected of living with HIV but only 21.4% believed they could get HIV by sharing food with a person who has AIDS (see **Table 1**).

Table 1. Descriptive characteristics of the participants (n = 13,311).

Variables	N	%
<i>Region</i>		
North Central	2415	18.1
North East	2447	18.4
North West	2960	22.2
South East	1755	13.2
South South	1697	12.7
South West	2037	15.3
<i>Ethnicity</i>		
Hausa/Fulani	4397	33.1
Igbo	2134	16.0
Yoruba	1811	13.6
Others	4969	37.3
<i>Resident type</i>		
Urban	5506	41.4
Rural	7806	58.6
<i>Age Group (years)</i>		
15 - 34	7388	55.6
35 - 44	3288	24.7
45 - 59	2635	19.8
<i>Marital status</i>		
Married	7738	58.1
Single	5105	38.4
Cohabitation	280	2.1
Widowed/Divorce/Separated	188	1.4
<i>Education</i>		
No education	2946	22.1
Primary	1914	14.4
Secondary or higher	8451	63.5

Continued

<i>Employment</i>		
Not working	8488	63.8
Currently working	4823	36.2
<i>Wealth status</i>		
Poor	4874	36.7
Middle-income	2858	21.5
Rich	5579	41.9
Religion		
Catholic	1587	11.9
Protestant	4948	37.2
Islam	6664	50.1
Traditionalist/Others	112	0.8
Would get HIV by sharing food with PLHIV		
No	9632	78.6
Yes	2627	21.4
Would fear getting HIV from saliva of PLHIV		
No	5793	46
Yes	6805	54
Would buy vegetables from PLHIV vendor		
No	6367	50.5
Yes	6231	49.5

PLHIV = people living with HIV.

4.2. Association between Socio-Demographic Factors, and Structural Violence Behaviors (Table 2)

The logistic regression results show association between socio-demographic factors with structural violence behaviors (would get HIV by sharing food with PLHIV, would be afraid of getting HIV from saliva of PLHIV, would buy vegetables from PLHIV vendor) against people suspected of living with HIV are shown in **Table 2**. Regarding region, the results indicate that living in South-East (AOR 0.73; 95% CI = 0.60 - 0.90; $p = 0.003$), South-South (AOR 1.38; 95% CI = 1.15 - 1.65; $p < 0.001$), and South-West (AOR = 1.63; 95% CI = 1.39 - 1.92; $p < 0.001$) respectively, were significantly associated with the belief that one would get HIV by sharing food with people living with HIV (Model 1). Specifically, the odds of believing that one would get HIV by sharing food was greater in the South-South (AOR 1.38; 95% CI = 1.15 - 1.65) and South-West (AOR = 1.63; 95% CI = 1.39 - 1.92) regions respectively, compared to North Central (Model 1). In model 2, there was a significant association between being afraid of getting HIV from the saliva of people living with HIV, and residing in the North-West (AOR = 0.79; 95% CI = 0.70 - 0.90, $p < 0.001$) and South-South (AOR = 1.87, 95% CI = 1.62 -

2.12; $p < 0.001$) respectively. In the North-East (AOR = 1.09; 95% CI = 0.96 - 1.24) and South-South (AOR = 1.87, 95% CI = 1.62 - 2.12) regions, there were stronger odds of being afraid of getting HIV from the saliva of people living with HIV compared North Central region. Model 3 results indicate that all regions were strongly associated with buying vegetables from a vendor with HIV. However, only results from North-East (AOR = 2.90; 95% CI = 2.53 - 3.33) and North-West (AOR = 1.97; 95% CI = 1.73 - 2.25) regions exhibited higher odds for buying vegetables from vendors living with HIV compared the North Central region (see **Table 2**).

Table 2. The logistic regression model for socio-demographic factors associated with structural violence behaviors.

Variable	Structural Violence Behaviors		
	Model 1: Afraid of getting HIV sharing food with PLHIV AOR (95% C.I)	Model 2: Would get HIV from saliva of PLHIV AOR (95% C.I)	Model 3: Would buy vegetables from PLHIV vendor AOR (95% C.I)
Region			
North Central	Ref	Ref	Ref
North East	0.99 (0.85 - 1.15)	1.09 (0.96 - 1.24)	2.90 (2.53 - 3.33)***
North West	0.90 (0.77 - 1.05)	0.79 (0.70 - 0.90)***	1.97 (1.73 - 2.25)***
South East	0.73 (0.60 - 0.90)**	0.91 (0.79 - 1.05)	0.49 (0.42 - 0.56)***
South South	1.38 (1.15 - 1.65)***	1.87 (1.62 - 2.12)***	0.55 (0.55 - 0.47)***
South West	1.63 (1.39 - 1.92)***	0.89 (0.78 - 1.01)	0.37 (0.32 - 0.42)***
Residence			
Urban	Ref	Ref	Ref
Rural	1.19 (1.06 - 1.33)**	1.07 (0.98 - 1.17)	0.88 (0.80 - 0.96)
Age (years)			
15 - 34	Ref	Ref	Ref
35 - 44	0.97 (0.85 - 1.10)	0.95 (0.86 - 1.06)	1.27 (1.14 - 1.42)***
45 - 59	0.91 (0.79 - 1.05)	0.95 (0.85 - 1.07)	1.39 (1.24 - 1.56)***
Marital status			
Single	Ref	Ref	Ref
Married	0.72 (0.63 - 0.82)***	0.84 (0.75 - 0.93)***	1.15 (1.04 - 1.28)**
Cohabitation	0.62 (0.43 - 0.90)*	0.73 (0.56 - 0.96)*	1.75 (1.33 - 2.30)***
Widowed/Divorce/Separated	1.17 (0.83 - 1.67)	0.99 (0.72 - 1.36)	1.11 (0.81 - 1.53)
Education			
No education	Ref	Ref	Ref
Primary	0.82 (0.71 - 0.96)*	0.86 (0.75 - 0.98)*	1.53 (1.34 - 1.75)***
Secondary/Higher	0.54 (0.48 - 0.62)***	0.71 (0.64 - 0.80)***	2.02 (1.80 - 2.28)***

Continued

Employment			
No	Ref	Ref	Ref
Yes	0.88 (0.76 - 1.01)	0.94 (0.83 - 1.06)	1.45 (1.28 - 1.64)***
Religion			
Traditionalist/Others	Ref	Ref	Ref
Christian	1.17 (0.69 - 1.98)	0.84 (0.56 - 1.26)	1.59 (1.05 - 2.42)*
Islam (Muslim)	1.50 (0.88 - 2.56)	1.07 (0.71 - 1.61)	0.76 (0.50 - 1.16)
Wealth Status			
Poor	Ref	Ref	Ref
Middle-income	0.91 (0.80 - 1.04)	0.77 (0.69 - 0.86)***	1.45 (1.30 - 1.62)***
Rich	0.64 (0.55 - 0.74)	0.53 (0.47 - 0.59)***	1.95 (1.74 - 2.19)***

*= $p < 0.05$, **= $p < 0.01$, ***= $p < 0.001$, AOR = Adjusted Odd Ratio, CI = Confidence Intervals. Model 1: Would get HIV from sharing food with PLHIV, Model 2: would get HIV from saliva of PLHIV, and Model 3: would buy vegetables from PLHIV vendor are analyzed as outcome variables, PLHIV = people living with HIV.

Compared to living in urban areas, rural areas were significantly associated with and had greater odds of believing that one would get HIV by sharing food with people living with HIV (AOR = 1.19; 95% CI = 1.06 - 1.33; $p = 0.002$). Also, rural dwellers show stronger odds of being afraid of getting HIV from the saliva of people living with HIV (AOR = 1.07; 95% CI = 0.98 - 1.17) compared to urban dwellers. Regarding age groups, only ages 35-44 years (AOR = 1.27; 95% CI = 1.14 - 1.42, $p < 0.001$), and 45 - 59 years (AOR = 1.39; 95% CI = 1.24 - 1.56; $p < 0.001$) were strongly significantly associated with and had higher odds of buying vegetables from a vendor with HIV compared to participants aged 15 - 34 years. Compared to single men, married and cohabiting couples were significantly associated with believing that one would get HIV by sharing food, being afraid of getting HIV from the saliva, and buying vegetables from vendors living with HIV respectively, compared to those that do not. However, married (AOR = 1.15, 95% CI = 1.04 - 1.28; $p = 0.009$) and cohabiting couples (AOR = 1.75, 95% CI = 1.33 - 2.30; $p < 0.001$) had greater odds for buying vegetables from vendors living with HIV, compared to single men (see **Table 2**).

Furthermore, having primary, secondary, and higher education were significantly associated with believing that one would get HIV by sharing food, being afraid of getting HIV from the saliva, and buying vegetables from vendors living with HIV respectively, compared to having no education. However, having primary (AOR = 1.53; 95% CI = 1.34 - 1.75; $p < 0.001$), and secondary/higher education (AOR = 2.02; 95% CI = 1.80 - 2.28; $p < 0.001$) indicated significantly higher odds for buying vegetables from vendors living with HIV compared to having no education. In terms of employment, participants who were currently employed

(AOR = 1.45; 95% CI = 1.28 - 1.64; $p < 0.001$) were strongly significantly associated with and exhibited higher odds for buying vegetables from vendors living with HIV compared to those unemployed (Model 3). Compared to traditionalists/others, both Christians (AOR = 1.17; 95% CI = 0.69 - 1.98) and Muslims (AOR = 1.50; 95% CI = 0.88 - 2.56) show higher odds of believing that one would get HIV by sharing food (Model 1). Likewise, Muslims (AOR = 1.07; 95% CI = 0.71 - 1.61) indicated higher odds of the fear of getting HIV from the saliva of people living with HIV compared to traditionalists/others (Model 2). Conversely, Christians had greater odds (AOR = 1.59; 95% CI = 1.05 - 2.42; $p = 0.028$) and significant association with buying vegetables from vendors living with HIV compared to Traditionalists/others (Model 3). Significantly, both middle-income and rich participants were strongly associated with fear of getting HIV from the saliva, and buying vegetables from vendors living with HIV respectively, compared to poor people (Model 2 and 3). However, in model 3, only the middle-income (AOR = 1.45; 95% CI = 1.30 - 1.62), and rich (AOR = 1.95; 95% CI = 1.74 - 2.19) participants exhibited higher odds for buying vegetables from vendors living with HIV compared to poor participants (see **Table 2**).

5. Discussion

The primary aim of this study was to examine the fundamental tenets of structural violence behaviors, and how certain socio-demographic factors within the Nigerian context could enable structural violence behaviors against people suspected of living with HIV. Structural violence and social discrimination remains one of the foremost concern impacting people living with living with HIV [11]. However, structural violence in the context of this study denotes adverse events only, rather than physical violence, and is characterized as marginalizing beliefs and behaviors towards people living with or suspected to be living with HIV. Structural violence behaviors limits individuals' capacity for life preserving action and contributes to pervasive and long-lasting social discrimination, and creating unequal opportunities for marginalized groups [4] [5]. Discriminatory beliefs and behaviors that infringe on the right of people suspected of living with HIV to co-exist is a form of structural violence.

There were several findings from this study. The prevalence findings suggest that 50.5% of the participants are unwilling to purchase vegetables from a vendor suspected of living with HIV. Additionally, 54% expressed fear of contracting HIV through saliva, and 21.4% believe that sharing food with individuals living with HIV could lead to transmission. The findings demonstrate how behaviors targeting people suspected of living with HIV could interfere with the ability of people to earn a decent living or lead a meaningful existence. In turn the already vulnerable individuals would be unable to meet up with financial obligations, leading to the adoption of survival strategies in order to cope with these structural vulnerabilities—social discrimination and unequal opportunities. If coping is successful, the individual could easily be re-traumatized. However, if coping is unsuccessful,

the individual living with HIV could succumb to psychological trauma, transactional sex, or suicidal ideation. In theory, this process potentially triggers structural violence exacerbated by socio-demographic factors. Although, there is scant proof indicating the likelihood of success for policies aimed at reducing poverty, HIV is frequently associated with poverty [12] [13]. Yet, the focus within the field often revolves more around treatment than prevention or survivorship. Consistent with previous studies, when alternative means of earning a living are scarce for both themselves and their families, biological susceptibility to HIV increases and millions of women in Africa resort to transactional sex driven by poverty which poses the danger of unprotected sexual encounters [14]-[16]. This cycle perpetuates the likelihood of structural violence. Given that half of the participants in this current study potentially perpetuate structural violence behaviors against people living with HIV, there is crucial need to explore and implement innovative male-focused sexual health equity education in Nigeria.

Another noteworthy finding was the significant regional variation in structural violence behaviors. Specifically, believing that one would get HIV by sharing food were significantly associated with southern regions only (South-East, South-West, South-South) and not the northern regions, perhaps incumbent upon the anecdotal perception of more entrenched communal living culture in the northern regions of Nigeria. The significant regional variation observed in the multi-variate logistic regression analysis aligns with previous studies in Nigeria, Kenya, Zambia, and Zimbabwe where variations in health behaviors within gender and ethnic specific groups were documented [17]. Likewise, other studies found significant ethnic differentials in HIV stigma and discrimination among Nigerian women coupled with the direct impact of forced marriage on social discrimination in the context of HIV [18] [19]. Overall, the regional variation findings are suggestive that people living with HIV or suspected to be, are prone to structural violence evenly across Nigeria and even more so in the southern regions of Nigeria.

Further evidence shows that residing in the rural areas were significantly associated with believing that one would get HIV by sharing food and participants in rural areas were more likely to do so, compared to those in urban areas. Likewise, living in rural areas suggests higher odds of being afraid of getting HIV from the saliva of people living with HIV than residing in urban areas. This urban-rural differential is supported by previous research where urban areas had high prevalence of sexual behavioral vulnerability and risky sexual practices such as transactional sex [20]. Similarly, our overall findings are congruent with previous studies conducted in Nigeria where marital status, education, gender, rural or urban residency were noteworthy predictors of discrimination against individuals living with HIV [20] [21]. Hence, education and marital status of the participants in the current study were significantly associated with believing that one would get HIV by sharing food, being afraid of getting HIV from the saliva, and buying vegetables from vendors living with HIV respectively. Compared to those with no education, one emergent observation was that participants with primary school education or

higher exhibited higher odds of buying vegetables from vendors living with HIV. This suggests that educated men in Nigeria may exhibit less social discrimination and thus contribute less in creating or deepening social vulnerabilities for people living with HIV.

Furthermore, there were higher odds of buying vegetables from vendors living with HIV among participants aged 35 - 44 and 45 - 59 years old respectively, compared to those aged 15 - 34 years. Likewise, a significant association exists between ages 35 - 44 and 45 - 59, and buying vegetables from vendors living with HIV. This finding indicates that older male participants were more accepting of people living with HIV than younger males aged 15 - 34 years. Similarly, previous research in Nigeria identified a statistically significant association between age and comprehensive HIV knowledge [6]. There is need to scale up HIV prevention education particularly to the younger age groups who are less likely to have comprehensive education about HIV and thus maybe more hostile to people suspected of living with HIV. Employment status also found some significance with buying vegetables from vendors living with HIV. Specifically, being employed was not only significantly associated with buying vegetables from vendors living with HIV, but it also shows higher odds for it compared to participants that were unemployed. This finding suggests that being unemployed is a facilitator of structural violence than being employed. Hence, men who are currently working in Nigeria are more likely than not to be accepting of those suspected of living with HIV. Evidence shows that employment discrimination against people living with HIV may be common and have been frequently studied, but not how gainful employment is favorable for people living with HIV and vice-versa [22].

Although regarded as a secular nation, Nigeria is an inherently multi-cultural and pluralistic religious country with ingrained religious sentiments intertwined with strong ethnic allegiances which play a significant role in the social structures in the country [23]. This study found that among Christians and Muslims, they were comparatively equally higher odds of fear of contracting HIV through saliva, and believing that sharing food with individuals living with HIV could lead to transmission than Traditionalists/Other religions. However, only being Christian shows a significant association with buying vegetables from vendors living with HIV compared to Traditionalists/Other religions. This may be supportive of the significant ethno-regional variation observed in this study. Historically, religion has been a prominent feature in HIV stigma and discrimination among Sub-Saharan Africans [24]. Negative coping mechanisms and inner conflicts stemming from stringent religious directives have been at the root of most of the uncomplimentary role of religion in the fight against HIV social discrimination [24]. However, religion can also be positively impactful in providing spiritual support for those already living with HIV, promoting healthy safe-sex behaviors [24].

Regarding wealth index, our findings suggest that the middle-income and the rich participants are more likely to patronize a vegetable vendor with HIV, but would still be afraid of getting HIV from their saliva coupled with being unwilling

to share food with them. Previous studies in this regard have focused on income inequality as key drivers of the HIV disease but not how the “wealthy” may have contributed in undermining the eradication of HIV stigma [25]. Put simply, what people would not do to people suffering from other diseases, they do against people living with HIV.

6. Limitations of the Study

The current study has a limited number of examples in the dataset illustrating structural violence behaviors, such as mandatory pre-employment HIV screening. Additionally, the observational cross-sectional study design prevents the establishment of a causal inference between structural violence behaviors, and socio-contextual factors. Despite these constraints, our models integrated variables selected for their relevance in the existing literature. Noteworthy is the use of a nationally representative sample, contributing to enhanced reliability and generalizability of the findings across sub-Saharan Africa.

7. Conclusion

This study reveals significant regional and socio-demographic variations in structural violence and social discrimination against people living with HIV in Nigeria, particularly among men in the southern regions. There is a need for updated legal frameworks and mandatory health equity education to combat outdated fears and improve HIV prevention and treatment awareness across Nigeria.

Acknowledgements

The authors would like to acknowledge Inner City Fund International (ICF) for granting us permission to use DHS dataset.

Author Contributions

All authors were involved with: 1) Conceptualization; 2) Writing (original draft); and 3) Writing (review and editing).

Data Availability Statement

The summary of the 2018 Nigeria Demographic and Health Survey (NDHS) used for this secondary analysis are publicly available in: <https://data.humdata.org/dataset/dhs-subnational-data-for-nigeria#> [10] and the permission for access to the datasets can be facilitated through the NPC and the ICF.

Conflicts of Interest

The authors declare that they have no competing interests.

References

- [1] The Joint United Nations Programme on HIV and AIDS UNAIDS (2024) Country

- Progress Report—Nigeria. Global AIDS Monitoring 2020. https://www.unaids.org/sites/default/files/country/documents/NGA_2020_countryreport.pdf
- [2] Haugerud, A. (2021) Afterword: Axioms of Violence. *Anthropological Forum*, **31**, 335-338. <https://doi.org/10.1080/00664677.2021.1964067>
 - [3] Lee, B.X. (2019) Violence: An Interdisciplinary Approach to Causes, Consequences, and Cures. Wiley-Blackwell, 123-142. <https://www.wiley.com/en-us/Violence%3A+An+Interdisciplinary+Approach+to+Causes%2C+Consequences%2C+and+Cures-p-9781119240686>
 - [4] Farmer, P. (2004) An Anthropology of Structural Violence. *Current Anthropology*, **45**, 305-325. <https://doi.org/10.1086/382250>
 - [5] Farmer, P., Nizeye, B., Stulac, S. and Keshavjee, S. (2006) Structural Violence and Clinical Medicine. *PLOS Medicine*, **3**, e449. <https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.0030449>
 - [6] Kareem, Y.O., Dorgbetor, C.I., Ameyaw, E.K., Abubakar, Z., Adelekan, B., Goldson, E., *et al.* (2023) Assessment and Associated Factors of Comprehensive HIV Knowledge in an At-Risk Population: A Cross-Sectional Study from 19,286 Young Persons in Nigeria. *Therapeutic Advances in Infectious Disease*, **10**, 1-14. <https://doi.org/10.1177/20499361231163664>
 - [7] Odii, I.O. and Chipalo, E. (2024) Differentials in Male Circumcision Prevalence, HIV/AIDS Knowledge and Behavioral Prevention Practices among Men in Nigeria. *Texila International Journal of Academic Research*, **11**, 107-118. <https://doi.org/10.21522/tijar.2014.11.01.art011> https://www.texilajournal.com/thumbs/article/Academic_Research_Vol11_Issue1_Article_11.pdf
 - [8] Suleiman, A. (2008) Socio-Cultural Factors Influencing the Prevalence, Care and Support INHIV/Aids among the Yoruba of Southwestern Nigeria. *African Journal of Health Sciences*, **14**, 61-69. <https://doi.org/10.4314/ajhs.v14i1.30848>
 - [9] Kazeem, O.T. (2012) Relationship between Psychodemographic Factors and Perceived Stigmatization among People Living with HIV/Aids in Ibadan, Nigeria. *IOSR Journal of Humanities and Social Science*, **5**, 81-87. <https://doi.org/10.9790/0837-0558187>
 - [10] Aransiola, J., Imoyera, W., Olowookere, S. and Zarowsky, C. (2014) Living Well with HIV in Nigeria? Stigma and Survival Challenges Preventing Optimum Benefit from an ART Clinic. *Global Health Promotion*, **21**, 13-22. <https://doi.org/10.1177/1757975913507297>
 - [11] National Population Commission (NPC) [Nigeria] and Inner-City Fund International (ICF) (2024) Nigeria Demographic and Health Survey 2018. <https://data.humdata.org/dataset/dhs-subnational-data-for-nigeria#>
 - [12] Okidegbe, N. (2015) Redressing HIV/AIDS Discrimination in Nigeria: The Implications of the Anti-Discrimination Act of 2015. *Africa Policy Journal*, **11**, Article 56.
 - [13] O'Farrell, N. (2001) Poverty and HIV in Sub-Saharan Africa. *The Lancet*, **357**, 636-637. [https://doi.org/10.1016/s0140-6736\(05\)71428-8](https://doi.org/10.1016/s0140-6736(05)71428-8)
 - [14] Pascoe, S.J.S., Langhaug, L.F., Mavhu, W., Hargreaves, J., Jaffar, S., Hayes, R., *et al.* (2015) Poverty, Food Insufficiency and HIV Infection and Sexual Behaviour among Young Rural Zimbabwean Women. *PLOS ONE*, **10**, e0115290. <https://doi.org/10.1371/journal.pone.0115290>
 - [15] Mbirimtengerenji, N.D. (2007) Is HIV/AIDS Epidemic Outcome of Poverty in Sub-Saharan Africa? *Croatian Medical Journal*, **4**, Article 605.

- [16] Lopman, B., Lewis, J., Nyamukapa, C., Mushati, P., Chandiwana, S. and Gregson, S. (2007) HIV Incidence and Poverty in Manicaland, Zimbabwe: Is HIV Becoming a Disease of the Poor? *AIDS*, **21**, S57-S66. <https://doi.org/10.1097/01.aids.0000300536.82354.52>
- [17] Lachaud, J. (2007) HIV Prevalence and Poverty in Africa: Micro- and Macro-Econometric Evidences Applied to Burkina Faso. *Journal of Health Economics*, **26**, 483-504. <https://doi.org/10.1016/j.jhealeco.2006.10.007>
- [18] Magadi, M., Gazimbi, M., Wafula, C. and Kaseje, M. (2021) Understanding Ethnic Variations in HIV Prevalence in Kenya: The Role of Cultural Practices. *Culture, Health & Sexuality*, **23**, 822-839. <https://doi.org/10.1080/13691058.2020.1734661>
- [19] Odimegwu, C.O., Alabi, O., De Wet, N. and Akinyemi, J.O. (2018) Ethnic Heterogeneity in the Determinants of HIV/AIDS Stigma and Discrimination among Nigeria Women. *BMC Public Health*, **18**, Article No. 763. <https://doi.org/10.1186/s12889-018-5668-2>
- [20] Augustine Bala, N., Azman, A. and Singh, P.S.J. (2022) The Impact of Gender Discrimination and HIV Stigma on Women Living in North Central Nigeria. *Cogent Social Sciences*, **8**, Article 2027612. <https://doi.org/10.1080/23311886.2022.2027612>
- [21] Thior, I., Rowley, E., Mavhu, W., Kruse-Levy, N., Messner, L., Falconer-Stout, Z.J., *et al.* (2020) Urban-Rural Disparity in Sociodemographic Characteristics and Sexual Behaviors of HIV-Positive Adolescent Girls and Young Women and Their Perspectives on Their Male Sexual Partners: A Cross-Sectional Study in Zimbabwe. *PLOS ONE*, **15**, e0230823. <https://doi.org/10.1371/journal.pone.0230823>
- [22] Nwanna, C.R. (2011) Socio-Economic Status and Discrimination Against people Living with HIV/AIDS in Selected Local government Areas of Lagos State, Nigeria. *African Population Studies*, **25**, 34-62. <https://doi.org/10.11564/25-1-255>
- [23] Sprague, C., Brown, S.M., Simon, S.E., McMahan, L.D. and Konkle-Parker, D. (2021) Experience of Religion and Spirituality among Socially Marginalised People Living with HIV in Mississippi. *Culture, Health & Sexuality*, **23**, 1111-1125. <https://doi.org/10.1080/13691058.2020.1758345>
- [24] Akpanika, E.N. (2017) Religious and Political Crises in Nigeria: A Historical Exploration. <https://philarchive.org/archive/AKPRAP>
- [25] Reyes-Estrada, M., Varas-Díaz, N. and Martínez-Sarson, M.T. (2015) Religion and HIV/AIDS Stigma: Considerations for the Nursing Profession. *The New School Psychology Bulletin*, **12**, Article 48.