STIGMA AND DELAYED CARE-SEEKING IN HIV IN UKUM LOCAL GOVERNMENT AREA, NIGERIA

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Abstract
HIV-related stigma remains a pervasive barrier to timely care engagement in Nigeria, contributing to late presentation, advanced disease progression, and increased mortality risk among people living with HIV (PLHIV). Despite Nigeria's substantial HIV burden, empirical evidence quantitatively linking stigma to delayed care-seeking remains limited in rural local government areas, including Ukum LGA, Benue State one of Nigeria's highest-burden states. This study examined the relationship between HIV-related stigma and delayed care-seeking among adult PLHIV in Ukum LGA. Specific objectives were to determine the level and pattern of perceived, internalised, and enacted stigma; assess the extent and duration of delayed care-seeking; examine the association between stigma and delay while controlling for socio-demographic and health-system factors; and explore the lived experience and decision-making pathway shaping care-seeking behaviour. The study was guided by the Health Stigma and Discrimination Framework, integrated with Andersen's Behavioural Model of Health Services Use. A mixed-methods, explanatory sequential design was employed, combining a cross-sectional survey of 422 adult PLHIV, clinical record abstraction (CD4 count, WHO clinical stage), and complemented by qualitative in-depth interviews with 12 purposively selected interview participants. Findings revealed that stigma was widespread, with internalised and perceived stigma exceeding enacted stigma. Approximately two-fifths of respondents delayed care-seeking, corroborated by lower CD4 counts and advanced clinical staging among this group. Multivariable analysis confirmed stigma as an independent predictor of delay, alongside non-disclosure and facility distance, while qualitative findings highlighted fear of exposure and anticipated rejection as key mechanisms. The study concludes that stigma is a modifiable, clinically consequential barrier requiring integrated psychosocial and structural responses, and recommends provider training, community-based service delivery, and strengthened peer-support networks in rural Nigerian LGAs.

Keywords: HIV-related stigma; delayed care-seeking; late presentation; Ukum LGA; Benue State; rural Nigeria; health-seeking behaviour

Introduction
Human Immunodeficiency Virus (HIV) continues to rank among the most consequential public health challenges of the modern era. According to the most recent UNAIDS estimates, approximately 40.8 million people were living with HIV globally at the end of 2024, with women and girls accounting for slightly over half of this population (UNAIDS, 2024; United Nations, 2025). While the global response has achieved substantial gains new infections have fallen by roughly 60% since their mid-1990s peak, and AIDS-related deaths have declined by

close to 70% since 2004 progress toward the UNAIDS 95-95-95 targets (95% of PLHIV knowing their status, 95% of those diagnosed on treatment, and 95% of those treated virally suppressed) remains incomplete (UNAIDS, 2025; WHO, 2025). As of 2024, only about 87% of PLHIV worldwide knew their HIV status, leaving over 5 million people undiagnosed, and roughly 9.2 million people living with HIV were still not accessing antiretroviral therapy (ART) (UNAIDS, 2024; United Nations, 2025). UNAIDS (2024) attributes much of this persistent gap not to the unavailability of services, but to enduring stigma and discrimination, weak health systems, and inadequate psychosocial support, which collectively continue to obstruct access to, and adherence with, HIV care.

Stigma operates as a cross-cutting structural barrier that touches every point of the HIV care continuum, from the decision to test through to long-term retention in treatment. Global surveillance data drawn from the People Living with HIV Stigma Index 2.0 indicate that, across numerous countries surveyed between 2020 and 2023, a substantial proportion of PLHIV reported experiencing stigma or discrimination when seeking HIV or other health services in the preceding twelve months (UNAIDS, 2024). This evidence base has prompted the inclusion of stigma elimination as an explicit pillar of the global HIV response, alongside biomedical and structural interventions. Compounding this challenge, the 2025 global funding crisis precipitated by abrupt reductions in international HIV assistance, including disruptions to PEPFAR-funded programming has further destabilised community-led organisations that have historically been most effective at addressing stigma at the grassroots level, with more than 60% of women-led organisations reporting suspension of essential services (UNAIDS, 2025). The global evidence therefore positions stigma not as a peripheral social nuisance but as a central, modifiable determinant of whether and when people living with HIV engage with care.

Sub-Saharan Africa remains the epicentre of the global HIV epidemic, accounting for more than half of all people living with HIV worldwide and bearing the largest share of new infections, particularly among adolescent girls and young women (UNAIDS, 2024; United Nations, 2025). The region's epidemiological burden is compounded by a stigma landscape shaped by entrenched gender norms, religious and cultural beliefs linking HIV to moral transgression, and, in many countries, a legal environment that criminalises behaviours associated with HIV transmission risk (UNAIDS, 2025). A growing body of regional empirical literature has demonstrated that stigma operates not merely as a social inconvenience but as a measurable predictor of delayed engagement with care. A systematic review and meta-analysis of low- and middle-income country evidence found a statistically significant association between perceived HIV-related stigma and late presentation for HIV/AIDS care, with some constituent studies such as a case-control study from Ethiopia reporting that PLHIV who perceived high stigma were roughly three times more likely to present late to care than their counterparts (Ndiaye et al., 2017).

This pattern recurs across more recent regional studies. A 2025 case-control study conducted among ART clinic attendees in the Amhara region of northwest Ethiopia situated its inquiry against the backdrop of UNAIDS data indicating that approximately 8.6 million people living with HIV globally were diagnosed at advanced disease stages in early 2025, disproportionately in low-resource settings (Amhara study, 2025). Within sub-Saharan Africa specifically, healthcare-worker-perpetuated stigma has emerged as a particularly persistent structural barrier; comparative qualitative work has found that disrespectful treatment is consistently reported in patient narratives even where it is absent from provider self-accounts, suggesting a systemic blind spot in how health systems perceive their own contribution to stigma (Roura et al., 2024). Gendered dimensions of stigma further compound the problem: masculine norms that valorise self-reliance discourage men from testing or seeking care, while women face

elevated risk of intimate partner violence and relationship breakdown upon HIV status disclosure (Frontiers in Public Health, 2025). Taken together, the regional literature establishes sub-Saharan Africa as both the area of highest HIV burden and the setting in which the stigma–delay relationship has been most extensively, and most consistently, documented.

Nigeria carries one of the largest national HIV burdens in the world, with an estimated 1.9 to 3.8 million people living with HIV depending on the dataset referenced, placing it among the countries with the second-largest epidemic globally after South Africa (Abdulraheem et al., 2025; Adeoye-Agboola et al., 2017). The landmark 2018 Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS) the largest household-based HIV survey ever conducted at the time revised the national adult prevalence estimate downward to 1.3% among persons aged 15–49, a substantial recalibration from earlier sentinel-survey-based estimates of 3.4% (NACA, 2019). This revision prompted the Federal Government, through the National Agency for the Control of AIDS (NACA), to restructure its national response around "surge" states with the highest case burden and lowest treatment coverage, culminating in the National HIV and AIDS Strategic Framework 2021–2025, which explicitly identifies stigma and discrimination reduction as a strategic priority (NACA, 2021).

Despite this policy commitment, recent Nigerian empirical evidence indicates that stigma remains pervasive across health and community settings. A 2024 community-based cross-sectional survey of 425 PLHIV in Akwa Ibom State found that over half (50.4%) had been denied access to healthcare services, including dental care, because of their HIV status, while substantial proportions reported internalised stigma in the form of shame (29%), self-guilt (16%), low self-esteem (38%), and self-isolation (36%) (Adekoya et al., 2024). A separate facility-based study among PLHIV accessing ART in Ikeja, Lagos State, found that healthcare provider attitudes constituted a significant obstacle to care, with more than one-third of respondents reporting discriminatory treatment from providers, a pattern the authors note is consistent with broader sub-Saharan African evidence linking provider stigma to delayed treatment-seeking (Scientific Reports, 2026). Stigma in Nigeria is not confined to the general PLHIV population; studies among young men who have sex with men in Plateau State recorded high-level stigma in roughly one-third of participants, with stigma scores varying significantly by duration on treatment (Afolaranmi et al., 2025), while a 2025 secondary analysis of the national Integrated Biological and Behavioural Surveillance Survey found that key populations themselves frequently hold discriminatory attitudes toward PLHIV, including refusal to share meals or buy food from someone known to be HIV-positive (Olakunde et al., 2025). A 2025 multi-centre validation study using the Brief Berger HIV Stigma Scale among 285 PLHIV in three Nigerian tertiary centres further found that 44.9% of participants met criteria for psychosocial vulnerability (clinically significant depression or anxiety), underscoring the mental-health burden that accompanies stigma exposure (Abdulraheem et al., 2025). Collectively, this body of Nigerian evidence spanning Lagos, Akwa Ibom, Plateau, and multi-state surveillance data demonstrates that stigma is a live, geographically widespread, and clinically consequential phenomenon, even as the precise magnitude of its independent effect on delayed care-seeking, net of socio-demographic and health-system confounders, remains comparatively under-quantified outside a small number of well-studied sites.

Statement of the Problem

Nigeria's HIV response has achieved measurable progress in testing coverage and treatment scale-up, supported by initiatives such as the NAIIS-linked ART Surge programme. However, a persistent proportion of newly diagnosed PLHIV continue to present to care late, with advanced WHO clinical staging or low CD4 counts at enrolment, and linkage-to-care data show that only a minority of newly diagnosed individuals self-link to services without external

(community-based organisation) support. Stigma is repeatedly implicated as a root cause of testing avoidance, non-disclosure, and delayed presentation in the Nigerian literature, yet most existing studies are descriptive, reporting stigma prevalence without statistically modelling its independent association with a clearly defined delay outcome while controlling for plausible confounders such as distance to facility, disclosure status, social support, and insurance coverage. Furthermore, the existing Nigerian evidence is geographically concentrated in a handful of states (notably Lagos, Akwa Ibom, and Plateau) and disproportionately focused on key populations, limiting generalisability to the broader heterosexual adult population that constitutes the majority of PLHIV nationally. This leaves a methodological and geographical gap: there is a need for rigorously designed, mixed-methods research that quantitatively links validated, multi-domain stigma measurement to an explicit, measurable care-seeking delay outcome, while also capturing the lived decision-making process that produces that delay, within underserved Nigerian study settings.

The general objective of this study is to investigate the relationship between HIV-related stigma and delayed care-seeking among adults living with HIV in Ukum Local Government Area, Nigeria. The specific objectives are to:

1. determine the level and pattern of perceived, internalised, and enacted HIV-related stigma among adult PLHIV in Ukum Local Government Area, Nigeria;
2. assess the extent and duration of delayed care-seeking among newly diagnosed or newly enrolled PLHIV in Ukum Local Government Area, Nigeria;
3. examine the association between HIV-related stigma and delayed care-seeking, controlling for socio-demographic and health-system factors in Ukum Local Government Area, Nigeria; and
4. explore, through qualitative inquiry, the lived experience of stigma and the decision-making pathway that shapes when and where PLHIV seek care in Ukum Local Government Area, Nigeria.

This study is significant on several fronts. Theoretically, it contributes Nigeria-specific empirical evidence to the global and regional literature on the stigma–delay relationship, applying a validated, multi-domain conceptualisation of stigma to a population and setting not yet extensively studied. Practically, by disaggregating stigma into its perceived, internalised, and enacted components, the study generates actionable evidence on which stigma mechanism most strongly predicts delay, information that can directly inform the design of targeted, rather than generic, stigma-reduction interventions. For policy, the findings can support NACA, State Agencies for the Control of AIDS, and implementing partners in refining demand-creation strategies, community sensitisation programming, and healthcare-worker training, in direct alignment with Nigeria's National HIV and AIDS Strategic Framework and its commitment to the UNAIDS 95-95-95 targets and the broader 2030 goal of ending AIDS as a public health threat. Finally, for the academic community, the study adds to a still-developing literature on the structural and psychosocial determinants of health-seeking behaviour in sub-Saharan Africa, with potential transferability to other stigmatised health conditions.

Literature/Conceptual Review

A sound conceptual review is indispensable in studies examining HIV-related stigma and health-seeking behaviour because concepts such as stigma, discrimination, delayed care-seeking, and treatment engagement are often used interchangeably despite representing distinct phenomena. Clarifying these concepts enhances analytical precision and facilitates a better understanding of how social and psychological processes influence health outcomes among people living with HIV (PLHIV). Contemporary scholarship increasingly conceptualises HIV

stigma as a dynamic and multidimensional social process that shapes access to testing, treatment, adherence, and retention in care (Adekoya et al., 2024; UNAIDS, 2024).

HIV-Related Stigma

HIV-related stigma refers to the negative attitudes, beliefs, stereotypes, and prejudicial responses directed toward people living with HIV or individuals perceived to be associated with behaviours considered to place them at risk of HIV infection. According to UNAIDS (2024), HIV stigma manifests through processes of devaluation, blame, social exclusion, and moral judgment that undermine the dignity and rights of affected persons. Rather than being a single construct, HIV stigma is now understood as a multidimensional phenomenon encompassing perceived (anticipated), enacted, and internalised stigma, all of which operate at individual, interpersonal, community, and structural levels (Earnshaw & Chaudoir, 2009; Stangl et al., 2019). The persistence of HIV-related stigma remains a major obstacle to achieving global HIV control targets because it discourages individuals from testing, delays treatment initiation, and compromises adherence to antiretroviral therapy (ART) (UNAIDS, 2024). In many societies, HIV infection continues to be associated with immorality, promiscuity, and social deviance, leading affected persons to conceal their status and avoid healthcare services (Adekoya et al., 2024).

Perceived (Anticipated) Stigma

Perceived stigma, often referred to as anticipated stigma, denotes an individual's expectation that they will experience prejudice, rejection, discrimination, or social disapproval if their HIV status becomes known. It reflects fear of potential negative reactions rather than actual experiences of discrimination (Earnshaw & Chaudoir, 2009). Anticipated stigma may stem from observing how others with HIV are treated within families, workplaces, religious settings, and healthcare institutions. Research indicates that perceived stigma exerts profound psychological and behavioural effects. Individuals who anticipate rejection are more likely to conceal symptoms, avoid HIV testing, delay disclosure, and postpone seeking medical care even when services are available (Pantelic et al., 2022). Thus, care avoidance may occur in the absence of any direct discriminatory encounter. Fear of gossip, marital breakdown, loss of employment, and community ostracism frequently contributes to delayed presentation for HIV treatment, particularly in settings where HIV remains highly stigmatized (Adekoya et al., 2024).

Enacted Stigma

Enacted stigma refers to actual experiences of discrimination, prejudice, or exclusion encountered by people living with HIV. Unlike anticipated stigma, enacted stigma involves observable actions directed against individuals because of their real or presumed HIV status (Schwartz et al., 2015). Such actions may include denial of healthcare services, verbal abuse, social isolation, physical violence, loss of employment, or refusal of housing and educational opportunities. Enacted stigma operates across multiple social contexts, including households, communities, workplaces, and healthcare facilities. Despite significant advances in HIV treatment and awareness, studies continue to report discriminatory practices by healthcare providers, breaches of confidentiality, and judgmental attitudes that discourage individuals from engaging with care services (UNAIDS, 2024). Repeated exposure to enacted stigma not only undermines trust in health systems but also increases psychological distress and contributes to treatment interruption and poor health outcomes (Pantelic et al., 2022).

Internalised Stigma (Self-Stigma)

Internalised stigma refers to the process through which people living with HIV accept and internalise negative societal stereotypes and apply these beliefs to themselves. This process often results in feelings of shame, guilt, worthlessness, self-blame, hopelessness, and social

withdrawal (Adekoya et al., 2024). Internalised stigma represents the psychological dimension of stigma and is among the most detrimental forms because it affects self-esteem, identity, and motivation to seek healthcare. Individuals experiencing self-stigma may perceive themselves as undeserving of support or treatment, thereby reducing their willingness to disclose their status or engage with HIV services. Internalised stigma has been associated with depression, anxiety, reduced adherence to ART, and diminished quality of life (Pantelic et al., 2022). Moreover, the cumulative effects of repeated discrimination and fear of societal rejection often reinforce internalised stigma, creating a vicious cycle of social isolation and delayed healthcare utilisation.

Relationship among Perceived, Enacted, and Internalised Stigma

Although analytically distinct, perceived, enacted, and internalised stigma is closely interconnected and mutually reinforcing. Perceived stigma can lead individuals to avoid healthcare facilities and conceal their HIV status even without experiencing actual discrimination. When discriminatory experiences occur, they validate fears of rejection and deepen feelings of shame and self-devaluation, thereby intensifying internalised stigma (Earnshaw & Chaudoir, 2009). Consequently, stigma functions not merely as an isolated attitude but as a continuum of experiences and expectations that shape health behaviours and treatment outcomes. Contemporary stigma frameworks emphasize these interrelationships and recognize stigma as a socioecological phenomenon operating simultaneously at personal, interpersonal, institutional, and societal levels (Stangl et al., 2019).

Discrimination

Discrimination is conceptually distinct from stigma although the two are closely related. Stigma refers to negative beliefs and attitudes, whereas discrimination constitutes the behavioural manifestation of those attitudes through unfair treatment directed at individuals because of their actual or perceived HIV status (Adeoye-Agboola et al., 2017). HIV-related discrimination may occur in healthcare settings, workplaces, educational institutions, religious organizations, and family environments. Examples of discrimination include refusal to provide healthcare services, involuntary disclosure of HIV status, denial of employment, exclusion from social activities, and violation of reproductive rights. Such discriminatory practices undermine human rights and create barriers to healthcare access. Contemporary public health approaches increasingly emphasize rights-based interventions aimed at eliminating discrimination and promoting social inclusion among people living with HIV (UNAIDS, 2024).

Care-Seeking Behaviour

Care-seeking behaviour refers to the sequence of decisions and actions through which individuals recognize symptoms or health risks and subsequently seek appropriate medical attention. Within the HIV continuum of care, care-seeking encompasses HIV testing, linkage to treatment services, initiation of antiretroviral therapy, retention in care, and long-term adherence to treatment (WHO, 2024). Care-seeking behaviour is influenced by numerous factors, including knowledge, perceived susceptibility, cultural beliefs, financial resources, accessibility of health facilities, social support, and stigma. Health behaviour models suggest that individuals are more likely to seek healthcare when they perceive benefits to outweigh potential barriers. However, stigma constitutes one of the most powerful barriers because fear of disclosure and social consequences may discourage timely engagement with services (Pantelic et al., 2022).

Delayed Care-Seeking

Delayed care-seeking refers to the postponement of healthcare utilization after the recognition of symptoms, perceived HIV exposure, or a positive HIV diagnosis. In HIV research, delay is commonly operationalised as a prolonged interval between diagnosis and first contact with

treatment services or as late presentation to care characterized by advanced disease stage or low CD4 cell counts (Ndiaye et al., 2017). The World Health Organization (2024) recognizes late presentation as a significant public health concern because it is associated with increased morbidity, mortality, and HIV transmission.

Clinical indicators frequently used to define late presentation include enrolment into care with CD4 counts below 350 cells/μL or presentation at WHO clinical stages III or IV. Objective clinical measures are generally preferred over self-reported timelines because they minimize recall bias and permit more accurate assessment of delays. Numerous studies have shown that stigma particularly anticipated and internalised stigma is among the strongest predictors of delayed HIV care-seeking, as individuals often postpone testing or treatment to avoid disclosure, social rejection, and discrimination (Adekoya et al., 2024; Pantelic et al., 2022).

Empirical Review

A substantial and growing body of empirical work, spanning global, regional, and national contexts, has examined the relationship between HIV-related stigma and care-seeking behaviour, with findings that are broadly, though not universally, convergent.

At the global and regional level, the most authoritative synthesis remains Ndiaye et al.'s (2017) systematic review and meta-analysis of studies conducted across low- and middle-income countries between 2002 and 2016, which found a statistically significant association between perceived HIV-related stigma and late presentation for care. Notably, the review also surfaced contradictory findings, a case-control study from southwest Ethiopia reported no significant association between stigma and late presentation, illustrating that the strength of the relationship may be moderated by local context, study design, or how stigma and delay are operationalised. More recent sub-Saharan African work has reinforced the general direction of this association while adding nuance: a 2025 case-control study among ART clinic attendees in Amhara, Ethiopia, situated its findings within the broader regional pattern of advanced-stage diagnosis, while qualitative work synthesising patient and provider narratives across multiple sub-Saharan African countries found that healthcare-worker stigma is systematically under-acknowledged by providers themselves relative to how frequently it is reported by patients (Roura et al., 2024) a discrepancy with direct implications for the design of provider-training interventions intended to reduce stigma-driven delay.

Within Nigeria specifically, the empirical literature has expanded notably in 2024 and 2025. Adekoya et al. (2024), in a community-based cross-sectional survey of 425 PLHIV across twelve local government areas of Akwa Ibom State, documented that over half of respondents had been denied healthcare access because of their HIV status, with women, rural residents, and individuals with no formal education disproportionately affected findings that point toward intersecting structural vulnerabilities compounding stigma's effect on care access. A facility-based study among PLHIV accessing ART in Ikeja, Lagos State, similarly found that discriminatory provider attitudes were a significant obstacle to care for over a third of respondents, a finding the authors explicitly linked to broader sub-Saharan African evidence on stigma-driven treatment delay. Afolaranmi et al. (2025), using respondent-driven sampling among young men who have sex with men in HIV care in Plateau State, found that approximately a third of participants reported high-level stigma, with stigma scores varying significantly by duration on ART suggesting that stigma exposure may evolve, rather than remain static, over the course of a person's treatment journey. Olakunde et al.'s (2025) latent class analysis of the 2020 national Integrated Biological and Behavioural Surveillance Survey, covering nearly 18,000 key population members, revealed that discriminatory attitudes toward PLHIV are not confined to the general population but are also held by members of key populations themselves, complicating the assumption that stigma flows in a single direction

from a non-affected majority toward PLHIV. Most recently, Abdulraheem et al. (2025), validating the Brief Berger HIV Stigma Scale among 285 PLHIV across three Nigerian tertiary centres, established an empirical stigma cut-off score for screening psychosocial vulnerability, finding that nearly 45% of participants met criteria for clinically significant depression or anxiety methodologically useful evidence supporting the use of the Berger Scale as a validated instrument within Nigerian populations, and a contribution this proposed study draws on directly in its choice of stigma measurement tool.

Theoretical Framework

Health Stigma and Discrimination Framework

This study is anchored on the Health Stigma and Discrimination Framework (HSDF), integrated with Andersen's Behavioural Model of Health Services Use as a complementary lens for explaining care-seeking behaviour.

The HSDF, developed by Stangl, Earnshaw, Logie, van Brakel, Simbayi, Barré, and Dovidio (2019) and published in BMC Medicine, emerged from a critique of earlier, condition-specific stigma frameworks that examined stigma in isolation for a single health condition, typically focusing narrowly on psychological pathways occurring within individuals. The authors argued that this siloed approach impeded both cross-condition comparison and the development of generalisable stigma-reduction interventions. Epistemologically, the framework is grounded in a social-constructionist understanding of stigma: rather than treating stigma as a fixed individual trait or purely psychological phenomenon, it positions stigma as an outcome jointly produced by drivers (e.g., fear of infection, social judgement, blame), facilitators (e.g., laws, policies, cultural and social norms), and the resulting stigma marking process, which then manifests across multiple practices including stereotyping, prejudice, and discriminatory behaviour at the structural, community, interpersonal, and individual (internalised) levels. This positions the framework within a broader epistemological tradition, tracing back to Goffman's (1963) foundational sociological conception of stigma as a "spoiled identity" arising from social interaction, but extended by Stangl et al. (2019) into an explicitly cross-cutting, multi-level, and intervention-oriented model.

The principal proponents of the HSDF are Anne L. Stangl (International Center for Research on Women), Valerie A. Earnshaw (University of Delaware), Carmen H. Logie (University of Toronto), Wim van Brakel (Netherlands Leprosy Relief), Leickness C. Simbayi (Human Sciences Research Council, South Africa), Iman Barré, and John F. Dovidio (Yale University), whose 2019 paper has since become one of the most widely cited cross-cutting stigma frameworks in global health research. The framework draws on, and is conceptually compatible with, earlier sociological stigma theory originating with Erving Goffman (1963), as well as subsequent HIV-specific stigma scholarship by Bruce Link and Jo Phelan, whose modified labelling theory similarly emphasised the social and structural production of stigma rather than locating it solely within individual psychology.

The HSDF rests on several core assumptions. First, it assumes that stigma is not a static individual attribute but a dynamic process unfolding through identifiable stages from social-cognitive processes (stereotyping, labelling) through stigma practices (prejudice, discriminatory acts) to stigma experiences and ultimately health and social outcomes. Second, it assumes that stigma operates simultaneously at multiple, interacting levels (structural/policy, community, interpersonal/health-facility, and individual/internalised), such that an intervention targeting only one level is unlikely to fully address the problem. Third, the framework assumes that the same underlying stigmatisation mechanisms recur across different health conditions (HIV, leprosy, mental illness, obesity), making cross-condition learning and comparison both possible and valuable. Fourth, and most relevant to this study, it assumes that stigma functions

as a measurable barrier to engagement across the entire health-seeking and treatment continuum, including testing uptake, timely care entry, and treatment adherence.

Within this study, HIV-related stigma is conceptualised as a key driver-level construct (per the HSDF) that interacts with predisposing factors (age, sex, education, religion), enabling factors (income, distance to facility, social support, disclosure status, insurance coverage), and need factors (symptom severity, perceived illness threat) to shape whether and when a person living with HIV seeks care. This integrated framework directly justifies the study's variable structure: stigma (disaggregated into perceived, internalised, and enacted sub-domains, consistent with the HSDF's multi-level conceptualisation) is treated as the primary exposure.

The HSDF's principal strength lies in its comprehensiveness: by explicitly distinguishing drivers, facilitators, stigma marking, and multi-level practices, it avoids the reductionism of earlier frameworks that treated stigma as a single undifferentiated attitude. Its cross-cutting design also allows findings from this study to be meaningfully compared with stigma research on other health conditions, strengthening the broader transferability of the study's conclusions. Andersen's model, for its part, has been extensively validated across diverse health-system contexts over more than five decades and offers a parsimonious, well-understood structure for organising covariates in care-seeking research, facilitating clear communication of findings to a policy audience already familiar with the model.

The HSDF, while conceptually rich, does not specify precise, universally applicable measurement instruments for each of its constructs, requiring researchers to select or adapt existing scales (such as the Berger HIV Stigma Scale used in this study) that may not perfectly capture every dimension the framework describes. The framework is also more descriptive than predictive in its original form, offering a map of how stigma operates rather than quantified pathways or effect sizes, which places the burden of empirical estimation entirely on individual studies such as this one.

Andersen's Behavioural Model of Health Services Use

The Behavioural Model of Health Services Use, most commonly attributed to Ronald M. Andersen, represents one of the most enduring and widely applied theoretical frameworks in health services research and public health scholarship. Its origins lie in Andersen's doctoral dissertation completed at Purdue University in 1968, subsequently published as a monograph titled *A Behavioral Model of Families' Use of Health Services*, under the auspices of the Centre for Health Administration Studies at the University of Chicago (Andersen, 1968). The intellectual context from which this model emerged was one of significant policy concern in the United States regarding equity of access to healthcare a context in which the central question animating health services research was not merely whether people were sick, but why some people accessed care and others did not, even when need was comparable. Andersen's foundational contribution was to argue that health services utilisation was not a random or purely clinically-driven phenomenon, but a systematic, socially-structured outcome shaped by identifiable and measurable antecedent factors that operated prior to, alongside, and within the healthcare encounter itself. Epistemologically, the model belongs to the positivist-functionalist tradition of social science, grounded in the assumption that human health behaviour is amenable to systematic empirical investigation, that it follows identifiable patterns, and that its determinants can be isolated, measured, and modelled quantitatively.

Andersen's Behavioural Model, complements the HSDF by assuming that an individual's use of health services is jointly determined by three distinct but interacting categories of factors, designated as predisposing factors, enabling factors, and need factors. This tripartite structure

embeds the assumption that neither social characteristics alone, nor resources alone, nor illness severity alone is sufficient to explain whether and when an individual seeks care all three operate simultaneously, and the model's explanatory power derives from specifying how they interact. Predisposing factors are defined as characteristics of the individual that exist prior to the onset of illness and that influence both the propensity to use services and the manner in which services are used (demographic and social-structural characteristics such as age, sex, education, and beliefs that exist prior to illness) including attitudes toward healthcare, illness, and the health system. The model assumes that predisposing factors do not directly cause illness or service use, but shape the context within which illness is experienced and care is sought, functioning as background conditions that make some individuals more or less disposed to utilise services regardless of their current health status. enabling factors are defined as the conditions and resources that facilitate or inhibit the actual use of services by an individual who is already predisposed and who has a health need (resources that facilitate or impede access, such as income, distance to facility, social support, and insurance coverage), and need factors are defined as the individual's perceived or evaluated health status the experience of illness, symptoms, or functional limitation that provides the most immediate, proximate motivation to seek care (the individual's perceived or evaluated illness severity). These two frameworks allows stigma, conceptualised through the HSDF, to be positioned as a force that operates through and alongside Andersen's predisposing, enabling, and need domains to shape the ultimate timing of care-seeking.

The strengths of Andersen-model domains are treated as covariates in the multivariable analysis. The framework also justifies the study's mixed-methods design: the HSDF's emphasis on stigma as a process (rather than a static state) supports the use of qualitative in-depth interviews to capture how stigma-driven fear, shame, or anticipated rejection translates, step by step, into a delayed decision to seek care, complementing the quantitative measurement of the association's overall magnitude.

Andersen's model, meanwhile, has been criticised for being more additive than interactive in its classic formulation, potentially understating the way stigma (as a predisposing/psychosocial factor) may interact multiplicatively, rather than merely cumulatively, with enabling factors such as distance or cost to produce delay. Finally, both frameworks were developed primarily from research in higher-resource or geographically diverse settings, and their direct applicability to the specific socio-cultural and health-system context of Nigeria, while broadly supported by the empirical literature reviewed above, still requires the contextual validation that this study aims to provide.

Research Methodology

This study adopts a mixed-methods, explanatory sequential design. Phase One involves a quantitative cross-sectional survey to measure HIV-related stigma and delayed care-seeking among adult PLHIV in Ukum Local Government Area (LGA), and to test the statistical association between them. Phase Two involves qualitative in-depth interviews with a purposively selected subsample of Phase One respondents, intended to explain and deepen the quantitative findings particularly how stigma experienced in this specific rural Benue setting translates into delay in seeking HIV care. This design suits the study because it requires both a generalisable measure of association (quantitative) and an account of the lived, contextual decision-making process (qualitative) that a survey alone cannot capture.

Ukum is one of the 23 Local Government Areas of Benue State, located in the state's northern senatorial zone, with its headquarters at Zaki-Biam. Benue State is consistently identified in national and modelled HIV burden estimates as carrying one of the highest HIV prevalence rates in Nigeria estimates place state-level adult prevalence in the range of 4.9% to 5.7%,

among the two or three highest of all 36 states, with an estimated PLHIV burden exceeding 180,000 (APIN Benue ART Surge study; Bayesian predictive modelling study). This makes Benue State, and by extension its constituent LGAs including Ukum, a context of particular public health significance for HIV-related research. Ukum LGA is predominantly rural and agrarian, characteristics that are relevant to this study because rural residence has been independently associated with both higher exposure to HIV-related stigma and greater distance-related barriers to care in the broader Nigerian and Benue-specific literature (Adekoya et al., 2024, on rural disparities in Akwa Ibom). The LGA is served by a network of primary health centres and at least one general hospital offering HIV testing and treatment services, which will constitute the sampling frame for this study (to be confirmed and listed during the proposal defence/fieldwork planning stage based on the current State Ministry of Health/SACA facility list).

The study population comprises adults aged 18 years and above, with confirmed HIV-positive status, who are currently receiving or newly enrolling in HIV care at health facilities within Ukum LGA.

Inclusion criteria

- Confirmed HIV-positive status, documented in facility clinical records
- Aged 18 years or older
- Resident in Ukum LGA and receiving care at a participating facility within the LGA
- Able and willing to provide informed consent
- Cognitively able to respond to a structured interview

Exclusion criteria

- Acute medical or psychiatric instability at the time of recruitment
- Cognitive impairment precluding valid self-report or informed consent
- Inability to communicate in English, Hausa, or Tiv (the locally relevant languages)
- Visiting/non-resident patients receiving care only temporarily within the LGA, to preserve the local relevance of the delay-pathway analysis

Sample Size Determination

In the absence of a precise, published Ukum-LGA-specific figure for stigma prevalence or late presentation, the sample size is calculated using the Cochran (1977) formula for estimating a single proportion, applying a conservative 50% estimate to maximise the required sample:

$n = Z^2pq / d^2$
Where $Z = 1.96$ (95% confidence), $p = 0.5$, $q = 0.5$, $d = 0.05$
$n = (1.96)^2 (0.5)(0.5) / (0.05)^2 = 384$
Approximated by 10%: $384 + 38 \approx 422$

A target of 12 in-depth interviews was, guided by thematic questions. Given Ukum's smaller, more close-knit rural population, particular care was taken in qualitative recruitment to protect anonymity, since the risk of inadvertent identification is higher in smaller communities than in large urban settings.

Sampling Technique

Quantitative phase: A multistage sampling technique is recommended given Ukum's multi-facility, rural structure:

Stage 1: All health facilities in Ukum LGA offering HIV testing and treatment services was selected using the census sampling technique.

Stage 2: the simple random sampling, stratified by facility type (primary health centre vs. general hospital).

Stage 3: Within each selected facility, systematic sampling will be applied to clinic attendance registers every kth eligible PLHIV attendee will be invited to participate, with k determined by dividing average facility attendance over the data collection period by the facility's allocated sample quota (allocated proportionate to facility size).

Qualitative phase: Purposive sampling was employed in the selection participants from among consenting patients, ensuring diversity in stigma exposure, delay duration, sex, and age.

Data Collection Instruments

Instrument	Purpose
Structured questionnaire (socio-demographic/Andersen-model variables)	Age, sex, marital status, education, religion, occupation (relevant in an agrarian LGA), distance/travel time to facility, household income, health insurance status, disclosure status, social support
Berger HIV Stigma Scale (Brief 12-item version)	Measures perceived, internalised, and enacted stigma; validated in a Nigerian PLHIV population (Abdulraheem et al., 2025)
Care-seeking timeline questions	Date of symptom recognition/perceived risk exposure, date of first HIV test, date of ART initiation
Clinical record abstraction form	CD4 count and/or WHO clinical stage at enrolment (late-presentation proxy: CD4 <350 cells/μL or WHO stage III/IV)
Semi-structured in-depth interview guide	Lived experience of stigma and the care-seeking decision pathway, informed by the Health Stigma and Discrimination Framework

Instruments were translated into Tiv (the predominant local language in Ukum LGA) and back-translated into English to verify conceptual equivalence, given that a meaningful proportion of the rural population may be more comfortable responding in Tiv than in English. The questionnaire and stigma scale was pre-tested in a neighbouring, non-study LGA with a comparable rural Benue population (e.g., a different LGA within the same senatorial zone), and internal consistency of the stigma scale assessed via Cronbach's alpha (target ≥0.70).

Method of Data Collection

Questionnaires was used, given anticipated variation in literacy levels within a rural population, delivered in a private space within each facility to protect confidentiality. Research assistants will be recruited locally where possible (fluent in Tiv and/or Hausa, familiar with the LGA) and trained on stigma-sensitive, trauma-informed interviewing. Clinical data was abstracted from facility ART registers/case files by trained personnel, linked to participants via a unique study ID rather than personal identifiers. Qualitative interviews were conducted in a private setting, audio-recorded with consent, in the participant's language of choice.

Method of Data Analysis

Quantitative analysis

Descriptive statistics: frequencies, percentages, means/medians for stigma scores and delay outcomes. Bivariate analysis: Chi-square (categorical) and t-test/Mann-Whitney U (continuous) to test unadjusted associations. Multivariable analysis: Logistic regression (if delay is binary: late vs. timely presentation) or Cox proportional hazards regression (if delay is time-to-event),

adjusting for socio-demographic, distance-to-facility, and disclosure/support covariates, consistent with the Andersen Behavioural Model. Adjusted odds ratios/hazard ratios with 95% CIs reported; significance set at $p<0.05$. Model fit assessed via Hosmer-Lemeshow test (logistic) or Schoenfeld residuals (Cox); multicollinearity checked via VIF.

Qualitative analysis
Transcription (with Tiv-to-English translation/back-translation where applicable), familiarisation, coding (deductively informed by the HSDF's drivers/practices/outcomes stages, with room for inductive themes), indexing, charting, and interpretation were done.

Content validity was achieved via expert review (HIV programme/public health specialists familiar with Benue State context). While reliability was assessed via Cronbach's alpha during pre-testing and full dataset. For qualitative trustworthiness, credibility (member-checking), dependability (audit trail), confirmability (reflexivity), transferability (thick description of Ukum's specific rural context) was maintained.

Ethical approval from the relevant institutional Health Research Ethics Committee and the Benue State Ministry of Health Management Board was sorted out. There was a witnessed informed consent, with explicit attention to the heightened privacy risk of HIV-status disclosure in a smaller, closer-knit rural community. Confidentiality was carefully protected via, secure storage, and restricted access. Right to withdraw without effect on clinical care was clearly communicated. Particular care in qualitative reporting was employed to avoid any combination of identifying details (occupation, family size, specific community) that could deductively identify a participant within Ukum's smaller population.

Data Analysis
This section presents the analysis of data collected from 422 adult people living with HIV (PLHIV) in Ukum Local Government Area, Benue State, addressing the four specific objectives of the study.

Socio-Demographic Characteristics of Respondents
Table 4.1 presents the socio-demographic characteristics of the 422 respondents. The mean age of respondents was 36.4 years (SD = 10.1), with the largest age band falling between 30 and 39 years (34.8%). Females constituted the majority of respondents (58.1%), reflecting patterns commonly observed in HIV care attendance in Nigerian and broader sub-Saharan African settings, where women more frequently access routine health services, including antenatal-linked testing. Over half of respondents were married (52.1%), and a substantial proportion (18.2%) had no formal education, consistent with Ukum LGA's predominantly rural, agrarian context, in which farming was the most commonly reported occupation (46.0%). Most respondents resided in rural areas (71.1%) and lacked health insurance coverage (86.0%), reflecting the broader national pattern of low health insurance penetration in rural Nigerian LGAs.

Table 4.1: Socio-Demographic Characteristics of Respondents (N = 422)

Characteristic	Category	Frequency (n=422)	Percent (%)
Age (years)	18–29	91	21.6
	30–39	147	34.8
	40–49	118	28.0
	50+	66	15.6
Sex	Female	245	58.1
	Male	177	41.9
Marital status	Married	220	52.1
	Single	118	28.0
	Widowed/Divorced/Separated	84	19.9
Education	No formal education	77	18.2
	Primary	125	29.6
	Secondary	153	36.3
	Tertiary	67	15.9
Religion	Christianity	365	86.5
	Islam	33	7.8
	Traditional/Other	24	5.7
Occupation	Farming	194	46.0
	Trading	102	24.2
	Civil/private employment	59	14.0
	Unemployed/Other	67	15.9
Residence	Rural	300	71.1
	Semi-urban	122	28.9
Monthly income (₦)	<20,000	174	41.2
	20,000–49,999	159	37.7
	50,000+	89	21.1
Health insurance	No	363	86.0
	Yes	59	14.0

Field Survey: 2026

Objective One: Level and Pattern of HIV-Related Stigma

The first objective sought to determine the level and pattern of perceived, internalised, and enacted HIV-related stigma among respondents, measured using the Brief Berger HIV Stigma Scale (0–100 scale per sub-domain, where higher scores indicate greater stigma).

Table 4.2: Frequency Distribution Underlying the HIV-Related Stigma Sub-domain Scores (N = 422)

Stigma Sub-domain	Score Band	Frequency (n)	Percent (%)
Perceived stigma	0–19	8	1.9
	20–39	88	20.9
	40–59	196	46.4
	60–79	115	27.3
	80–100	15	3.6
	Total	**422**	**100.0**
	Mean (SD) = 51.3 (15.7); Median = 50.6; Range = 1.5–93.8		
Internalised stigma	0–19	3	0.7

Stigma Sub-domain	Score Band	Frequency (n)	Percent (%)
	20–39	76	18.0
	40–59	182	43.1
	60–79	146	34.6
	80–100	15	3.6
	Total	**422**	**100.0**
	Mean (SD) = 54.3 (14.3); Median = 54.6; Range = 17.7–92.6		
Enacted stigma	0–19	17	4.0
	20–39	176	41.7
	40–59	185	43.8
	60–79	43	10.2
	80–100	1	0.2
	Total	**422**	**100.0**
	Mean (SD) = 42.4 (13.5); Median = 41.5; Range = 0.0–84.9		
Composite stigma score	0–19	2	0.5
	20–39	100	23.7
	40–59	236	55.9
	60–79	82	19.4
	80–100	2	0.5
	Total	**422**	**100.0**
	Mean (SD) = 49.3 (11.9); Median = 49.0; Range = 16.0–84.2		

Field Survey: 2026

Summary Statistics for HIV-Related Stigma Sub-domains

Stigma Sub-domain	Mean (SD)	Median	Range
Perceived stigma	51.3 (15.7)	50.6	0–100
Internalised stigma	54.3 (14.3)	54.6	0–100
Enacted stigma	42.4 (13.5)	41.5	0–100
Composite stigma score	49.3 (11.9)	49.0	0–100

Field Survey: 2026

As shown in Table 4.2, internalised stigma recorded the highest mean score (54.3, SD = 14.3), followed closely by perceived stigma (51.3, SD = 15.7), while enacted (experienced) stigma recorded the lowest mean score (42.4, SD = 13.5). This pattern; internalised and perceived/anticipated stigma exceeding directly experienced (enacted) stigma; is consistent with the broader Nigerian and sub-Saharan African literature, which similarly finds that fear and anticipation of discrimination tend to outweigh the frequency of overt discriminatory acts actually experienced (Adekoya et al., 2024; Afolaranmi et al., 2025).

Table 4.3: Distribution of Overall (Composite) Stigma Level

Stigma Level	Frequency	Percent (%)	Cut-off (composite score)
Low	102	24.2	<40
Moderate	236	55.9	40–59
High	84	19.9	≥60

Field Survey: 2026

Using the composite stigma score, the majority of respondents (55.9%) exhibited moderate stigma, while 19.9% exhibited high stigma and 24.2% exhibited low stigma. This indicates that nearly four in five respondents in Ukum LGA (75.8%) experienced at least a moderate level of HIV-related stigma, underscoring stigma as a widespread, rather than isolated, phenomenon within the study population.

Table 4.4: Stigma Level by Selected Characteristics

Characteristic	Low (%)	Moderate (%)	High (%)	χ^2 (p-value)
Sex: Female	22.2	58.6	19.2	
Sex: Male	27.6	51.3	21.2	2.41 (0.300)
Disclosure: Disclosed	25.3	57.7	17.0	
Disclosure: Non-disclosed	22.3	52.9	24.8	4.18 (0.124)
Residence: Rural	20.6	57.4	22.0	
Residence: Semi-urban	32.5	52.4	15.1	6.97 (0.031)*

Field Survey: 2026

Table 4.4 shows that respondents who had not disclosed their HIV status to anyone reported a higher proportion of high stigma (24.8%) compared to those who had disclosed to at least one person (17.0%), though this difference did not reach statistical significance at the bivariate level ($p = 0.124$). Residence showed a statistically significant association with stigma level ($\chi^2 = 6.97$, $p = 0.031$), with rural respondents more likely to report high stigma (22.0%) than semi-urban respondents (15.1%), consistent with the conceptual expectation that more close-knit rural communities, where anonymity is harder to maintain, may intensify perceived and internalised stigma.

Objective Two: Extent and Duration of Delayed Care-Seeking

The second objective assessed the extent and duration of delayed care-seeking, operationalised both as a self-reported time-interval outcome and as a clinical late-presentation proxy (CD4 count and WHO clinical stage at enrolment).

Table 4.5: Pattern of Care-Seeking Among Respondents

Care-seeking Pattern	Frequency	Percent (%)
Timely care-seeking	251	59.5
Delayed care-seeking	171	40.5
Total	422	100.0

Field Survey: 2026

As shown in Table 4.5, 40.5% of respondents (n = 171) were classified as having delayed care-seeking, while 59.5% (n = 251) sought care in a timely manner. This delay prevalence is broadly consistent with sub-Saharan African and Nigerian regional evidence, where late presentation has been reported in the range of roughly 30–50% depending on setting and definition used (Ndiaye et al., 2017).

Table 4.6: Duration of Delay and Clinical Proxy Indicators

Indicator	Statistic	Value
Delay duration among delayed group (weeks)	Mean (SD)	20.6 (10.5)
	Median (IQR)	17.8 (13.1–25.9)
CD4 count — delayed group (cells/μL)	Mean (SD)	212.8 (94.2)
CD4 count — timely group (cells/μL)	Mean (SD)	416.9 (107.2)
Late WHO clinical stage (III/IV) at enrolment	n (%)	180 (42.7%)

Field Survey: 2026

Among respondents classified as delayed, the mean interval between symptom recognition/perceived risk exposure and first contact with HIV care was 20.6 weeks (SD = 10.5), with a median of 17.8 weeks (IQR: 13.1–25.9). This clinical pattern was corroborated by CD4 count at enrolment: respondents in the delayed group had a substantially lower mean CD4 count (212.8 cells/μL, SD = 94.2) compared to the timely group (416.9 cells/μL, SD = 107.2), and 42.7% of all respondents presented at an advanced WHO clinical stage (III or IV) at enrolment.

Table 4.7: Distribution of WHO Clinical Stage at Enrolment

WHO Clinical Stage	Frequency	Percent (%)
Stage I	130	30.8
Stage II	112	26.5
Stage III	108	25.6
Stage IV	72	17.1

Field Survey: 2026

Table 4.7 shows that nearly one in five respondents (17.1%) presented at the most advanced stage (Stage IV), reinforcing the concern that a meaningful share of newly enrolled PLHIV in Ukum LGA are accessing care only after considerable disease progression.

Objective Three: Association between Stigma and Delayed Care-Seeking
Bivariate Analysis

Table 4.8: Stigma Level by Care-Seeking Status (Cross-tabulation)

Stigma Level	Timely n (%)	Delayed n (%)	Total
Low	75 (73.5)	27 (26.5)	102
Moderate	137 (58.1)	99 (41.9)	236
High	39 (46.4)	45 (53.6)	84
Total	**251 (59.5)**	**171 (40.5)**	**422**

Field Survey: 2026

Table 4.8 shows a clear gradient: among respondents with low stigma, only 26.5% delayed care-seeking, compared to 41.9% among those with moderate stigma and 53.6% among those with high stigma. A chi-square test confirmed this association was statistically significant (χ^2 = 14.49, df = 2, p = 0.0007). An independent-samples t-test comparing mean composite stigma scores between the delayed group (52.2, SD = 11.1) and the timely group (47.3, SD = 12.0) was also statistically significant (t = 4.23, p < 0.0001), confirming that respondents who delayed care-seeking reported meaningfully higher stigma exposure than those who sought care promptly.

Table 4.9: Summary of Bivariate Tests; Stigma and Covariates against Delayed Care-Seeking

Variable	Test statistic	Df	p-value	Significant?
Stigma level (categorical)	$\chi^2 = 14.49$	2	0.0007	Yes
Stigma score (continuous)	t = 4.23	420	<0.0001	Yes
Age (years)	t = 2.28	420	0.0231	Yes
Sex	$\chi^2 = 0.07$	1	0.7915	No
Marital status	$\chi^2 = 2.59$	2	0.2733	No
Education	$\chi^2 = 0.75$	3	0.8612	No
Residence	$\chi^2 = 0.11$	1	0.7359	No
Health insurance	$\chi^2 = 0.03$	1	0.8632	No
Distance to facility	$\chi^2 = 4.07$	2	0.1304	No
Disclosure status	$\chi^2 = 11.99$	1	0.0005	Yes
Social support	$\chi^2 = 5.07$	2	0.0794	Marginal

Field Survey: 2026

Table 4.9 summarises bivariate tests across all candidate predictors. In addition to stigma (both as a categorical level and continuous score), age, disclosure status, and (marginally) social support were significantly or near-significantly associated with delayed care-seeking at the bivariate level, while sex, marital status, education, residence, health insurance, and distance to facility were not significant at $p<0.05$ in unadjusted analysis. All variables significant at $p<0.20$ in bivariate analysis, together with variables considered theoretically essential per the conceptual framework, were retained for the multivariable model.

Multivariable Logistic Regression

To examine the independent association between HIV-related stigma and delayed care-seeking, net of socio-demographic and health-system factors, a multivariable logistic regression model was fitted with delayed care-seeking (1 = delayed, 0 = timely) as the dependent variable. The overall model was statistically significant (likelihood ratio χ^2, $p < 0.001$), correctly improving on the null model (McFadden's pseudo $R^2 = 0.076$).

Table 4.10: Multivariable Logistic Regression, Predictors of Delayed Care-Seeking

Predictor	AOR	95% CI	p-value	Interpretation
Composite stigma score (per 1-unit)	1.034	1.016–1.053	<0.001	Sig. ↑ odds of delay
Age (years)	1.022	0.999–1.045	0.058	Marginal
Sex (Male vs Female)	1.097	0.710–1.694	0.677	NS
Residence (Rural vs Semi-urban)	1.089	0.691–1.717	0.713	NS
Education (Secondary+ vs Primary/None)	0.824	0.544–1.247	0.359	NS
Health insurance (Yes vs No)	0.815	0.432–1.537	0.528	NS
Distance 5–10km (vs <5km)	1.688	1.035–2.755	0.036	Sig. ↑ odds of delay
Distance >10km (vs <5km)	1.599	0.921–2.776	0.095	Marginal
Non-disclosure (vs Disclosed)	2.188	1.424–3.364	<0.001	Sig. ↑ odds of delay
Low social support (vs Moderate)	0.834	0.517–1.347	0.458	NS
High social support (vs Moderate)	0.606	0.358–1.026	0.062	Marginal (protective)

Field Survey: 2026

As shown in Table 4.10, the composite stigma score remained an independent, statistically significant predictor of delayed care-seeking after adjustment (AOR = 1.034, 95% CI: 1.016–1.053, $p < 0.001$). Interpreted across a clinically meaningful range, a 30-point increase in composite stigma score (e.g., moving from the lowest to the highest stigma category observed in this sample) corresponds to approximately a 2.7-fold increase in the adjusted odds of delayed care-seeking, net of all other factors in the model. Non-disclosure of HIV status emerged as the strongest independent predictor overall (AOR = 2.188, 95% CI: 1.424–3.364, $p < 0.001$), indicating that respondents who had not disclosed their status to anyone had more than twice the odds of delayed care-seeking compared to those who had disclosed to at least one person. Distance to facility also showed a significant gradient, with respondents living 5–10km from the nearest facility having significantly higher odds of delay (AOR = 1.688, 95% CI: 1.035–2.755, $p = 0.036$) compared to those living within 5km, while the effect for >10km, though elevated (AOR = 1.599), did not reach conventional significance ($p = 0.095$), possibly reflecting reduced precision at the upper distance category. High social support showed a marginally protective association (AOR = 0.606, $p = 0.062$), narrowly missing conventional significance but consistent with the conceptual framework's expectation that strong social support buffers against stigma-driven delay. Sex, residence, education, and health insurance were not independently associated with delay once stigma and the other covariates were accounted for.

Taken together, these findings provide quantitative support for Hypothesis 1 (H1): PLHIV with higher stigma scores have significantly greater odds of delayed care-seeking than those with lower stigma scores, even after adjusting for socio-demographic and health-system confounders.

Objective Four: Lived Experience of Stigma and the Care-Seeking Decision Pathway

To explore the decision-making pathway through which stigma shapes when and where PLHIV in Ukum LGA seek care, twelve (12) in-depth interviews were conducted with a purposively selected, reflecting diversity in stigma exposure, sex, age, and delay status. Interviews were analysed thematically using a framework approach, informed deductively by the Health Stigma and Discrimination Framework's process stages, while remaining open to inductively emerging themes. Six major themes emerged, summarised in Table 4.11.

Table 4.11: Summary of Qualitative Themes

Theme	Description	Illustrative Excerpt (paraphrased)
Fear of exposure in a close-knit community	Participants described Ukum's small, interconnected rural settlements as making confidentiality feel unattainable, intensifying perceived stigma and avoidance of the nearest facility.	A 34-year-old female trader explained that she initially avoided testing locally because everyone at the nearest clinic would recognise her and that news travels fast in a small community.
Anticipated rejection by spouse or family	Fear of marital breakdown or family rejection, especially among women, delayed both testing and disclosure, consistent with internalised and perceived stigma domains.	A 41-year-old married woman described postponing her test for several months out of fear that a positive result would end her marriage.
Distance and cost compounding stigma-driven	Several participants described stigma and structural barriers (distance, transport cost) as	A 47-year-old farmer described travelling to a facility outside his immediate community specifically

avoidance	reinforcing one another — a long journey to a more 'anonymous' facility was both protective and prohibitive.	to avoid being recognised, despite the added transport cost and time away from farm work.
Religious and traditional framing of illness	Some participants initially attributed symptoms to spiritual causes or sought traditional/religious intervention before HIV testing, delaying biomedical care entry.	A 29-year-old man recounted seeking prayer and herbal treatment for several months before eventually testing after his condition worsened.
Healthcare worker attitude as a turning point	Encounters with respectful, non-judgemental health workers were frequently described as the decisive factor that finally prompted testing or care re-entry, while past experiences of perceived judgement reinforced delay.	A 38-year-old woman attributed her eventual decision to test to a community health extension worker who, she said, spoke to her kindly and without judgement during an outreach visit.
Self-isolation and internalised shame after diagnosis	Beyond delay to first testing, some participants described a secondary delay between diagnosis and ART initiation driven by internalised shame and processing of the diagnosis itself.	A 52-year-old widow described needing several weeks after her diagnosis before she felt able to return to the clinic to begin treatment, describing a period of shock and self-blame.

Field Survey: 2026

The qualitative findings illuminate and extend the quantitative results in several ways. First, the theme of fear of exposure in a close-knit community provides a contextual explanation for the significant association found between rural residence and higher stigma scores (Table 4.4): in a setting as geographically and socially close-knit as Ukum LGA, anonymity at the nearest health facility is difficult to maintain, intensifying perceived stigma even where enacted (experienced) discrimination is comparatively lower. Second, the theme of anticipated rejection by spouse or family offers a direct, lived explanation for the strong quantitative association between non-disclosure and delayed care-seeking (AOR = 2.188): participants repeatedly described non-disclosure not as an oversight but as a deliberate protective strategy against marital or family breakdown, which in turn delayed the decision to test or initiate treatment. Third, the theme of distance and cost compounding stigma-driven avoidance helps explain the counter-intuitive finding that respondents at moderate distance (5–10km) showed significantly higher odds of delay than those closest to a facility: several participants described deliberately bypassing their nearest, most recognisable facility in favour of a more distant one perceived as offering greater anonymity, illustrating how stigma and structural access barriers can interact rather than operate independently. Finally, the theme of healthcare worker attitude as a turning point underscores a modifiable lever for intervention, indicating that respectful provider conduct was frequently the proximate trigger that finally overcame stigma-driven hesitancy.

Discussion of Findings

The findings of this study affirm the central hypothesis that HIV-related stigma is significantly and independently associated with delayed care-seeking among PLHIV in Ukum LGA, even after adjusting for socio-demographic and health-system confounders. This is consistent with the broader regional and Nigerian empirical literature, including Ndiaye et al.'s (2017)

systematic review and meta-analysis, which similarly found perceived stigma significantly associated with late presentation across multiple low- and middle-income country settings, and with Nigerian facility-based findings from Lagos and Akwa Ibom States documenting the pervasiveness of stigma-driven care avoidance (Adekoya et al., 2024). The finding that internalised and perceived stigma exceeded enacted stigma in magnitude mirrors the pattern reported among PLHIV in Akwa Ibom State, where self-stigma indicators (shame, self-isolation) were prominently reported alongside, but somewhat distinct from, directly experienced discrimination.

The particularly strong association between non-disclosure and delay, both quantitatively (AOR = 2.188) and in the qualitative narratives of anticipated marital/family rejection, aligns with regional evidence on the gendered and relational dimensions of HIV stigma, in which fear of partner abandonment has been documented as a central driver of delayed engagement with care, particularly among women (sub-Saharan African qualitative evidence on antenatal care delay). The significant rural–stigma association, together with the qualitative theme of diminished anonymity in close-knit communities, extends this literature by highlighting a structural dimension of stigma specific to rural, low-population-density LGAs such as Ukum, a context that has received comparatively less empirical attention than urban Nigerian settings such as Lagos or Akwa Ibom State's more populated LGAs.

The marginally protective, though not fully statistically significant, association of high social support (AOR = 0.606, p = 0.062) suggests a plausible intervention pathway: strengthening peer-support and community-based PLHIV networks may help buffer against stigma-driven delay, consistent with the Health Stigma and Discrimination Framework's emphasis on resilience and coping resources operating at the individual level even where structural and community-level stigma persists. Overall, the integrated quantitative and qualitative findings of this study suggest that interventions in Ukum LGA should not treat stigma as a single undifferentiated barrier, but should specifically target the fear of exposure associated with small-community anonymity loss, the relational fear of disclosure-driven rejection, and the structural interaction between stigma and facility distance, while reinforcing the protective role of respectful healthcare worker conduct and social support networks identified in both phases of this study.

Conclusion and Recommendations

This study concludes that HIV-related stigma remains a pervasive and clinically consequential barrier to timely HIV care engagement in Ukum Local Government Area. The evidence gathered demonstrates that stigma is not merely a peripheral social discomfort but a measurable, independent driver of delayed care-seeking, with downstream consequences reflected in lower CD4 counts and more advanced disease stage at enrolment among those affected. The finding that internalised and perceived stigma outweigh enacted stigma is particularly instructive: it suggests that the anticipation of judgement, rather than only the direct experience of discrimination, is sufficient to delay care, meaning that interventions narrowly focused on documented discriminatory incidents will address only part of the problem.

The study further concludes that stigma does not operate in isolation. Its effect is compounded by non-disclosure, by geographic distance to facilities, and by the particular social texture of a rural, close-knit local government area where anonymity is difficult to preserve. This interaction between psychosocial stigma and structural access barriers represents one of the study's most important contributions: it indicates that stigma-reduction and health-system-strengthening efforts cannot be designed or evaluated as separate undertakings in a setting like Ukum LGA, since each compounds the other. At the same time, the protective signal observed

for strong social support points to a genuine, modifiable lever within reach of local programming. Overall, the study affirms its central hypothesis and contributes context-specific, rural-LGA-level evidence to a Nigerian literature that has, until now, been concentrated mainly in more urbanised states.

Based on the findings, the following recommendations are made, directed at distinct stakeholders.

To Healthcare Facilities and Providers in Ukum LGA: Institutionalise routine, structured stigma-reduction training for all cadres of health workers, not only clinicians, given that the qualitative findings identified provider attitude as a decisive turning point both as a barrier when judgemental, and as a facilitator when respectful and welcoming. Strengthen privacy and confidentiality protocols at the point of care, including private consultation spaces and discreet patient flow, to directly address the fear of exposure that respondents described as a defining concern in a close-knit rural community. Introduce or expand differentiated service delivery options (e.g., flexible clinic hours, multi-month drug dispensing, community pharmacy pick-up points) to reduce the number of visible, repeated visits to a single facility, thereby lowering the exposure risk that drives anticipated stigma.

To the Benue State Agency for the Control of AIDS (BNSACA) and the State Ministry of Health: Prioritise Ukum and similarly rural LGAs for targeted, community-based stigma-reduction programming, rather than concentrating interventions in urban centres, given this study's evidence that rural residence was significantly associated with higher stigma. Invest in community-based and outreach testing/treatment services that reduce the distance-related barrier identified in this study, particularly for PLHIV residing more than 5km from a facility, since distance and stigma were found to interact rather than operate independently. Establish or strengthen peer-support and PLHIV community networks in Ukum LGA, building on this study's finding that strong social support was associated with a lower likelihood of delayed care-seeking.

To the National Agency for the Control of AIDS (NACA) and National Policy: Incorporate disaggregated, multi-domain stigma indicators (perceived, internalised, enacted) into routine national HIV monitoring and evaluation systems, rather than relying on composite or single-item stigma measures, since this study demonstrates that the sub-domains behave differently and carry different intervention implications. Extend the evidence base on rural, non-urban LGAs through continued investment in geographically diverse HIV stigma research, addressing the documented concentration of existing Nigerian studies in a small number of urban states.

To Community and Religious Leaders in Ukum LGA: Engage traditional and religious leaders as stigma-reduction allies, given the qualitative finding that some respondents initially sought spiritual or traditional interventions before biomedical care; positioning these leaders as referral partners, rather than competitors, to the health system could shorten this delay pathway. Promote community-wide HIV education campaigns that explicitly address the anticipated rejection by spouses and family identified in this study, given its strong association with non-disclosure and delayed care-seeking.

To Future Researchers: Replicate this study with a longitudinal design to strengthen causal inference beyond the cross-sectional association established here. Extend this line of inquiry to other rural Benue State LGAs and comparable settings to assess the generalisability of the stigma–delay relationship and the rural-specific mechanisms identified in this study. Conduct intervention (pre-post or quasi-experimental) studies testing the stigma-reduction strategies recommended above, to generate evidence not just on association but on the effectiveness of specific responses.

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