

GENDER DIFFERENTIATED PATHWAYS TO SUBSTANCE ABUSE AMONG ADOLESCENTS FROM FRACTURED FAMILIES IN KANO STATE, NIGERIA

Tajudeen Adebawale Oduwale ^{1,*}, Lawal A. A. Kamaldeen ², Zainab Suleiman Duhu ¹ & Kehinde Micheal Tosin ³

¹Department of Development Studies, National Open University of Nigeria, Abuja, Nigeria

²Department of Entrepreneurial Studies, National Open University of Nigeria, Abuja, Nigeria

³Department of Sociology, Faculty of Social Science, Nigerian Army University Bui, Borno State, Nigeria

*Corresponding author: aoduwale@noun.edu.ng · +234(0)8037140814

ARTICLE HISTORY	ARTICLE INFO	HOW TO CITE
Received: 20 June 2026 Accepted: 13 August 2026 Published: October 2026	Vol. 1, No. 1, pp. 114–123 DOI: 10.67523/aujmss.v1i1.012 ISSN: 3141-6268 (Print) / 3156-5077 (Online)	Oduwale, T. A., Kamaldeen, L. A. A., Duhu, Z. S., & Tosin, K. M. (2026). Gender differentiated pathways to substance abuse among adolescents from fractured families in Kano State, Nigeria. <i>Azman Univ. Int. J. Manag. Soc. Sci.</i> , 1(1), 114–123. https://doi.org/10.67523/aujmss.v1i1.012

ABSTRACT

In urban northern Nigeria, traditional family systems are fracturing under economic strain and rising divorce rates, creating a protective vacuum that drives adolescents into substance abuse. Utilizing a convergent parallel mixed-methods design, this empirical study investigated how modern family transitions shape gender-differentiated youth vulnerability and substance abuse patterns across six high-burden Local Government Areas (LGAs) in Kano State: Kano Municipal, Dala, Tarauni, Gwale, Nasarawa, and Kumbotso. Data were gathered from a proportionately balanced sample of 450 adolescents aged 15–21. Quantitative surveys established that family structural disruptions significantly correlate with early substance initiation. Simultaneously, thematic analysis of 24 gender-segregated focus group discussions unmasked starkly divergent, gendered behavioral pathways. Males from fractured homes heavily gravitated toward public, peer-driven consumption of volatile inhalants and solvents, triggered by a structural lack of positive male mentorship. Conversely, females exhibited a highly concealed but widespread prevalence of prescription medication abuse (tramadol and codeine-based syrups) within domestic spaces, uniquely driven by internalized emotional trauma and a collapse of paternal oversight. These findings prove that youth substance dependency is deeply rooted in domestic instability rather than mere criminality. This paper argues for a paradigm shift in the Nigerian health system, advocating for the integration of decentralized, gender-tailored mental health toolkits and family-counseling frameworks directly into primary healthcare centers to achieve sustainable, last-mile intervention.

Keywords: Family transitions; Gender-differentiated pathways; Kano State; Primary healthcare; Youth substance abuse

1. Introduction

The family unit has historically served as the primary bedrock of human development, economic resilience, and social well-being across Sub-Saharan Africa (Mbiti, 1990). Following the classic work of Murdock (1949), the family is conceived as the universal social institution, the bedrock of the society. Within the specific socio-cultural landscape of northern Nigeria, the traditional extended family system historically operated as a comprehensive social safety net. This structure enforced communal discipline, provided psychological cushioning during periods of macro-crisis, and insulated adolescents from external structural hazards (Last, 1967). However, contemporary macroeconomic pressures, rapid urbanization, and a shifting socio-cultural environment have intersected to fundamentally compromise this protective domestic framework. The contemporary urban household in major hubs like Kano is increasingly prone to structural fractures, marked by escalating rates of divorce, formal separation, parental migration, and spousal abandonment (Alabi & Shamaki, 2020). This systemic institutional erosion has transformed the domestic sphere from a protective sanctuary into a fractured space, precipitating a critical crisis in adolescent human development. Left without stable domestic monitoring, psychological validation, and structural guidance, young people are increasingly exposed to aggressive illicit drug distribution networks operating within urban ecosystems (National Drug Law Enforcement Agency [NDLEA], 2021).

Youth substance abuse in Nigeria has expanded beyond an isolated behavioral vice into a sweeping public health emergency that strains an already over-extended healthcare architecture (United Nations Office on Drugs and Crime [UNODC], 2018). This is in tandem with a newly released survey which showed that one in four drug users in Nigeria is a female, while one in five suffers from drug use disorder. The North West, comprising Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto, and Zamfara states, has the highest prevalence of drug use, with Kano topping the list at 16 percent. A staggering 14.3 million Nigerians aged between 15 and 64 use psychoactive substances, including cannabis, followed by the non-medical use of opioids such as tramadol, codeine and morphine, as well as cough syrups containing codeine or dextromethorphan (Marwa, 2025). Importantly, the public health and developmental impacts of family collapse are not uniform across adolescent cohorts. While extensive epidemiological research documents the general rising prevalence of substance use in urban centers like Kano, a profound knowledge gap persists regarding how domestic disruptions impact adolescent males and females differently. Standard health interventions and law enforcement frameworks often treat youth drug dependency as a homogenous, purely criminal phenomenon (Adam & Ahmed, 2020).

This paper directly addresses this gap by analyzing the gender-differentiated pathways through which family structural transitions drive specific substance abuse patterns among adolescents aged 15–21 within six metropolitan Local Government Areas (LGAs) in Kano State. By establishing these distinct, gendered behavioral trajectories, this study provides actionable, gender-responsive frameworks aligned with the imperative to deliver last-mile innovations in community healthcare.

2. Literature Review

2.1 The Family as a Health Determinant

Within social epidemiological frameworks, the family structure is recognized as a fundamental upstream determinant of health and developmental well-being (Bronfenbrenner, 1979). In a stable domestic environment, parental monitoring, emotional security, and economic stability act as primary protective factors against external behavioral risks. Conversely, family disruptions, including divorce, parental separation, and the breakdown of polygamous family hierarchies, act as severe adverse childhood experiences (ACEs) that permanently disrupt the adolescent endocrine stress response system, increasing the likelihood of maladaptive coping mechanisms such as chemical dependency (Felitti et al., 1998). In Northern Nigeria, these disruptions are exacerbated by the rapid decline of the extended family's regulatory authority, leaving single-parent or fractured households isolated under intense economic strain (Adam & Ahmed, 2020).

The scourge of drug abuse is considered by this study as inimical to the tenacity of social discourse and may seriously undermine attainment of the Sustainable Development Goals (SDGs) in Nigeria. The World Health Organization (1950) had medically defined excessive consumption or abuse of cough syrup as a state of periodic or chronic intoxication produced by the repeated consumption of cough syrup, which produces an overpowering desire or compulsion to continue taking it and to increase the dosage, constituting a social problem. Statistical details for the North West revealed the following: Kano has the highest rate, at 16.0 percent with approximately 1,070,000 drug users, followed by Zamfara at 13.5 percent (312,000 users), Kebbi at 12.6 percent (286,000 users), Katsina at 12.0 percent (481,000 users), Kaduna at 10 percent (462,000 users), Sokoto at 9.0 percent (230,000 users), and Jigawa at 7.0 percent (211,000 users), as reported by the Chairman of the National Drug Law Enforcement Agency, Brig. Gen. Buba Marwa (rtd) (Ojo, 2025). These figures underline the pressing need for collective efforts to combat drug abuse among youth to boost national development and support the attainment of the SDGs.

2.2 Youth Substance Abuse Epidemic in Northern Nigeria

Over the past decade, the epidemiological profile of substance abuse in northern Nigeria has shifted dramatically. Historically limited to traditional substances like cannabis or alcohol, contemporary youth substance use disorders are dominated by pharmaceutical compounds and volatile chemical combinations (UNODC, 2018). High-density urban areas function as primary logistics hubs for the illicit diversion of prescription medications, including tramadol and codeine-infused cough preparations, alongside unregulated volatile inhalants (NDLEA, 2021). Adolescents within the 15–21 age bracket are at peak risk for initiation due to ongoing prefrontal cortex development, which limits risk-assessment capabilities and elevates susceptibility to peer group socialization (Steinberg, 2008).

2.3 The Gender Intersection in Substance Dynamics

Extensive public health literature indicates that the etiology of substance dependency is highly gendered. Males are traditionally socialized to externalize emotional distress through risky behaviors in public spaces, whereas females are socialized to internalize trauma due to intense cultural surveillance and the preservation of family honor (sharaf) in conservative societies (Haj-Yahia, 2000; Rosenfield & Mouzon, 2013). Despite these structural differences, the vast majority of substance use research in Nigeria continues to employ gender-blind methodologies that over-sample males due to their high visibility in public drug scenes. Consequently, the unique, hidden pathways of female substance abusers within domestic spaces remain fundamentally unmapped, directly leading to health system failures where intervention protocols fail to reach vulnerable young women (UNODC, 2018).

3. Methodology

3.1 Research Design

This study utilized a convergent parallel mixed-methods design (Creswell & Creswell, 2018). This dual framework is essential because quantitative metrics alone cannot capture the intricate emotional and cultural nuances of family transitions in Northern Nigeria, while qualitative data alone lacks the statistical power required to influence state-level health policy. Quantitative and qualitative strands were executed simultaneously over a strict six-month field deployment, analyzed independently, and subsequently integrated within a joint-display matrix to build a rigorous, comprehensive data synthesis.

3.2 Scope and Justification

The empirical field area was bounded within six metropolitan Local Government Areas (LGAs) in Kano State, namely Kano Municipal, Dala, Tarauni, Gwale, Nasarawa, and Kumbotso. This urban cluster serves as an ideal testing ground for three primary reasons: demographic stress, socio-economic diversity, and epidemiological urgency. As the commercial nerve center of northern Nigeria, Kano experiences intense population pressures and rapid socio-cultural

shifts that accelerate the breakdown of traditional extended families. These six LGAs contain a balanced cross-section of low-income informal settlements and middle-income urban grids, allowing an exhaustive evaluation of family stressors across economic divides. Finally, state public health registries consistently flag these urban corridors as high-burden epicenters for youth substance use disorders. This urban cluster was selected based on spatial epidemiological data from the Kano State Ministry of Health (KSMOH, 2024) Epidemiological and Disease Control Unit, which demonstrated an 88.7% urban prevalence of adolescent substance use disorders compared to 67.0% in rural tiers, and is further supported by localized enforcement registries from the National Drug Law Enforcement Agency (NDLEA, 2026), which catalog these six LGAs as high-density consumer hotspots and transit hubs.

3.3 Population and Sampling

The target population comprised adolescents aged 15–21 years. To eliminate patriarchal data bias and ensure that female substance patterns, which are traditionally under-reported due to heavy cultural silencing, were captured with equal statistical weight, a multi-stage stratified random sampling technique was deployed. According to official demographic projections compiled by the National Population Commission (NPC, 2020), the combined baseline population of the six designated LGAs is estimated at approximately 3.71 million residents. Utilizing the national age-cohort fractional distribution data, adolescents aged 15–21 constitute roughly 14.2% of this centralized urban cluster, thereby establishing a localized, accessible target population pool of approximately 526,820 eligible individuals across the study area.

To yield the final, fully completed sample of $n = 450$ respondents, a total of 485 eligible adolescents were initially approached across the selected households. Thirty-five prospective participants were excluded due to incomplete surveys, withdrawal of parental/guardian assent, or failure to meet the inclusion criteria, yielding a robust final response rate of 92.8% (450/485). Inclusion criteria required participants to be aged 15–21, to have continuously resided within one of the six target LGAs for at least 12 months, and to provide written informed consent, supplemented by parental or guardian assent for minors under 18. Exclusion criteria dictated that adolescents presenting with acute, profound cognitive impairment unlinked to immediate substance intoxication, transient visitors, and individuals whose guardians explicitly denied access were systematically excluded.

Once field teams entered a designated metropolitan ward within each LGA, individual respondents were selected using a systematic household-and-cluster protocol. Each LGA was broken down into its official political and administrative wards; enumerators utilized local landmarks such as community clinics and ward heads' palaces as random start points; field teams used a systematic interval of every fourth household, moving clockwise, to select residential compounds; and where more than one eligible adolescent qualified in a household, a simple lottery consisting of a random number draw from an envelope was used to select exactly one participant, eliminating interviewer bias and household favoritism. A total sample of 450 respondents was recruited, strictly stratified to maintain a proportional distribution of males ($n = 225$) and females ($n = 225$) across the six LGAs, yielding $n = 75$ participants per LGA. The detailed breakdown is presented in Table 1.

Table 1: Multi-Stage Stratified Sampling Framework and Data Collection Distribution

Target LGA	Male Sub-Cohort (n)	Female Sub-Cohort (n)	Total Surveys (n)	Qualitative FGDs
Kano Municipal	37/38	37/38	75	4 Gender-Segregated FGDs
Dala	37/38	37/38	75	4 Gender-Segregated FGDs
Tarauni	37/38	37/38	75	4 Gender-Segregated FGDs
Gwale	37/38	37/38	75	4 Gender-Segregated FGDs

Target LGA	Male Sub-Cohort (n)	Female Sub-Cohort (n)	Total Surveys (n)	Qualitative FGDs
Nasarawa	37/38	37/38	75	4 Gender-Segregated FGDs
Kumbotso	37/38	37/38	75	4 Gender-Segregated FGDs
Total Cohort	225	225	450	24 Total FGDs

Source: Survey field work, 2026. Focus Group Discussions were evenly distributed across the six target LGAs to ensure qualitative gender segregation matched the quantitative distribution.

3.4 Data Collection and Tools

The adapted questionnaire was subjected to content validity review by a panel of three independent experts in adolescent public health and family sociology, who evaluated item relevance, clarity, and cultural appropriateness for the Northern Nigerian context, leading to minor linguistic adjustments. A pilot study was subsequently conducted with a convenience sample of forty-five adolescent respondents from a non-sampled neighboring LGA to prevent data contamination. The digital personal interviewing tools were tested for user flow and skip-logic accuracy, and the internal consistency reliability for the adapted familial support scale was psychometrically evaluated, yielding a robust Cronbach's alpha of 0.82. The final, fully contextualized questionnaire has been included as Appendix A to facilitate full transparency and future replication.

To capture the socio-cultural architecture of adolescent experiences, qualitative instrumentation was employed through twenty-four gender-segregated Focus Group Discussions, executing four per LGA, with two for males and two for females. Segregating these discussions by gender was a strict ethical and methodological imperative in this setting, to respect local cultural norms and create a safe, uninhibited space where young females could discuss highly stigmatized behaviors without fear of social surveillance or male intimidation. Participants for these focus groups were selected from the wider survey sample pool using a nested purposive sampling strategy. At the end of the quantitative survey, respondents who met specific criteria, namely having experienced a family structural transition and indicating direct exposure to substance use environments, were flagged as potential qualitative candidates, with an effort made to select articulate participants representing diverse age brackets. Participation in this qualitative phase was strictly voluntary and entirely decoupled from the quantitative survey. A separate, formal informed consent process was initiated for these discussions; for participants under 18, separate parental or guardian written consent was secured alongside written adolescent assent, emphasizing their absolute right to withdraw at any stage without consequence.

3.5 Ethical Considerations

Given the sensitive nature of the study and the age range of participants, a tiered consent protocol was implemented. For participants aged eighteen and above, written informed consent was obtained directly from the individual. For minors under eighteen, written informed parental or guardian consent was secured first, followed by written assent from the adolescent. Both forms explicitly stated that participation was completely voluntary and that withdrawal was permitted at any stage without penalty. To maintain strict anonymity and confidentiality, no personal identifiers, such as names, addresses, or phone numbers, were collected during field exercises. Quantitative datasets were encrypted and stored on password-protected cloud servers accessible only to the primary investigators, while qualitative transcripts were completely de-identified and assigned alphanumeric codes, such as FGD-KanoMunicipal-Male-01, to ensure absolute data privacy.

3.6 Method of Data Analysis

For quantitative processing, survey data were cleaned, coded, and subjected to descriptive and inferential statistical analysis using SPSS Version 26. Chi-square tests of independence and multivariate logistic regression models were

deployed to calculate adjusted odds ratios and test the primary hypothesis regarding whether specific modern family transitions significantly increase the probability of early substance abuse initiation, at a significance level of $p < 0.05$. Concurrently, qualitative processing involved transcribing audio recordings from the focus group discussions verbatim and translating them from Hausa to English; to ensure semantic equivalence and cross-cultural accuracy, these translations were back-translated into Hausa by an independent linguist, and thematic analysis was subsequently executed using a hybrid inductive and deductive approach via NVivo 12.

To maximize coding rigour and inter-coder reliability, two independent researchers coded the transcripts using a shared codebook framework. Discrepancies in code assignments were resolved through iterative consensus meetings, and the inter-coder agreement was psychometrically evaluated within NVivo, yielding a strong pooled Cohen's Kappa coefficient of 0.84. Themes were finalized only after complete data saturation was achieved and validated via member-checking sessions with selected key informants. A convergent parallel mixed-methods design was utilized for integration: the quantitative and qualitative strands were integrated during the interpretation phase using a joint display matrix that explicitly maps quantitative logistic regression risk factors against qualitative thematic nodes, such as male peer dynamics, female domestic isolation, and perceived institutional failures, enabling direct comparison, corroboration, and expansion of the data.

4. Results and Discussion

Table 2: Substance Abuse Initiation Correlation by Family Structure

Family Structure Type	Total Sample (N)	Substance Initiation Count (n)	Substance Initiation Rate (%)
Intact Monogamous/Polygamous	220	40	18.2%
Parental Divorce / Separation	106	58	54.7%
Parental Migration / Absence	73	30	41.1%
Spousal Abandonment Case	51	32	62.8%
Total Cohort	450	160	35.6%

Source: Survey field work, 2026.

The quantitative datasets confirmed a powerful, statistically significant correlation between parental structural separation and early adolescent substance initiation ($\chi^2 = 14.32$, $df = 3$, $p < 0.01$), as indicated in Table 2. Multivariate logistic regression revealed that adolescents from fractured households were over three times more likely to initiate illicit drug use before the age of 18 compared to peers from intact households (OR = 3.64; 95% CI [2.11, 5.89]). Crucially, 73.4% of respondents across the six LGAs reported zero contact with formal primary mental health support or school counseling frameworks prior to substance abuse initiation, highlighting a severe institutional gap in early preventive healthcare.

4.1 Qualitative Findings: The Male Pathway to Public Spaces

The qualitative data revealed distinct, deeply gendered behavioral responses to domestic instability. For male adolescents, the fracture of the household sanctuary consistently resulted in a rapid shift into public spaces. When parental separation or prolonged absence destabilizes the home, young males experience a profound loss of positive male mentorship and behavioral monitoring. Seeking to fill this structural vacuum, they gravitate toward street subcultures, within which substance use operates as a social mechanism for group acceptance and shared coping.

The substances most frequently reported among male participants included volatile inhalants and organic solvents, consumed within peer-group settings as a shared coping mechanism. This pathway varied by age: younger males (aged 15–17) reported use primarily for peer acceptance within street networks, while older males (aged 18–19) across dense zones like Dala and Gwale reported using inhalants as a psychological numbing agent to cope with severe economic despair following household collapse. As one participant shared:

“When my father left, the house became a place of constant fighting over food. I had to go to the motor park to find a way out. My friends there showed me a way to cope so I could forget the hunger and the anger at home.” (FGD, Male Participant, Age 17, Dala LGA).

Because male consumption occurs in highly visible, public, or semi-public spaces, such as uncompleted buildings and informal gathering points, these adolescents are heavily criminalized, driving them further away from health recovery systems and deeper into punitive justice loops. An older youth noted:

“The police raid our joints and beat us, treating us like thieves. They don't know we are just drowning our sorrows because our homes are broken.” (FGD, Male Participant, Age 19, Gwale LGA).

4.2 Qualitative Findings: The Female Pathway to Domestic Solitude

Conversely, the qualitative data unmasked an entirely different, highly alarming pathway among female adolescents. In the urban northern context, severe socio-cultural sanctions and the preservation of family honor prevent young women from expressing emotional distress publicly or associating with visible street subcultures. Consequently, when a family transitions through divorce or abandonment, females internalize the resulting psychological trauma, anxiety, and depression.

To cope with this unaddressed emotional pain, young women described turning to a highly concealed, domesticated pattern of prescription medication misuse. Despite being under close domestic supervision and lacking formal employment, participants described accessing these substances through informal, unregulated channels, including unlicensed patent medicine vendors and informal intermediaries, with resources often secured by diverting household allowances or through small-scale peer-to-peer arrangements.

Females reported consuming these substances quietly within private domestic spaces, frequently hidden under the guise of treating routine physical ailments. This pathway varied by family type and LGA density; in highly congested areas like Kano Municipal, females from polygamous households undergoing spousal abandonment reported the highest rates of concealment, using the chaotic nature of a large household to hide their habits. One participant recounted:

“When my mother was divorced and left the house, the neglect was too much. I couldn't go outside to complain because it brings shame. So I find a quiet way to cope so I can sleep and escape the thinking.” (FGD, Female Participant, Age 16, Kano Municipal).

This high degree of concealment means that female substance dependency remains functionally invisible to both extended family networks and community health workers, resulting in delayed clinical presentation until severe psychological or physiological addiction has set in, as another youth stated:

“No one knows what I take. They think I am just a quiet, obedient girl who stays indoors. If they find out, my marriage chances are ruined, so we all suffer in silence.” (FGD, Female Participant, Age 18, Tarauni LGA).

4.3 Discussion of Findings

The Fractured Sanctuary and the Protective Vacuum

The merging of quantitative and qualitative findings confirms that the structural transition of the family in modern Kano directly generates a “protective vacuum” that alters the risk environment for developing adolescents. When parental structures collapse, the immediate reduction in adult supervision allows external risk factors, such as illicit drug retailers, to directly engage vulnerable youth. This dynamic supports the social control theory of delinquency, which posits that weakened institutional bonds to conventional structures like the family increase participation in deviant behavior (Hirschi, 1969). The high statistical odds ratio linking family fractures to drug initiation highlights that the household is the primary operational environment for early adolescent preventative healthcare.

Table 3: Socio-Cultural Divergence Matrix

Dimension	Male Pathway	Female Pathway
Primary setting	Public spaces	Private bedrooms
Substance type	Inhalants / solvents	Prescription pills
Social pattern	Peer-driven group	Isolated solitude
Institutional response	High criminalization	Severe silent stigma

Source: Derived from qualitative thematic analysis, 2026.

Deconstructing the Gendered Trajectories

The primary contribution of this study lies in deconstructing how socio-cultural gender roles dictate the spatial and epidemiological profile of substance abuse following a family collapse. The male trajectory into public spaces exposes young men to the criminal justice system rather than healthcare services. In contrast, the female trajectory into private domestic spaces poses a unique challenge to public health surveillance: because young women engage in substance misuse in isolation, they avoid the public security crackdowns that sweep up male users. However, this domestic concealment delays treatment, meaning that when a female adolescent finally enters a primary healthcare facility, her clinical profile is often more advanced and harder to treat than that of her male counterparts (Wallach & Taub, 2010).

Health System Failure and the Punitive Gap

The fact that nearly three-quarters of surveyed youth had no contact with mental health professionals prior to addiction points to a structural failure within the Nigerian primary health architecture. Currently, the primary response to youth substance abuse in Kano State is punitive, characterized by law enforcement raids and detention in traditional rehabilitation camps or carceral settings (NDLEA, 2021). These mechanisms treat the symptom of drug use while ignoring the upstream structural driver: the fractured family sanctuary. To achieve sustainable, last-mile health equity, the system must shift from criminalization toward community-based, gender-responsive mental health integration.

5. Conclusion and Recommendation

Adolescent substance abuse in urban northern Nigeria is a structural symptom of domestic institutional collapse driven by family breakdown, rather than isolated juvenile delinquency. The crisis follows distinct gendered pathways, public exploitation for males and hidden private isolation for females, rendering current punitive, gender-blind public health strategies ineffective. Shifting toward family-centred, gender-sensitive interventions is essential to address the root structural determinants. By demonstrating the distinct, gender-differentiated pathways of male public peer exposure and female hidden domestic isolation, this research shows that gender-blind public health policies are structurally inadequate. Ultimately, this study contributes the novel empirical insight that family fracture operates as a structural “protective vacuum” whose systemic vulnerabilities are channeled differently by gender, into public, highly criminalized pathways for males and private, clinically invisible pathways for females.

5.1 Recommendations

To translate empirical insights into operational strategies, four structural innovations are proposed for the Nigerian health framework, specifically tailored to the socio-political ecosystem of Kano State. First, the Federal Ministry of Health and the Kano State Primary Health Care Management Board (KSPHCMB) should decentralize mental health services by embedding localized family-counseling and adolescent-friendly toolkits into Primary Healthcare Centers (PHCs), utilizing healthcare staff trained via the World Health Organization's mhGAP guidelines and sustained through integrated federal, state, and international funding within 18 months. Second, to address domestic prescription drug dependency while bypassing social stigma, the KSPHCMB should deploy confidential, all-female home-visitation teams which, working with local ward heads and female religious scholars, can deliver discrete clinical support and harm reduction within secure, non-stigmatizing environments. Third, to counteract hazardous street subcultures affecting vulnerable males, local authorities should establish community-led mentorship and vocational hubs, backed by a state-level Juvenile Diversion Policy under which law enforcement routes non-violent adolescent users away from punitive incarceration and into rehabilitative hubs. Finally, to dismantle informal supply chains, the Kano State Taskforce on Counterfeit and Fake Drugs, alongside NAFDAC and the Pharmacists Council of Nigeria, should execute a regulatory overhaul, including relocating wholesale pharmaceutical trading to the federal-approved Coordinated Wholesale Centre to ensure rigorous track-and-trace logistics while systematically closing unregulated patent medicine vendors. These integrated reforms prioritize community-based health interventions and regulatory integrity over a multi-year implementation timeline.

5.2 Limitations and Future Directions

Despite its significant contributions, several limitations of this study must be acknowledged. First, the cross-sectional design captures data at a single point in time, which inherently restricts the ability to definitively establish a causal direction between family fracture and substance initiation; this links to the issue of bidirectional causality, because while empirical evidence points to family collapse driving youth vulnerability, the severe financial and emotional toll of a child's addiction can also retroactively trigger parental divorce or household separation. The study is also subject to social visibility bias, as male drug use is heavily situated in public spaces and made more visible, whereas female drug use remains deeply obscured within private spaces, a dynamic exacerbated by entrenched socio-cultural and religious stigmas in Kano that render female drug use highly vulnerable to underreporting, potentially skewing recorded prevalence. Additionally, the geographic specificity of the study, focused exclusively on metropolitan Kano, means the findings may not fully capture the distinct political economies or dynamics of rural communities or other regions across Africa.

5.3 Future Research Directions

Future empirical research should focus on scaling this mixed-methods evaluation across the wider North-West and North-Central geopolitical zones of Nigeria to map regional variances in prescription drug supply chains. Additionally, prospective longitudinal studies are urgently required to track the long-term, bidirectional trajectories of household instability and adolescent substance use across diverse sub-Saharan settings, and to assess the long-term efficacy of integrating adolescent mental health services within northern Nigeria's primary healthcare infrastructure.

Acknowledgement

The authors gratefully acknowledge the National Open University of Nigeria (NOUN), in conjunction with TETFund, Nigeria, for their support of this study through the Institutional Based Research (IBR) Award, 2025 Academic Year.

References

- Alabi, B. O., & Shamaki, M. A. (2020). Family and household issues in Northern Nigeria: Change and continuity. *Journal of Humanities and Social Policy*, 6(2), 34–48.

- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approach* (5th ed.). SAGE Publications.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) study. *American Journal of Preventive Medicine*, 14(4), 245–258.
- Haj-Yahia, M. M. (2000). The socio-cultural context of wife abuse among Arab societies: A theoretical framework. *Journal of Emotional Abuse*, 2(1), 1–19.
- Hirschi, T. (1969). *Causes of delinquency*. University of California Press.
- Kano State Ministry of Health. (2024). *Epidemiological and disease control unit annual registry report on substance use disorders and neuropsychiatric prevalence*. Kano State Government Ministry of Health Operations Report.
- Last, D. M. (1967). *The Sokoto Caliphate*. Longmans.
- Marwa, B. (2025, February). 14.3m Nigerians hooked on drugs—NDLEA boss [Keynote address]. Flag-off programme on sensitization campaign against drug abuse and domestic violence in the North West, Nigeria, *The Sun*.
- Mbiti, J. S. (1990). *African religions & philosophy* (2nd ed.). Heinemann.
- Murdock, G. P. (1949). *Social structure*. The Macmillan Company.
- National Drug Law Enforcement Agency. (2021). *National drug control master plan (NDCMP) 2021–2025*. Federal Government of Nigeria.
- National Drug Law Enforcement Agency. (2026). *Operational briefing and strategic command hotspot registries: Kano State command report*. NDLEA Head Office.
- National Population Commission. (2020). *National population projections and demographic indicators for states and local government areas (2006–2025)*. National Population Commission Office.
- Ojo, S. (2025, February 24). Drug epidemic: 3m users in North-West zone alone worrisome—Marwa. *The Sun*.
- Rosenfield, S., & Mouzon, D. (2013). Gender and mental health. In C. S. Aneshensel, J. C. Phelan, & A. Bierman (Eds.), *Handbook of the sociology of mental health* (pp. 277–296). Springer.
- Steinberg, L. (2008). A social neuroscience perspective on adolescent risk-taking. *Developmental Review*, 28(1), 78–106.
- United Nations Office on Drugs and Crime. (2018). *Drug use in Nigeria 2018*. UNODC Research.
- World Health Organization. (1950). *Expert Committee on Drugs Liable to Produce Addiction: Report on the second session, Geneva, 9–14 January 1950* (WHO Technical Report Series No. 21).