



Original Article

Sexual Behaviour and Health Risks among Unmarried Adolescent Girls in Nigerian IDP Camps: A Pilot Study

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ABSTRACT

Background: Internal displacement (ID) places women and especially unmarried adolescent girls in heightened vulnerability of sexual exploitation and other forms of gender-based violence. In the wake of increasing displacement due to violent conflict in Nigerian communities, we evaluated the sexual behaviour and associated determinants among unmarried adolescents in Internally Displaced Persons (IDP) camps in North central, Nigeria. **Methods:** This was a descriptive cross-sectional design, using a structured questionnaire to survey 75 older adolescent girls aged 15–19 years living in six IDP camps across Abuja, Benue, and Plateau States. Data was analysed using the Statistical Product and Service Solution (SPSS) version 23.0, using Chi-square tests and logistic regression to identify predictors of sexual initiation among the respondents. $p < 0.05$ was considered significant. **Results:** Among respondents, 42.7% of participants had initiated sexual intercourse, with a mean (SD) age of debut at 16.6 ± 1.5 years. Over half (53.1%) of these instances occurred after displacement and 81.3% of these were unprotected intercourse. Older adolescents (aged 17–19 years) and those not currently attending school were more likely to have initiated sexual activity ($p < 0.001$). **Conclusion:** A significant proportion of internally displaced female adolescents have initiated sexual activity, majority of which are unprotected. This study highlights the need to strengthen sexual and reproductive health services among displaced populations.

Keywords: Sexual Behaviour, Sexual Debut, Health Risks, Adolescent Girls, Internally Displaced Persons, Sexual and Reproductive Health, Nigeria.

INTRODUCTION

Adolescents are young people between the ages 10 and 19 years. The WHO further divided these categories into

early adolescents (ages 10–14 years) and late adolescents (15–19).^{1,2} Adolescents represent a significant section of human population and stage of life is marked by rapid physical, emotional, and cognitive development, making it a particularly sensitive period, especially with respect to sexual and reproductive health (SRH).^{1–4} During adolescence, individuals often begin exploring their sexual identity and relationships, which can pose

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challenges if not guided by appropriate information and support. Ensuring that adolescents are able to experience a safe, informed, and fulfilling sexual life is crucial; failure to do so may result in adverse reproductive health outcomes such as unintended pregnancies, sexually transmitted infections (STIs), and unsafe abortions.^{1,6}

A variety of social, cultural, and environmental factors shape adolescent sexual behaviour. Nonetheless, one of the most effective ways to positively influence this behaviour is through access to accurate, age-appropriate sexual and reproductive health information and services.^{2,4} Addressing adolescent unique SRH needs through youth-friendly services and comprehensive sexuality education is therefore essential for their well-being and development.^{2,4,7}

Sexual behaviour among adolescents remains a critical public health concern, particularly in humanitarian settings such as internally displaced persons (IDP) camps.⁸ In Nigeria, conflicts, natural disasters, and other socio-political crises have contributed to the displacement of millions of people, disproportionately affecting women and adolescent girls. Geographical displacement in Nigeria has brought about an environment where adolescent girls face amplified risks of engaging in risky sexual behaviour. Internal displacement often leads to disruptions in the economy and health especially reproductive health services, displaced adolescents often end up in IDP camps that are characterized by inadequate access to healthcare, limited education, and poverty. All of which contribute to increased vulnerability to early sexual debut, transactional sex, and sexual violence especially among the unmarried adolescents who hardly enjoy protection as compared to their married counterparts.⁸⁻¹⁰

There is a lack of data exploring the socio-demographic determinants of sexual behaviour among unmarried female adolescents in IDP settings. In the wake of increasing displaced adolescent in Nigeria, questions regarding how factors such as age, education level, and access to RH information and services shape their sexual behaviour has become imperative. This pilot study is therefore aimed at addressing this knowledge gap to provide data for developing culturally sensitive and sustainable interventions to protect and empower female adolescents in IDP camps.

METHODS

This cross-sectional study was conducted in IDP camps in North-Central Nigeria, specifically in Abuja, Benue State and Plateau State. The study was carried out in six IDP camps in the selected states including, Malaysian Gardens and New Kuchingoro camps in Abuja; Abagena and Daudu camps in Benue State; and COCIN Church

Heipang and Heipang New Market camps in Plateau State.

The data for this study was collected between August 2019 to January 2020. This was calculated using the formula for cross-sectional studies ($n = \frac{z^2 pq}{d^2}$)¹¹ where n = minimum sample size; z = confidence limit at 95% = 1.96; p = (3.8% prevalence of women of reproductive age 15-19 years.¹²; q = complimentary probability (1- p) 0.96; d = degree of accuracy, set at 5%. A sample size of approximately 60 Participants was calculated. Adjusting for possible data loss due to non-response, poor response and incomplete response, 25% of this was added. Thus, minimum sample size 75 was used for this study.

A total of 75 questionnaires was administered proportionately using proportional allocations technique by Cochran, 1977.¹³ The model is stated as $nh = Nh \times \frac{n}{N}$; where nh = Number of questionnaire administered in each camp; Nh = Estimated population of unmarried female of IDPs aged 15-19 years in each camp; n = Total number of questionnaires administered; N = Total number of unmarried female IDPs aged 15-19 years in all camps (aggregate of Nh).

Sampling

A multi-stage sampling technique was utilized in this study. In the first stage, purposive sampling was used to select two states (Plateau and Benue) and the Federal Capital Territory-Abuja in North-Central Nigeria due to their high concentrations of internally displaced persons (IDPs). During the second stage, simple random sampling was applied to select two officially recognized IDP camps from each of the chosen states. The third stage involved stratified sampling, where the female IDP population was divided into three age-based categories: under 15 years, 15–19 years, and 20 years and above. The study focused specifically on adolescents aged 15–19 years. To further refine the sample, females in this age group were stratified by marital status, and only unmarried adolescents were included. Respondents were then selected through simple random sampling within this subgroup.

Data Collection and Analysis

Data was collected using a structured questionnaire adapted from the UNFPA Country Programme of Assistance to Nigeria (Baseline/Endline Survey, 2008). The question was interviewed-administered and sought information regarding socio-demographic characteristics, sexual debut and activities including age at sexual debut, number of sexual partners, access to RH information and Adolescent/Youth friendly SRH services among others.

Data analysis was performed using Statistical Product and Service Solution (SPSS) version 23.0. Descriptive and inferential statistics were presented using tables and chart as frequencies, proportions, Mean (Standard Deviation), Chi-square and logistic regression. Factors that were statistically significant at bivariate level of analysis using chi-square were subjected to Binary logistic regression to test the extent of association. Probability values of $p < 0.05$ was considered as statistical significance.

Ethical Approval

Ethical clearance was obtained from the Ethics Committee of the Plateau State Specialist Hospital, Jos, Plateau State (NHREC/05/01/201b). Additional permissions were obtained from the relevant IDP camp authorities. All participants provided written informed consent prior to participation. All data was treated as confidential.

RESULTS

The socio-demographic characteristics of adolescents living in IDP camps reveal a nearly equal distribution in age, with 49.3% of the respondents aged 15-16 years and 50.7% aged 17-19 years, with a mean age of 16.6 ± 1.5 years. Most participants (58.7%) were from Benue State, while 29.3% resided in Plateau State and 12.0% in Abuja. Before displacement, a significant proportion (92.0%) of adolescents attended school, yet only 40.0% remained enrolled at the time of the study, with 60.0% no longer in school. In terms of religious affiliation, 46.7% identified as Catholics, 41.3% as Protestants, and 12.0% as Muslims. Regarding the duration of stay in the camp, most adolescents (78.7%) had been in the camps for 13-24 months, while 12.0% had stayed for more than 24 months, and 9.3% had been there for exactly 12 months. The majority (84.0%) were residing in concentration camps, whereas 16.0% lived in settlement camps. Moreover, Youth friendly centres and services were absent in all sampled IDP camps.

Out of the 75 respondents, 42.7% (32 individuals) reported having initiated sexual intercourse, while the remaining 57.3% (43 individuals) indicated they had not. See Figure 1. The association between socio-demographic factors and initiation of sexual intercourse as presented in Table 2, revealed a statistically significant association with age and current school attendance. Age was strongly associated with sexual initiation (p -value < 0.001), with a higher proportion of older adolescents (17-19 years) reporting that they have ever had sexual intercourse (71.1%) compared to their younger counterparts aged 15-16 years (13.5%). Current school attendance also revealed a significant association

with sexual initiation (p -value = 0.006). Adolescents who were not currently attending school were more likely to have engaged in sexual intercourse (55.6%) compared to those who remained in school (23.3%). However, other socio-demographic factors, including ever attending school, state of residence, type of camp, and duration of stay in the camp did not show significant associations with sexual initiation.

Table 3 present the multivariate logistic regression analysis of factors that were significantly associated with initiation of sex indicated that age is a major predictor of sexual intercourse among adolescents in IDP camps. Adolescents aged 17-19 were 12.9 times more likely to commence sexual activity than those aged 15-16, demonstrating a substantial connection between increasing age and sexual initiation. In contrast, there was no statistically significant association between current school attendance and sexual initiation. Adolescents who were not currently attending school were 2.4 times more likely to engage in sexual intercourse than those who remained in school, but this difference was not statistically significant.

The details of sexual activities among adolescents who have initiated sexual intercourse reveal key insights into their sexual behaviour. The mean (SD) age at sexual debut was 15.2 (2.7) years, with 31.2% initiating sex before age 15, 50.0% between 15-17 years, and 18.8% between 18-19 years. Regarding their sexual partners, the majority (81.3%) reported that their first sexual partner was older, most adolescents' first sexual intercourse experience was with a fiancé (59.4%), followed by a boyfriend (25.0%), a neighbor (9.4%), or a stranger (6.2%). The trend remained similar for their most recent sexual partner, with 65.6% reporting a fiancé, 15.6% a boyfriend, 9.4% a neighbor, and 9.4% a stranger.

A slight majority (53.1%) initiated sexual activity after displacement and while living in the camp, while 46.9% had their first experience before displacement. More than half (53.1%) reported engaging in sexual intercourse within the last three months. Among those who were sexually active in the past three months ($n=17$), 76.5% had one sexual partner, while the remaining 23.5% had more than one partner. The use of Protection against pregnancy and sexually transmitted infections was notably low, with only 18.7% reporting condom use, while 81.3% did not use any protection. The circumstances surrounding sexual debut showed that 81.3% initiated sex willingly, while 12.5% experienced rape, 3.1% were drugged, and another 3.1% reported peer pressure as a factor. Refer to Table 4.

Table 1: Socio-Demographic Characteristics of Adolescents Living in IDP camps

Variable	Frequency n=75	Percent
Age		
15-16	37	49.3
17-19	38	50.7
Mean±SD	16.6±1.5	
State		
Abuja	9	12.0
Benue	44	58.7
Plateau	22	29.3
school attendance before displacement		
Yes	69	92.0
No	6	8.0
Current in school		
Yes	30	40.0
No	45	60.0
Religion		
Catholics	35	46.7
Protestants	31	41.3
Islam	9	12.0
Duration of stay in camp (months)		
12	7	9.3
13-24	59	78.7
<24	9	12.0
Type of Camp		
Concentration	63	84.0
Settlement	12	16.0

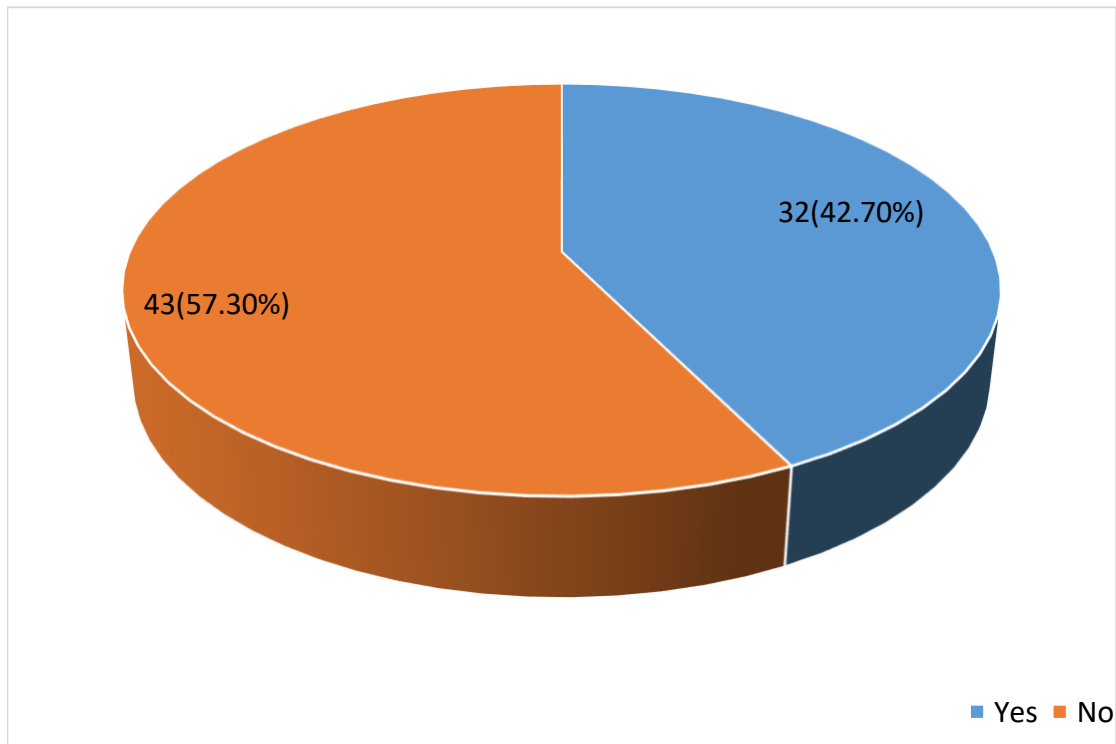


Figure 1: Distribution of Study participants based on Sexual Intercourse Initiation

Table 2: Association between Socio- demographic Factors and Sexual Initiation

Variable	Had Sexual Intercourse		X2	P-value
	Yes n=32	No n=43		
Age group			25.372	<0.001*
15-16	5(13.5)	32(86.5)		
17-19	27(71.1)	11.(28.9)		
Ever attended school			2.787	0.095
Yes	27(39.1)	42(60.9)		
No	5(83.3)	1(16.7)		
Current school attendance			7.640	0.006*
Yes	7(23.3)	23(76.7)		
No	25(55.6)	20(44.4)		
State of residence			2.346	0.309
Abuja	3(3.3)	6(66.7)		
Benue	22(50.0)	22(50.0)		
Plateau	7(311.8)	15(68.2)		
Type of camp			0.006	0.939
Concentration	27(42.9)	36(57.1)		
Settlement	5(41.7)	7(58.3)		
Duration of stay in camp (months)			0.869	0.351
12	3(42.9)	4(57.1)		
13-24	27(45.8)	32(54.2)		
<24	2(22.2)	7(77.8)		
Presence Youth Friendly Centre				
No	75(100.0)			

*Statistically significant

Table 3: Multiple Logistic regression of Factors that are significantly associated with Sexual Initiation

Variable	Odds ratio	95%CI	P-value
Age group			
15-16	1.0		
17-19	12.9	3.9-42.9	<0.001*
Current school attendance			
Yes	1.0		
No	2.4	0.8-8.1	0.163

*Statistically significant

Table 4: Detail of Sexual Activities of Adolescents Who Have Initiated Sexual Intercourse

Variable	Frequency(%); n=32
Age at sexual debut (Mean±SD)	15.2±2.7
<15	10(31.2)
15-17	16(50.0)
18-19	6(18.8)
Relationship with first sexual partner	
Fiancé	19(59.4)
Boyfriend	8(25.0)
Neighbour	3(9.4)
Stranger	2(6.2)
Timing of sexual debut	
Before displacement	15(46.9)
After Displacement	17(53.1)
Intercourse in the last three months	
Yes	17(53.1)
No	15(53.1)
Number of Sexual partners in the last 3months (n=17)	
1	13(76.5)
2	3(17.6)
3	1(5.9)
Partner status	
Younger	1(3.1)
Of the same age	5(15.6)
Older	26(81.3)
Relationship with last sexual partner	
Fiancé	21(65.6)
Boyfriend	5(15.6)
Neighbour	3(9.4)
Stranger	3(9.4)
Use protection	
Yes (Condom)	6(18.7)
No	26(81.3)
Circumstance for Sexual debut	
Willingly	26(81.3)
Rape	4(12.5)
Drugged	1(3.1)
Peer pressure	1(3.1)

DISCUSSION

Findings of this study highlight critical insights into the sexual behaviour (especially with respect to initiation of sexual intercourse) of female unmarried adolescents living in IDP camps in North-Central Nigeria. The data indicate that nearly half of adolescents have initiated sexual intercourse, with the majority experiencing their first sexual encounter during mid-to-late adolescence. This outcome is far higher than previous reports which showed that 20-25% of adolescents have initiated sexually intercourse.^{8, 15, 14} Although a few reports suggest that up to 78-81 percent of rural and out-of-school female

adolescents have had sexual intercourse.^{14,16} Nonetheless our findings suggest a prevailing high rate of sexual intercourse among displaced female adolescents.

The study also reveals that older adolescents (17-19 years) were significantly more likely to have engaged in sexual activity compared to their younger counterparts. This find aligns with previous research indicating that age is a strong predictor of sexual initiation among adolescents.^{15,17- 18} As adolescents grow older, they become more susceptible to engaging in sexual activity due to increased exposure to peer influences, economic challenges, and evolving romantic relationships.¹⁹

The role of education in sexual initiation was another key finding. Although most adolescents had attended school before displacement, current school attendance was significantly associated with sexual behaviour. Those who were no longer in school had higher odds of engaging in sexual intercourse, a trend supported by previous studies linking non-student adolescents to increased vulnerability to early sexual initiation and risky sexual behaviour.^{15, 17} The displacement-related disruption of education in IDP camps may have exacerbated this trend, emphasizing the need for continued educational support for displaced adolescents.²⁰⁻²³

Another notable finding was the low use of protection among sexually active adolescents. Only 18.7% reported using condoms, leaving the majority at risk of unintended pregnancies and sexually transmitted infections (STIs), including HIV. This low contraceptive use is consistent with studies that have shown limited access to and knowledge of contraception among displaced populations.^{24,26} Limited access to sexual and reproductive health (SRH) services in IDP camps, along with sociocultural constraints, may be driving this pattern. This is supported by findings by Envuladu et al in a qualitative investigation which revealed that negative attitudes from healthcare providers, misinformation or lack of information, high service costs, and poor service availability were major obstacles to condom and contraceptive use among adolescents.⁵ Additionally, other studies have linked low contraceptive use to the lack of privacy in accessing SRH services underscoring the pressing need for adolescent-friendly reproductive health initiatives.^{27,28}

This study also found that a significant proportion (more than half) of adolescents initiated sexual activity after displacement. This suggests that the conditions in IDP camps, such as economic hardship, lack of parental supervision, and increased exposure to sexual exploitation may contribute to early sexual debut.^{14,15} Prior studies have established that displaced adolescent girls are more vulnerable to coerced or transactional sex due to their precarious living conditions.^{9,26,29} Furthermore, a concerning proportion (12.5%) of adolescents reported experiencing rape as their first sexual encounter, reinforcing the need for strengthened protection mechanisms within IDP camps.^{30,31}

Although the modest sample size and cross-sectional design of this study may limit making of temporal inference regarding the determinants of sexual behaviour, our study nonetheless provides preliminary evidence of factors that influence sexual behaviour among internally displaced population. This may form a basis for larger studies that could elucidate of the specific magnitude of these factors.

CONCLUSION

A significant proportion of internally displaced female adolescents have initiated sexual activity, majority of which are unprotected and occurred during the displacement, driven by unstable living conditions, limited parental supervision, socio-economic pressures and poor access to RH information and Adolescent/Youth friendly SRH services. This study highlights the need to strengthen sexual and reproductive health services among displaced populations.

Acknowledgement

The authors wish to appreciate the adolescents in the IDP camps who participated in this research and generously provided the crucial data for this work. We are also indebted to the exceptional field assistants across the three states – Nguwasen Vendagor, Doose Terseer, Mercy Oke, Elizabeth Oloho, Blessing Ujah, Victoria Akinola, Esitime Bassey, Rebecca Innocent, and Felicia Simon for assisting in data collection.

Contribution of Authors

IJA. served as the lead investigator; IJA, DCK, EEA, MFA and OMO contributed to study conception and design; IJA, DCK, BM, EEA, MFA and OMO contributed to data acquisition and analysis, interpretation, and writing of article; IJA, DCK, BM, EEA, MFA and OMO contributed to editing, reviewing and final approval of article. All authors read and approved the final version of the manuscript.

Conflict of Interest: The Authors declare no conflict of interest.

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