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Prevalence, predictors and selected outcomes of early sexual initiation among adolescents in secondary schools in Lugbe, Abuja, Nigeria: a mixed methods study

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ABSTRACT

Background Early sexual initiation is the onset of sexual intercourse below 15 years. Despite many negative effects of early sexual initiation, its prevalence has kept increasing globally over the past decades.

Objective This study aims to determine the burden, identify risk factors and examine the selected outcomes of early sexual initiation among secondary school adolescents.

Design The study was a school-based descriptive cross-sectional survey which employed quantitative and qualitative methods.

Method A descriptive cross-sectional survey was conducted among 300 in-school adolescents aged 15–19 in Lugbe, Abuja. Data were collected using an interviewer-administered questionnaire. Focus group discussion was also conducted in six schools using a structured FGD Guide. The prevalence of early sexual initiation was determined. Descriptive and inferential statistical analysis was done including a binary logistic regression to determine the predictive factors and outcomes of early sexual initiation with statistical inference made at p value <0.05.

Results The prevalence of early sexual initiation was 11%; 80% of the respondents who had initiated sex did so before age 15, while 20% had first sex at ages between 15 and 19. Gender, academic performance, communication with parents and peer pressure were significantly associated predictive factors. Pregnancy, abortion, sexually transmitted infections, loss of self-confidence, expulsion from school, poor academic performance and depression were associated outcomes. Four main themes were identified from the qualitative data: being in a romantic relationship, peer pressure, media and lack of parental communication and monitoring.

Conclusion The study concluded that there is high prevalence of early sexual initiation among those who had initiated sex. Predictive factors such as peer pressure, parental communication and media influence can be addressed by the inclusion of sex education in school curriculum and training of peer educators, advocacy and health education for parents of adolescents.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Prevalence and identified predictors of early sexual initiation among in-school adolescents especially in other parts of Nigeria.

WHAT THIS STUDY ADDS

⇒ This study provided data on prevalence and predictors associated with early sex in northern central Nigeria and employed a mixed study method, unlike in most other studies.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This study might be useful in designing intervention programmes that might possibly delay and increase age at sexual initiation thus preventing the negative outcomes of early sex initiation in adolescence.

INTRODUCTION

Sexual initiation is considered 'early' if it happens before age 15.[1] Research has consistently shown that early sex is associated with more dangerous and complicated outcomes compared with those who initiated sex at a late age.[2]

Globally, early sexual initiation is becoming more prevalent in both developed and developing countries. A recent study in India shows that 15.5% adolescents had had sex before age 15.[3] Another study carried out in Rio Grande de Sol, Brazil, revealed a high prevalence at 21.53%.[4] A study carried out among a nationally representative sample of Nigerian Adolescents revealed that 9.0% of adolescents had early sex.[5] More recent studies show a higher proportion of early sexual initiation among Nigerian adolescents.[6 7]

Adolescent sexual intercourse, whether in early (10–13), middle (14–16) or late (17–19) adolescence, is affected by the following

factors: living with either one or no biological parent, little or no monitoring by parents or guardians, having an advanced pubertal change, involvement in dating, having a more carefree attitude towards sex, intake of alcohol, problems in school, juvenile delinquency and having signs of depression.[8]

The outcomes of early sexual initiation are complex; it has health, social, demographic and psychosocial impacts. Some of these consequences include risk of unwanted pregnancy, human papilloma virus infection, cervical cancer, sexually transmitted infections (STIs), delay in growing into healthy adult psychosocial abilities, detrimental socioeconomic consequences and higher rate of school dropouts.[9] For example, the WHO approximates that 70% of premature deaths among adults are mostly due to risky behaviours (including early sex) initiated during adolescence.[10] It results in teenage pregnancy which may in turn bring about expulsion from school and stigmatisation and consequently affect the adolescent's self-worth. This will also have negative effects on academic performance which can well extend beyond secondary school.[6 9] These negative outcomes affect the adolescent, along with their families, communities, and the society at large.[10]

Although there is a large body of literature that determined the prevalence and identified predictors of early sexual initiation among in-school adolescents,[6 8 11] and some that examine outcomes,[12 13] there is a paucity of data on prevalence and predictors associated with early sex in Abuja, despite the predisposition of young adolescent girls in this area to early marriage. This study aims to determine the burden, identify risk factors, and examine the selected outcomes of early sexual initiation among secondary school adolescents.

MATERIALS AND METHODS

The study employed quantitative and qualitative methods. It employed the descriptive cross-sectional survey design with a multistage sampling technique among secondary school adolescents, where only those who were physically and mentally alert to comprehend the information given and make a decision were selected to participate. The study also employed analytical methods to identify factors that influence early sexual initiation.

The sample size was determined using Leslie- Fischer's formula. The output of the formula with a 95% CI, a prevalence set at 18.6%[7] and a 10% non-response rate gave a sample size of 257 which was rounded off to 300 after including provisions for attrition.

Data were collected using a pretested semistructured interviewer administered questionnaire (online supplemental file 2). The questionnaire was used to collect information on the respondents' sociodemographic characteristics, sexual behaviours, psychosocial characteristics, lifestyle factors, parental and community characteristics responsible for early sexual debut and its outcome. Table 1 shows how these variables were measured.

For the qualitative data collection, purposive selection was used to select six schools out of the ten schools. In each school, eight males and eight females (aged 15–19) were randomly selected from SS1 to SS3 to be part of the focus group discussion (FGD). The FGD was conducted separately for males and females, which was conducted using an FGD Guide. The FGD Guide consisted of questions relating to initiation of sex among adolescents: reasons why adolescents engage in sex such as strong sexual urge; curiosity; risky sexual behaviours such as dating, exposure to pornographic content, smoking and alcohol intake; and how these predispose one to early sex. External factors such as the role of one's academic performance, peer pressure, societal norms and beliefs about engaging in sex, parental influence, the role of media and its impact on delaying or facilitating early sexual initiation were also explored.

Table 1 List of some predictors and how they were measured

Variables	Items	Measurement
Religiosity	How important is your faith and religion to you in helping you deal with problems and delaying sexual initiation? How often do you attend religious meetings (church, mosque, etc)?	Dichotomous (low, high)
Academic performance	What is your academic performance in the last 1 year like?	Discrete (poor, average, high)
Sexting	Do you engage in phone sex (sending and/or receiving explicit texts, or pictures and videos of yourself or another person)?	Dichotomous (regular, not regular)
Exposure to sex via media	How often do you watch videos, movies with sexual contents on TV or the internet?	Dichotomous (regular, not regular)
Feelings of depression	During the past 12 months, how often have you felt lonely? During the past 12 months, how often did you ever seriously consider attempting suicide? During the past 30 days, how often did you ever feel so sad or hopeless	Dichotomous (yes, no)
School sex education	How often does your school educate you about sex?	Dichotomous (regular, not regular)

Ethical approval was obtained at Ethics Committee, Health and Human Services, Federal Capital Territory Administration, Abuja, with study approval number FHREC/2019/01/118/09-12-19. All procedures were following responsible standards on human experimentation and with the Helsinki Declaration of 1975.

Data analysis

Quantitative data analysis

The data collected were cleaned, checked for consistency and entered into IBM SPSS V.22 for analysis. It was subjected to univariate and bivariate analyses. Univariate analysis was used to determine the frequency and proportions; bivariate analysis was used to determine association between individual, parental, community, and psychosocial factors and early sexual initiation, as well as to determine the association between early sexual initiation and the selected outcomes of early sexual initiation. Logistic regression was used to determine predictors associated with early sexual initiation. Bivariate analysis involved the use of χ^2, and binary logistics regression was used to identify predictors after adjusting for cofounders, and OR and 95% CI were determined. The level of significance determined at p value less than 0.05.

How the predictors were measured

Table 1 shows how the predictors were measured. Religiosity scores for individuals were calculated and summed up to give a total score of 5. The mean score was 3; scores below three were considered low, while scores between 3 and 5 were rated high. Academic performance was recorded as reported by the respondents. 0–49% in the last academic session was considered low, 50–79% was average and 80–100% was recorded as high performance.

Responses to sexting, exposure to sex via media and school sex education were recorded thus: always=5, most times=4, sometimes=3, rarely=2 and never=1. The mean score was 3; scores below 3 were considered not regular, while scores between 3 and 5 were regular.

Each item of the variable, feelings of depression, was recorded thus: always=5, most times=4, sometimes=3, rarely=2 and never=1. Total scores of the three questions were calculated (15=highest obtainable). Mean scores were obtained to be 8. Scores below 8 were considered no, while scores above 8 were recorded as yes.

Qualitative data analysis

Results from the FGD were transcribed, coded and analysed according to themes. A set of codes was developed to describe a group of words or categories with similar meanings. Once the code was established, transcripts were coded, and analysis was done using the N Vivo V.11 software. Direct quotes from the participants that most clearly represent each theme were chosen.

Patient and public involvement

The public was first involved when pretesting the questionnaire. The questionnaire was designed considering the adolescents' age and the need for privacy considering the sensitive nature of the topic. Written consent was sought from adolescents, their parents and school authorities. They were asked to assess the burden of the intervention and time required to participate in the research. The result of the study will be disseminated to relevant public health bodies and national government organisations within the community for interventions.

Table 2 Sociodemographics of respondents

Variables	Frequency (n=300)	Percentage (%)
Age		
15–16	228	76
17–19	72	24
Class		
SS1	84	28
SS2	129	43
SS3	87	29
Sex		
Male	163	54.3
Female	137	45.7
Religion		
Christianity	255	85
Islam	44	14.7
Traditional	1	0.3
Ethnic groups		
Igbo	81	27
Yoruba	96	32
Hausa	44	14.7
Others	79	26.3
Father's highest education		
None	16	5.3
Primary	28	9.3
Secondary	70	23.3
Tertiary	186	62
Mother's highest education		
None	16	5.3
Primary	39	13
Secondary	77	25.7
Tertiary	168	56

RESULTS

Socio-demographics of respondents

Table 2 shows 137 (45.7%) of the respondents were males, and 163 (54.3%) were females. The mean age of respondents is 15.83±1.1 (15.89±1.1 in males, 15.77±1.1 in females). Those ages 15–16 (mid-adolescence) are 228 (76%), and those ages 17–19 (late adolescence) are 72 (24%). There are 84 (28%) respondents in SS1, 129 (43%) in SS2, and 87 (29%) in SS3.

Table 3 Distribution of respondents by sexual behaviour

Variables	Frequency (n)	Percentage (%)
Ever had sex (n=300)	41	13.7
Yes	259	86.3
No		
Age group at first sexual intercourse (n=300)		
<15	33	11
15–19	8	2.7
Never had sex	259	86.3
Age group at first sexual intercourse (n=41)		
<15	33	80.5
15–19	8	19.5
Partner at first sexual initiation (n=41)		
Girlfriend/boyfriend	25	61
Relative	8	19.5
Stranger	8	19.5
No. of sexual partners in the past 12 months (n=41)		
1	27	65.9
3, Feb	9	22
6, Apr	4	9.8
10, Jul	1	2.4
Unprotected sex at first sexual intercourse (n=41)		
Yes	9	22
No	32	78

Distribution of respondents by sexual behaviors

Table 3 shows that 41 respondents (13.7%) had sexual intercourse, while 259 (86.3%) had never had sex. Thirty-three respondents had their first sexual intercourse before age 15 (11.0%). Among the sexually experienced (41 respondents), 80.5% had first sex before 15. More than half (61.0%) of the sexually experienced respondents had first sex with either their boyfriends or girlfriends. Within 12 months prior to the time of the research, 34.1% of these respondents had had sex with more than one partner. More than three-quarters (78.0%) of these respondents had unprotected sex at first sexual intercourse.

Predictors of early sexual initiation

Table 4 shows the proportion of male respondents (63.6%) who had early sexual initiation was significantly higher than the proportion of female respondents (36.4%) who had early sexual initiation ($\chi 2=4.825$, p=0.028). The proportion of respondents who had high academic performance and experienced early sexual initiation (6.1%) is significantly lower than the proportion of respondents with average academic performance (69.7%) and experienced early sexual initiation and the proportion of respondents with high academic performance (24.2%) who experienced early sexual initiation ($\chi^2=7.390$, p=0.025). Respondents who had high level of exposure to sexual content via media (72.7%) and experienced early sex is higher than the proportion of respondents who had a lower level of exposure to sexual content via media (27.3%) and experienced early sex ($\chi^2=0.973$, p=0.324), though not statistically significant.

Binary logistic regression model predicting factors associated with early sexual Initiation

Male respondents are two times more likely to engage in early sexual initiation than female respondents

Table 4 Association between sociodemographic, parental factors, psychosocial and community factors, and early sexual initiation

Variable	Early sexual Initiation Yes (n=33)	No (n=267)	Statistical test (χ^2 test)	OR	95% CI	P value
Gender						**0.037***
Male	21 (63.6%)	116 (43.4%)	4.825	2.228	1.048–4.738	
Female	12 (36.4%)	151 (56.6%)		1		
Academic performance						**0.008***
Low	8 (24.2%)	38 (14.2%)	7.390		1.241–4.366	
Average	23 (69.7%)	159 (59.6%)		2.328		
High (RC)	2 (6.1%)	70 (26.2%)		1		
Communication with parents						**0.034***
Poor	22 (66.7%)	132 (49.4%)	3.490	1	0.1774–0.932	
Good	11 (33.3%)	135 (50.6%)		0.403		
Pressure by peers to initiate sex						
Yes	9 (27.3%)	35 (13.1%)	4.708	2.344		
No	24 (72.7%)	232 (82.9%)		1	0.974–5.641	

*See online supplemental material 3 for the complete version of table 4.
RC, reference category.

Table 5 Association between selected outcomes and early sexual initiation; n=41

Variable	Early sexual Initiation		Statistical test (χ^2 test)	P value
	Yes	No		
Pregnancy				
Yes	3 (9.1%)	1 (12.5%)	0.785	0.376
No	30 (90.9%)	7 (87.5%)		
Abortion				
Yes	3 (9.1%)	1 (12.5%)	0.085	0.771
No	30 (90.9%)	7 (87.5%)		
Sexually transmitted infections				
Yes	12 (36.4%)	5 (62.5%)	1.812	0.178
No	21 (63.6%)	3 (37.5%)		
Loss of self-confidence				
Yes	20 (60.6%)	6 (75%)	0.575	**0.448**
No	13 (39.4%)	2 (25%)		
Expulsion from school				
Yes	3 (9.1%)	0 (0.0%)	0.785	0.376
No	30 (90.9%)	8 (100.0%)		
Poor academic performance				
Yes	15 (45.5%)	1 (12.5%)	2.939	0.086
No	18 (54.5%)	7 (87.5%)		
Depression				
Yes	16 (48.5%)	2 (25.0%)	1.442	0.23
No	17 (51.5%)	6 (75.0)		

(OR=2.228, CI 1.048 to 4.738, P= 0.037). Respondents with low academic performance are two times more likely to engage in early sexual initiation than respondents with average and high academic performance (OR=2.328, CI 1.241 to 4.366, p= 0.008). Respondents who had good communication with their parents were 40.3% less likely to have experienced early sexual initiation than those who had poor parental communication (OR=0.403, CI 0.174 to 0.932, p= 0.034)

Respondents who experienced pressure by peers are two times more likely to initiate sex than respondents who were not being pressured by their peers to have sex (OR=2.344, CI 0.974 to 5.641, p=0.049). Respondents who were exposed to sexual content via media are more likely to experience early sex than respondents who had low exposure (OR=0.770, CI 0.535 to 1102, p=0.153).

Outcomes of early sexual initiation

Table 5 shows the proportion of respondents who had early sex and got pregnant as a result (9.1%) is lower than the proportion of respondents who did not get pregnant (90.9%), though this was not statistically significant (χ^2=0.785, p=0.376). The proportion of respondents who had STIs from early sex (36.4%) was lower than the proportion of respondents who did not have STIs (63.6%), though this was not statistically significant (χ^2=1.812, p=0.178). The proportion of respondents who lost self-confidence (60.6%) due to early sexual initiation is higher than the proportion of respondents who did not loss self-confidence (30.4%), though it was not statistically significant (χ^2=0.575, p=0.448). The proportion of respondents who experienced depression after engaging in early sex (48.5%) was almost similar to the proportion of respondents who did not experience depression (51.5%), though this was not statistically significant (χ^2=1.442, p=0.230).

Qualitative analysis

Strong sexual urge

Some of the participants linked their continued engagement in sex to an uncontrollable sexual desire and urge after first exposure; others mentioned that the urge was incited by erotic pictures, videos, songs, etc.

> *When I am having the urge to do it and I can't just control it. I go out to visit someone I can do it with.* (Male, late adolescence)

Curiosity

Some of the participants engaged in sex just because they wanted to know what it feels like or to know if all some of their friends have said about it is really true.

> *I did it because I wanted to know how it feels; my friends are telling me that it is fun, so I thought I should too.* (Female, late adolescence)

External factors

Involvement in romantic relationships (dating)

Many agreed that having a boyfriend or girlfriend made it very easy for them to engage in first and subsequent sexual intercourse.

> *When we went out on a date, we started with things like kissing; then he said we should go inside the room to enjoy ourselves, so we had sex.* (Female, mid-adolescence)

Lack of parental communication and monitoring

Some agreed that the lack of monitoring by their parents made was a factor that encouraged them to have sex early.

> *My parents do not have time for us, so I would go out to the streets and spend time with my friends. My friends and I drink, smoke, spend time with our girlfriends who satisfy us sexually.* (Male, late adolescence)

Peer pressure

One factor mentioned by almost all participants was the influence their friends had on them and the role they had to play in the initiation of their first sexual experience. Many males, more than females, are subject to such pressure.

> *Some of my friends already have boyfriends, so I want to feel among so that they will not look at me as a small girl, so I don't want to be left out.* (Female, late adolescence)

Media

The entertainment industry is characterised by nudity and display of erotic dressings and scenes. Most participants see these on TV, internet, etc.

> *When I watch some movies, it makes me young people have the urge to have sex, just want to do what I saw in the movie.* (male, late adolescence)

Myths/beliefs

Some participants highlighted certain societal beliefs/myths which they believe in. Most of the myths mentioned favoured early initiation of sex. Their thinking pattern and belief system has been hampered by some of these myths.

> *If you don't do it while you are young, when you get old, it may be difficult and when you get married too.* (Female, late adolescence)

DISCUSSION

The study determined the prevalence of early sexual initiation and examined the individual, demographic, parental, psychosocial and community factors associated with early sexual initiation among adolescents in secondary schools in Lugbe, Abuja. While most studies have focused on predictors alone, this study goes further to elucidate the outcomes of early sexual initiation.

Prevalence of early sexual initiation

The prevalence of early sexual initiation in this study is 11%; however, among those who had sexual intercourse, 80.5% had early sexual initiation, consistent with the finding in some studies in Nigeria which also reported 11% and 18.6% prevalence of early sexual initiation respectively.[6 7] This is also comparable to the reports from Ethiopia and Thailand: 19% and 24% were reported respectively as the prevalence of early sexual initiation.[7 14] However, this is much lower than those obtained in developed countries.[15 16] This is most likely due to the traditional norms of abstinence that stills exists in Africa.

The mean age of sexual initiation, 12.49±3.33 from this study is comparable to a recent study done in Iowa which reported 13.56[10] and studies in Nigeria[6 11] which reported 13.10±2.82 and 12.54±2.66, respectively, as mean age, although it is lower than what was obtained in other studies: 15±1.6 and 16.0±0.8.[16 17]

The Demographic and Health Surveys (DHS) reports (2008, 2013) show that the median age at first sexual intercourse for males is 16 years while that of females is 15 years; the result obtained in this study is much lower—the median age for males and females being 13 and 14 respectively. This shows age at first sexual intercourse has reduced over the years. These should be checked as extended duration of sexual activity from having initiated sex at 13 or 14 means more exposure to STIs over the reproductive period than one who initiates sex at age 20.[5]

Predictors of early sexual initiation

The following factors were found to be risk factors of early sexual initiation: sex, academic performance, parental communication and pressure from peers to initiate sex.[18]

In this study, males were two times more likely initiate sex than females. This was consistent with the study in Ethiopia which reported that females had 56% less likelihood to have sexual intercourse early.[19] Studies in Nigeria also show that females in secondary schools have a lower likelihood of initiating sex compared with males.[20] However, in some studies, females initiated sex earlier.[21–23] This could be explained by the fact that female adolescents have a higher tendency to compete with their peers with regard to possessions such as clothes, shoes and the latest electronic gadgets, and this pushes them to have rich sexual partners at an early age to fulfil their needs.[21]

High academic performance favours the delay in sexual debut in that those who performed poorly academically were more predisposed to sex initiation than the average and high performers. This aligns with the results from several other studies.[14 23 24]

Similarly, the more parents relate and communicate with their children, the less likely it is for the child to engage in sex early (OR=0.406, CI 0.177 to 0.932, p=0.034). This is also consistent with the reports of the research done in 32 countries by Brooks *et al*,[25] and in Nigeria.[7]

As in other studies,[22 26 27] peer pressure is one of the predictors of early sexual initiation. This study reveals

that adolescents who felt pressure from peer to initiate sex were two times more likely to engage in early sex.

Outcomes of early sexual initiation

Reproductive health outcomes

There was no statistically significant outcome among the selected outcomes of early sexual initiation among respondents. However, the findings of this study shows 25% of the sexually active females who admitted being pregnant and attempting an abortion; more males contracted STIs than females agree with that from research in Abia state.[28]

Psychosocial outcomes

Age of first sexual initiation is not significantly associated with loss of self-confidence, poor academic performance, depression and dropping out of school among the respondents. However, more females experienced loss of self-esteem and depression than males. Males generally report experiencing less shame and guilt feelings, more pleasure and anxiety compared with females. More males got involved in substance abuse after initiating sex than females.

Qualitative analysis

Results from the FGDs show that early sexual initiation is strongly associated with individual factors such as strong sexual urge; parental elements such as lack of parental guidance, monitoring and communication; demographic predictors like socioeconomic status; psychosocial factors such as peer pressure; community factors including media; and myths and wrong beliefs accepted in the society. This is concurrent with the results from FGDs carried out in Nigeria by Ankomah *et al*,[18] which reported that locally made movies, lack of good parenting, the media, friends, myths and misconceptions are predictors. The outcomes of early sexual initiation with the highest occurrence, reported in this study, were pregnancy, poor academic performance, mental instability and addiction to sex.

Limitations of the study

Since sexual intercourse has a private, intimate and sensitive nature in society, there might have been under-reporting of some behaviours, especially with the FGDs. However, the principal investigator ensured that privacy and confidentiality are maintained and assured participants of same.

CONCLUSION AND RECOMMENDATIONS

The study concluded that a little above one-tenth of the respondents were sexually active, of which more than 80% were involved in early sexual initiation. The predictors associated with early sexual initiation in this study are gender, parental communication, academic performance and pressure by peers to initiate sex. Other predictors such as strong sexual urge, media, myths and wrong beliefs, and socioeconomic status were drawn from the FGDs. All selected outcomes of sexual initiation were experienced by the respondents, with the highest being STIs, loss of confidence and depression.

Other studies have shown the importance of effective parental communication in reducing the prevalence of early sexual initiation among adolescents.[10 29 30] Parents should be exposed to comprehensive sexuality education to pass on the right information and provide adequate guidance to their adolescents.

Adolescent-friendly health services should be created to provide more awareness on sexuality and the consequences of early sex.[31]

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Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, conduct, reporting or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants. The ethical approval was obtained at Ethics Committee, Health and Human Services, Federal Capital Territory Administration, Abuja, with study approval number FHREC/2019/01/118/09-12-19. All procedures were following responsible standards on human experimentation and with the Helsinki Declaration of 1975. Participants gave informed consent to participate in the study before taking part.

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