



Predictors of Sexual Behaviour among Adolescents Attending Co-Educational Schools in Uyo Local Government Area Akwaibom State Nigeria

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ABSTRACT

Adolescent sexual activity is still a prevailing problem globally including Nigeria and it is only when the cause of the issue is first thoroughly understood, will there be a formulation of implementable effective interventions to address it. The aim of this study was to determine the predictors of sexual behaviour among adolescents attending co-educational public secondary school in Uyo LGA, Akwa Ibom State, Nigeria. This research employed a cross-sectional study design. A total of 414 eligible respondents were recruited using a multi-stage random sampling technique. A pretested interviewer administered semi-structured questionnaire was utilized to collect data on their sociodemographic characteristics and sexual behaviour, which were analyzed using statistical package for social sciences (SPSS) version 25. The mean age of the respondents was 15.9 ± 1.4 years. Among the 414 respondents, 37.3% were males while 62.6% were females, and 36.5% have had sexual intercourse. Predictors of sexual behaviour found to be independently significant after controlling for confounders using multivariable logistic regression were: being in an intimate relationship, poor parental monitoring, substance use, family dysfunction, sexual abuse, having no information on sexuality, media and peer influence. This study's findings revealed that a lot of adolescents attending public secondary school in Uyo LGA are sexually active. This shows that there is an urgent need for an adolescent friendly clinic in health facilities at all levels of health care service delivery and a curriculum based sex education need to be established in schools.

Keywords: sexual behaviour; adolescents; senior secondary students; Uyo

INTRODUCTION

Adolescents sexual activities and their adverse consequences, which can profoundly impact immediate and long term health outcomes, are recognized as a global public health challenge.¹ Adolescence signifies a transitional period of growth and development bridging childhood and adulthood, characterized by rapid physical, cognitive and psychosocial development including an upsurge of sexual hormones and sexual feelings which affects how they think, feel and make decision as well as interact with the world around them.^{2,3} According to the World Health Organization (WHO), adolescents are individuals aged 10 – 19 years.² Adolescence can be broadly divided into three stages: Early (10 – 13 years), middle (14 – 16 years), and late (17 – 19 years).³ With a global population exceeding 1.3 billion, adolescents now constitute approximately 16% of the world's population, greater than at any other time in history.⁴ Adolescents comprise 22% of Nigeria's population.⁵

Sexual behaviours refers to activities indulged by individuals to gratify their sexual need.^{6,7} Sexual behaviour encompasses a broad range of activities and practices related to sexual expressions and intimacy and can be classified as low or high risk in terms of health outcomes.⁷ One of such activities among adolescents that is of high risk and of a major concern is engaging in sexual intercourse, which can be between two or more people.⁷ This the core focus of this study. Adolescents are curious at exploring the unexplored, as such, they venture



into various risky behaviours.³ During adolescence, there is a heightened quest for sexual experimentation, and initiation of sexual activity during this phase, is often not without risk with negative outcomes.^{1,3} Recent data from the global school based student health survey conducted in 68 low and middle-income countries revealed a global prevalence of sexual intercourse of 16.2%.⁸ Studies in Rivers and Cross River States, South-South, Nigeria, reported a prevalence of sexual intercourse of 63.5% and 41.5%, respectively.^{9,10} From various studies globally, predictors of sexual behaviour among adolescents have been found to include family influence, peer group influence, media influence including watching pornographic videos, low socioeconomic status/poverty, demographic characteristics such as age, sex and religion, alcohol and other psychoactive substance use, depression and having information about sexuality. 12-18

The family is the first setting that is capable of affecting an adolescent ability to function effectively in the society.^{11,12} Family influence in terms of family functioning, family size in the household, family type, parental monitoring, marital status of parents and sharing a room with parents or adult relatives of the opposite sex during the adolescent phase is an important determinant in shaping their sexual behaviour.¹³⁻²⁰ Family functioning refers to the social and structural properties of the global family environment and it includes interactions and relationships within the family.¹³ The concept of family functioning embodies the characteristics of a family as a system and has been found by researchers to play a major role in shaping the sexual behaviour of an adolescent.¹³⁻¹⁵ Studies in sub-Saharan Africa revealed that adolescents who had good family communication and family connectedness were significantly less likely to engage in risky sexual practices and other risk taking behaviours.¹⁶ Parental monitoring is defined as a set of correlated parenting behaviours involving attention to and tracking of the children's whereabouts, activities, and adaptation.¹⁷ In Cross River State, Nigeria, poor parental monitoring was noted to be strongly associated with sexual exposure among adolescents.¹⁰ These positive findings may emanate from the fact that less monitored adolescents have higher chances of being sexually exposed. In same study, it was also noted that among adolescents who engaged in sexual intercourse, majority were from polygamous homes compared with their counterpart from monogamous homes.¹⁰ Researchers have revealed that the marital status of parents can directly affect various aspects of an adolescent's life including their sexual life.¹⁸ Marital discord has been shown to affect the behaviour of children with most engaging in delinquent behaviour including engaging in sexual activities.¹⁸ A study in Lagos State Nigeria also reported that respondents whose parents were divorced had an increased likelihood of participating in sexual activities.¹⁹ Extensive research from various countries reinforces the significant influence of the family on adolescent sexual behaviour.^{11,12} A study in South eastern Nigeria revealed that early initiation of sexual activity was found to be strongly linked with sharing a room with parents or adult relations as they may observe their parents or older sibling indulge in sexual activity and imitate them.²⁰

Peer pressure is a situation where members of the same social group influence others to partake in certain behaviours.²¹ Some adolescents give in to peer pressure because they want to be liked or to fit in, as such, adopt the values and practices of their peers.²¹ A European study reported that adolescents who believed that their friends have had sexual intercourse had increased likelihood to engage in sexual intercourse themselves.²² In Nigeria, Durowade et al also reported a statistical significance between peer influence and sexual initiation.²³

Recent studies both within and outside Nigeria have shown that the tendency to engage in sexual intercourse are significantly higher in substance using population compared to general population, adolescents inclusive.^{24,25} A survey among Korean adolescent reported a significant association between substance use and engaging in sexual intercourse.²⁴ The inhibition conflict theory and alcohol myopic theory suggests that there is lowered inhibition which conflicts with an individual's desire, perception limitation along with narrowed focus of attention while under the influence of psychoactive substance especially alcohol.²⁵ In Ekiti State Nigeria, Durowade et al concluded that alcohol intake was found to be a risk factor for early sexual debut among adolescents.²³

In today's world, there are advances in technology and science, which gives wider information and communication turning the world into a global village.²⁶ Most adolescents have smart mobile phones, with easy and unrestricted access to readily available explicit contents on the internet like pornography which



contributes to the high prevalence of sexual initiation among them, worse still, shape their views about sexuality.²⁷ In Korea, a significant association was also found between exposure to harmful media with adult content and engaging in sexual intercourse among adolescents.²⁴ Studies in Ibadan, South-West Nigeria, by Oladeji et al and Okunola et al observed that watching programmes with sexual contents on the television, spending much time with the media, and listening to sexually explicit lyrics contribute to the increase in sexual activities among adolescents.^{28,29} Media with sexual content incite sexual provocation, making adolescents who are exposed these sexual content want to experiment what have been watched, accounting for the prevalence of sexual intercourse among them.

Adolescents from low socioeconomic background or under severe financial constrain are prone to transactional sex, and with weak bargaining power on the use of protection during sexual intercourse, are exposed to the at risk of contracting HIV/AIDS, STIs, unintended pregnancies, unsafe abortions, physical abuse, substance use and early death.^{14,30} Studies in South-West and South-South, Nigeria observed that low socioeconomic status was a major predictor of engaging in sexual intercourse among adolescents.^{10,14}

Depression is one of the leading mental health problems faced by adolescents.⁵ According to DSM-V, a diagnosis of depression requires the presence of at least one of the core symptom for a minimum of two weeks; depressed mood or loss of interest or pleasure, with any three of these; change in weight or appetite, change in sleep pattern, psychomotor agitation or retardation, fatigue or loss of energy, feeling of worthlessness or guilt, poor concentration and suicidal ideation.³¹ A study conducted in Finland, reported that 44.5% of depressed adolescents were involved in sexual intercourse and a significant positive association between the two factors was found.³² In Enugu State, South-East Nigeria, Adimora et al observed that, compared to their non-depressed peers, depressed adolescents were more likely to attain early sexual debut.²⁰ This shows that depressed adolescents may engage in sexual intercourse in an attempt to uplift their mood.

Studies have shown that lack of proper information on sexuality is a contributory factor to sexual initiation among adolescents.^{33,34} In Nigeria, Odii et al reported that adolescents indulged in sexual intercourse because of dearth of knowledge or limited access to proper sex education.³³ In a study in Akwa Ibom State, South-South Nigeria among pregnant teenagers, 61.64% reported that they had never been taught sex education prior to being pregnant.³⁵ Child sexual abuse refers to the involvement of a minor in any form of sexual activity that exceeds their cognitive understanding, physical maturity, and societal norms, and to which they are not capable of providing an informed consent.³⁶ It consists of both physical (penetrative) and non-physical (non-penetrative) sexual exposure with negative short and long term effect.³⁶ Childhood sexual abuse remains a public health issue as it infringes upon the rights of vulnerable children.² Researchers have found a link between childhood sexual abuse and early sexual debut.^{3,81,37,38} In the USA, a significant association was also discovered between forced sexual intercourse and engaging in sexual intercourse for the first time among adolescents aged 14 – 18 years.³⁷ In Rivers State, south-South Nigeria, same finding was also observed.³⁸ A study in Akwa Ibom state, South-South, Nigeria, reported a mean age of 14.17 among adolescents that were rape survivors with a prevalence of 5.40% and 80% knowing the perpetrators but only 40% reported the case to the police.³⁹

Scholars have found an association between socio-demographic characteristics and the sexual behaviour of adolescents. The socio-demographic characteristics implicated include; age, gender, religion, ethnicity, place of residence, class level, being in an intimate relationship.⁴⁰⁻⁴⁵ In Cameroun, Bongwong et al reported a strong relationship between intimate relationship, use of sexual language and sexual practices.⁴⁵ This shows that adolescents in an intimate relationship are more likely to engage in sexual activities.

In Nigeria, recent studies have revealed that the problem of adolescent sexual behaviour and negative outcomes are on the increase especially in the South-South region.⁴⁶ A high rate of sexual activity among in-school adolescents especially among those attending co-educational public secondary schools have been noted.⁴⁷⁻⁵⁰ In Uyo, Akwa Ibom State, Udoh et al, reported a high rate of unplanned pregnancy (45.34%) among adolescents.³⁵ A similar study in same State, documented a prevalence of abortion of 57.1% among secondary school girls.⁵¹

Despite the growing knowledge and evidences, internationally and majorly in the south eastern and western regions of Nigeria on the predictors of adolescent sexual behavior, in Akwa Ibom State, South-South, Nigeria, studies are mainly centered on the consequences of sexual practices among adolescents, the predictors of these sexual practices have not been explored. Also, local studies assessing predictors like sexual abuse, depression and family functioning are few. It is only when the cause of a problem is understood that proper intervention can be earmarked to tackle it. As such, identifying and understanding the predictors of engaging in sexual activities during adolescence is of essence if meaningful progress is to be achieved. The findings from this study will add to existing knowledge, create more awareness and provide health care practitioners, policy makers, parents and the communities at large with opportunities for intervention especially when armed with the knowledge of the predictors of sexual activities among this special group of individuals. Adolescents are the future generation, and investing in a safe and healthy sexual transition from childhood to adulthood is of essence, hence, this study sets to look at the prevalence and predictors of sexual behaviour among adolescents attending co-educational public secondary school in Uyo LGA.

METHODOLOGY

Study area and population

The study was conducted among selected public secondary schools in Uyo LGA, the capital city of Akwa Ibom State, South-South Nigeria. The study population comprised of both male and female adolescent students in senior secondary classes attending co-educational public secondary schools in Uyo LGA.

Study design

The study was a school based cross-sectional study.

Sample size determination

The sample size (n) was estimated using the Leslie and Kish statistical formula shown below;

$$n = \frac{z^2 pq}{d^2} \dots\dots\dots 52$$

Where n = desired sample size when population is greater than 10,000

z = the standard deviation set at 1.96 which corresponds to 95% confidence level

p = the prevalence of sexual intercourse among adolescents (41.5%) from a similar study in South-South Nigeria.¹⁴

q = 1 – p

d = precision which at 95% confidence interval is 5% (0.05) Therefore n = 1.962 x 0.415 (1 – 0.415)/ 0.052= 373

A response rate of 90% was envisaged among the respondents. Therefore, to adjust for this, the formula below was used;

$$N_s = \frac{n}{x} \dots\dots\dots 52$$

Therefore, $N_s = \frac{n}{x} = \frac{373}{0.9} = 414$

A total of 414 participants were recruited for the study.



Sampling method

Multi-stage sampling method was used to select participants for this study.

Stage 1- Among the 14 co-educational public secondary schools in Uyo LGA, six schools were selected using simple random sampling (lottery method).

Stage 2 - In each selected school, one arm from each senior secondary class level (from SS1, SS2 and SS3) were selected using simple random sampling (lottery method), totalling three arms in all.

Stage 3- Final selection of respondents from the selected arms was done using simple random sampling (lottery method). To avoid duplication of respondents, the process of “sampling without replacement” was done. This was done daily until the allocated number for each selected class arm and eventually each selected school was attained.

Inclusion criteria

1. Adolescents with parental/guardian consent to participant in the study
2. Adolescents who gave assent to participate in the study.
3. Adolescent students in senior secondary classes (SS1 – SS3) attending co-educational public secondary schools in Uyo LGA

Exclusion criteria

1. Adolescents who were absent from school or acutely ill
2. Adolescents with disabilities that impaired communication like mental defects and hearing loss.

Study protocol

A pre-test of the questionnaire was carried out prior to commencement of the study, after administrative approval was obtained using 41 (10% of sample size) selected participants from two co-educational public secondary schools in Abak LGA, Akwa Ibom State (the neighbouring LGA) and this process lasted for five consecutive working days. This was done to determine its applicability, in terms of the understanding of the questionnaire by the students as well as the adequacy of the questionnaire in collecting the required information, which was found to be adequate at the end of the process.

A pretested interviewer - administered semi structured questionnaire was used to obtain information regarding the socio- demographic and other family characteristics, as well as the sexual history of the respondents. The socioeconomic status of adolescents was determined based on the social class of their parents or guardians as they are still dependent. The socioeconomic status of their parents or guardians was classified using the revised scoring scheme for the classification of socio-economic status of families in Nigeria.⁵³

For each selected school, the author visited the school two days before with an approval letter obtained from the Director, Secondary and Higher Education Directorate, Akwa Ibom State Ministry of Education and intimated the school principals and teachers of the aim of the study and obtained their permission and cooperation. Thereafter, for each selected class arm, the aim and objectives of the study was explained to the students and written informed consent for parents or guardian was given to students below 18 years to be returned on the day of the study. Primary data for the study was collected using questionnaires which were administered to eligible respondents by the researcher and research assistants after the aim of the study had been reiterated and the signed informed consent obtained. The survey was done during their break time in their classroom, in order not to interfere with the students' academic activities. Due to the sensitive nature of the study, in order to ensure openness and honest responses, the respondents were assured of strict confidentiality and anonymity of responses and respondents' identity (the questionnaire did not require the participant's name written during and even after the study). To ensure their comfort and accuracy of responses, the trained research assistants included two young males and a female (totalling 2 males and 2 females including the



author), and the participants chose their preferred interviewer. To further ensure privacy and comfort of respondents, two classrooms were used during data collection, with only two participants per class with their preferred interviewers (who were well spaced, with the respondents backing each other and not within hearing distance from themselves) present in a classroom. This also guarded against interference from teachers or interactions with the other students throughout the period of filling the questionnaire and checked against peer influences. In schools where their class Teachers' private offices were available, these were used as well.

Operational definition of terms and validated tools used.

Sexual behaviour: It refers to activities indulged by individuals to gratify their sexual need and it encompasses a broad range of activities and practices related to sexual expressions and intimacy and can be classified as low or high risk in terms of health outcomes.^{6,7} One of such activities among adolescents that is of high risk and of a major concern is engaging in sexual intercourse, which was the focus of this study.

Sexual intercourse: Sexual intercourse is defined as sexual contact or activity between individuals which commonly involves penetration of the vagina or anus by the penis.⁵⁴ Question was adapted from the WHO illustrated questionnaire for young people and similar studies in an African setting including Nigeria, to determine the prevalence of sexual intercourse among the respondents.⁵⁵ Respondents that answered "YES" to the variable "ever had sexual intercourse" irrespective of sexual act (vaginal, anal) were regarded as having had sexual intercourse.

Family functioning: This refers to the social and structural properties of the global family environment and it includes interactions and relationships within the family.¹³ This was measured using the Family APGAR. A validated instrument developed by Smilkstein in 1982, that assesses a person's satisfaction with their family relationship.⁵⁶ It is a widely used family functioning assessment tool having been applied and validated in different parts of the world including Nigeria.¹⁵ It is a five-item questionnaire where each item is scored on a 3-point Likert scale. The five parameters of family APGAR are an acronym for adaptation, partnership, growth, affection, and resolve. The scale is scored by summing the values for the five items for a total score of 0 to 10. Score of 0 to 3 is interpreted as a severely dysfunctional family, while a score of 4 to 6, and 7 to 10 are interpreted as moderately dysfunctional and highly functional family respectively. This instrument has a Cronbach's alpha score of 0.80.⁵⁶

Depression: According to DSM-V, a diagnosis of depression requires the presence of at least one of the core symptom for a minimum of two weeks; depressed mood or loss of interest or pleasure, with any three of these; change in weight or appetite, change in sleep pattern, psychomotor agitation or retardation, fatigue or loss of energy, feeling of worthlessness or guilt, poor concentration and suicidal ideation.³¹ This predictor was measured using the Patient Health Questionnaire 2 (PHQ 2). The PHQ 2 is a standardized brief screening for depression in primary care developed from the PHQ 9 questionnaire by Robert Spitzer and his colleagues from Columbia University.⁵⁷ It has been widely used and validated among adolescents with good sensitivity and specificity.⁵⁸ It is a 2-item questionnaire with each of the items scored on a four point Likert scale (0-3) and the total score is summed up (0-6). The tool has an optimal cut score for depression as 2 or greater with a sensitivity and specificity of 89% and 83% respectively, which was employed in this study.⁵⁸

Parental monitoring: Parental monitoring is defined as a set of correlated parenting behaviours involving attention to and tracking of the children's whereabouts, activities, and adaptation.¹⁷ Questions on parental monitoring was adopted from WHO, GSHS questionnaire, which consisted of four questions with responses ranging from 1 = 'never' to 5 = 'always'. For this study, responses to all four questions were combined into a single binary variable. Therefore, participants who respond as "always" or "most of the time" on all questions were regarded as having good parental monitoring (value = 1) while participants who responded as "sometimes", "never" or "rarely" were regarded as having poor parental monitoring (value = 0). The World Health Organization (WHO) Global School-based student Health Survey (GSHS) questionnaire.⁵⁹ This is a relatively low cost school-based survey which uses a questionnaire to obtain data on young people and adolescent's health behaviour in 10 keys areas including sexual behaviours, alcohol and drug use, and protective factors like parental monitoring, designed to help countries measure and assess the behavioural risky



and protective predictors related to the leading causes of mortality and morbidity among young people and has been used in sexual behavioural studies involving adolescents in Africa including Nigeria.^{60,61}

Peer influence: Peer pressure is a situation where members of the same social group influence others to partake in certain behaviours.²¹ Questions relating to peer influence were adapted from WHO illustrated questionnaire for young people and similar studies in an African setting including Nigeria.^{22,55,61,62} In this study, questions to assess peer Influence include: “having friends who have had sex and/or the perception that friends have had sex”. Respondents who answered “YES” to any of these questions were regarded as having peer influence.

Media influence: It refers to the effect of mass/social media on the thoughts, feelings and actions of its audience. Questions relating to media influence was also adapted from WHO illustrated questionnaire for young people and similar studies in an African setting including Nigeria.^{55,62,63} Questions on “exposure to media with sexual content” was asked and respondents who answered “YES” to this question were regarded as having media influence. **Sexual abuse:** Child sexual abuse refers to the involvement of a minor in any form of sexual activity that exceeds their cognitive understanding, physical maturity, and societal norms, and to which they are not capable of providing an informed consent.³⁶ For the purpose of this study, sexual abuse focused on respondents who have had non-consensual penetrative sexual intercourse. Question to assess this was adapted from the WHO illustrated questionnaire for young people.⁵⁵

Substance use: substance use refer to exposure to psychoactive substances like alcohol, cannabis etc. Question to assess this was adapted from the alcohol/drug use module of the WHO, GSHS questionnaire and similar studies in an African setting including Nigeria.^{23,59,62}

Having information on sexuality: Having information of sexuality refer to exposure to sex education. Questions to assess this was adapted from sexual behaviour module of the WHO, GSHS questionnaire and similar studies in an African setting including Nigeria.^{23,54,60}

Ethical considerations

Ethical clearance from University of Uyo Teaching Hospital Health Research Ethical Committee was obtained before the commencement of the study. Assent was obtained from the study participants aged 18 years and above after the objectives have been clearly explained to them. For those under 18 years, written informed consent was obtained from their parent or guardian as well as assent from them with detailed explanation of the purpose and advantage of the study. The parents/guardians and students were assured of strict confidentiality and that participation was completely voluntary. They were also assured that they could choose to withdraw from the study at any point they deem necessary, and this would not in any way affect the quality/quantity of any educational service received in the school.

All respondents with a history of sexual intercourse were duly counselled on safe sexual practices by the author. Also, respondents with depression were referred to the mental health physician in the UUTH, Uyo and co-managed accordingly with the author. Survivors of rape and their families were counselled accordingly and referred to the clinical psychologist for further care and management. They were also informed of available help centres and the contacts of this centres (both the address and phone numbers) were given and they were at liberty to make informed decision on whether to assess the service or not. These help centres included sexual violence service providers such as National Agency for the Prohibition of Trafficking in Persons (NAPTIP) Uyo command, Ministry of Women Affairs (Akwa Ibom State) and International Federation of Women Lawyers (FIDA) Akwa Ibom State branch.

Data analysis

Data collected was collated manually, coded, and inputted into the IBM Statistical Package for Social Sciences (SPSS) version 25. Data obtained were analysed using frequencies and percentages to represent categorical variables. Bivariate analysis using chi square for categorical variables was also used and significant variables

(p value < 0.05 at confidence interval of 95%) was inputted into a multivariable logistic regression model to identify independent predictors for sexual behaviour among the respondents.

RESULTS

A total of four hundred and fourteen respondents (414) were recruited for the study between mid-September and mid-December 2024.

Socio-demographic characteristics of the respondents

The socio-demographic characteristics of the respondents are shown in table 1. Respondents' ages ranged from 13 to 19 and were further categorized into early adolescence (students aged 10 to 13 years), middle adolescence (students aged 14 to 16) and late adolescence (students aged 17 to 19). The mean age of the respondents was 15.91 ($\pm$ 1.4) years. Majority of the respondents fell within the middle adolescence category (66.9%) and the least were within the age of early adolescence (1.7%). Most of the respondents (62.6%) were females, while one hundred and fifty five (37.4%) were males.

Table 1: Socio-demographic characteristics of the respondents

Variables	Groups	Frequency	Percentage (%)
Age group	Early Adolescence (10–13 years)	7	1.7
	Middle Adolescence (14–16 years)	277	66.9
	Late Adolescence (17–19 years)	130	31.4
Sex	Female	259	62.6
	Male	155	37.4
Religion	Christianity	406	98.1
	Muslim	7	1.7
	Traditional worship	1	0.2
Ethnicity	Ibibio	315	76.1
	Annang	39	9.4
	Oron	11	2.7
	Igbo	31	7.5
	Yoruba	7	1.7
	Hausa	6	1.4
	Others	5	1.2
Class level	SS 1	138	33.3
	SS 2	138	33.3
	SS 3	138	33.3
Area of Residence	Urban	377	91.1
	Rural	37	8.9
Relationship Status	Not in an intimate relationship	265	64.0
	In an intimate relationship	149	36.0
Living arrangement	Both parents	233	56.3
	Father alone	22	5.3
	Mother alone	101	24.4
	Neither parents	58	14.0
Total		414	100.0

Table 2: Other characteristics related to family among the respondents

Variables	Groups	Frequency	Percentage (%)
Family type	Monogamous	199	48.1
	Polygamous	35	8.5

	Extended	73	17.6
	Single parent	107	25.8
Marital status of Parent	Married	293	70.8
	Separated	23	5.6
	Divorced	18	4.3
	Widowed	42	10.1
	Single	38	9.2
Family household size	1 – 3	67	16.2
	4 – 6	237	57.2
	7 – 10	94	22.7
	>10	16	3.9
Socioeconomic status of Parents	High	8	1.9
	Middle	136	32.9
	Low	270	65.2
	Total	414	100

Prevalence of sexual intercourse among the respondents

Among the 414 respondents recruited into the study, 151 (36.5%) have had sexual intercourse and 262 (63.5%) were primary abstainers. This is summarized in Figure 2 below

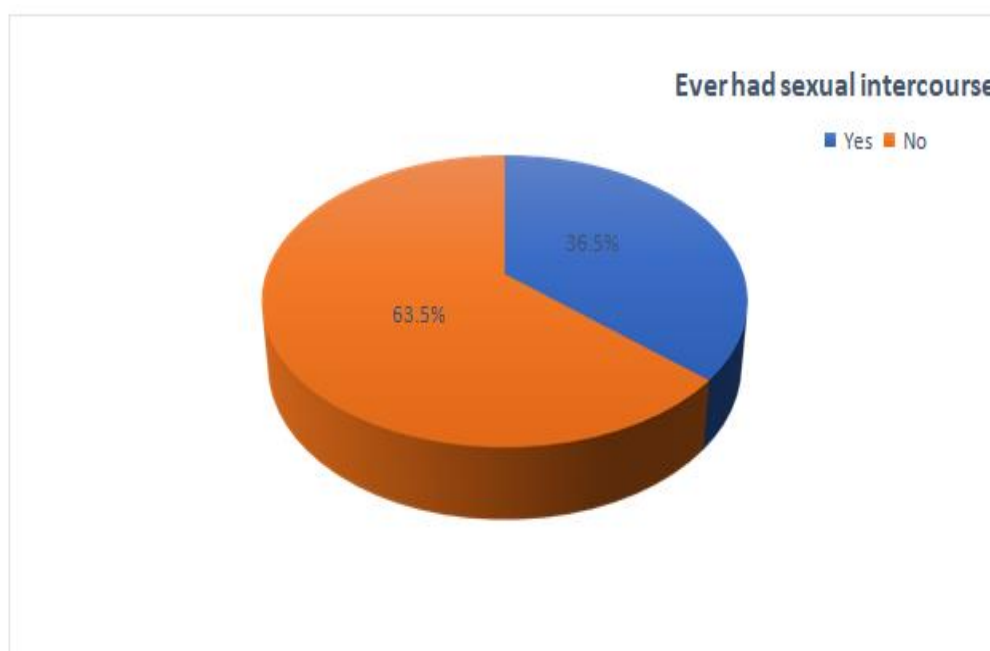


Figure 2: Pie chart showing the prevalence of sexual intercourse among respondents.

Bivariate analysis showing the predictors of sexual behaviour among the respondents.

Association between socio-demographic characteristics and sexual intercourse among respondents.

Tables 5 shows the association between socio-demographic characteristics and sexual intercourse among the study participants.



Table 5: Association between socio-demographic characteristics and sexual intercourse among respondents

Variables	Groups	Ever had sex Yes, n (%)	Ever had sex No, n (%)	Total	Chi-square (χ^2)	p-value
Age	Early Adolescence (10–13 years)	1 (14.3)	6 (85.7)	7	4.448	0.104
	Middle Adolescence (14–16 years)	94 (33.9)	183 (66.1)	277		
	Late Adolescence (17–19 years)	56 (43.1)	74 (56.9)	130		
Gender	Male	55 (35.5)	100 (64.5)	155	0.105	0.746
	Female	96 (37.1)	163 (62.9)	259		
Religion	Christianity	150 (36.9)	256 (63.1)	406	1.825	0.329
	Islam	1 (14.3)	6 (85.7)	7		
	Traditional belief	0 (0.0)	1 (100.0)	1		
Ethnicity	Ibibio	126 (40.0)	189 (60.0)	315	7.146	0.294 (FE)
	Annang	9 (23.1)	30 (76.9)	39		
	Oron	3 (27.3)	8 (72.7)	11		
	Igbo	8 (25.8)	23 (74.2)	31		
	Yoruba	2 (28.6)	5 (71.4)	7		
	Hausa	2 (33.3)	4 (66.7)	6		
	Others	1 (20.0)	4 (80.0)	5		
Class	SS 1	44 (31.9)	94 (68.1)	138	3.148	0.207
	SS 2	58 (42.0)	80 (58.0)	138		
	SS 3	49 (35.5)	89 (64.5)	138		
Area of residence	Urban	139 (36.9)	238 (63.1)	377	0.286	0.593
	Rural	12 (32.4)	25 (67.6)	37		
Relationship status	Not in an intimate relationship	39 (14.7)	226 (85.3)	265	150.419	<0.001*
	In an intimate relationship	112 (75.2)	37 (24.8)	149		
Living arrangement	Both parents	65 (27.9)	168 (72.1)	233	18.588	<0.001*
	Father alone	10 (45.5)	12 (54.5)	22		
	Mother alone	52 (51.5)	49 (48.5)	101		
	Neither parents	24 (41.4)	34 (58.6)	58		
Total		151	263	414		

*FE – Fisher's Exact

Association between other characteristics related to the family and sexual intercourse among respondents

A bivariate analysis of other characteristics related to family of respondents (Table 6) showed a statistically significant association in the family type, marital status of parent, and socio-economic status.

Table 6: Association between other characteristics related to family and sexual intercourse among respondents.

Variables	Groups	Ever had sex Yes, n (%)	Ever had sex No, n (%)	Total	Chi-square (χ^2)	p-value
Family type	Monogamous	52 (26.1)	147 (73.9)	199	33.153	<0.001*
	Polygamous	13 (37.1)	22 (62.9)	35		
	Extended	63 (58.9)	44 (41.1)	107		
	Single parent	23 (31.5)	50 (68.5)	73		
Marital status of parent	Married	83 (28.3)	210 (71.7)	293	32.426	<0.001*
	Separated	9 (39.1)	14 (60.9)	23		
	Divorced	11 (61.1)	7 (38.9)	18		
	Widowed	—	—	—		
	Single (never married)	26 (61.9)	16 (38.1)	42		
Family household size	1–3	33 (35.1)	61 (64.9)	94	2.827	0.419
	4–6	9 (56.3)	7 (43.8)	16		
	7–10	24 (35.8)	43 (64.2)	67		
	>10	85 (35.9)	152 (64.1)	237		
Socio-economic status of parent/guardian	High	1 (12.5)	7 (87.5)	8	14.619	0.001 (FE)*
	Middle	34 (25.0)	102 (75.0)	136		
	Low	116 (43.0)	154 (57.0)	270		

Association between factors influencing the sexual behaviour and sexual intercourse among respondents

Table 7 shows the association between factors that influences the sexual intercourse and ever had sex among the respondents. A bivariate analysis of factors that influence the sexual behaviour of the respondents was statistically significant for family functioning ($\chi^2=138.445$, p-value = <0.001), parental monitoring ($\chi^2=136.775$, p-value = <0.001), depression ($\chi^2=4.818$, p-value = 0.028), peer influence ($\chi^2=128.418$, p-value = <0.001), media influence ($\chi^2=178.194$, p-value = <0.001), received information about sexuality ($\chi^2=48.073$, p-value = <0.001), sexual abuse ($\chi^2=88.855$, p-value = <0.001), and substance use ($\chi^2=125.585$, p-value = <0.001).

Table 7: Association between factors influencing sexual behaviour and sexual intercourse among the respondents.

Variables	Groups	Ever had sex Yes, n (%)	Ever had sex No, n (%)	Total	Chi-square (χ^2)	p-value
Family functioning	Severely dysfunctional family	63 (73.3)	23 (26.7)	86	138.445	<0.001*
	Moderately dysfunctional family	77 (52.4)	70 (47.6)	147		
	Highly functional family	11 (6.1)	170 (93.9)	181		
Parental monitoring	Poor	136 (63.0)	80 (37.0)	216	136.775	<0.001*
	Good	15 (7.6)	183 (92.4)	198		

Depression	Yes	34 (47.9)	37 (52.1)	71	4.818	0.028*
	No	117 (34.1)	226 (65.9)	343		
Peer influence	Yes	109 (72.2)	42 (27.8)	151	128.418	<0.001*
	No	42 (16.0)	221 (84.0)	263		
Media influence	Yes	136 (70.1)	58 (29.9)	194	178.194	<0.001*
	No	15 (6.8)	205 (93.2)	220		
Having information on sexuality	Yes	99 (28.9)	243 (71.1)	342	48.073	<0.001*
	No	52 (72.2)	20 (27.8)	72		
Sexual abuse	Yes	52 (92.9)	4 (7.1)	56	88.855	<0.001*
	No	99 (27.7)	259 (72.3)	358		
Substance use	Yes	116 (68.2)	54 (31.8)	170	125.585	<0.001*
	No	35 (14.3)	209 (85.7)	244		
Sharing a room with parents or adult relative of the opposite sex	Yes	62 (53.9)	53 (46.1)	115	20.901	<0.001*
	No	89 (29.8)	210 (70.2)	299		

*Statistically significant (p-value = <0.05)

Binary logistic regression identifying independent predictors of sexual behaviour among respondents

The variables that were significantly associated with engaging in sexual intercourse of the respondents on bivariate analysis were further analysed to adjust for the effect of confounders and identify independent predictors among the study participants as shown in tables 8a and 8b. Being in an intimate relationship (OR = 3.265, CI = 1.283 – 8.310), having media influence(OR = 7.215, CI = 2.772 – 18.778), peer influence(OR = 3.373, CI = 1.431 – 7.947), poor parental monitoring (OR = 3.319, CI = 1.152 – 9.564), substance use(OR = 2.386, CI = 1.003 – 5.678), having a history of sexual abuse(OR = 7.456, CI = 1.876 – 29.634), not having access to information on sexuality (OR = 3.806, CI = 1.297 – 11.168), dysfunctional family (OR= 7.386, CI = 1.998-27.300), moderately functional family(OR= 4.773, CI=1.397 – 16.309) were the only predictors that remained statistically significant after logistic regression analysis.

Table 8a: Binary logistic regression on significant predictors of sexual behaviour among the respondents

Variables	Odd ratio	95% CI	p- value
Relationship status	3.265	1.283 – 8.310	0.013*
In an intimate relationship	Ref	1	
Not in an intimate relationship			
Family type			
Polygamous	0.927	0.235 – 4.902	0.927
Extended	0.661	0.200 – 2.774	0.661
Single parent	0.518	0.295 – 11.262	0.518
Monogamous	Ref	1	
Living arrangement			
With neither parents	0.952	0.281 – 3.226	0.937
Father alone	0.192	0.025 – 1.490	0.115
Mother alone	0.409	0.076 – 2.211	0.299



Both parents	Ref	1	
Marital status of parent			
Single	1.194	0.119 – 11.971	0.88
Separated	0.776	0.073 – 8.220	0.833
Divorced	0.227	0.023 – 2.248	0.205
Widowed	2.655	0.343 – 20.540	0.305
Married	Ref	1	
Socio-economic status			
low	1.8	0.049 – 65.479	0.748
Middle	0.49	0.013 – 19.027	0.702
High	Ref	1	
Substance use			
Yes	2.386	1.003 – 5.678	0.049*
No	Ref	1	
Media Influence			
Yes	7.215	2.772 – 18.778	<0.001*
No	Ref	1	
Having information on sexuality			
No	3.806	1.297 – 11.168	0.015*
Yes	Ref	1	
Depression			
Yes	0.803	0.266 – 2.422	0.697
No	Ref	1	
Peer influence			
Yes	3.373	1.431 – 7.947	0.005*
No	Ref	1	
Family functioning			
Severely dysfunctional family	7.386	1.998 – 27.300	0.003*
Moderately dysfunctional family	4.773	1.397 – 16.309	0.013*
Highly dysfunctional family	Ref	1	
Parental monitoring			
Poor	3.319	1.152 – 9.564	0.026*
Good	Ref	1	

Table 8b: Binary logistic regression on significant predictors of sexual behaviour among the respondents (cont'd)

Variables	Odd ratio	95% CI	p- value
Sexual abuse	7.456	1.876 – 29.634	0.004*
Yes No	Ref	1	
Sharing a room with parents or relatives of the opposite sex	0.984	0.385 -2.514	0.974
Yes No	Ref	1	

*statistically significant Ref – reference variable

DISCUSSION

Socio-demographic characteristics of respondents

In this study, the mean age of the respondents was 15.9 ± 1.4 years, among which majority (66.9%) were middle aged adolescents (students aged 14 to 16). This is similar to a study by Osunmakinwa et al who reported a mean age of 15.7 ± 3.5 years and majority (57.8%) were also in the middle adolescence phase.⁶⁴ In Ogun state Nigeria, the mean age of the respondents were also noted to be 15.2 ± 1.4 years.⁶⁵ The observed similarity in these studies may be explained by the demographic composition of the sample, with respondents mostly being middle-aged adolescents. The gender distribution of the respondents showed a largely female preponderance in this study representing 62.6% of the respondents while 37.4% were males. This finding aligns with those of Johnson et al and Udoh et al in Uyo, who both reported a higher proportion of female respondents compared to males.^{47,66} Similarly, Abiodun et al observed more females (66.1%) than males respondents (33.9%) in South-West Nigeria.¹⁵ This could be attributed to a higher female school enrolment in the southern parts of Nigeria.⁶⁷ The percentage of respondents in the current study who lived in the urban area was 91.1% while 8.9% lived in the rural area. This is similar to a report by Odii et al where the majority (67%) of respondents lived in the urban area compared to 33% who lived in the rural area.³³ Osunmakinwa et al also had same finding.⁶⁴ This is attributable to the fact that in these settings, the studies were carried out in an urban area, likewise, all the schools sampled in the present study were located within Uyo metropolis which is an urban area.

In this study, 56.3% of the respondents lived mostly with both parents, 5.3% lived with father alone, 14.0% lived with mother alone, and 24.4% lived with neither parents. This finding is comparable to findings by Oben et al in Rivers state Nigeria, were a majority (50.4%) stated that they live with both parents, 24.8% single parent, and 7.8% lived with relatives.⁹ In Tanzania, majority of the study participants (66.5%) were also living with both parents whereas 13.5% were living with other relatives or guardians.⁶⁸ Among respondent's family type, 48.1% were from monogamous homes, 8.5% polygamous, 25.8% indicated that they were from a single parent family, while 17.6% practiced the extended family type. Also, most of their parents were married (70.8%). This is comparable to a study by Eyam et al who reported half of the respondents to be from monogamous family setting and a majority having married parents (94.7%).¹⁰ In Ondo state as well, 78.4% of respondents were from a monogamous family setting.⁶⁴ The reason for monogamy being the majority family type in both studies may be attributed to the fact that in Southern Nigeria inhabitants are predominantly Christians and disapproval of a man marrying more than one wife is the practice of Christianity. Findings from this study revealed that the number of inhabitants in the household ranged mostly from four to six (57.2%). This is comparable to Odeigha's study in Ilorin Nigeria.⁶⁹ This may be explained by the fact that the family type for the majority of the respondents was monogamous, which in most cases is synonymous with lesser number of people in a household.



Prevalence of sexual intercourse among respondents

The prevalence of sexual intercourse among adolescents in this study was 36.5% which is close to twice the pooled prevalence of sexual intercourse among adolescents from different geographical regions of Nigeria which stood at 22.1%.⁷⁰ The reason for this disparity in result could be that the study was a multi-regional study, with regions having varying socio-cultural norms and demographic characteristics. Several other studies however, reported prevalence of sexual intercourse significantly higher than was recorded in the present study. A previous study carried out in same study area by Udoh and his colleagues reported a prevalence of 59.6%.⁴⁷ The relatively lower prevalence in this study may be attributed to increased awareness about the consequences of engaging in sexual practices.⁴⁷ In Cross River State Nigeria, the prevalence of sexual intercourse among adolescents was observed to be 41.5%.¹⁰ The higher result could be attributed to the larger sample size than the present study. Another study across five sub-Saharan African countries (Benin, Mozambique, Namibia, Seychelles and Tanzania) pooled an overall prevalence of sexual intercourse of 43.5% among adolescents.⁷¹ Higher prevalence of 49% and 65% were also found in studies conducted in America and Britain, respectively.⁷² The comparable differences in this studies in relation to findings reported in the present study can be attributed to religious and socio-cultural differences. The culture of perceived laxity and permissive attitude towards adolescent dating is seen as normal in some western climes like America which may contribute to their engaging in sexual intercourse.⁷²

Predictors of sexual behaviour among the respondents

In this study, relationship status was positively associated with having sexual intercourse among the respondents. Respondents who were in an intimate relationship were 3.265 times more likely to engage in sexual intercourse compared to their counterpart. This is in agreement with findings in Plateau State Nigeria, where relationship status was found to be statistically significant.⁷³ Similarly, in a qualitative exploratory study in South-East Nigeria by Odii and his team of researchers, they observed that adolescents who were in a romantic relationship were likely to engage in sexual intercourse.³³ The finding in the present study is also comparable to a study of similar context by Abiodun and his colleagues who reported a positive relationship between being in a relationship and engaging in sexual intercourse among adolescents.¹⁵ In Cameroun, Bongwong et al also reported a strong relationship between being in an intimate relationship, use of sexual language and sexual behaviour among young people which is in line with the findings in the present study.⁴⁵ The reason for the finding in the present study may be explained by the fact that romantic relationships is usually characterized by expressions of affection and quite often becomes the primary motivating factor to become sexually active.⁷⁴

Parental monitoring was found to be statistically significant among the respondents in this study and respondents who recorded poor parental monitoring had a higher odds of engaging in sexual intercourse. This is in agreement with previous studies conducted in Oyo and Cross River States Nigeria by Oluyemi et al and Eyam et al, who reported an association between poor parental monitoring and having sexual intercourse among adolescents with higher odds noted among those with poor parental monitoring.^{10,12} Similar findings have been re-echoed by other authors in Ethiopia and Asia.^{17,75} The positive findings could be attributed to the fact that adolescents who are less monitored at home by their parents or guardian have higher chances of being sexually exposed.

Family functioning was found to be statistically significant in this study. The prevalence of sexual intercourse was highest among study participants from severely dysfunctional families, and were 7.386 times more likely to engage in sexual intercourse compared with their counterpart from highly functional families. This findings is comparable to a study of a similar context by Olorunsola et al in Ibadan, Nigeria who reported a positive relationship between poor family functioning and risky sexual behaviour among sexually active adolescents.¹⁴ Similar finding was also upheld in a study conducted in sub-Saharan Africa by Somefun et al.¹⁶ Authoritarian or very strict parenting style with no warmth or support affects communication regarding sensitive topics like sexuality between children and their parents, as such this information may be obtained from peers who are likely poorly informed as well, resulting in early sexual debut.⁷⁶ In some Nigerian and African homes, this



parenting style is mostly practiced owing to the staunch religious and cultural belief that harsh discipline brings up a good child.

In this study, media influence was statistically significant. Among 46.9% of the respondent who were exposed to sexual content on the media, 70.1% were 7.215 times more likely to be sexually active. This finding is in line with studies conducted in Ibadan, South-West Nigeria, by Oladeji et al and Okunola et al, and in Ghana, where a significant association was found between exposure to media contents and a history of sexual intercourse among adolescents.^{28,29,55} Another study among regions of sub-Saharan Africa, as well as in Korea, reported a significant positive association between exposure to harmful media with adult content and engaging in sexual intercourse among adolescents.^{16,24} The finding in this study can be attributed to the fact that sexually explicit media like romantic movies, pornography and other types of media with sexual contents encourage adolescent sexual activities by heightening their curiosity, inciting sexual provocation and impulsiveness making them want to experiment what they have watched or seen.

In the current study, substance use was found to be statistically significant and 68.2% of the respondents who used substances were more likely to engage in sexual intercourse. This result is consistent with findings from a study by Nwagu et al in Enugu Nigeria, who found a statistical significance between alcohol, drug usage and sexual intercourse among adolescents.⁷⁷ Also in agreement with the present study was a study among in-school adolescents from five sub-Saharan countries, where substance use was strongly associated with sexual intercourse among the adolescent respondents.⁷¹ A survey among Korean adolescents also reported a significant association between substance use and engaging in sexual intercourse.⁷⁸ The finding in this study can be attributed to the inhibition conflict theory and alcohol Myopic theory which suggests that there is lowered inhibition which conflicts with an individual's desire, perception limitation along with narrowed focus of attention while under the influence of psychoactive substance especially alcohol which increases the likelihood to have sexual intercourse.²⁵

Having information about sexuality was found to be statistically significant. This outcome is in tandem with a qualitative study by Odii et al in South eastern Nigeria, who observed a positive association between having information about sexuality and engaging in sexual activities among the adolescent respondents.³³ The reason for this may be attributed to religious and societal norms as parents hesitate to provide sex education to their children which may be due to either parents being uncomfortable or unwilling.^{33,79}

In the present study, sexual abuse was statistically significant among the respondent and those with a history of sexual abuse had a 7.456 higher odds of sexual initiation than those without a history of sexual abuse. A qualitative study in Plateau State Nigeria, reported that adolescents attained sexual debut following sexual abuse.⁸⁰ In Rivers State Nigeria, as well as the USA, a significant association was also found between forced sexual intercourse and engaging in sexual intercourse for the first time among adolescents.^{37,38} In this study, peer influence was found to be statistically significant. Study participants with peer influence were more than three times more likely to engage in sexual intercourse. This is comparable to a study of by Durowade et al who reported a statistical significance between peer influence and sexual initiation.²³ The finding in this study may be due to the fact that outside the home environment the behaviour of adolescents are greatly influenced by their peers and those who have friends who are already sexually experienced, discuss frequently about sex and have a higher likelihood of engaging in the sexually norms practiced by their peers in a bid to belong.⁵⁰ A European study also reported that adolescents who had friends or perceived that their friends have ever had sex were more likely to engage in sexual intercourse.²² Same results were also upheld in Sao Paulo Brazil by Arruda and his Oteam of researchers.⁸¹ The reason for this may be attributed to the belief by adolescents that engaging in sexual practices increases their social status and respect among peers and is often perceived as an official group membership "stamp".⁷⁵

CONCLUSION

In this study, sexual behaviour among the respondents focused on their engagement in sexual intercourse and a prevalence of 36.5% was found among adolescents attending co-educational public secondary schools in Uyo

Local Government Area, Akwa Ibom, which is high. This is particularly of major concern as it's associated with significant mortality and morbidity from consequences of engaging in such behaviours. The predictors of sexual behaviour among them include; being in an intimate relationship, the presence of poor parental monitoring, family dysfunction, having a history of substance use and sexual abuse, peer and media influence, and not having information on sexuality. This shows that there is a need for age appropriate, socially and culturally acceptable sex education (both abstinence only and comprehensive sex education) to be included as part of the curriculum in secondary schools to increase knowledge and target positive change in sexual behaviours among adolescents. Parents should be encouraged to play a pivotal role in providing information regarding safe sex education to their children and wards because where none is available, they rely on their peers and the internet which may disseminate wrong information. Effective parental monitoring, communication and support, as well as positive role modelling should be encouraged among parents/guardians and their wards.

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