Prevalence and Predictors of Early Sexual Debut among Adolescents in Ogbomoso, Nigeria

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Abstract Background: Adolescent sexuality is an important subject of social concern because of its connection to negative outcomes like adolescent pregnancy and sexually transmitted infections. The timing of an adolescent's first sexual intercourse is thus a key variable affecting those negative outcomes. This study thought to determine the prevalence and predictors of early sexual debut among never-married adolescents in Ogbomoso, South-Western Nigeria. Methods: It was a cross-sectional study carried out between January and March 2016. Data was collected from a total of 447 never-married adolescents between 16 and 19 years using semi-structured interviewer administered questionnaires. Data was analyzed in SPSS version 20. Descriptive, bivariate and multivariate logistic regression analyses were performed. Results: About a quarter (26.80%) of the adolescents were sexually active with mean age at sexual debut of 15.80 in girls and 15.40 years in boys. An average of 18.60% had experienced sexual debut before their 15th birthday, 16.60 % in boys, and 20.20% in girls. Polygamous family setting, peer sex education, alcohol use, and poor reproductive health knowledge were predictors of early sexual debut. Conclusion: The study concluded that early initiation of sexual debut is high among study participants that have initiated sex. Religiosity and good social behavior were found to be protective against early sexual debut. Therefore, there is the need to ensure effective programmes that will built upon the understanding of those factors associated with an increased likelihood of an early sexual debut.

Keywords: prevalence, predictors, early sexual debut

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1. Introduction

An adolescent is defined by the World Health Organization (WHO) as a person aged 10 to 19 years [1]. Adolescence is a progression from the appearance of sexual characteristics to sexual and reproductive maturity; development of adult mental processes and adult identity and a period of transition from total socioeconomic dependence to relative independence [2].

Adolescent sexuality continues to be an important subject of social concern because of its connection to negative outcomes like adolescent pregnancy and sexually transmitted infections. The timing of an adolescent's first sexual intercourse is thus a key variable affecting those negative outcomes. Research has shown that adolescents who initiate sex at younger ages may be at increased risk for unintended pregnancy because they are less likely to practice effective contraception [1,2].

In addition, the early sexual debut is associated with an increased risk of sexually transmitted infections (STI) [2,3,4]. Some research shows the likelihood of giving birth as a teenager or of contracting STI is three times higher for those who had their sexual debut before age 16 compared to those who did not [2,5,6,7]. This was also corroborated by findings in a review aimed to assess the effect of age at the time of first sexual intercourse (coitarche) on the health of adolescent girls which showed that a young age at sexual initiation can lead to increase risky sexual behavior.

In 2007, 45% of all HIV infections occurred among the youths aged 15-25 years [3]. Worldwide, an estimated 12-14 million adolescent pregnancies occur each year in the developing world, and in sub-Saharan Africa, between 10% and 79% of all births to women below 20 years of age are reported to be mistimed or unwanted [4].

In Nigeria, over 35 million people are aged 10-19 years, making sexual abstinence among adolescents a critical preventive strategy against human immunodeficiency virus (HIV) infection in a country where 3% of 15- to 19-year-olds are HIV positive [5]. From an international perspective, any study on the sexual health of Nigerian adolescents is of significance to sub-Saharan Africa, as a third of African adolescents live in Nigeria and the country's birth rate among adolescents is one of the highest in the world [6]. About 1 million births per year in Nigeria are to teenage mothers, and abortion complications are responsible for 72% of all deaths among teenagers aged under 19 years [8].

In 2013, approximately 20% of women in Nigeria were sexually active by age 15, and the median age for first sex stood at 17.7 years for women and 20.6 years for men [9]. In Nigeria, previous studies have validated the observation that sexual activity among unmarried adolescents and young adults is on the rise [10,11,12].

Previous studies attribute variations in adolescent sexual risk behaviors to social class, future aspiration, academic and social self-perception, depressed moods, family connection, gender, alcohol, drug abuse and ethnicity [2,3,6-14]. In particular, high scores of parental monitoring, future aspirations, academic self-concept and low scores of depressed moods were found to be protective factors against early sexual debut [14].

Perceptions of peer sexual behavior are also predictive of individual behavior. The youths who believe that their friends are sexually active are more likely to have initiated sex and have more partners compared to the youths who perceived that their friends are not sexually active [15,16].

Previous studies in Nigeria on age at sexual initiation in adolescents have put the mean age at sexual debut at 14.1 for males and 13.4 for females [1], respectively. A young age at coitarche can lead to subsequent risky sexual behavior. Girls who have coitarche when they are 14 years old or younger are less likely to use contraception on this occasion, take more time before they start using contraception in subsequent sexual relations, are more likely to have several sex partners, have a higher risk for depression, have lower self-esteem and more episodes of repentance, and have a higher risk for a sexually transmitted disease and cervical cancer [7].

Increasing adolescent age at sexual debut has been at the center stage of most interventions in Sub-Sahara Africa [8,11,12].

This present study, therefore, aims at determining the prevalence as well as predictors of early sexual debut among adolescents in Ogbomoso, Nigeria. This can help policymakers in the provision of interventions targeted at increasing age at sexual debut.

2. Methodology

This cross-sectional study was conducted in selected schools of Ogbomoso Municipality from January to March 2016. Ogbomoso is a semi-urban town with a projected population of 645,000 according to the 2006 national census. It has 12 public secondary schools and 8 private secondary schools. The study population consisted of secondary school never-married adolescents aged 16-19 years.

Sample size was determined using Fisher's formula and a total of 447 respondents were selected for the study using multistage sampling technique. Students who gave their consent to participate in the study and whose school authority gave us permission were recruited into the study. A semi-structured interviewer-administered questionnaire was administered to consenting adolescents. The questionnaire collected information on sociodemographic, family and peer characteristics. Information on age at sexual debut, communication with peer and parents as well as risk behaviors was collected. All the information was collected in class under the supervision of trained research assistants.

The IBM Statistical Package for Social Science (SPSS) version 20.0 was used for data entry and analysis. Descriptive analysis such as mean and standard deviation was used for quantitative variables. Frequency and percentage distribution were used for categorized variables. The chi-square test was used to assess the association between categorical variables. When the chi-square test was not appropriate, Fisher exact test was used. A p-value <0.05 was used as the cut-off level for statistical significance. Logistic regression was done to assess for predictors of the early sexual debut (i.e. sexual initiation before age 15). The age for early sexual debut was taken as 15 years in this study because previous studies were done in the country by Duru et al., [1], Olugbenga- Bello et al., [17] reported mean age at sexual initiation to be 15.08 (±0.2) and 15.2(±)years respectively.

Reproductive Health knowledge score was created by adding all correct answers to 14 questions in the areas of pregnancy, contraception, HIV/AIDS transmission and treatment, and prevention of STIs. A correct response was scored as one point while a wrong answer was scored as zero. The scoring range of the questionnaire was 14 (highest) to 0 (lowest). The mean score was determined and used as cut off. A score below the mean was considered as poor whereas a score equal to or above the mean was considered as good reproductive health knowledge. Knowledge scores for individuals were calculated and summed up to give the total knowledge score. The mean score was 8; scores below 8 were poor knowledge, and scores between 8 and 14 were rated good knowledge of sexual and reproductive health issues. Religiosity was assessed by asking whether religion is important to them, and frequency of attendance at religious congregational services. Those who declare religion as " very important " and attended religious services at least once a week was described as very religious for ease of analysis.

The research protocol was approved by the Research Ethics Review Committee of the Bowen University Teaching hospital, Ogbomoso. Permission for the study was obtained from school authorities of the respective schools used for the study. Informed consents (written) was obtained from the parents and verbal assents from the participants. The confidentiality of the information was maintained by assigning identification numbers to each questionnaire and data entered was secured with a password.

3. Results

3.1. Socio-Demographic Characteristics of the Respondents

A total of 447 respondents were recruited into the study (199 boys and 248 girls). The mean age of boys was 16.20 ±2.4years that of girls was 15.70± 3.2years. The majority of the respondents (96.2%) were of Yoruba ethnicity. Christianity was the most predominant religion (88.9% of the boys and 87.3% of the girls. About 74% of the boys and 77% of the girls were religious. There were no statistically significant differences between males and females socio-demographic characteristics except for their class in school. (Table 1)

3.2. Sexual Debut, Parental Interaction and Adolescent Sexual Behavior

More than a quarter (26.84%) of the adolescents were sexually active. The mean age at sexual debut was 15.80±1years in girls and 15.40±3 years in boys. An average of 18.60% had experienced sexual debut before their 15th birthday, 16.60 % in boys, and 20.20% in girls. About 18% and 12% of the sexually active boys and girls respectively used the condom at their sexual debut. More than three-quarter of the respondents (87.9% of the boys and 81.5% of the girls) live with their parents. Communications about sex-related issues occurred more between peers outside the family (48.2% of the boys and 45.2% of the girls) compared to within the family (24.1 % of the boys and 32.7% of the girls).About half (49.70 %) of the male respondents ever party and 48.20% used alcohol while only 35.2% of the female respondents ever party and less than 20% ever used alcohol. There is a statistically significant difference in parenteral communication about sex, ever use alcohol, ever party and media exposure between males and females.

Table 1. Socio-Demographic Characteristics of the Respondents

Variables	Males (199)	Females (248)	Total (447)	Statistical indices
Class				
SS1	42(21.10)	75(30.20)	117(26.27)	χ^2=8.09 df=2 P= 0.017
SS2	99(49.80)	92(37.10)	191(42.73)	
SS3	58(29.10)	81(32.70)	139 (31.00)	
Tribe				
Yoruba	191(96.00)	239(96.40)	430(96.20)	χ^2=0.91 df=2 P= 0.8719*
Igbo	7(3.50)	7(2.80)	14(3.13)	
Hausa	1(0.50)	2(0.80)	3(0.67)	
Religion				
Christian	177(88.90)	219(87.30)	396(88.59)	χ^2=0.30 df=2 P= 0.2904*
Islam	20(10.30)	29(12.70)	49(10.96)	
Traditional	2(0.80)	0(0.00)	2(0.45)	
Religiosity				
Yes	149(74.90)	191(77.00)	340(76.06)	χ^2=0.189 df=1 P= 0.664
No	50(25.10)	57(23.00)	107(23.94)	
Both parents alive				
Yes	185(93.00)	237(95.60)	422(94.41)	χ^2=1.410 df=1 P= 0.235
No	14(7.00)	11(4.40)	25(5.59)	
Live with parents				
Yes	175(87.90)	202(81.50)	377(84.35)	χ^2=3.519 df=1 P= 0.061
No	24(12.10)	46(18.50)	70(15.65)	

*fishers Exact.

Table 2. Sexual debut, parental interaction, and adolescent sexual behavior

Variables	Males (199)	Females (248)	Total 447	Statistical indices
Ever had sex				χ^2=0.115 df=1 P=0.735
Yes	55(27.60)	65(26.20)	120(26.84)	
No	144(72.40)	183(73.80)	327(73.16)	
Mean age at first intercourse	15.4±3 years	15.8±1 years		
Sex before age 15				χ^2=0.935 df=1 P=0.334
Yes	33(16.60)	50(20.20)	83(18.56)	
No	166(84.40)	198(79.80)	364(81.44)	
Family communication about sex				χ^2=3.923 df=1 P= 0.048
Yes	48(24.10)	81(32.70)	129(28.85)	
No	151(75.90)	167(67.30)	318(71.15)	
Peer communication about sex				χ^2=0.421 df=1 P= 0.516
Yes	96(48.20)	112(45.20)	208(46.54)	
No	103(51.80)	136(54.80)	239()53.46	
Family setting				χ^2=0.1171 df=1 P= 0.679
Monogamous	159(79.90)	202(81.50)	361(80.76)	
Polygamous	40(20.10)	46(18.50)	86(19.24)	
Ever use alcohol				χ^2=42.188 df=1 P <0.001
Yes	96(48.20)	48(19.40)	144(32.21)	
No	103(51.80)	200(80.60)	303(67.79)	
Ever smoke cigarette				χ^2=2.45 df=1 P= 0.118
Yes	23(11.60)	18(7.30)	41(9.18)	
No	176(88.40)	230(92.70)	406(90.82)	
Ever Party				χ^2=9.777 df=1 P= 0.002
Yes	99(49.70)	87(35.10)	186(41.60)	
No	100(50.30)	161(64.90)	261(58.40)	
Media exposure				χ^2=33.928 df=1 P<0.001
Yes	167(83.90)	145(72.90)	312(69.79)	
No	32(16.10)	103(27.10)	135(30.21)	
Condom used at first intercourse	n= 55	n= 65	N= 120	χ^2=0.806 df=1 P=0.369
Yes	10(18.20)	8(12.30)	18(15.00)	
No	45(81.80)	57(87.70)	102(85.00))	

Table 3. Knowledge of respondents on Sexual and Reproductive issues

Variables	Males 199 (%)	Females 248 (%)	Total 447 (%)
A woman can get pregnant at first intercourse	84(42.20)	128(51.60)	212(47.40)
Pregnancy is most likely to occur at mid-cycle	100(50.30)	102(41.10)	202(45.20)
Awareness of condom and supply source	156(78.40)	131(52.80)	287(64.20)
Awareness of emergency contraceptive and supply source	120(60.30)	125(50.40)	245(54.80)
Agree that condom effectively protects against pregnancy	125(62.80)	131(52.80)	256(57.30)
Awareness of other methods of contraception and supply source	110(55.30)	98(39.50)	208(46.50)
Ever seen a condom	94(47.20)	54(21.70)	148(33.10)
Knowledge score			
Good(≥8)	77(38.690)	103(41.53)	180(40.30)
Poor(>8)	122(61.310)	144(58.47)	267(59.70)

Table 4. Association between selected factors and Early sexual debut

Variables	Early sexual debut(83)	Not early sexual debut(364)	Statistical Indices
Sex			χ^2=0.935
Male	33(39.76)	166(45.60)	df=1
Female	50(60.24)	198(54.40)	P=0.334
Religiosity			χ^2=165.520
Yes	18(21.69)	322(88.46)	df=1
No	65(78.31)	42(11.54)	P<0.001
Sex education at home			χ^2=10.296
Yes	12(14.46)	117(32.14)	df=1
No	71(85.54)	247(67.86)	P=0.001
Peer sex education			χ^2=12.294
Yes	53(63.86)	155(42.58)	df=1
No	30(36.14)	209(57.42)	P< 0.001
Family setting			χ^2=137.727
Monogamous	29(34.94)	332(91.21)	df=1
Polygamous	54(65.06)	32(8.79)	P< 0.001
Alcohol use			χ^2= 70.520
Yes	59(71.08)	85(23.35)	df=1
No	24(28.92)	279(76.65)	P< 0.001
Cigarette Smoking			χ^2= 47.691
Yes	24(28.92)	17(4.67)	df=1
No	59(71.08)	347(95.33)	P< 0.001
Knowledge of reproductive health			χ^2= 8.026
Good	22(27.00)	158(43.41)	df=1
Poor	61(73.00)	206(56.59)	P = 0.005

3.3. Knowledge of Respondents on Sexual and Reproductive Issues

The mean knowledge score for participants was 8. Based on the mean knowledge score, (40.3%) had adequate knowledge about sexual and reproductive health issues while (59.7%) were within the poor knowledge range. Only 47.4% of the respondents know that pregnancy can occur at first sexual intercourse while less than half of the respondents know that pregnancy is most likely to occur at mid-cycle. Fifty –seven percent of the respondents were aware of condom as a means of preventing pregnancy, sexually transmitted infections (STIs) and HIV and about a two-thirds were also aware of the supply source (Table 3).

3.4. Association between Selected Factors and Early Sexual Debut

There was a statistically significant association between religiosity, sex education at home, peer sex education, family settings, alcohol use, cigarette smoking, knowledge of reproductive health issue, and early sexual debut in among respondents. Those respondents that were religious have higher tendency to delay sexual initiation beyond their 15th birthday compare to their less religious

counterparts (χ^2=165.520, df=1, P<0.001). Communication at home about sex was significantly associated with increasing age at sexual debut (χ^2=10.296, df=1, P=0.001), while peer communication outside of the home about sex is strongly associated with early sexual debut among respondents (χ^2=12.294, df=1, P< 0.001). Alcohol use and poor reproductive health knowledge were other factors that were strongly associated with predisposition towards early sexual debut. (Table 4)

3.5. Predictors of early sexual debut among respondents.

Logistic regression analysis was done to determine predictors of early sexual debut among respondents. Females were almost twice more likely to have early sexual initiation compared with their male counterparts (OR 1.55, CI 1.52-2.13). Respondents that are religious were 58% less likely to be involved in early sexual debut compared to their counterparts who were not (OR 0.58, CI 0.43-0.64). Respondents that had sex education with their parents at home were 45% less likely to initiate sex early compared to their counterparts who do not have sex education at home.(OR 0.45, CI 0.26-0.54). Respondents that had peer education are twice more likely to initiate sex early compared to their counterparts who were not.

(OR 1.57, CI 1.24-2.39). Respondents from polygamous setting were twice likely to initiate sex early compare with their counterparts who were not.(OR 2.62, CI 1.70-2.79). Respondents that take alcohol were two times more likely to be involved in early sexual debut compared to their counterpart who were not (OR 2.35, CI 2.12-4.65). The respondent who smokes cigarette were three times likely to initiate sex early compared to their counterparts who were not. (OR 2.78, CI 2.38-3.85). Respondents that have good knowledge of reproductive health issues were 82% less likely to initiate sex early compared to their counterparts who were not (OR 0.82, CI 0.54-0.86) (Table 5).

Table 5. Predictors of early sexual debut among respondents

Variables	Early sexual debut(83)	Not early sexual debut(364)	OR	CI	P
Sex					
Male(1)	33(39.76)	166(45.60)	1		
Female	50(60.24)	198(54.40)	1.55	1.52-2.13	0.035
Religiosity					
Yes	18(21.69)	322(88.46)	0.58	0.43-0.64	
No(1)	65(78.31)	42(11.54)	1		0.017
Sex education at home					
Yes	12(14.46)	117(32.14)	0.45		
No(1)	71(85.54)	247(67.86)	1	0.26-0.54	0.002
Peer sex education					
Yes	53(63.86)	155(42.58)	1.57	1.24-2.39	0.052
No(1)	30(36.14)	209(57.42)	1		
Family setting					
Monogamous(1)	29(34.94)	332(91.21)	1		
Polygamous	54(65.06)	32(8.79)	2.62	1.70-2.79	0.023
Alcohol use					
Yes	59(71.08)	85(23.35)	2.35		
No(1)	24(28.92)	279(76.65)	1	2.12-4.65	0.038
Cigarette Smoking					
Yes	24(28.92)	17(04.67)	2.78		0.001
No(1)	59(71.08)	347(95.33)	1	2.38-3.85	
Knowledge of reproductive health					
Good	22(27.00)	158(43.41)	0.82		
Poor(1)	61(73.00)	206(56.59)	1	0.54-0.86	0.041

4. Discussion

Adolescent sexuality is a major public health issue globally especially in the developing world where the majority of this age group lives. The mean ages at sexual debut of 15.8 years in girls and 15.4 years in boys obtained from this study were slightly lower than that of the 2013 National Demographic Health Survey (NDHS) where 17.6 years and 21.1years were quoted as mean ages at sexual debut for girls and boys respectively [9]. This probably means that age at sexual debut is decreasing in Nigeria. These findings negate the efforts of most interventions in sub-Sahara Africa that are geared towards increasing adolescents' age at sexual debut. Sexual initiation before age 15 was reported by 16.60% of male and 20.20% of female never married adolescents in this study. These values were comparable with that of 2013 NDHS report where 20% of Nigerian females were already sexually active by age 15 [9]. The higher prevalence of females engaged in early sexual debut in our study is in agreement with the finding of the United States National Academies of Science which revealed that more females compared to males report having had sex by age 18 in sub-Saharan Africa. This was in contrast to findings from Latin America and the Caribbean [24] Overall, 27.6% of male and 26.2% of female never-married adolescents (16–19 years) reported being sexually experienced in our study. These figures are consistent with those of other Nigerian studies [6,18,19,20,21,22]. Only 18.2% and 12.3% of the sexually active male and female adolescents respectively used the condom at their sexual debut. This mirror the poor knowledge of reproductive health issues that was predominant in this study and the fact that most of the sexual debut was unplanned. This result is comparable with that of previous studies [17,21]. The present finding also questions the assertion by some that females consistently underreport and males overreport their sexual activities. Likewise, an experimental study on data collection methods among unmarried adolescents in Kenya did not uncover evidence of female adolescent underreporting in face-to-face interviews when compared with the use of audio-assisted self-interview [25].

Consistent with previous reports [26,27], our study found that there is a lower tendency for adolescents with high levels of religiosity to experience early sexual initiation. The use of alcohol and cigarette smoking were strong predictors of early sexual debut in our study. Association between sexual engagement and alcohol use has been reported in numerous adolescent studies in different parts of the world including in the United States [28], the Caribbean [29], and Japan [30] whereas very little focus has so far been given to such relationship in the Nigerian environment. The repeated observations of the association between adolescent sexual initiation and alcohol use are in agreement with Jessor's cluster of risk behaviors among adolescents [31,32.] Conventionality-

unconventionality has been conceptualized as a dimension underlying and summarizing an orientation towards, commitment to, and involvement in the prevailing values, standards of behavior, and established institutions of the adult society [32]. In general, greater conventionality is associated with greater involvement in health-maintaining behaviors whereas greater unconventionality relates to less involvement in health-maintaining behavior and greater involvement in health-risk behaviours.

In our study, monogamous family settings; and parental communication about sex -related issues at home strongly influence delay in first sexual intercourse. The factors listed above enhance parental monitoring which has been shown to influence delay in sexual initiation from previous studies [33,34,35]. Whether or not there are programs that work best to increase parental involvement in reducing risky behaviors among adolescents in Nigeria and other African countries is unclear.

Findings from this study should be interpreted in light of some limitations. First, it is a cross -sectional study and this limit causal conclusion. In addition, the study relied on self-reported information on sexual debut, which is subject to bias. Finally, our dependent variable—early sexual debut—is problematic to objectively define, as one would wonder how young is too early?

Nevertheless, our findings have significant implications for adolescent sexual and reproductive interventions in Nigeria since abstinence still constitutes a primary pillar in the prevention of HIV, other sexually transmitted infections, and teenage unwanted pregnancy. Among other strategies, health education and behavior change communication programmes targeting young people in Nigeria need to consider how the issues of myths, wrong information, and poor attitude to such simple but critical interventions such as condom use impact behavior. Additionally, the role of religiosity raises the question of the potential influence of the faith community in promoting adolescent sexual health.

5. Conclusion

This study concluded that early initiation of sexual debut is high among study participants that have initiated sex. The study also finds that most of the first sexual intercourse was unprotected because they were not planned. Religiosity and good social behavior were found to be protective against early sexual debut. Therefore, there is the need to ensure effective programmes that will reach those who are most vulnerable. To be effective such programmes must be built upon the understanding of those factors associated with an increased likelihood of an early sexual debut.

Competing Interests

The authors declare that they have no competing interests.

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Disclosure Statement

None of all authors.

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