



## Predictors of Early Sexual Debut and Its Implications among Adolescents in Kintampo, Ghana: A Cross Sectional Survey

Ellen A. Boamah-Kaali<sup>1\*</sup>, Kwaku Poku Asante<sup>1</sup>, Grace Manu<sup>1</sup>,  
Elisha Adeniji<sup>1</sup>, Emmanuel Mahama<sup>1</sup>, Emmanuel Kwesi Ayipah<sup>1</sup>  
and Seth Owusu-Agyei<sup>1</sup>

<sup>1</sup>Kintampo Health Research Center, Ghana Health Service, Ministry of Health, Post Office Box 200, Kintampo Brong Ahafo Region, Ghana.

### Authors' contributions

This work was carried out in collaboration between all authors. Authors EABK, KPA and SOA designed the study. Author EABK wrote the protocol and wrote the first draft of the manuscript. Authors GM and EKA collected and managed the qualitative data. Author EA managed the quantitative data. Author EM analyzed the quantitative data. All authors read and approved the final manuscript.

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### ABSTRACT

**Aims:** The aim of this study is to understand the factors that influence early sexual debut among adolescents in order to devise appropriate strategies to delay first sex as a crucial element for adolescents' sexual health.

**Study Design:** Across-sectional survey was conducted among adolescents aged 15 to 19 years.

**Place and Duration of Study:** The study took place in the Kintampo Municipality and South District of Ghana from October 2010 to March 2011.

**Methods:** Male and Female adolescents aged 15 to 19 years participated in the study. The study employed both quantitative and qualitative data collection methods. Eight Focus Group Discussions were held among 96 of the adolescents.

**Results:** A total of 793 adolescents participated in the study at a response rate of 100%. About 40% of adolescents interviewed had initiated sex. Median age at first sex was 14.5 years. Majority (72.1%) of adolescents initiated sex between ages 15-17 years. Almost all predictor variables

\*Corresponding author: Email: [ellen.boamah@kintampo-hrc.org](mailto:ellen.boamah@kintampo-hrc.org);

explored were significantly associated with early sexual intercourse initiation. Females were five times more likely to initiate sex, compared to males with an adjusted OR of 5.06, (95% CI:3.28-7.78;  $P<.001$ ). Adolescents who resided with a single parent were two times more likely to initiate sex, compared to adolescents who lived with both parents with an adjusted OR of 2.22, (95% CI: 1.40-3.51;  $P<.001$ ). Adolescents who did not take alcohol were less likely to initiate sex early, compared to those who did with adjusted OR of 0.21(95% CI:0.08-0.58  $P<.001$ ).

**Conclusion:** Majority of adolescents had initiated sex. Sexual initiation among adolescents was more likely among females compared to their male counterparts. Various socio-cultural factors contribute to early sexual initiation. There is the need for education on sex, pregnancy and related issues among adolescents in the area.

*Keywords: Early sexual debut; adolescents; sex and sexuality; sexual health; Kintampo; Ghana.*

## 1. INTRODUCTION

Sex before marriage is not encouraged in most cultural settings in Ghana [1]. The existing religious, cultural and social system limits discussions on sexuality and act of coitus to only married adults [2,3]. Adolescents are limited in their ability to discuss sex-related issues with adults [3] who are more likely to provide them with experiential and reliable information. Rather, they tend to discuss such issues with their peers who are without experience and similarly vulnerable [4].

Though adolescents are expected to be less sexually active because they are young, several studies report high early sexual debut among adolescents [5-11]. Early sexual intercourse among adolescents especially girls, predisposes them to a host of physical, emotional and other social risks that can negatively impact their general wellbeing [12]. Adolescents who have sex at an early age have elevated risks of increased life time sexual partners and their exposure to risks of sexually transmitted infections, unwanted pregnancies and abortions becomes long [13]. Early sex heightens the risk of Human Papilloma virus infection and subsequently, cervical cancer [14] among female adolescents.

Several factors may be associated with early initiation of sex among adolescents. Inclusive of these are adolescent's personal beliefs, alcohol use, their social and demographic characteristics, living arrangement and parenting characteristics and peer pressure among others [15-20]. Understanding the factors that influence early sexual debut among adolescents and devising appropriate strategies to delay first sex is crucial for adolescents' sexual and reproductive health [21].

This paper uses data from a survey that assessed knowledge, sexual behaviours and

contraceptive use, among adolescents in the Kintampo districts of Ghana, to evaluate the factors associated with early initiation of sexual intercourse amongst adolescents as evidence to develop appropriate interventions for adolescent sexual health programmes in Kintampo.

## 2. METHODS

### 2.1 Survey Design

Between October 2010 and May 2011, cross-sectional survey was conducted among adolescents aged 15 to 19 years to assess the knowledge, sexual behaviours and contraceptive use among adolescents. The study used both quantitative and qualitative data collection techniques.

### 2.2 Study Area Description

The survey took place in Kintampo Municipality and Kintampo South District of Ghana. These are two adjoining political administrative districts and span an area of approximately 7200 square kilometres. The study area has a resident population of about 140,000 made up of 51% females and 49% males [22]. Eighty percent of communities in the study area is rural. The Kintampo area is multi-ethnic but Akans (54%) are the most dominant. Literacy rate is low in the study area; 48.6% males and 55.2% females have had some form of formal education. However, more than 70% of both male and female adolescents are in school [22]. Adolescent Sexual health programs are limited in the study area [23,24].

### 2.3 Sample Size and Sampling Procedure

A total of 793 adolescents aged 15 to 19 years of age were randomly sampled using STATA version 11.0 (Stata Corp LP, College Station, TX USA) from Kintampo Health and Demographic Surveillance System (KHDSS) database of all

adolescents in the study area. The adolescents aged 18 years and above gave their consent prior to their enrolment into the study. Parental consent was sought for adolescents less than 18 years of age.

## 2.4 Sample Size Calculation

This work is part of a study that assessed the knowledge, sexual behaviours and contraceptive use among adolescents in the Kintampo area [23]. The sample size used for this survey was calculated based on the prevalence of contraceptive use among adolescents in the Kintampo area. We estimated a 19% contraceptive prevalence among adolescents in the Kintampo area of Ghana with 80% statistical power and 95% confidence limit, a total of 789 adolescents was required for the study. For this paper, prevalence of early sexual initiation was assumed to be 14%. With a power of 80% and 95% confident limits, at least a sample size of 400 adolescent was needed.

## 2.5 Instruments

Both structured questionnaires and Focus Group Discussion guides were used for data collection. These tools benefited from the one developed jointly by the United Nations Development Program, the United Nations Population Fund, the World Health Organisation and the World Bank purposely designed for collecting adolescent's sexual and reproductive health data [25]. The tools were adapted and pretested in the study area prior to their use for data collection.

## 2.6 Data Management and Analysis

All source documents were checked for consistency and accuracy and double-entered into a password-protected database in Microsoft FoxPro. STATA version 11 was used for data analysis. The association between the independent (Socio-Demographic characteristics of adolescents, personal beliefs and practices) and dependent variables (early sexual debut) was explored using the odds ratio and the Pearson Chi squared test. Univariate and multivariate logistic regressions have been used to determine the predictors of early sexual debut among adolescents.

QSR NVivo qualitative analysis software (version 9; QSR International Pty Ltd, Doncaster, VIC Australia) was used for the qualitative data analysis.

## 3. RESULTS

### 3.1 Demographic Characteristics of Adolescents

Seven hundred and ninety three adolescents, made up of 43.0% males and 57.0% females were interviewed (Table 1). The mean age of the respondents was 16.9 years. All adolescents interviewed responded to all questionnaires administered, resulting in a 100% response rate. Almost all (97%) adolescents interviewed had acquired some levels of formal education with majority (84.3%) completing primary school education (Table 1). Fifty-seven percent of adolescents were living with both parents during the interview (Table 1).

**Table 1. Demographic characteristics of male and female adolescents, Kintampo, (2011)**

Variables (N=793)	Frequency (%)
<b>Sex</b>	
Males	342(43.1)
Females	451(56.9)
<b>Age group</b>	
15-17 years	491(61.9)
18-19 years	302(38.1)
<b>Formal education</b>	
Yes	783(98.7)
No	10(1.3)
<b>Educational level</b>	
None	10(1.3)
Primary/JHS	668(84.3)
SHS and beyond	115(14.5)
<b>Religion</b>	
Christianity	628(79.2)
Islam	136(17.2)
Traditional/Other	29(3.6)
<b>Ethnicity</b>	
Akan	303(38.2)
Mo	173(21.8)
Dagarti/Frafra	131(16.5)
Other	186(23.5)
<b>Living arrangement</b>	
Both parents	452(57)
One parent	193(24.3)
Other relative/Guardian	113(14.3)
Other	35 (4.4)
<b>Marital status</b>	
Married	6(0.8)
Living together	10(1.3)
Unmarried	776(97.9)

### 3.2 Age at First Sex, Pregnancy, Abortion and Births among Adolescents

About 40% (315/793) of adolescents who participated in the survey had initiated sexual intercourse. Males accounted for 25.1% (79/315) and females; 74.9% (236/315). Table two describes the age of first sexual encounter among adolescents, pregnancy, abortion and live births ever experienced by them. Among all the adolescent who had initiated sex, 15.9% had had sex by age 14 (Table 2). A greater proportion (71.4%) had their sexual debut between ages 15 to 17 years. The rest, 12.7% had their first sexual intercourse between 18 to 19years (Table 2). Most of the pregnancies recorded were among adolescents who initiated sex between ages 15 to 17years. High levels of abortion were recorded across all age groups.

### 3.3 Reasons for Early Sexual Initiation

Adolescents gave several reasons during the Focus Group Discussions on why they engage in early and premarital sex. While some adolescents had sex to satisfy their natural urge, *"it comes by nature, so we can't control it. Whenever our feelings come, we have to have sex with the ladies"* (a seventeen year old male), others did it for financial support; *"for money. The girls have sex with the men to get financial support from the man so that they can use the money to buy food and other things that they need because, their parents cannot provide everything (18 year old male)*; others also did it out of ignorance, misinformation and pressure from friends *"Sex makes you feel like a woman and sometimes it makes the girls grow faster"* (16 year old female).

Even though parents discourage adolescents from involving themselves in premarital sex, it is not enough reason for them to abstain as said by a seventeen year old adolescent male; *"For me, my father does not encourage it. He says I am a child and that I can rather get married when I get a bit older. He discourages it but I still have a girlfriend"* (a seventeen year old male).

### 3.4 Predictors of Sexual Intercourse among Adolescents

Being a male or female, was significantly associated with early sexual intercourse initiation ( $P<.001$ ). Female adolescents were five times more likely to have early sexual intercourse compared to males with an adjusted [OR=5.06;

(95% CI: 3.28-7.78)  $P<.001$ ] (Table 3). Age was a significant predictor of early sexual initiation among adolescents. Adolescents aged 18 to 19 years had 4.0 times the odds of having sex compared to adolescents aged <15 to 17 years. Adjusted OR=4.0 [(95% CI: 2.62-6.29)  $P<.001$ ] (Table 3).

Adolescents' living arrangement was another important predictor of early sexual intercourse amongst them. Adolescents who lived with single parents were more likely to initiate sex early compared to those who lived with both parents. Adjusted OR= 2.22 [(95% CI: 1.40-3.51)  $P<.001$ ].

There was no significant difference in the odds of early sexual initiation between adolescents who discussed sex related issues with their parents or guardians and those who did not. Adjusted OR=1.46 [(95% CI: 0.79-2.67)  $P=.21$ ] (Table 3).

Premarital sexual compatibility assessment was a significant predictor of whether adolescents will have early sex or not. From Table 3, adolescents who believed that boys and girls should not have sex to assess their sexual compatibility before marriage were less likely to initiate sex, compared to those who believed otherwise. OR=0.61 [(95% CI: 0.4-0.93)  $P<.001$ ] (Table 3).

Alcohol use was an important predictor of early sex among adolescents. In Table 3, Adolescents who did not drink alcohol were less likely to indulge in early sex compared to those who did. Adjusted OR=0.21 [(95% CI: 0.08-0.58)  $P<.001$ ].

## 4. DISCUSSION

Our study shows an appreciable number of adolescents in the Kintampo area are actively involved in sex. This finding confirm similar findings reported in other studies conducted in other parts of Ghana and other African countries [1,2,7,15]. Early sexual initiation is a public health challenge, because it leaves adolescents more at risk of getting Sexually Transmitted Infections, unwanted pregnancies associated with poor health outcomes for both mother and child, abortion and abortion-complications among others [26-28]. More than 80% of sexually active adolescents had had sex by age 17. The average age at first sexual experience was 14.5 years. This implies that they will be exposed to risk factors of early sexual intercourse such as unwanted pregnancies, abortion amongst and abortion complications amongst others for prolonged periods. Consequently, high levels of

pregnancy were recorded in this survey. About a third of all sexually active adolescents had experienced pregnancy. The occurrence of pregnancy was comparatively higher among the adolescent who initiated sex very early (i.e. by age 14). Although only 15% of the adolescents who initiated sex between ages 18-19 years ever got pregnant, it is surprising that half of all the pregnancies that occurred were aborted. The fact that most of adolescents aborted their pregnancies means that they were not prepared for babies yet and if these were unsafe abortions, adolescents may face untoward repercussions.

Several reasons may explain why adolescents initiate sex early. Almost all the predictors explored; sex, age, living arrangements, believe systems, religion, ethnicity, clubbing, alcohol use among others, were significantly associated with early sexual debut.

More females than males in this study had initiated sex. This is similar to the findings from most adolescent studies. Glover et al. [7] documented in their study that, females had 1.6 the odds of having sex compared to their male counterparts [8]. Agyei and his colleagues also found a higher percentage (78%) of sexually active females in their study, compared to their male counterparts (67%) [7]. Karim et al. [8] found comparable scenarios; as 41% of females in their study had initiated sex compared to 36% of their male counterparts. More females initiate sex earlier probably because, there is documented fact that age at first marriage has always been lower for females compared to males in Ghana [29].

Another significant predictor of early sexual debut among adolescents is their living arrangement. Adolescents who lived with both parents were more likely to delay sex compared to those with other living arrangements. Similar to this finding are observations by Davis and Friel and Santelli et al. [30,31] both studies concluded that, adolescents who live with both parents are

more likely to initiate sex later compared to those with other living arrangements. Adolescents who live with both parents delay sex because both parents tend to monitor them and limit how often they leave home [32].

Adolescent's personal characteristics and believe system is also associated with their sexual initiation. Various religious groups prescribe sex only within marriage settings. In effect, young adults especially females, are expected to remain virgins until marriage. However, modernisation and education have altered this expectation [29]. Most adolescents in this study did not think that girls should remain virgins until marriage. As a result, the adolescents who believed that they shouldn't remain virgins until marriage were more than five times likely to have sex compared to the others who had this believe. It is not clear whether adolescents shared this opinion because they had already initiated sex or that, their believe system encouraged them to have sex. This finding is contrary to the findings from a survey of 1,038 adolescents in Ghana by Awusabo-Asare et al., where about 50% of the adolescents interviewed believed that chastity is the ideal to attain and, believed that it was achievable. However, even with this believe, 42% of the males and 15% of the females in that survey had had sexual intercourse [1].

Another important predictor of early sexual intercourse among adolescents is alcohol use. Among the adolescents interviewed those who drunk alcohol had higher odds of having sex compared to those who did not. This reflects the findings of Li et al. [16] who also found alcohol use as a predictor for sexual intercourse among adolescents. Graves and Leigh also had similar findings in their study [32]. Alcohol and drugs are perceived to obstruct judgment and impede decision making [33]. Drinking alcohol limits the ability for self-control and increases vulnerability to risky behaviours like unsafe sexual intercourse [34,35].

**Table 2. Age at first sex, pregnancy, abortion and births among adolescents in Kintampo, 2011**

<b>Variables N (315)</b>	<b>Male and Female adolescents n (%)</b>	<b>Percentage ever experienced pregnancy in relationship n(%)</b>	<b>Percentage currently expecting a child n (%)</b>	<b>Percentage ever aborted pregnancy n (%)</b>	<b>Percentage ever given birth n(%)</b>
14 or below	50 (15.9)	19 (38)	3(15.8)	8(42.1)	8 (42.1)
15-17	225(71.4)	66 (29.3)	17(25.8)	21(31.8)	28(42.4)
18-19	40(12.7)	6(15)	2(33.3)	3(50)	1(16.7)

**Table 3. Univariate and multivariate Logistic regression analysis of the predictors of early sexual intercourse initiation among adolescents, Kintampo, 2011**

Variables (N=793)	Sexual intercourse yes n (%)	Sexual intercourse no n(%)	Crude OR	95% CI	P-Value	Adjusted OR	95% CI	P-Value
<b>Sex</b>								
Males	79(23.1)	263(76.9)	1			1		
Females	236(52.3)	215(47.7)	3.65	2.67-4.99	<.001	5.06	3.28-7.78	<.001
<b>Age group</b>								
< 15-17 years	135(27.5)	356(72.5)	1			1		
18-19 years	180(59.6)	122(40.4)	3.89	2.87-5.26	<.001	4.0	2.62-6.29	<.001
<b>Educational level</b>								
None	7(70.0)	3(30.0)	1			1		
Primary/JHS	238(35.6)	430(64.4)	0.23	0.06-0.92	.03	1.08	0.20-5.84	.92
SHS and beyond	70(60.9)	45(39.1)	0.66	0.16-2.71	.57	2.02	0.36-11.30	.42
<b>Religion</b>								
Christianity	263(41.9)	365(58.1)	1			1		
Islam	47(34.6)	89(65.4)	0.73	0.49-1.07		2.23	1.07-4.63	.03
Traditional Or Other	5(17.2)	24(82.8)	0.28	0.10-0.76	<.01	0.62	0.18-2.13	.45
<b>Ethnicity</b>								
Akan	167(55.1)	136(44.9)	1			1		
Mo	36(20.8)	137(79.2)	0.21	0.13-0.32	<.001	0.10	0.05-0.20	<.001
Dagarti / Frafra	50(38.2)	81(61.8)	0.50	0.33-0.76	<.001	0.64	0.36-1.15	.14
Other	62(33.3)	124(66.7)	0.40	0.27-0.59	<.001	0.23	0.11-0.46	<.001
<b>Living arrangement</b>								
Both parents	142(31.4)	310(68.6)	1			1		
One parent	102(52.9)	91(47.2)	2.44	1.73-3.45	<.001	2.22	1.40-3.51	<.001
Other relative/guardian	51(45.1)	62(54.9)	1.79	1.17-2.73	<.001	1.86	1.06-3.27	.05

Variables (N=793)	Sexual intercourse yes n (%)	Sexual intercourse no n(%)	Crude OR	95% CI	P-Value	Adjusted OR	95% CI	P-Value
Other	20(57.1)	15(42.9)	2.91	1.44-4.86	<.001	2.58	0.94-7.01	.06
<b>Discusses sex related issues with parent/guardian</b>								
Yes	46(48.9)	48(51.1)	1			1		
No	265(38.2)	428(61.8)	0.64	0.41-0.99	.04	1.46	0.79-2.67	.21
<b>Learnt about sexuality and reproductive systems of men and women</b>								
Yes	267(43.5)	48(26.8)	1			1		
No	347(56.5)	131(73.2)	0.47	0.32-0.68	<.001	0.54	0.30-0.98	.05
<b>Learnt about relationships</b>								
Yes	284(46.3)	329(53.7)	1			1		
No	31(17.2)	149(82.8)	0.24	0.15-0.36	<.001	0.35	0.19-0.62	<.001
<b>Believe that unmarried boys and girls can have sex if they love each other</b>								
Yes	201(50.0)	114(29.2)	1			1		
No	201(50.0)	277(70.8)	0.4	0.30-0.55	<.001	0.31	0.20-0.47	<.001
<b>Believe that boys and girls should have sex to assess sexual compatibility before marriage</b>								
Yes	189(44.6)	235(55.4)	1			1		
No	126(34.2)	243(65.8)	0.64	0.48-0.85	<.001	0.61	0.40-0.93	<.05
<b>Believe that girls should remain virgins till they get married</b>								
Yes	250(35.3)	458(64.7)	1			1		
No	65(76.5)	20(23.5)	5.9	3.52-10.05	<.001	6.10	2.89-12.88	<.001
<b>Respondent attends parties and</b>								

Variables (N=793)	Sexual intercourse yes n (%)	Sexual intercourse no n(%)	Crude OR	95% CI	P-Value	Adjusted OR	95% CI	P-Value
<b>club</b>								
Yes	158(45.7)	188(54.3)	1			1		
No	157(35.1)	290(64.9)	0.64	0.48-0.85	<.001	0.48	0.23-0.72	<.001
<b>Respondent drinks alcohol</b>								
Yes	36(83.7)	7(16.3)	1			1		
No	279(37.2)	471(62.8)	0.11	0.50-0.26	<.001	0.21	0.08-0.58	<.001



## 5. CONCLUSIONS

In conclusion, early sexual initiation among adolescents is prevalent in the Kintampo area. It is more common among females compared to their male counterparts. Various factors contribute to early sexual initiation. The demographic attributes of adolescents, their personal beliefs, alcohol use among others, play a crucial role. High levels of pregnancy were observed and while some adolescents are now teen-mothers with its untoward effects, others face an uncertain future regarding their fertility, productivity, sexual health and over all well-being.

There is the need for concerted efforts to institute workable programs that will help adolescents delay first sexual intercourse. This intervention should be at various quarters, schools, churches, identified youth groups among others. Another important need is a youth friendly centre where adolescents can easily and conveniently seek for information and services on their sexual and reproductive health. Parent's ability to maintain stable relationships, communication and the privilege of living together may improve their efforts to monitor the movement of their adolescents.

## CONSENT AND ETHICAL APPROVAL

People's sexual and reproductive health behaviours are very sensitive areas and usually concealed from public attention. Appreciating this fact, measures to ensure confidentiality, privacy and anonymity were employed to rest assure participants that their information is safe. In addition to this, generalised reports from collated data is what is reported without making reference to specific individuals. Scientific and ethical approvals for this work were sought from the Kintampo Health Research Center Scientific Review Committee (SRC) and Institutional Ethics Committee (IEC) (FWA00011103) respectively. Participants were individually consented to participate in the study. Parental assent was sought for minors.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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