

# Why Too Soon? Early Initiation of Sexual Intercourse Among Adolescent Females in Ethiopia: Evidence from 2016 Ethiopian Demographic and Health Survey

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**Background:** Early sexual initiation – sexual activity that begun earlier than 18 years of age – is among risky sexual behaviors which may be associated with increased risks of adverse outcomes such as sexually transmitted infections (STIs), unwanted pregnancy and unsafe abortions. However, there is no nationally representative evidence on early initiation of sexual intercourse and its determinant factors among adolescent females in Ethiopia.

**Methods:** Data were extracted from the 2016 Ethiopian Demographic and Health Survey (EDHS) to assess early initiation of sexual intercourse and factors contributing to it in adolescent females. The analysis included a weighted sample of 3881 adolescent females aged 15–19 years. A multivariable logistic regression analysis was conducted and the results were presented as adjusted odds ratio (AOR) at 95% confidence interval (CI), declaring statistical significance at a p-value <0.05 in all analyses.

**Results:** About 1 in 5 (21.9%, 95% CI: 20.5%, 23.33%) adolescent females experienced early sexual debut. Administrative regions (Amhara, AOR = 2.3, 95% CI: 1.30, 4.09 and Gambella, AOR = 4.89, CI 95%: 1.08, 22.07), religion (Muslim, AOR = 1.76, 95% CI: 1.24, 2.49), substance use (e.g., ever chewed khat, AOR = 2.02, 95% CI: 1.47, 2.77, ever drunk alcohol, AOR = 1.83, 95% CI: 1.35, 2.48) and having no knowledge on family planning (AOR = 4.47, 95% CI: 2.22, 8.99) were found to have statistically significant association with early sexual debut in adolescent females. Whereas any levels of formal education decreased the odds of early sexual debut (primary, AOR = 0.44, 95% CI: 0.35, 0.56; secondary, AOR = 0.19, 95% CI: 0.13, 0.28, and higher, AOR = 0.31, 95% CI: 0.15, 0.63). Similarly, all categories of wealth indices as compared to the poorest were protective of early sexual initiation in adolescent females (AOR = 0.40–0.57) as was for education as compared to no education (AOR = 0.19–0.44).

**Conclusion:** A significant proportion of adolescent females initiate early sexual intercourse in Ethiopia and multifaceted factors appear to determine their early sexual experiences. Contextualized interventions including strengthening information, education and communication on adverse consequences of early sexual initiation in regions and improving contraceptive knowledge of teenagers will play a paramount role.

**Keywords:** early initiation of sexual intercourse, female adolescents, EDHS, Ethiopia

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## Background

The World Health Organization (WHO) defines an adolescent as an individual in the age group 10–19 years.<sup>1</sup> Around 1.2 billion people – 1 in 6 of the world's population – are adolescents aged between 10 and 19 years, and most of whom live in less developed regions of the world.<sup>2</sup> For example, an estimated 5.6 million

women aged 15–19 were living in Ethiopia as of 2014, accounting for 12% of the total female population.<sup>3</sup>

This stage is a key phase of human development characterized by rapid biological and psychosocial changes<sup>4</sup> and this stage is often considered as a relatively healthy stage of life. However, adolescents face health risks, particularly in relation to reproduction and sexuality<sup>4</sup> including early initiation of sexual intercourse. Early sexual initiation is defined as sexual activity that begun earlier than 18 years of age,<sup>5</sup> and most often it is considered as a risky sexual behavior because of its adverse consequences.<sup>6</sup> In other words, early sexual initiation is associated with adolescents' increased risks of acquiring HIV/AIDS and other STIs, having multiple partners, not using contraceptives, unwanted pregnancy, and unsafe abortions.<sup>7,8</sup> As a result, the leading causes of death for 15 to 19-year-old girls globally are complications from pregnancy and childbirth.<sup>2</sup> About 11% of all births worldwide are attributed to girls aged 15 to 19 years, and the vast majority of these births occur in low and middle-income countries.<sup>2</sup> Similarly, an estimated 2.1 million adolescents were living with HIV in 2016; the great majority being in Africa. Although the overall number of HIV-related deaths has been decreasing since the peak in 2006, estimates suggest an increasing trend among adolescents.<sup>2</sup>

In African setups, an early sexual debut is high which ranging from 26.8% in Nigeria to 55% in Ghana.<sup>9–11</sup> A complex interplay of factors like socio-cultural, religion, parent and child connectedness plays a significant role in the timing of sexual initiation to sustain adolescents remaining sexually abstinent.<sup>12,13</sup> For instance, a comparative cross-sectional study done in Nigeria depicted that religion were significant predictors of teenage pregnancy in which Muslim followers were more likely to practice it.<sup>14</sup> The possible reason for this might be attributed to the traditional cultures and norms among Muslim followers and it might also be related to the low utilization of contraceptive method among the Muslim respondents.<sup>15,16</sup>

Like other African countries, experiences of early sexual initiation among Ethiopian female adolescents are high, ranging from 19% in Shire-Endasillasi to 20.4% in Ambo university, through to 27.6% in Legehida district of Amhara region.<sup>17–19</sup> Unfortunately, the majority of the adolescents do not use contraceptives including condoms during early sexual intercourses.<sup>8,17,20</sup>

Substance use behaviors such as alcohol drinking, cigarette smoking and khat chewing appear to determine early initiation of sexual intercourse in female adolescents.<sup>5,20,21</sup> According to few local studies in Ethiopia, being a female

increases the likelihood of early sexual initiation<sup>5,22,23</sup> as well as, educational status, place of residence, income and religion are found to be factors associated with an early sexual initiation in female adolescents.<sup>17,19,20</sup>

In Ethiopia, although different studies have been conducted assessing early initiation of sexual intercourse among young women, most of these studies are institution-based and focus adolescents in school and university settings. Therefore, this study is aimed to assess the magnitude and determinants of early sexual initiation among Ethiopian female adolescents using data from 2016 EDHS 2016. EDHS is a nationwide survey that includes both rural and urban residents from nine regions and two cities administrations of the country.

## Methods

### Data Sources

This study utilizes data from the 2016 EDHS, a nationally representative survey that collected data on basic health, demographic and socioeconomic indicators. Among 16,583 eligible women, the interview was completed for 15,683 women (15–49 years) across the nine administrative regions and two city administrations. We extracted data for all adolescent females (15–19 years), and a weighted sample of 3881 respondents were included in the study for the purpose of this analysis. Details about the DHS sampling techniques and sample size are available at <http://www.dhsprogram.com/>. The EDHS research protocol complies with the National Health Research Ethics Committee and Institutional Review Board guidelines.

### Study Variables

#### Dependent Variable

The study uses age at first intercourse from the survey data, and respondents who initiated sexual intercourse before the age of 18 years were considered as those experienced an “early sexual initiation.”

#### Independent Variable

This study included place of residence (urban and rural), administrative regions, religion, education (no education, primary education, secondary, and higher educations) as well as knowledge of contraceptive methods and access to media (frequency of listening to radio and watching TV) as independent variables. Household wealth, represented by wealth index (in five categories: poorest, poorer, middle, richer and richest). Wealth index was constructed

using data on a households' ownership of selected assets, such as television and bicycles, materials used for housing construction, and types of water access and sanitation facilities. The index placed individual households on a continuous scale relative to their wealth status.

## Statistical Analysis

Extracted data were weighted so that the sample was representative of 15–19-year-old respondents in 2016 EDHS. Analyses were performed using STATA version 14. To assess the association between socio-demographic characteristics and other explanatory variables, and early sexual debut among female adolescents, a logistic regression model was employed and two steps were followed. First, each variable was entered into a binary logistic regression model. Second, variables which were significant at a p-value of less than or equals 0.25 were fitted into a multivariable logistic regression model to identify independent factors of early sexual initiation among adolescent females in Ethiopia. Statistical significance was declared at a p-value < 0.05 in all analyses. The results from the logistic regression analyses are presented as adjusted odds ratios (OR) with 95% confidence intervals (CIs).

## Results

### Socio-Demographic Characteristics

A weighted sample of 3381 Ethiopian adolescent females (15–19 years) included in the study. Nine regions and two administrative cities were included. The mean age of the respondents was 16.9 (SD ± 1.36) years. The majority of (76.19%) the adolescents lived in rural areas. The majority of (83.16%) the respondents had formal education. Only a quarter (25%) of the respondents were employed (Table 1).

### Sexual History of Respondents

More than 1 out of 5 (21.9%, 95% CI: 20.5%, 23.33%) female adolescents reported having had early sexual intercourse at the time of the survey. The mean age at first sexual intercourse was 15.51 (SD ± 0.058) years. Among adolescents who had early sexual intercourse, the majority (66.08%) had their first sexual intercourse between the ages of 15 and 17 years. Two hundred four (27.5%) adolescents who had early sexual intercourse had no formal education while 537 (72.5%) had primary and above educational level.

**Table 1** Socio-Demographic Characteristics of Adolescent Females in Ethiopia, 2016

Variables	Categories	Frequency (Weighted)	Percentage
Place of Residences	Urban	805	23.81
	Rural	2576	76.19
Age Group	<18 years	2050	60.63
	≥18 years	1331	39.37
Religion	Orthodox	1426	42.18
	Protestant	847	25.05
	Muslim	1064	31.47
	Others	44	1.3
Sexual Partner	Yes	588	17.39
	No	2793	82.61
Employment Status	Unemployed	2558	75.66
	Employed	823	24.34
Educational Status	No education	468	13.84
	Primary education	2148	63.54
	Secondary	678	20.05
	Higher	87	2.57
Wealth Status	Poorest	478	14.14
	Poorer	558	16.50
	Middle	638	18.87
	Richer	716	21.18
	Richest	991	29.31
Administrative Regions	Tigray	276	8.16
	Afar	29	0.86
	Amhara	767	22.68
	Oromiya	1234	36.5
	Somali	105	3.1
	Benishangul	34	1.01
	SNNPR	681	20.14
	Gambella	9	0.27
	Harari	8	0.24
	Addis Ababa	217	6.42
	Dire Dawa	20	0.59

**Abbreviation:** SNNPR, Southern nations, nationalities and people region.

### Risky Behaviors Associated with Early Sexual Initiation

About 7.4% of the total adolescents had ever chewed chat. Of which, 15% a history of had early sexual intercourse. Similarly, among adolescent females who had initiated sex earlier, 35.2% had ever experienced drinking alcohol. Among adolescents who had sexual partners (832), 11% (90 of the adolescents had multiple sexual partners (Table 2)).

**Table 2** Risky Behaviors Associated with Early Sexual Initiation Among Female Ethiopian Adolescents, 2016

Variables	Categories	Frequency	Percentage
Ever chewed khat	No	3131	92.6
	Yes	250	7.4
Ever Drink alcohol	Yes	2352	69.6
	No	1029	30.4
Number of Sexual Partners (n= 832)	One	742	89.2
	Two and above	90	10.8

## Determinants of Early Sexual Initiation Among Adolescent Females in Ethiopia

In bi-variable analyses, almost all variables were associated with early initiation of sexual intercourse among adolescent females in Ethiopian. After controlling for the possible confounders in multivariable analysis, variables including administrative region, religion, educational status, history of chat chewing and alcohol use, knowledge of family planning methods, and wealth status were associated with early initiation sexual intercourse. Adolescent females living in Amhara and Gambella regions were more likelihood to have early sexual intercourse as compared to those living in Addis Ababa city (Amhara: AOR = 2.30, 95% CI: 1.30, 4.09, Gambella: AOR = 4.89, 95% CI: 1.08, 22.07). Being in primary, secondary, and higher education level decreases the odds of early sexual debut compared to those with no formal education (primary AOR = 0.44, 95% CI: 0.35, 0.56, secondary AOR = 0.19, 95% CI: 0.13, 0.28, and higher AOR= 0.31, 95% CI: 0.15, 0.63). The study reveals being from Muslim religion follower increased the likely of early sexual debut when compared with those from orthodox followers (AOR = 1.76, 95% CI: 1.24, 2.49). With increasing the class of their wealth status from poorer to the richest, the likelihood of early sexual initiation was found to be decreasing (i.e., poorer: AOR = 0.66, 95% CI: (0.49, 0.88), middle: AOR = 0.57, 95% CI: 0.42, 0.76, richer: AOR = 0.40, 95% CI: 0.29, 0.55, and richest: AOR = 0.49, 95% CI: 0.32, 0.73). Adolescent females with a history of khat chewing were 2.02 times likely to initiate sexual intercourse earlier as compared to those did not chew khat (AOR = 2.02, 95% CI: 1.47, 2.77). Having a history of drinking alcohol increased the likelihood of earlier sexual intercourse by 1.83 times as compared to those who did not drink (AOR = 1.83, 95% CI: 1.35, 2.48).

Respondents who were knowledgeable about any type of family planning methods were 4.47 times more likelihood to initiate sexual intercourse earlier than those without the knowledge (AOR = 4.47, 95% CI: 2.22, 8.99) (Table 3).

## Discussion

This study showed that 21.9% of respondents were involved in early sexual intercourse, which perhaps is comparable with findings from “pocket” studies in the country ranging from 19% to 25.3%.<sup>17,19,22</sup> In contrast, this finding is higher than the findings from Ghana (55%) and Tanzania (48.7%).<sup>9,10</sup> This discrepancy might be due to the differences in cultural norms and social values that discourage premarital sex in Ethiopia. Perhaps other unstudied factors might have contributed to this difference. Religion is found to be associated with early sexual initiation; the Muslim followers are more likelihood to initiate sex early as compared to Orthodox Christianity followers. However, evidence from Ambo University indicated that Orthodox Christianity followers were more likely to initiate sex.<sup>17</sup> The reason might be the belief in the religion that enhances early marriage to protect virginity and obey rules of the religion.

Having primary and above educational level is found to be protective for early marriage as compared to those with no education. This is supported by evidences from eight African countries,<sup>24</sup> and Ambo town and Addis Ababa city in Ethiopia.<sup>20,25</sup> This could be a function of maturity as educational level advances, and might also be due to exposure to information, education and communication on the topic. Wealth status was significantly associated with early initiation of sexual intercourse possibly portrays that female with better wealth index were less likely to engage in early sex.<sup>9</sup> Indeed, economically poor females engage in earlier sexual intercourse in exchange for money and other benefits.<sup>8</sup> In other words, poverty contributes to the deterioration of adolescents’ future by leaving lasting sequels from sexual and reproductive complications. That may mean, adolescent females with knowledge on any methods of contraceptive initiate sex early.<sup>9</sup> Having knowledge about contraceptive may avoid fear of unwanted pregnancy and increase confidence to start sexual activity at early ages. In line with other studies,<sup>10,11,24,26</sup> substance use increases the likelihood of early sexual debut.<sup>5,22,23,25</sup> This may be due to the fact that alcohol or khat can alter the normal behaviors and increase disorientation and loss of self-control that can lead adolescents to early sexual act and other risky sexual activities. Furthermore, a study conducted on Khat and

**Table 3** Factors Associated with Early Sexual Initiation Among Female Ethiopian Adolescents, 2016

Predictor Variables	Categories	Early Sexual Initiation		COR	AOR
		No	Yes		
Place of Residences	Urban	703	102	1	1
	Rural	1937	639	2.270(1.81, 2.85)*	0.92(0.61, 1.38)
Religion	Orthodox	1118	308	1	1
	Protestant	730	117	0.58(0.46, 0.73)*	1.27(0.88, 1.85)
	Muslim	722	309	1.48(1.24, 1.78)*	1.76(1.24, 2.49)*
	Others	37	7	0.74(0.33, 1.64)	0.69(0.28, 1.65)
Educational Status	No education	265	204	1	1
	Primary education	1685	462	0.356(0.29, 0.44)*	0.44(0.35, 0.56)*
	Secondary	615	63	0.13(0.097, 0.18)*	0.19(0.13, 0.28)*
	Higher	76	11	0.19(0.099, 0.37)*	0.31(0.15, 0.63)*
Wealth Status	Poorest	300	178	1	1
	Poorer	391	167	0.71(0.55, 0.93)*	0.66(0.49, 0.88)*
	Middle	482	156	0.54(0.42, 0.70)*	0.57(0.42, 0.76)*
	Richer	604	112	0.31(0.24, 0.41)*	0.40(0.29, 0.55)*
	Richest	863	128	0.25(0.19, 0.32)*	0.49(0.32, 0.73)*
Ever Chewed Khat	No	2501	630	1	1
	Yes	139	111	3.15(2.42, 4.10)*	2.02(1.47, 2.77)*
Ever Drink Alcohol	No	1872	480	1	1
	Yes	768	261	1.33(1.11, 1.57)*	1.83(1.35, 2.48)*
Knowledge of Family Planning	No	90	11	1	1
	Yes	2550	730	2.3(1.22, 4.25)*	4.47(2.22, 8.99)*
Administrative Regions	Addis Ababa	197	20	1	1
	Tigray	211	64	3.01(1.76, 5.16)*	1.81(0.97, 3.39)
	Afar	16	14	8.44(3.58, 19.89)*	2.56(0.97, 6.8)
	Amhara	547	220	3.97(2.44, 6.45)*	2.30(1.30, 4.09)*
	Oromiya	956	279	2.88(1.78, 4.65)*	1.40(0.79, 2.51)
	Somali	79	26	3.29(1.74, 6.23)*	1.51(0.70, 3.29)
	Benishangul	26	8	3.18(1.28, 7.87)*	1.95(0.73, 5.24)
	SNNPR	579	101	1.73(1.04, 2.87)*	1.18(0.64, 2.19)
	Gambella	6	3	5.47(1.33, 22.54)*	4.89(1.08, 22.07)*
	Harari	6	2	3.11(0.56, 17.33)	2.09(0.33, 13.20)
	Dire Dawa	17	4	2.37(0.72, 7.82)	1.57(0.44, 5.53)
Frequency of Watching TV	Not at all	1707	590	1	1
	<1 a week	384	88	0.66(0.51, 0.85)*	0.88(0.66, 1.18)
	≥1 week	549	63	0.33(0.25, 0.44)*	0.68(0.46, 1.01)
Frequency of Listening Radio	Not at all	1620	522	1	1
	<1 a week	536	119	0.69(0.55, 0.86)*	1.04(0.81, 1.33)
	≥1 week	484	100	0.64(0.50, 0.80)*	1.22(0.92, 1.60)

**Note:** \*Statistically significant at  $p < 0.05$ .

**Abbreviations:** AOR, adjusted odds ratio; COR, crudes odds ratio; SNNPR, Southern nations, nationalities and people region.

alcohol use and risky sex behaviour among in-school and out-of-school youth in Ethiopia revealed that substance use is significantly and independently associated with risky sexual behavior.<sup>27</sup> Hence, national HIV/AIDS prevention

and control strategies and programmes directing adolescents ought to take into account substance use as one of the important factors playing paramount role in risky sexual behaviours like early sexual debut.

## Strengths and Limitations

The study utilized a weighted sample of data from a nationwide survey, which could be considered as strength and could enhance representativeness. On the other hand, this study may suffer from a recall bias sexual activity was a self-reported event.

## Conclusion

A significant proportion of adolescent females initiate early sexual intercourse in Ethiopia and multifaceted factors appear to determine their sexual experiences. Administrative region, religion, educational status, history of chat chewing and alcohol use, knowledge of family planning methods, and wealth status were associated with early initiation of sexual intercourse. Contextualized interventions including strengthening information, education and communication on adverse consequences of early sexual initiation in regions and improving contraceptive knowledge of teenagers will play a paramount role. Health promotion that supports teenagers refrain from substance use is also highly recommended.

## Abbreviations

AOR, adjusted odds ratio; CI, confidence interval; COR, crude odds ratio; CSA, Central Statistical Agency; EDHS, Ethiopian Demographic and Health Survey; WHO, World Health Organization.

## Data Sharing Statement

This research uses national survey data that is publicly available for research collected by the Central Statistical Agency [Ethiopia] and ICF. National Demographic and Health Survey of Ethiopia in 2016 [Dataset]. Accessed (<http://idhsdata.org>). The datasets used and/or analyzed in the current study are available from the corresponding author on reasonable request.

## Ethics and Consent Statement

The 2016 EDHS data are available to the general public by request in different formats from the Measure DHS website [<http://idhsdata.org>]. We applied the measure DHS by briefly stating the objectives of the study and got the permission to download the dataset in SPSS format. Permission letter for access to database was received from Measure DHS, ICF International, Rockville, Maryland, USA.

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## Author Contributions

Conceived and designed the study: ET and BTM; Methodology: BTM, ET and GF; Analysis: BT and ET; Drafting the manuscript and made revisions: BTM, ET, AAA and GF. All authors contributed to data analysis, drafting or revising the article, gave final approval of the version to be published, and agreed to be accountable for all aspects of the work.

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## Disclosure

The authors report no conflicts of interest in this work.

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