



## Risky sexual behavior and associated factors among sexually experienced secondary school students in Guduru, Ethiopia

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### ABSTRACT

Adolescents at secondary schools are susceptible to engaging in risky sexual behavior (RSB) due to their teenage stage and the new environment they face. Limited researches in district towns have evaluated the RSB among adolescents with various findings. This study aimed to assess the RSB and associated factors among sexually experienced secondary school students. School-based cross-sectional study was conducted in Guduru district from March 4–8, 2019. A total of 1236 secondary school students were undergoing a survey. The data were collected using a pretested anonymously self-administered questionnaire and students who reported having ever had sex were evaluated for RSB. From all participants, 352 (29.8%) had ever started sexual intercourse from which 240 (68.2%) students were involved in RSB. During the multivariable logistic regression analysis, sex (AOR: 3.73; 95%CI: [1.71–8.14]), father educational level (AOR: 0.37; 95%CI: [0.16–0.84]), drinking alcohol (AOR: 2.76; 95%CI: [1.29–5.69]), perceived peer pressure (AOR: 4.22; 95%CI: [1.59, 11.24]), communication with parents (AOR: 9.58, 95%CI: [3.53, 25.94]), and perceived parental monitoring (AOR: 0.33; 95%CI: [0.14–79]) were significantly associated with RSB. This study outlined that the majority of sexually active adolescents are involved in RSB. Interventions at the health facility and school level should focus on the identified determinants of sexual behaviors among adolescents to minimize the risky consequences.

### 1. Introduction

Currently, there are about 1.2 billion people aged 10–19 years, accounting for 16% of the world's population and over 80% live in developing countries (UNICEF, 2012; Das Gupta et al., 2014). According to the Ethiopian Demographic and Health Survey (EDHS), the country is characterized by adolescent population contributing 24.4% of the total population (CSA Ethiopia and ICF, 2016).

RSB is individuals' sexual practice that may increase vulnerability of a person to the risk of reproductive health problem like STIs including HIV/AIDS, unwanted pregnancy, abortion, and psychological distress (Gojjam Tadesse, 2015; Muche et al., 2017; Adeomi et al., 2014). Adolescence is the periods between childhood and adulthood whereby young people are expected to undergo major physical, emotional, and social developments, with a significant impact on their sexual and

reproductive health (Desale et al., 2016). In addition to opportunities for development, this transition poses risks to their health and well-being. For instance, initiation of sexual activity while they lack adequate knowledge and skills for protection places adolescents at a higher risk of unwanted pregnancy, unsafe abortion and sexually transmitted infections including HIV/AIDS (Envuladu, 2016).

Globally, 2.1 million adolescents aged 10–19 years were living with HIV (Human Immunodeficiency Virus) and 55,000 AIDS (Acquired Immune Deficiency Syndrome) death among adolescents in 2016 which is mostly due to RSB (UNICEF, 2017). Compared with older adults, sexually active adolescents aged 15–19 years are at risk of acquiring STD for a combination factors like behavioral, cultural reasons (CDC, 2017). Globally, most abortions are the result of unintended pregnancy which is resulted from unprotected sexual intercourse. Similarly, in Ethiopia, 44% of pregnancies among adolescents were unintended of which 46%

*Abbreviations:* ASRH, Adolescent sexual and reproductive health; CSWs, commercial sex workers; AOR, adjusted odds ratio; CI, confidence interval; COR, crude odds ratio; SPSS, Statistical package for social science.

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ended in abortion (Gutmacher Institute, 2018).

Evidences in Ethiopia showed that respondents who had started sexual intercourse among secondary school adolescents ranges from 16% in Jiga (Kassa et al., 2016) to 49.9% in Haramaya (Shunu, 2015) and risky sexual practices range from 13% in Humera to 71.21% in Addis Ababa (Dadi and Teklu, 2014; Abdusemed Mussa Ali, 2017). Among sexually active adolescent students, 77% in Arbaminch and 84.3% in Gondar City had started sexual intercourse before the age of 18 years (Mersha et al., 2018; Kasahun et al., 2018). Inconsistent and incorrect condom use is a widespread practice among adolescents (Envuladu, 2016). Moreover, among sexually active adolescents 48.5% had multiple sexual partners and 66% did not use condom consistently (Asrese and Mekonnen, 2018).

Adolescents who had risky sexual practices may face problems with school dropouts, the potential need for unsafe abortions due to unintended pregnancy, and increased exposure to STIs including HIV/AIDS (Amare et al., 2017). Engaging in sexual intercourse in exchange for money or gifts increases the risk of acquiring STIs (Desale et al., 2016).

The use of alcohol and drugs is known to drive risk sexual behavior during adolescence and were significant public health concerns (Asrese and Mekonnen, 2018). The influence of peers is critical for adolescents, wherein risky, impulsive behaviors are enhanced in the presence of peers (Viner et al., 2012). Adolescent females were especially unable to declare their right to negotiate safe sex due to threat, forceful sex, or monetary benefit (Envuladu, 2016). Poor supervision by parents and non-communication of young people with parents on sexual and reproductive health issue, due to socio-cultural taboo and shamefulness, are also factors which can lead to risky sexual practices. Moreover, the negative media images like watching pornographic movies promote irresponsible sexual behavior (Muche et al., 2017).

In Ethiopia, secondary school is a new environment where many young people from various primary schools join and expand the social network in which they may develop new sexual behavior. Majority of students enrolled in secondary school are at their teenage stage where identity building and sexual experimentation takes place. Evidences have been concentrated predominantly at higher educational institutions and focused in major towns with varying magnitudes. In addition, most of the available studies assessed RSB among the whole participants, while this study focused among participants who initiated sexual intercourses in the study area. The finding of this study gives up-to-date data for local health managers, researchers and concerned bodies to design intervention strategies for young people at school.

## 2. Methods and Materials

### 2.1. Study area and period

The school-based cross-sectional study was conducted from March 4–8, 2019 in Guduru district, Horo Guduru Wallaga zone, west Ethiopia. The district is found at 270 km West of Addis Ababa. The population was estimated to be 88,272 (female 44,280) of which 74,720 were rural residents. It has a District Hospital, five health centers, and 25 health posts. There are either no youth-friendly services at the health facilities or school-based healthcare services in the district (Guduru District Health Office Report, 2018).

There were two high schools, one preparatory school, and one Technical Vocational Educational Training (TVET) college. The total number of enrolled students in secondary school in 2018/2019 academic year is 5210, out of which 2627 are male students. There were 2679 students at preparatory school and 2531 students at high schools (Guduru Education Statistics Annual Report, 2018).

### 2.2. Population and eligibility

All students enrolled in secondary schools in the district during the 2018/2019 academic year were the source population. The source

population was all students in secondary school of Guduru district. Study participants were students aged 14 to 19 years. Students seriously ill during data collection were excluded from the study.

### 2.3. Sample size and sampling technique

Sample size was decided by using the double population proportion formula in OpenEpi, Version 3 with the assumptions: confidence level of 95%, power of 80%, design effect of 2, and non-response rate 10%. The final sample size was determined using living arrangement with outcome percent of unexposed 16% and exposed 8.2%, giving a total sample size of 1236. This sample size was decided to obtain a sufficient sample of students who had ever initiated sexual intercourse. After the survey was conducted among the 1236 participants, final analysis was executed for those participants who had initiated sexual intercourse before the data collection.

One high school and one preparatory school were included in the study. The sample size was allocated for each school and grade with a probability proportional to school enrollment size. The number of sections to be selected from each grade was decided after considering the number of students enrolled in each grade. Finally, sections were selected using the lottery method and the whole eligible students in the selected sections were included in the survey. Accordingly, a total of 283, 282, 426 and 245 students were invited to participate in the survey from grades 9, 10, 11 and 12, respectively.

### 2.4. Data collection instruments and procedures

A structured self-administered questionnaire was developed after reviewing different works of literature. Initially, the questionnaire was developed in English and translated to the local language, Afaan Oromo, then back to the English language by language experts to ensure consistency of the tool. Afaan Oromo version tool was used to collect the data.

The research instrument included socio-demographic variables (age, sex, religion, marital status, living arrangement, get monthly pocket money, level of education, educational status of parents, parents residence area), personal behaviors (alcohol consumption, chewing chat, smoking cigarettes, peer pressure, watching pornographic movies), parent related (communication on sexual issues, monitored by parents).

To ensure quality of the data, four diplomas as data collectors and two senior health professionals as supervisors were employed based on their previous experiences. Training was given for data collectors and supervisors on the aims and process of data collection. Pre-test on 5% of the actual sample size was done in secondary school out of the study area. To minimize social desirability bias, each participant took a separate table at a sufficient distance, and no participant identifier was written on the questionnaire so that anonymity is ensured. Participants put the completed questionnaire by themselves in the prepared cartoon box at the corner of the room to ensure privacy and confidentiality. To minimize information contamination, students completed the self-administered questionnaire during one class period. Supervision was made daily to ensure the completeness of the questionnaire. The principal investigator had led the overall data collection process.

### 2.5. Measurements and operational definitions

Risky sexual behavior (RSB): was the main outcome variable measured using one item. Respondents were engaged in RSB if they responded "Yes" for one of the following sexual activities: sex with commercial sex workers, multiple sexual partners, inconsistent condoms use or failure to use condoms during sexual intercourse with an irregular sex partner and sexual debut at age < 18 years (Amare et al., 2017). In this study, RSB was computed for those who ever had sexual intercourse a head in the data collection period. **Sexually active**: students who have engaged in sexual intercourse at least once until the data collection

period (Dadi and Teklu, 2014).

**Early sexual initiation:** sexual initiation before the age of 18 years (Dadi and Teklu, 2014; Ethiopian Federal Ministry of Labor and Social Affairs, 2005).

**Adolescents:** in this study, adolescents are study participants between the ages group of 14–19 years old, adapted from WHO definition (WHO, 2015).

**Secondary school:** In this study, secondary school includes high school (9th and 10th grades) and preparatory schools (11th and 12th grades) (Federal Democratic Republic of Ethiopia, 2015).

### 2.6. Data processing and analysis

The returned questionnaires were checked manually for completeness and consistency of the response before data entry. Then questionnaires were entered into EpiData version 3.1 and exported to SPSS version 22 for further analysis. Descriptive statistics like frequencies with percentages for categorical variables and mean with standard deviation for continuous variables was computed. Bivariate analysis was carried out and a variable with p-value < 0.25 at the confidence level of 95% was taken as a candidate for multivariable logistic regression analysis to control confounding variables. Multi-collinearity was tested using variance inflation factor (VIF) with the 4.2 cutoff and model fitness was checked with Hosmer-Lemeshow test (P-value = 0.099). Finally, statistical significance was declared at p-value < 0.05 for AOR within the 95%CI.

## 3. Results

### 3.1. Socio-demographic characteristics of students

Out of the planned study participants, 1181 respondents underwent the survey making a response rate of 95.6%. The rest 4.5% of participants were not included in the analysis due to incomplete information. In this study, 352 participants had reported that they had initiated sexual intercourse and all analysis focused on these groups. About 68.8% of parents of the participants were living in rural areas and 72.2% of students were living away from parents (Table 1).

### 3.2. Substance use and parent related factors

Concerning the personal behavior of the participants, 44% of the participants were drinking alcohol at the time of data collection, 67.3% had ever seen pornographic films, and 33% had ever felt peer pressure influence. In addition, 72.2% of them never discussed with their parents on the sexual issues. Regarding parental monitoring, 67.3% of participants' parents did not know where and with whom their children stay. In addition, higher proportion of female students had perceived that they were influenced by peers to have engaged in sexual intercourse (40.9% of females vs 27.1% of males) from participants who had initiated sexual intercourse (Table 2).

### 3.3. Risky sexual behavior among study participants

From the 1181 respondents, 352 (29.8%; 95%CI: 27.2, 32.6) ever had sexual intercourse going ahead to the data collection period. A higher proportion of males 203 (57.7%), compared with females 149 (42.3%), reported having engaged in sexual intercourse. More than two thirds, 68.2% (95%CI: 63.1, 72.8) of participants engaged in RSB, of which 114(47.5%) were females. From participants who had initiated sexual intercourse, higher proportion of female students had engaged in RSB compared to male students (76.5% of females vs 62.1% of males). The mean age at first sexual debut was 17.49(SD = 0.73) years. On average, females began sexual intercourse earlier (17.2 ± 0.70) than their male counterpart (17.2 ± 0.69).

In this study, early sexual initiation was 44.3% (95%CI: 38.9, 49.4)

**Table 1**

Socio-demographic characteristics of sexually active secondary school adolescents in Guduru, 2019 (n = 352).

Variables	Categories	Frequency	Percent
Sex	Male	203	57.7
	Female	149	42.3
Age	14–16	8	2.3
	17–19	344	97.7
Marital status	Single	344	97.7
	Married	8	2.3
Current educational level	Grade 9	69	19.6
	Grade 10	74	21.0
	Grade 11	133	37.8
	Grade 12	76	21.6
Parents' residence area	Rural	242	68.8
	Urban	110	31.3
Religion	Protestant	252	71.6
	Orthodox	94	26.7
	Others *	6	1.7
Attending religious service	Every day	42	11.9
	Some time	259	73.6
	Never go	51	14.5
Living arrangement	With biological parents	98	27.8
	Away from parents **	254	72.2
Father's educational status	No formal education	138	39.2
	Elementary and above	197	56
	Missed	17	4.8
Mother's educational status	No formal education	208	59.1
	Elementary and above	137	38.9
	Missed	7	2.0
Get monthly pocket money	Yes	199	56.5
	No	153	43.5

Others\* = Muslims and Catholics; away from parents\*\*= (living with relatives, living alone, living in group).

**Table 2**

Individual related behavior among sexually active secondary school students in Guduru, 2019 (n = 352).

Variables	Sex category n (%)		
	Male (n = 203)	Female (n = 149)	Total (n = 352)
Drink alcohol within the last 30 days			
Yes	107(52.7)	48(32.2)	155(44)
No	96(47.3)	101(67.8)	197(56)
Chew khat within the last 30 days			
Yes	5(2.5)	1(0.7)	6(1.7)
No	198(97.5)	148(99.3)	346(98.3)
Smoked cigarette within the last 30 days			
Yes	2(1.0)	0(0.0)	2(0.6)
No	201(99.0)	149(100.0)	350(99.4)
Ever seen pornographic films			
No	145(71.4)	92(61.7)	235(67.3)
Yes	58(28.6)	57(38.3)	115(32.7)
Perceived peer pressure to have sexual intercourse			
Yes	55(27.1)	61(40.9)	116(33)
No	148(61)	88(59.1)	236 (67)
Discussion on sexual issues with parents within the last year			
Yes	60(29.6)	38(25.5)	98(27.8)
No	143(70.4)	111(74.5)	254(72.2)
Parents know here they stay and with whom they stay			
No	68(33.5)	47(31.5)	115(32.7)
Yes	135(66.5)	102(68.5)	237(67.3)

and 59.4% (95%CI: 54.3, 64.2) had not used condom correctly. The most cited reason for not consistently using a condom was their partner's partners (51%; 95%CI: 45.2, 59). About 15.3% (95% CI: 11.6, 19.0) of the participants had more than one sexual partner in their lifetime. Moreover, 5.4% (95% CI: 2.5, 8.8) of male respondents had sexual intercourse with a CSWs during the last sexual intercourse (Table 3).

### 3.4. Results of multivariable logistic regression analysis

In multivariable logistic regression analyses, sex, educational level of father, drinking alcohol, perceived peer pressure, no communication with parents on sexual issues, and monitoring by parents were factors significantly associated with RSB among secondary school students in the study area.

Females were about 4 times more likely to engage in RSB compared with male (AOR = 3.73; 95% CI: 1.6–7.84). Respondents whose father had formal education were 63% less likely to engage in RSB (AOR = 0.37; 95% CI: 0.16–0.84). The odds of RSB among participants who drink alcohol were about 3 more likely to encounter RSB than those who did not drink alcohol (AOR = 2.76; 95%CI: 1.29–5.69). Those perceived peer pressure influence were about 4 times more likely engaged in RSB compared with their counterparts (AOR = 4.22; 95%CI: 1.59,11.24). Participants those who did not communicate on the sexual issue with their parents in the last year were about 9 times more likely to engage in RSB compared to their counterparts (AOR = 9.23: 3.75–22.69). Students who perceived that they were monitored by their parents were about 67% less likely to be involved in RSB [Table 4].

## 4. Discussion

This study had tried to assess RSB and associated factors among sexually experienced secondary school students in the study area. Sex, educational level of father, drinking alcohol, perceived peer pressure, no communication with parents on sexual issues, and perceived monitoring by parents were identified as associated factors.

**Table 3**  
Sexual history of participants among sexually active secondary school students in Guduru district, 2019.

Variables	Sex category (n (%))		
	Male (n = 203)	Female (n = 149)	Total (n = 352)
Engaged in RSB			
Yes	126(62.1)	114(76.5)	240(68.2)
No	77(37.9)	35(23.5)	112(31.8)
Age at first sexual intercourse			
<18	59(29.1)	97(65.1)	156(44.3)
>=18	144(70.9)	52(34.9)	196(55.7)
Reason for initiation of sexual intercourse			
Desire for sex	183(90.1)	34(22.8)	217(61.6)
Promise	13(6.4)	91(61.1)	104(29.5)
Others *	7(3.4)	24(16.1)	31(8.8)
Condom used during first sexual intercourse			
Yes	145 (71.4)	9(6.0)	154(43.8)
No	58(28.6)	140(94)	198(56.2)
Used condom during the last time sexual intercourse			
Yes	76(37.4)	34(22.8)	110(31.3)
No	127(62.6)	115(77.2)	242(68.8)
Number of sexual partners in a lifetime			
One	164(80.8)	134(89.9)	298(84.7)
More than one	39(19.2)	15(10.1)	54(15.3)
Sexual intercourse with CSW			
No	192(94.6)	149(100)	341(96.9)
Yes	11(5.4)	0	11(5.4)

Note: RBS; risky sexual behavior, CSW; Commercial Sex Workers, \*;

**Table 4**  
Factors associated with risky sexual behavior among sexually active school students in Guduru district.

Variable	RSB		COR (95%CI)	AOR (95%CI)
	Yes	No		
Sex*				
Male	126 (52.5)	77 (68.8)	1	
Female	114 (47.5)	35 (31.2)	1.99 (1.24–3.19)	3.73 (1.71–8.14) *
Student educational level				
Grade 9	40 (16.7)	29 (25.9)	0.60 (0.30–1.19)	1.91 (0.62–6.88)
Grade 10	44 (18.3)	30 (26.)	0.64 (0.32–1.25)	0.55 (0.16–1.92)
Grade 11	103 (42.9)	30 (26.8)	1.49 (0.79–2.82)	1.02 (0.40–2.64)
Grade 12	53 (22.1)	23 (20.5)	1	1
Living arrangement				
With parents	45 (18.7)	53 (47.3)	1	1
Away from parents	195 (81.3)	59 (52.7)	3.89 (2.38–6.37)	0.88 (0.37–2.10)
Father's Educational status				
No formal education	126 (56.3)	12 (10.8)	1	1
Elementary and above	98 (47.3)	99 (89.2)	0.09 (0.05–0.18)	0.37 (0.16–0.84) *
Educational status of Mother				
No formal education	179 (76.5)	29 (26.1)	1	1
Formal education	55 (23.5)	82 (73.9)	0.11 (0.07–0.18)	0.77 (0.30–1.98)
Get monthly pocket money				
Yes	106 (44.2)	93 (87.0)	1	1
No	134 (53.8)	19 (17.0)	6.19 (3.55–10.78)	0.81 (0.35–1.84)
Drunk alcohol *				
Yes	131 (54.6)	24 (21.4)	4.41 (2.63–7.39)	2.76 (1.29–5.69) *
No	109 (43.4)	88 (78.6)	1	1
Watch pornographic film				
Yes	194 (80.8)	43 (39.4)	1.29 (0.51–3.83)	1.35 (0.54–3.38)
No	46 (19.2)	69 (61.6)	1	1
Perceive peer pressure*				
Yes	108 (45.0)	8(7.1)	10.64 (4.69–22.81)	4.22 (1.59–11.24) *
No	132 (55.0)	104 (92.9)	1	1
Communication with parents on sexual issue*				
Yes	17 (7.1)	81 (72.3)	1	1
No	223 (92.9)	31 (27.7)	34.28 (18.00–65.25)	9.23 (3.75–22.69) **
Perceived parental monitoring*				
Yes	31 (12.5)	84 (75.0)	0.05 (0.03–0.09)	0.33 (0.14–0.79) *

(continued on next page)

Table 4 (continued)

Variable	RSB		COR (95%CI)	AOR (95%CI)
	Yes	No		
No	209 (87.5)	28 (25.0)	1	1

\* = p-value < 0.05, \*\* = p-value < 0.001.

In this study, 29.8% (95% CI: 27.3, 32.3) of the total participants had sex before the data collection period. This is in line with findings from Shashamane (Seyfu and Yohannes, 2018) and Boditti (Daka and Shaweno, 2014). This similarity might be due to socio-demographic and cultural closeness between the two study areas. However, it is lower than the study conducted in Lalibela Town (Desale et al., 2016). These variations could be due to socio-cultural characteristics of the study participants in which early marriage is more common in Labella.

From 352 sexually active respondents at least two out of three, (68.2%; 95% CI: 63.6, 72.7) had at least one of the RSB in their lifetime. Even though the study setting is a remote area, this finding showed that a considerable proportion of adolescents engaged in RSB. The possible reasons could be less control from parents, less parental discussion on sexual issues, and increasing freedom as the majority of the students are living in rented house at the town of the specified district far from their families. This finding agrees with the results of comparative study conducted in Addis Ababa secondary school students (Abdusemed Mussa Ali, 2017). This similarity ascertain the fact that young people at the stage at which they develop an interest in the opposite sex, and are often changing relationships which increase the exposure of RSB (Kassa et al., 2016).

The proportion of RSB among the sexually active respondents in this study is higher than the study conducted in Lalibela (46.5%) (Desale et al., 2016) and Arbaminch (22.4%) (Mersha et al., 2018). The variation may be due to the difference in study time related with the increasing accessibility of internet and illicit media that might provoke the interest of adolescents to try new things like sexual experimentation so that expose adolescents to engage in RSB. The other reason behind higher level of RSB could also be misconception of uncomfortable sex with condom among participants.

In this study RSB is more likely among female students when compared to male students. This finding is supported by earlier studies in Brazil (Sanchez et al., 2013). The possible explanation might be exchange of material goods within sexual relationships, including cash, cosmetics, and forced sex by males either in school or out of school. In addition, the decision about condom use during sexual intercourse is made by male partners and females cannot declare safe sex compared to males. But the Shashamane study showed the odds of male being 2.5 times more likely than females engaging in RSB. This reverse finding could be suggestive of that substance abuse (alcohol consumption and chat chewing) which led to RSB is more common among males in Shashamane (Seyfu and Yohannes, 2018).

The finding of this study also showed that respondents who ever had perceived pressure from peers to have sex were more likely engaging in RSB. This finding is also supported by the study in Gondar (Kasahun et al., 2018) and Humera (Dadi and Teklu, 2014). This might be because adolescents are at higher likelihood of sharing their day-to-day life experience with their friends. This might be higher in students those living away from parents who had poor parental monitoring. Besides adolescents need attention, and recognition with peers so that they are likely to behave in a manner intimate friends practice.

In this study, participants who had history of drinking alcohol were more likely to be engaged in RSB compared with those who never drank alcohol. This is consistent with the findings of earlier studies in Arba Minch (Mersha et al., 2018), Bahir Dar, (Amare et al., 2017) and Gondar (Kasahun et al., October 2018). This could be due to the decreased feeling of risk with alcohol consumption. Therefore, alcohol use drives

adolescents in to RSB resulting poor judgment. Moreover, previous study in Vietnam indicated that substance using adolescents were more likely to not use condoms and participants taking alcohol or other stimulants before sex had a higher likelihood of unintended pregnancy (Ngoc Do et al., 2020).

Respondents who had no parental discussion on sexual and reproductive health issues were more likely to involve in RSB than their counterparts. This finding is also supported with the study conducted among high school students in Gondar and Humera in which RSB is significantly associated with non-parent communication (Dadi and Teklu, 2014; Kasahun et al., October, 2018). Limited communication could be due to traditional norms around sexuality, limited parental reproductive health knowledge, and misconception of the fear that parental communication with adolescents would encourage sexual activities.

#### 4.1. Limitations

Even though acceptable quality assurance was made, RSB data were self-reported so that the extent of under or over-reporting of behavior couldn't be determined. The study targeted only adolescents in secondary school which may not be representative of adolescents out of school in the area that need attention when generalizing the findings to other adolescents. Future researchers need to consider a study employing a qualitative method at the community level to determine strong predictors of RSB among adolescents at large.

#### 5. Conclusion

This study found a considerable proportion of RSB among sexually active adolescents in secondary schools of Guduru district. About one-third of the study participants had engaged in sexual intercourse in which more than two-third of them involved in the RSB. The findings of this study revealed that the majority of adolescents had not discussed with their parents on sexual and reproductive health issues which had a high significant association with RSB. Peer pressure, alcohol drink, and being female were also significantly associated with RSB. For parents, refraining from talking about a sexual and reproductive health issue does not mean that adolescents are safe in all aspects. Beginning to talk to the adolescent at a younger age will improve their knowledge about sexuality and enhance their informed decision about sexuality issues, and this will go a long way in helping to reduce the negative health outcome in their future. Therefore, strengthening behavioral changes on risky sexual acts through necessary services is an important measure. Besides, the findings of this study insight that more gender-responsive intervention is needed in the study area.

#### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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### Availability of data and materials

All the datasets used and/or analyzed during the current study are included in the manuscript and other information is available from the corresponding author on reasonable request.

### Author contributions

Buzayehu Fekadu had led the field data collection and analysis. All authors made substantial contributions to conception and design, analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed to send to the current journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

### Ethics approval and consent

Ethical clearance was obtained from the Institutional Health Research Ethics Review Committee of Haramaya University under Ref. No: IHRERC/029/2019. Then support letter was taken from concerned bodies at various levels. The purpose, benefit, risk and confidentiality of the information and voluntary nature of participation in the study were explained for participants. Then informed verbal consent was obtained for students aged  $\geq 18$  years. For students aged  $< 18$  years, written consent was obtained from their parent or guardians and then consent of assent was also being obtained from the participants. Participants were informed that nobody handles the collected data except the investigators and no identifier was written on the questionnaire so that anonymity is ensured. To keep privacy, each participant took a single sparsely arranged seat. And the participant put the questionnaire on separate table arranged at corner of the room after completing the questionnaire.

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