

RISKY SEXUAL BEHAVIOR AND ASSOCIATED FACTORS AMONG STUDENTS OF HAWASSA UNIVERSITY COLLEGE OF MEDICINE AND HEALTH SCIENCE, ETHIOPIA 2022

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ABSTRACT

BACKGROUND: Any sexual activity that increases the risk of sexually transmitted infections (STIs) and unwanted pregnancies is considered risky sexual behavior (RSB). Unintended pregnancies and STIs are significant reproductive health challenges faced by adolescents and youth in Ethiopia. Although it is assumed that university students are fully aware of HIV risks and preventive measures, evidence suggests that they are more likely to engage in RSB.

OBJECTIVE: To assess the prevalence of risky sexual behavior and associated factors among students of Hawassa University, college of medicine and health science, Ethiopia.

METHODS: An institutional-based cross-sectional study was conducted from July 18 to August 30, 2022. A total of 334 students were selected first by stratified based on their academic year and then selected using a simple random sampling method. A self-administered questionnaire was used to collect the data. Bivariate and multivariate logistic regression analyses were used to identify factors associated with RSB. Variables with p-value <0.25 were considered candidate for the final model, and statistical significance was declared at p-value of <0.05 in multivariate analysis.

RESULTS: The prevalence of RSB among students at Hawassa University College of medicine and health science was 109(34.4%) (95% CI: 29.3%, 39.7%). Drinking alcohol [AOR: 8.15; 95% CI (2.68, 11.61)], watching pornography videos [AOR: 3.32; 95% CI (1.53, 6.96)], and history of childhood sexual abuse [AOR: 2.34; 95% CI (1.78, 6.37)] were found to be the independent predictors of RSB. While religious engagement [AOR: 0.62; 95% CI (0.29, 0.83)] was a protective factor for RSB.

CONCLUSION: The prevalence of risky sexual behavior was high among students. Comprehensive behavioral intervention programs are needed on the identified factors to reduce the RSB of university students. In addition, sex education programs should rethink their approach to preventing RSB, because so far the pornography influence has rarely been considered.

KEYWORDS: Risky sexual behavior, Hawassa University, Ethiopia

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INTRODUCTION

Any sexual activity that increases the risk of sexually transmitted infections (STI) and unwanted pregnancies is considered risky sexual behavior (RSB)¹. RSB includes having sex with multiple sexual partners, not using or using condoms inconsistently, and sexual intercourse while under the influence of drugs or alcohol. According to 2020 UNAIDS epidemiological estimates, young people aged 15 to 24 years in sub-Saharan Africa account for 33% of new HIV infections due to inadequate knowledge, negative attitudes regarding the disease, and risky sexual behaviors². In Ethiopia, those aged 15 to 24 have the highest reported incidence of STIs and contribute to approximately 60% of new HIV infections and half of all people living with HIV³. These statistics highlight the urgent need to address RSB and improve sexual health education and interventions among young people in Ethiopia. In Ethiopia, young people make up around one-third of the total population, which is one of the largest groups in the country⁴. Young people in many developing countries are increasingly exposed to RSB because this age is characterized by a period of exploration and experimentation, particularly concerning sexual activity, and they typically engage in risky sexual practices such as early sexual intercourse, multiple sexual partners, unprotected sexual intercourse, and non-regular partners such as commercial sex workers (CSW)⁵.

Despite the assumption that university students are fully aware of HIV/STI risks and prevention measures, evidence suggests that they are still prone to engaging in high-risk sexual behavior. A study conducted at Jimma University showed that more than a quarter (28.3%) of sexually active students had multiple sexual partners in the previous year, and around one-fifth of them have had sexual intercourse with non-regular partners for the sake of money⁶. According to a study conducted at Madawalabu University⁷, Gonder University⁸, and Haromaya University⁹, 24%, 23%, and half of sexually active male students, respectively, have

reported sexual contact with CSW.

The RSB among university students worsens due to a variety of factors such as a lack of youth-friendly services and institution-targeted interventions, the use of the substances (alcohol and khat) and addiction, peer pressure, lack of life skills, freedom from parental control and liberty from the familiarized community^{7, 9-13}. Moreover, Hawassa University is located in the area where there is a high flow of tourists, night clubs, and has a lion's share of khat production and marketing in Ethiopia, which will expose students to engaging in various RSB. Despite their vulnerability and risk, there is scarce information regarding the RSB of Hawassa university students. To develop targeted interventions that address the unique context of the study area, it is crucial to monitor the magnitude and identify the factors that affect the RSB. Therefore, this study aimed to assess RSB and associated factors among students of Hawassa University, college of medicine and health science, Ethiopia.

METHODS

Study design and setting

An institutional-based cross-sectional study was conducted from July-18 to August-30/2022, among undergraduate students of Hawassa University College of Medicine and Health Science, Ethiopia. The college of medicine and health sciences was established in 2003 and consists of two faculties namely Medical and Health science faculty. The college is located in Hawassa city, 275 km far from Addis Ababa, the capital city of Ethiopia. The college currently offers 14 undergraduate programs with a total of 2729 students.

Study population

All regular undergraduate students in the College of Medicine and Health Science at Hawassa University. Due to their different socio-cultural backgrounds, students from other countries (foreign students) were excluded. First-year students were excluded because they are not familiar with the environment; therefore. their risky behaviors

may not be attributed to the same factors as other students. Furthermore, intern medical students were excluded from the study because their socioeconomic status, knowledge, attitude, and access to health care varied widely from the other health students.

Sample size determination and sampling procedure

The sample size was calculated using the single population proportion formula considering the following assumptions: estimated proportion of RSB 31.4%¹³ from a study conducted in Arba Minch University, 95% confidence level, 5% margin of error, and 15% nonresponse rate. After considering the correction formula, the final sample size was 334.

A stratified sampling technique was used to select students. First, all students at Hawassa University's College of Medicine and Health Science were stratified according to their academic year. A list of students' number and name were obtained from the registrar's office. Then, the total calculated sample size was allocated proportionally to each academic year. Finally, after preparing the sample frame with a list of students' names from the registrar's office, a simple random sampling technique was used to select students from each academic year.

Study variables

Dependent variable

Risky sexual behavior

Independent variables

Socio-demographic factors: Age, sex, academic year, residence, educational status of parents, occupational status of parents, monthly pocket money, and religious activities.

Sexual experience of the respondents: Ever had sexual intercourse, age at first sexual intercourse, sexual history, and condom use history in the last 12 months.

Substance use and adverse childhood experience of the students: Substance use history (alcohol,

khat, and cigarette), discussing sex matters with family members, history of childhood sexual abuse, and watching pornography videos.

Operational definition

Risky sexual behavior: Students who have practiced at least one of the following during the last 12 months were considered positive for RSB; early sexual debut, inconsistent use of condoms, having multiple sexual partners, sexual intercourse with CSW, or having sex under the influence of alcohol or drugs¹⁴.

Child sexual abuse: is any interaction between a child and an adult or another child in which the child is used for the sexual stimulation of the perpetrator including at least one of the following rape, genital contact, indecent exposure for the sexual gratification of the offender, incest, fondling and sexual exploitation¹⁵.

Watch pornography materials: It includes students who access pornography material intentionally or actively seeking out pornography. It does not include students who are exposed to pornography material involuntarily¹⁶.

Data collection tools and procedure

To collect data, a structured self-administered questionnaire was used. The tool was adopted from the sexual and reproductive health questionnaire of WHO, Ethiopia Demographic and Health Survey (DHS), and Behavioral Surveillance Survey (BSS). The questionnaire contained three parts: information on socio-demographics, sexual behavior, and risk factors. Five BSc Public Health professionals were recruited to facilitate the data collection process, and two supervisors (MPH holders) to monitor the process.

Data quality control

The questionnaire was pretested on 5% of the sample size at the main campus of Hawassa University, which is not part of the actual data collection site. Based on the output of the pretest, some modification was made to the questionnaire.

The original questionnaire was prepared in English, then translated into the local language Amharic, then back to English, and then checked for consistency. The principal investigator gave one-day training for the data collectors and supervisors on the objective of the study, data collection tool, and procedure. The supervisors and the principal investigator monitored the data collection process and checked the completeness of the collected data.

Data processing and analysis

The collected data were entered into EpiData Version 3.1 and then exported to SPSS version 20 for analysis. Descriptive statistics were used to describe the findings using frequency and percentage for categorical variables and central tendency and measure of dispersion for continuous variables. To identify the independent predictors of RSB, multivariate logistic regression was used. All predictor variables with a p-value of less than 0.25 in bivariable analysis were considered candidate variables for the final model. Hosmer Lemshow goodness of fit was used to test for model fitness and variance inflation factor (VIF) to check the presence of multi-co-linearity. Variables with p-values less than 0.05 were considered significant predictors in the multivariate analysis.

Ethical considerations

Hawassa University's institutional review board granted the ethical clearance. Before beginning data collection, each study participant was informed and written consent was obtained from them. Throughout the study, the confidentiality of the collected information was also maintained.

RESULTS

Socio-demographic characteristics

A total of 334 questionnaires were distributed, but complete data for analysis was obtained from 317 students making a 94.9% response rate. Of 317 study participants, 184 (58%) were males and more than half 172 (54.3%) of students were under 24 years old, with a mean age (\pm SD) of 23.1 \pm 2 years.

Regarding their current accommodation, only 9(2.8%) students were residing with their parents or relatives. The majority of the students were living in the university dormitory. Nearly three-fourth 234(73.8) of students get \geq 1000 ETB monthly pocket money (Table 1).

Table 1 Socio-demographic characteristics of students at Hawassa University, college of medicine and health science, Ethiopia 2022

Variables	Category	Frequency (%)
Sex	Male	184(58%)
	Female	133(42%)
Age	<24 years	172(54.3%)
	> 24 years	145(45.7%)
Study year	Second	83(26.2%)
	Third	63(19.9%)
	Fourth	94(29.6%)
	Fifth	77(24.3%)
Current accommodation	University dormitory	308(97.2%)
	Living with parents /relatives	9(2.8%)
Father's educational status	Unable to read and write	33(10.4%)
	Read and write	141(44.5%)
	College/University degree and above	143(45.1%)
Mother's educational status	Unable to read and write	61(19.2%)
	Read and write	156(49.2%)
	College/University degree and above	100(31.6%)
Fathers occupation	Daily laborer	13(4.1%)
	Farmer	84(26.5%)
	Government employee	99(31.2%)
	Employed in private sector	51(16.1%)
	Has private business	70 (22.1%)
Mothers occupation	Housewife	164(51.7%)
	Daily laborer	8(2.5%)
	Government employee	67(21.1%)
	Employed in private sector	18(5.7%)
	Has private business	60(19.0 %)
Monthly pocket money	<1000ETB*	83(26.2%)
	\geq 1000ETB	234(73.8)
Frequency of religious attendance	Daily	61(19.2%)
	More than twice a week	154(48.6%)
	Rarely	81(25.6%)
	Never	21(6.6%)

ETB*=Ethiopian Birr

Sexual experience of the students

Of the total study participants, 195 (61.5%) reported having a history of previous sexual intercourse, among those 137 (43.2%) of them had a sexual history in the last 12 months. Among sexual active students in the last 12 months, around 70 (51.1%) and 21 (15.3%) of them had sex with multiple partners and had sex with CSW, respectively (Table 2).

Table 2 Sexual experience of students at Hawassa University, college of medicine and health science, Ethiopia 2022.

Variables	Category	Frequency (%)
Ever had sexual intercourse	Yes	195(61.5)
	No	122(38.5)
Sexual history during the last 12 months	Yes	137(43.2%)
	No	180(56.8%)
Age at first sex	<18	20(10.2%)
	>=18	175(89.8%)
Time at first sex	Before joining university	82(42.1%)
	After joining university	113(57.9%)
Condom use history in the last 12 months	Yes	93(67.9%)
	No	44(32.1%)
Multiple sexual partners in the last 12 month	Yes	70(51.1%)
	No	67(48.9%)
Sex with CSW in the last 12 months	Yes	21(15.3%)
	No	116(84.7%)
Sex to receive a gift/money in the last 12 months	Yes	41(29.9%)
	No	96(70.1%)
Sex after drinking alcohol in the last 12 months	Yes	104(32.8%)
	No	213(67.2%)
Sex after chewing khat in the last 12 months	Yes	12(3.2%)
	No	305(96.8%)

Substance use and adverse childhood experiences of the students

Of 137 study participants 132(41.6%) of them had a history of alcohol consumption during the last 12 months. Around ten percent of study participants had a history of CSA. More than half 183(57.7%)

of the respondents reported watching pornographic videos during the last 12 months, among these 37(20.2 %) and 17(9.3%) consume pornography once a week and daily respectively (Table 3).

Table 3 Substance use and adverse childhood experience of students at Hawassa University, college of medicine and health science, Ethiopia 2022.

Variables	Category	Frequency (%)
Knows ways of avoiding /getting HIV/AIDS and/or STI	Yes	309(97.5%)
	No	8(2.5%)
History of childhood sexual abuse	Yes	29(9.1%)
	No	288(90.9%)
Ever discussed sex with anyone	Yes	264(83.3%)
	No	53(16.7%)
History of peer pressure to have sex during the last 12 months	Yes	118(37.2%)
	No	199(62.8%)
Gone to the night club in the last 12 months	Yes	186(58.7%)
	No	131(41.3%)
Watched pornography in the last 12 months	Yes	183(57.7%)
	No	134(42.3%)
Pornography type	Internet	152(83.1%)
	Mobile video	31(26.9%)
Frequency of pornography consumption	One/two times	82(44.8%)
	Once a week	37(20.2 %)
	A few times a week	34(18.5%)
	Once a day	17(9.3%)
	Several times a day	13(7.2%)
History of alcohol drinking in the last 12 months	Yes	132(41.6%)
	No	185 (58.4%)
Frequency of alcohol drinking	Daily	22(16.7%)
	More than once a week	39(29.5%)
	Weekly	31(23.5%)
	Monthly and above	40(30.3%)
History of chat chewing in the last 12 months	Yes	30(9.5%)
	No	287(90.5%)
Frequency of chat chewing	Daily	9(30.1%)
	More than once a week	7(23.3%)
	Weekly	10(33.3%)
	Monthly and above	4(13.3%)

Prevalence of risky sexual behavior

Among the total students (317), more than one-third 109(34.4%) (95% CI: 29.3%, 39.7%) of them had RSB during the last 12 months (Figure 1).

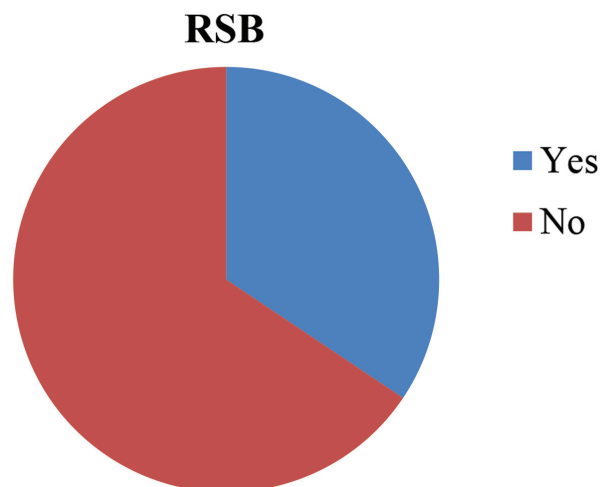


Figure 1 Prevalence of risky sexual behavior among students at Hawassa University, college of medicine and health science, Ethiopia 2022

Factors associated with RSB

After adjusting for possible confounders in the multivariate logistic regression analysis variables, alcohol drinking, watching pornography videos, history of CSA, and religious engagement were significantly associated with RSB at <0.05 P-value. Those who consumed alcohol were 8.15 more likely to engage in RSB compared to those who reported not using alcohol [AOR: 8.15; 95% CI (2.68–11.61)]. The odds of engaging in RSB were 3.32 times higher among students who reported watching pornography videos compared to their counterparts [AOR: 3.32; 95% CI (1.53–6.96)]. Students who reported a history of CSA were 2.34 times more likely to engage in RSB compared to students with no history of CSA [AOR: 2.34; 95% CI (1.78–6.37)]. Students who regularly attend religious places were 38% less likely to engage in RSB compared to those who did not attend religious places regularly [AOR: 0.62; 95% CI (0.29–0.83)] (Table 4).

Table 4 Binary logistic regression analysis of factors associated with RSB among students of Hawassa University, college of medicine and health science, Ethiopia 2022

Variables	Category	Risky Sexual Behavior		COR (95% CI)	AOR (95% CI)
		Yes	No		
Age	< 24 years	40	132	1	1
	>24 years	69	76	2.99 (1.85, 4.84)	1.25 (0.72, 2.03)
Time of first sexual intercourse	Before joining university	37	45	0.46 (0.26, 0.83)	0.80 (0.72, 1.78)
	After joining university	72	41	1	1
Parent student discussion about sexual matter	Yes	40	123	1	1
	No	69	85	2.49 (1.54, 4.02)	2.03 (0.89, 3.61)
Drink alcohol	Yes	76	56	6.25 (3.75, 10.41)	8.15 (2.68, 11.61)*
	No	33	152	1	1
Chew khat	Yes	19	11	3.78 (1.72, 8.27)	2.04 (0.93, 4.74)
	No	90	197	1	1
Attending night club	Yes	87	99	4.35 (2.53, 7.48)	3.52 (0.64, 5.65)
	No	22	109	1	1
History of childhood sexual violence	Yes	20	9	4.96 (2.17, 9.34)	2.34 (1.78, 6.37)*
	No	89	199	1	1
Regular religious attendance	Yes	65	150	0.57 (0.31, 0.76)	0.62 (0.29, 0.83)*
	No	44	58	1	1
Watching porn video	Yes	105	78	8.75 (3.75, 10.94)	3.32 (1.53, 6.96)*
	No	20	130	1	1

*significantly associated variables with p-value <0.05

DISCUSSION

This study revealed that the magnitude of RSB is 34.4%. It requires special attention from the concerned bodies because even though the study was conducted among students with health backgrounds who believed they had better knowledge of STI/HIV and contraception, more than one-third of them engaged in risky sexual behavior in the previous 12 months. This study finding is lower than the study conducted among undergraduate students at the University of Gondar 44% (8), Addis Ababa Ethiopia 43.1%¹⁷, Jimma Ethiopia 43.5%¹⁸, and Madawalabu 51.4%⁷. However, this is higher than two other studies conducted in Arba Minch¹³,¹⁹. The possible explanation for the disparity in the magnitude of RSB among university students of different studies could be due to differences in the academic background of students, this study includes students with health backgrounds which might affect their knowledge, attitude, and, practice to ward STI/HIV and contraception.

The present study revealed that religious engagement is a protective factor for RSB. This association has also been reported in comparable studies conducted in Gondar, Boston, and Sri Lanka^{8, 10, 12}. The plausible explanation for this association lies in the fact that students with strong religious engagement are less inclined to abuse alcohol or drugs, which are known to be key factors associated with RSB. In addition, religious students often hold negative attitudes toward non-procreative sexual activities and less likelihood of engaging in early sexual debut or having multiple sexual partners, or participating in sexual intercourse with commercial sex workers, even if they have prior sexual experience. A similar study among Nigerian university students, also showed that students with higher levels of religiosity were less likely to engaged in RSB, because religious beliefs and practices often emphasize abstinence, fidelity, and moral values, which can service as protective factors against RSB²⁰.

In this study, a significant relation was found between exposure to pornography and RSB in

students. A Nigerian study also found that those who frequently accessed pornographic sites on the Internet had more multiple sexual partners than those who rarely accessed sexual content on the Internet²¹. In countries with a lack of adequate sex education, the increasing access to smart mobile technology, internet, and unrestricted access to pornographic media are aggravating the problem of RSB among youths. This could be because pornographic materials are impulsive, leading to erotic sex stimulation or risky sexual practices. This finding is in line with studies conducted in Axum²², Bahir Dar¹¹, and Tiss Abay²³.

Students with a history of sexual violence during childhood have a higher chance of participating in risky sexual practices. This could be due to the fact that childhood sexual violence has a direct relation with poorer psychological functioning, aggressive behavior, and increase use of alcohol and other drugs²⁴. Students with a history of CSA might use alcohol and other drugs to cope with trauma symptoms, and alcohol use may lead to the risk of RSBs. In addition, the attachment theory could provide a better explanation for this finding, from the theoretical perspective victims of CSA have casual sexual behaviors to inhibit the development of deep emotional attachment²⁵.

This study also indicated that alcohol consumption increases the risk of having RSBs. In this study out of 138 students with a history of alcohol consumption, 90(65.2%) of them used condoms inconsistently. And out of 138 students with a history of alcohol consumption, 102(73.9%) had gone to night club during the last 12 months. This could be the fact that, when people are under the influence of alcohol, they will lose control over their consciousness and they might become less concerned about the risk associated with their sexual behavior. This finding has been supported by other studies conducted in different countries^{19, 22, 26}.

CONCLUSION

More than one-third of students at Hawassa University, college of medicine and health science engaged in RSB. Alcohol consumption, watching pornography videos, history of childhood sexual violence, and religious engagement were predicting factors for RSB. The authority of the university should consider comprehensive behavioral intervention programs to reduce alcohol consumption, and improve the habit of media consumption among undergraduate university students. The authority of the university should work on internet access policies, to limit certain websites that exposed students to pornographic content. Sex education programs should rethink their approach to preventing RSB because the pornography influence is rarely considered. Future researcher should consider a qualitative study, to get a comprehensive understanding of the underlying factors.

Abbreviations

AIDS: Acquired Immune Deficiency Syndrome,
CSA: Childhood Sexual Abuse,
CSW: Commercial Sex Workers,
EDHS: Ethiopian Demographic and Health Survey,
RSB: Risky Sexual Behavior,
SRH: Sexual and Reproductive Health,
STI: Sexually Transmitted Infections

DECLARATION

Competing interests

The authors declare that they have no competing interests.

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Authors' contribution

YS: Conceived the research idea, design questionnaire, data analysis, and wrote the manuscript. **GO** and **AA:** supervised the entire process of the research work, participated in the questionnaire design, analysis, and reviewed the

manuscript. All authors have read and approved the final manuscript for publication.

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