

Risky sexual behavior among university students who attended/did not attend HIV/AIDS, sexual, and reproductive health and life skill course: a comparative cross-sectional study

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Abstract

Introduction: Risky sexual behavior is vast reproductive health problem among university students in Ethiopia. Human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS), sexual and reproductive health and life skill course has been provided to university students to reduce sexual and reproductive health challenges. The present study aimed to assess and compare risky sexual behavior and associated factors among university students who attended and did not attend the course in Northeast Ethiopia.

Material and methods: Institutional-based comparative cross-sectional study was conducted among a total of 691 students. A pre-tested structured questionnaire was used to collect data. Bivariable and multivariable binary logistic regression were applied. Adjusted odds ratio with 95% confidence interval was used to measure the strength of association.

Results: The overall prevalence of risky sexual behavior among participants was 75.1% (95% CI: 68.3-81.3%). The prevalence of risky sexual behavior among students who attended and did not attend HIV/AIDS, sexual and reproductive health and life skill course was 55.7% and 88.6%, respectively. Being male (AOR = 7.39; 95% CI: 2.78-19.68%), having good knowledge on HIV/AIDS (AOR = 0.29; 95% CI: 0.12-0.73%), and attending the course (AOR = 0.18; 95% CI: 0.07-0.43%) had significant association with risky sexual behavior.

Conclusions: The prevalence of risky sexual behavior is high. The prevalence of risky sexual behavior among students who did not attend the course is higher than that of students who attended the course. Being male, having good knowledge on HIV/AIDS, and attending HIV/AIDS, sexual and reproductive health and life skill course are the factors associated with risky sexual behavior. Efforts should be made to incorporate the course into universities curriculum.

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Key words: risky sexual behavior, university students, HIV/AIDS, sexual and reproductive health, Northeast Ethiopia.

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Introduction

Risky sexual behavior has been recognized as a big issue around the globe. Worldwide, the majority of girls are unable to refuse sex, and numbers of early sexual initiation, trans-generational sex, unprotected sex, and multiple sexual partners are rising. In Sub-Saharan Africa (SSA), 20% and 10% of sexually active male and female adolescences had multiple sexual partners (MSP), respectively [1]. The magnitude of risky sexual behavior in Ethiopian higher education institutions ranges from 17% to 65.8% [2, 3].

Risky sexual behavior poses huge reproductive health risks as well as medical, psychological, social, and economic consequences, including sexually transmitted infections (STI), such as human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS), unintended pregnancy, and unsafe abortion [4-7]. More than a million people acquire STIs each day; an estimated 499 million new cases of curable STIs occur yearly and the burden of STIs is greatest in low-income countries [5]. Youths account for 33% of all new global HIV infections. There are 19% of new HIV infections in young women, and more than 80% of those infections are in Sub-Saharan Africa [4]. Also, HIV exposes people to pain and suffering from broken relationships, a sense of abandonment, confusion about romantic feelings, altered self-esteem, depression, and impaired ability to develop and maintain healthy long-term relationships [8].

Different studies revealed that sex [2, 3, 9-11], age [10, 12-16], place of residence [10, 12], year of study [12, 15, 16], pocket money [2, 9], alcohol drinking [3, 10, 15-20], khat chewing [3, 17, 21], cigarette smoking [3, 10, 13, 17, 19, 21], attending night club [2, 11], watching pornographic film [14, 22], self-esteem [17], discussion about sexual matters with parents [2, 21], depression [10, 23], peer pressure [15, 24], and knowledge on HIV/AIDS [25] are factors associated with risky sexual behavior.

The government of Ethiopia has developed strategies to advance health of young people [26, 27]. In line with these strategies, some universities, including Wollo University, provide HIV/AIDS, SRH and life skill course for first-year university students as a common course. As far as maximum searching effort and knowledge is concerned, there is little evidence on whether there is a difference in the prevalence of risky sexual behavior among students who attended and did not attend the course. Therefore, the aim of this study was to assess and compare the prevalence of risky sexual behavior and associated factors among university students who attended and did not attend HIV/AIDS, SRH and life skill course.

Material and methods

Study design and participants

An institutional-based comparative cross-sectional study was conducted at Wollo and Woldia Universities from May 11, 2018 till June 11, 2018. Wollo University is one of the third generation higher education institutions in

Ethiopia established in 2007 and has two campuses (Kombolcha and Woldia). The University is located in Dessie Town, 401 km from Addis Ababa, the capital city of Ethiopia. In Wollo University, there are 6 colleges, 2 institutions, and 2 schools, with 70 fields of study in undergraduate and 32 fields in post-graduate programs. Currently, there are 14,475 undergraduate regular students at the University, of these 5,371 are females [28]. Wollo University has been delivered HIV/AIDS, SRH and life skill course since 2016. Established in 2011, Woldia University is one of the third generation higher education institutions in Ethiopia, located 521 km northeast of Addis Ababa. It has two campuses, i.e., Mersa and Woldia. Woldia University has 6 faculties, 2 colleges, and 1 school, with a total of 20,026 students. Technology Faculty is found in the Woldia Campus [29]. This University does not provide HIV/AIDS, SRH and life skill course. All second-year regular students at the Technology Institute/Faculty who were attending classes during the time of the study were included.

Sample size and sampling procedure

Sample size was determined with 95% CI, power 80%, ratio of exposed to non-exposed (1 : 1), and percentage of risky sexual behavior among rural residents (47.2%) [21]. The estimated sample size was 658; adding a 10% of non-response rate, the final sample size was determined to be 724, of these 362 participants were from Wollo University and 362 from Woldia University. A stratified sampling technique using simple random sampling was employed to select samples from the two universities. Stratification was made using sexes. Samples were taken from all departments of the Technology Institute and Technology Faculty of Wollo and Woldia Universities.

Data collection and measurement

Data were collected using a pre-tested structured self-administered English version questionnaire, adapted from previous studies. Data were gathered by four data facilitators who were diploma nurses, and supervision was made by two BSc nurses as supervisors. To obtain accurate data and confidentiality of respondents, questionnaire was enclosed in a postal envelope and delivered to each participant to be filled in their dormitory privately.

Risky sexual behavior

Student was considered with risky sexual behavior who had commenced sex and experienced either one or more of the following risk factors: inconsistent condom use, having multiple sexual partners, and having sex with a commercial sex worker within 12 months before the survey. Married students were considered with risky sexual behaviors if they experienced one or more of the following risk factors: having multiple sexual partners and having sex with a commercial

Table 1. Socio-demographic characteristics of university students, Northeast Ethiopia, 2018

Variables	Students who attended the course (n = 342), n (%)	Students who did not attend the course (n = 349), n (%)
Sex		
Male	257 (75.1)	271 (77.6)
Female	85 (24.9)	78 (22.4)
Age (years)		
≤ 22	306 (89.5)	297 (86.8)
> 22	36 (10.5)	52 (13.2)
Marital status		
Single	337 (98.5)	343 (98.3)
Married	5 (1.5)	6 (1.7)
Ethnicity		
Amhara	224 (65.5)	218 (62.5)
Oromo	38 (11.1)	33 (9.4)
Tigray	67 (19.6)	81 (23.2)
Other*	13 (3.8)	17 (4.9)
Religion		
Orthodox	275 (84.4)	309 (88.5)
Muslim	49 (14.3)	19 (5.4)
Other**	18 (5.3)	21 (6.1)
Residence		
Urban	132 (39.8)	147 (42.1)
Rural	210 (60.2)	202 (57.9)
Department		
Engineering	257 (73.6)	294 (84.2)
Computer	85 (36.4)	55 (15.8)
Source of meal		
Non-café	67 (19.6)	28 (8.0)
Café	275 (80.4)	321 (92.0)
Pocket money		
< 300 Ethiopian birrs	93 (27.2)	89 (25.5)
≥ 300 Ethiopian birrs	249 (72.8)	260 (74.5)
Father educational status		
No formal education	163 (47.7)	165 (47.3)
Primary education	86 (25.1)	79 (22.6)
Secondary education	44 (12.9)	38 (10.9)
College and above	49 (14.3)	67 (19.2)
Mother educational status		
No formal education	194 (56.7)	184 (52.7)
Primary education	75 (21.9)	71 (20.3)
Secondary education	30 (8.8)	26 (7.5)
College and above	43 (12.6)	68 (19.5)

*Somali and SNNP.

**Catholic and Protestant.

sex worker within 12 months before the survey [12]. Knowledge on HIV/AIDS was assessed using well-validated HIV knowledge 18-question scale, with 'true' or 'false' answers. A score of 1 was assigned to each 'correct' answer, and 'do not know' and 'no response' were coded as 'incorrect' and assigned a score of zero. Finally, students with a sum of score above median were deemed as having poor knowledge, and students with sum of score below and equal to median were considered as having good knowledge [30, 31]. To determine the level of HIV/AIDS risk perception, participants were asked "What are the chances that you might catch HIV?", with possible answers: no chance, some chance, moderate chance, and high chance. Students who responded with 'no chance' and 'some chance' of contracting the disease were considered as having low-risk perception, and those who responded with 'moderate chance' or 'high chance' were considered as having high-risk perception [32].

Statistical analysis

Data were entered into Epi Data version 3.1, and exported into SPSS version 23.0 for analysis. First, descriptive evaluation with frequencies and percentages was carried out. Variable binary logistic regression was performed and variables with a p-value of less than 0.25 were transported to multivariable binary logistic regression to identify factors independently associated with risky sexual behavior of students. Finally, variables with a p-value of less than 0.05 in multivariable binary logistic regression were deemed as statistically significant, and an adjusted odds ratio with its 95% confidence interval was considered to evaluate the strength and significance of the association. Multicollinearity test was done using standard error to estimate the correlation between independent variables. Hosmer and Lemeshow was applied to examine goodness-of-the-fit model.

Results

Socio-demographic characteristics of participants

In this study, 342 students who attended and 349 students who did not attend HIV/AIDS, SRH and life skill course were included in the analysis, with a response rate of 95.4%. The mean age of the respondents who attended and who did not attend the course was 21.2 years (± 1.2) and 21.3 years (± 1.2), respectively. Two hundred fifty-seven (71.4%) students who attended and 271 (77.6%) students who did not attend the course were males. 210 (61.4%) students who attended and 202 (57.9%) students who did not attend the course were rural residents (Table 1).

Behavioral and psycho-social characteristics of participants

One hundred thirty-three (38.9%) students who attended and 164 (47.0%) students who did not attend HIV/

AIDS, SRH and life skill course were drinking alcohol at least once in their lifetime. Fifty-six (16.4%) students who attended and more than one-fifth (21.8%) of the participants who did not attend the course ever visited a night club. Sixty-three (18.4%) students who attended and 85 (24.4%) who did not attend the course experienced peer pressure (Table 2).

Sexual history of respondents

In this study, 79 (23.1%) students who attended and 114 (32.7%) of those who did not attend HIV/AIDS, SRH and life skill course had started sex life. The mean age of sexual initiation among students who attended and who did not attend the course was 18.1 years (± 1.7) and 18.1 years (± 1.8), respectively. From sexually experienced respondents, 61 (77.2%) students who took and 106 (93.0%) students who did not take the course had sex in the past 12 months before the study. Of these, 31 (39.2%) students who attended and 91 (79.8%) of those who did not attend the course had inconsistent condom use, and 27 (34.2%) students who took and 34 (29.8%) who did not take the course had multiple sexual partners. Three (4.8%) students who attended and 8 (8.6%) of those who did not attend the course had sex with CSWs in the past 12 months before the survey (Table 3).

Prevalence of risky sexual behavior

The overall prevalence of risky sexual behavior among students was 75.1% (95% CI: 68.3-81.3%). The prevalence of risky sexual behavior among students who attended and who did not attend HIV/AIDS, SRH and life skill course was 55.7% (95% CI: 45.6-68.4%) and 88.6% (95% CI: 83.2-94.8%), respectively (Figure 1).

Table 2. Behavioral and psycho-social characteristics of university students, Northeast Ethiopia, 2018

Variables	Students who attended the course (n = 342), n (%)	Students who did not attend the course (n = 349), n (%)
Alcohol drinking		
Yes	133 (38.9)	164 (47.0)
No	209 (61.1)	185 (53.0)
Khat chewing		
Yes	28 (8.2)	37 (10.6)
No	314 (91.8)	312 (89.4)
Cigarette smoking		
Yes	2 (98.0)	13 (3.7)
No	335 (2.0)	336 (96.3)
Watching pornographic film		
Yes	102 (29.8)	154 (44.1)
No	240 (70.2)	195 (55.9)
Visiting night club		
Yes	56 (16.4)	76 (21.8)
No	286 (83.6)	273 (78.2)
Peer pressure		
Yes	63 (18.4)	85 (24.4)
No	279 (81.6)	264 (75.6)
Discussion on sexual issues with family		
Discussed	54 (15.8)	61 (17.5)
Never discussed	288 (84.2)	288 (82.5)
Knowledge about HIV/AIDS		
Good	158 (46.2)	174 (49.9)
Poor	184 (53.8)	175 (50.1)

Table 3. Sexual history of university students in the past 12 months, Northeast Ethiopia, 2018

Variables	Students who attended the course (n = 79), n (%)	Students who did not attend the course (n = 114), n (%)
Had sex in the past 12 months		
Yes	61 (77.2)	106 (93.0)
No	18 (22.8)	8 (7.0)
Inconsistent condom use		
Yes	31 (39.2)	91 (79.8)
No	48 (60.8)	23 (20.2)
No. of sexual partners		
One	52 (65.8)	80 (70.2)
Two or more	27 (34.2)	34 (29.8)
Had sex with commercial sex workers		
Yes	3 (36.4)	8 (45.5)
No	27 (63.6)	34 (54.5)

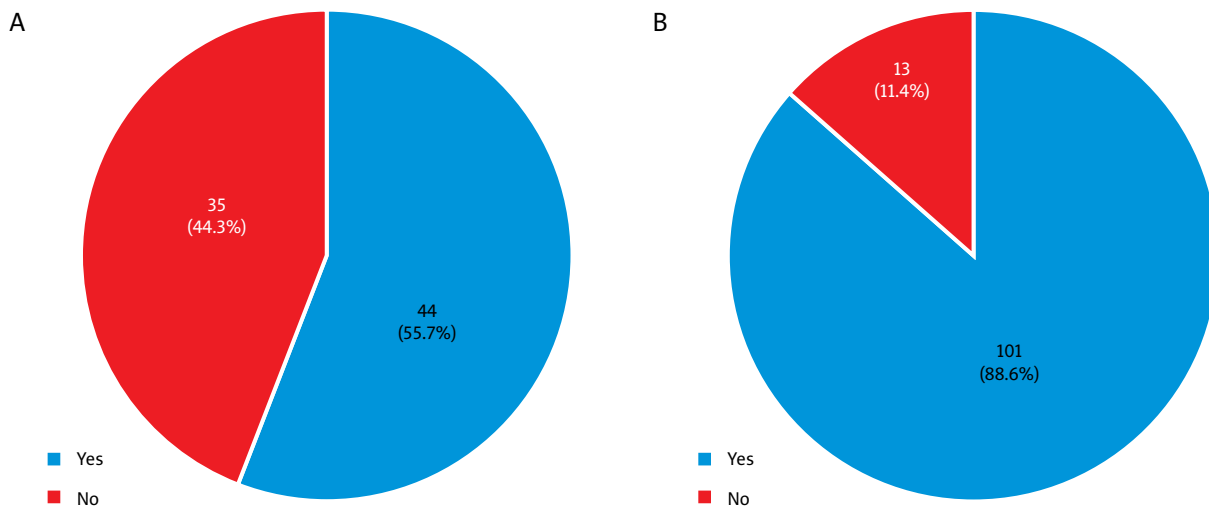


Figure 1. Risky sexual behavior among students who (A) attended and who (B) did not attend HIV/AIDS, SRH and life skill course, Northeast Ethiopia, 2018

Factors associated with risky sexual behavior

Bivariable and multivariable binary logistic regression analysis was performed for both students who attended and did not attend the course separately, and in general. In the final multivariable binary logistic regression analysis, being male, having good knowledge on HIV/AIDS, and attending HIV/AIDS, SRH and life skill course had an independent and significant association with risky sexual behavior. Male students were 7.4 times more likely to practice risky sexual behavior than female students (AOR = 7.39; 95% CI: 2.78-19.68%). Students with good knowledge on HIV/AIDS were 71% less likely to practice risky sexual behaviors than those with poor knowledge on HIV/AIDS (AOR = 0.29; 95% CI: 0.12-0.73%). The odds of risky sexual behavior among students who took basics of HIV/AIDS, SRH and life skill course were 82% less than students who did not attend the course (AOR = 0.18; 95% CI: 0.07-0.43%) (Table 4).

Discussion

The present study attempted to assess and compare the prevalence of risky sexual behavior and associated factors among university students who attempted and did not attempt HIV/AIDS, SRH and life skill course. The overall prevalence of risky sexual behavior among students was 75.1%. The prevalence of risky sexual behavior among the respondents who attempted and did not attempt the course was 55.7% and 88.6%, respectively. In this study, sex (being male), good knowledge on HIV/AIDS, taking HIV/AIDS, sexual reproductive health and life skill course had a statistically significant association with risky sexual behavior.

The overall prevalence of risky sexual behavior among students was higher than in studies conducted at Aksum

University (17%) [2], Arba Minch (31.4%) [21], Mada-walabu University (35.2%) [16], Debre Tabor University (39.6%) [33], Debre Markos University (58.15%) [17], Bahir Dar University (62.0%) [34], and Haramaya University (65.8%) [3]. This might be due to the difference in number of participants, study year, and measurement of the outcome variable. The current study evaluated the current level (12 months) of risky sexual behavior among students who had started sexual life. However, some studies [2] used the total number of students as a denominator, and other studies used only one or two types of risky sexual behaviors. This study attempted to consider all types of risky sexual behaviors. Moreover, students in the era of globalization have a higher risk of adopting new behaviors and practice [35].

The prevalence of risky sexual behavior among students who did not take the course was higher than students who took the course. This might be due to HIV/AIDS, SRH and life skill course that improves knowledge, skills, and attitudes of students needed to prevent risky sexual behaviors. In this study, sex had a statistically significant association with risky sexual behavior. Male students were seven times more likely to practice risky sexual behavior as compared with female students, and this is in line with studies conducted in Haramaya University, Aksum University, and Bonga Town [2, 3, 9]. This might be due to Ethiopia's cultural background that put male above female to express sexuality; therefore, males can ask females for sexual practice easily and get access to it as compared with females. Moreover, male students are more likely to be engaged in risky behaviors, such as alcohol drinking [36], chat chewing [37], and cigarette smoking [38] compared with female students. An important negative association was observed between knowledge on HIV/AIDS and risky sexual behavior. Students with good knowledge on HIV/AIDS were 71% less likely to practice risky sexual behaviors than those with poor knowledge on HIV/AIDS. This

Table 4. Factors associated with risky sexual behavior among university students, Northeast Ethiopia, 2018 ($n = 193$)

Variables	Risky sexual behavior		COR (95% CI)	AOR (95% CI)
	Yes, n (%)	No, n (%)		
Sex				
Male	126 (86.9)	30 (62.5)	3.98 (1.86-8.49%)*	7.39 (2.78-19.68%)*
Female	19 (13.1)	18 (37.5)	1	1
Residence				
Rural	61 (42.1)	27 (56.2)	1	1
Urban	84 (57.9)	21 (43.8)	1.77 (0.92-3.42%)	1.83 (0.77-4.37%)
Alcohol use in the past 12 months				
Yes	106 (73.1)	28 (58.3)	1.94 (0.98-3.84%)	1.17 (0.48-2.85%)
No	39 (26.9)	20 (41.2)	1	1
Watching pornographic film in the past				
Yes	99 (68.3)	27 (56.2)	1.67 (0.86-3.27%)	0.58 (0.22-1.52%)
No	46 (31.7)	21 (43.8)	1	1
Visiting night club in the past 12 months				
Yes	77 (53.1)	18 (37.5)	1.89 (0.97-3.68%)	1.05 (0.40-2.26%)
No	68 (46.9)	30 (62.5)	1	1
Experiencing peer pressure				
Yes	66 (45.5)	15 (31.2)	1.84 (0.92-3.67%)	2.02 (0.87-0.47%)
No	79 (54.5)	33 (68.8)	1	1
Knowledge on HIV/ AIDS				
Poor	127 (87.6)	28 (58.3)	1	1
Good	18 (12.4)	20 (41.7)	0.20 (0.09-0.42%)*	0.29 (0.12-0.73%)*
Attending HIV/AIDS, SRH and life skill course				
Yes	44 (30.3)	35 (72.9)	0.16 (0.08-0.34%)*	0.18 (0.07-0.43%)*
No	101 (69.7)	13 (27.1)	1	1

*Significant at $p < 0.05$ in bivariable and multivariable analysis
COR – crude odds ratio, AOR – adjusted odds ratio

finding is similar to another study from Ethiopia [25], and might be because knowledge is critical for behavioral change and motivates positive behavior. Therefore, high knowledge improves SRH care-seeking behavior and consistent condom use.

This study showed that taking HIV/AIDS, SRH and life skill course had a statistically significant negative association with risky sexual behavior. These students who attended the course were 82% less likely to practice risky sexual behaviors than students who did not attend HIV/AIDS, SRH, and life skill course. This finding is supported by studies from Ethiopia, USA, China, and Brazil [39-42]. This might be due to the students preparedness for the course regarding knowledge, skills, and attitudes needed to prevent and bring positive behavioral changes, such as correct and consistent condom use, reduction of the number of sexual partners, abstinence, and delayed sexual initiation.

This study has some limitation, which need to be considered. The finding of this study is subject to social desirability

biases, and the possibility of underestimation cannot be ruled out, since the study topic by itself assesses personal and sensitive issues related to sexuality, which might cause under-reporting of some behaviors. This study also did not assess environmental features and institutional level factors, which can affect the risky sexual behaviors of university students.

Conclusions

Significant number of university students are engaged in risky sexual behaviors. The prevalence of risky sexual behavior among students who did not take the course is higher than the students who took the course. Being male is the factor that increases risky sexual behavior, whereas good knowledge on HIV/AIDS and taking HIV/AIDS, SRH and life skill course are protective factors for risky sexual behavior. HIV/AIDS, SRH and life skill course should be incorporated into other universities' curricula. Moreover, universities should develop and implement effective and ongoing strategies, and

provide gender-specific intervention for all their students. Emphasis should be given on knowledge and efficacy regarding condom use. Further research on environmental and institutional factors, which affect university students' risky sexual behaviors are recommended.

Disclosures

1. Institutional review board statement: The study was approved by Ethical Review Committee of Wollo University College of Medicine and Health Sciences, with approval number: CMHS2850/13/10.
2. Assistance with the article: The authors would like to thank Wollo and Woldia Universities Registrar Offices staff for their cooperation and provision of valuable information.
3. Financial support and sponsorship: None.
4. Conflicts of interest: None.

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