Magnitude of risky sexual behaviors, determinants, and consequences among high school and preparatory school students in Mizan Aman Town, Ethiopia

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ARTICLE INFO	ABSTRACT
Article type: Original article *Article History:* Received: 09-May-2019 Accepted: 02-Oct-2019 *Key words:* Sexual behavior Risky behaviors Unsafe sex Adolescents	***Background & aim:*** Adolescence is the period when young people learn about sexual activity. This period exposes them to different challenges if not properly managed. Therefore, the present study aimed to determine the prevalence of risky sexual behaviors as well as its associated factors and consequences among high school and preparatory school students. ***Methods:*** This facility-based cross-sectional study was carried out among 349 randomly selected high school and preparatory students of Mizan Aman Town, Ethiopia, during May, 2018. For data collection a structured and validated questionnaire regarding risky sexual behaviors was filled out by students. The data were analyzed using SPSS software (version 21). Logistic regression with 95% confidence interval (CI) was used to determine independent factors, and p-value less than 0.05 in multivariable logistic regression was used to demonstrate statistical significance. ***Results:*** The prevalence rate of risky sexual behaviors was reported as 30.5%. Risky sexual behaviors were associated with issues including being from rural areas (AOR=2.041; 95% CI: 1.224-3.403), watching pornography (AOR=2.142; 95% CI: 1.219-3.766), and discussing the issue of sexuality with family (AOR=0.349; 95% CI: 0.191-0.541). Regarding the consequences of risky sexual behaviors, 8% of the respondents reported a history of signs or symptoms related to sexually transmitted infections (STIs), and 7.05% of the females had a history of an unplanned pregnancy. ***Conclusion:*** One-third of the study participants had risky sexual behaviors. The residents of rural areas and students who watched pornographic films were at a higher risk and the participants who had a discussion about sexuality with their families were at a lower risk of risky sexual behaviors. The STIs, unplanned pregnancy, and abortion were the consequences of risky sexual behaviors.

Introduction

Adolescence is a bridge between childhood and adulthood. It is a time of developing new behaviors in adolescents to make the future productive force of the nation. It is a period when the reproductive system starts functioning as adult individuals; therefore, it is a critical time and requires great attention to avert the problems related to the onset of adolescence (1–3).

Due to the lack of comprehensive reproductive health knowledge, adolescents and young people are exposed to the poor consequences of reproductive health (4). In most cases, the sexual relations of this population are unprotected. In turn, unprotected sexual intercourse has a greater probability of unintended pregnancy, induced abortion, and sexual transmitted infections (STIs) or HIV/AIDS

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(5). Globally, out of six pregnancies, one case is an adolescent pregnancy that results in a greater risk of complications both for newborn and mother (6).

The poor outcomes of reproductive health are common in developing countries. For instance, in eastern and southern Africa, adolescents and young people are highly affected by HIV. According to the Joint United Nations Programme on HIV/AIDS in this region, young women of 15 to 24 years of age accounted for 26% of new HIV infections in 2016 (7). Furthermore, young women are more susceptible to HIV infection in sub-Saharan Africa where risky sexual behaviors are prevalent. In this region, women within the age range of 15 and 24 years account for four in five new HIV/AIDS infections (8).

Each year, the frequency of new cases with HIV infection in adolescents and adults decreased by more than 50% from 2001 to 2012 in 26 countries. Decreasing HIV transmission did not show what has been expected in sub-Saharan Africa. The countries in this area did not demonstrate good progress in halting the major predisposing factors of HIV and other STIs. For instance, in sub-Saharan Africa, the trend of using a condom is decreasing, and the number of sexual partners is increasing (9).

Studies from different corners of the world indicate that the majority of adolescents' sexual practices are risky and result in poor reproductive health. For example, the results of a study in Cambodia showed that 12.7% of high school students stated they had sexual interaction during the past 3 months, and 34.6% of them had multiple sexual partners (10). At the University of North Carolina, the United States, about 30% of students who have used drugs have had sexual intercourse with four or more partners and did not use a condom. It demonstrated that only 50% of sexually active adolescents report using condoms even in case, the prevalence of HIV/AIDS was high (11). A study performed at Jimma University in Jimma, Ethiopia, demonstrated that three-fourths of students had the experience of sexual intercourse during high school (12).

In different parts of Ethiopia, a number of studies were conducted on the prevalence of risky sexual behaviors, the majority of which were descriptive (5, 12–17). In addition, almost all of the aforementioned studies did not address the consequences of risky sexual behaviors. Therefore, the assessment of risky sexual behaviors, associated factors, and consequences are important in this specific study domain in order to take appropriate measures. The objective of the present study was to determine the magnitude of risky sexual behaviors, determinants, and consequences among high school and preparatory school students in Mizan Aman Town, Ethiopia, in 2018.

Materials and Methods

This facility-based cross-sectional study was conducted in Mizan Aman town, which is located 561 km away from Addis Ababa as the capital of Ethiopia during May 3-8 in 2018. There is one governmental and two private high schools and preparatory schools in Mizan Aman Town. All regular high schools and preparatory students in Mizan Aman Town were the source population; however, randomly selected high schools and preparatory students in Mizan Aman Town were the study population. All regular students were included in the present study. Those students who were ill and unable to respond and nonregular students (night students) were not included in the study. Because almost all nonregular students were adults and they were different from adolescents in many characteristics.

The sample size was calculated using the single population proportion equation by assuming 95% confidence interval and 5% margin of error (d). The proportion (p) was obtained from a study conducted in Jimma high school and preparatory school (37%) (17).

n = ([Z a/2] ^{2} P [1-p]) /d^2 = 358

Since the source population was 3766 students, which was less than 10,000, the sample size was calculated by the following correction formula:

n final = n / (1+n/N) = 358/ (1+358/3766) = 327

Then, 10% was added to compensate for nonresponse.

n = 327+ (327*0.1) = 360

In Mizan Aman Town, there is one public and two private schools. Two high schools were selected, one from private (Misgana academy) by chance and the other from public high schools and preparatory schools. In both

selected high schools, there were a total of 3766 students out of whom 2290 subjects were governmental school students. The remaining 1476 students were from a private school (Misgana Academy). The sample size was proportionally allocated to both high schools according to their population size. The number of sampled students was calculated from each school and proportionally allocated to each grade (i.e., 9, 10, 11, and 12). In both Mizan high and preparatory schools, and private high school, there were 51 sections. Then, 18 sections were selected from those by the lottery method, and study units were chosen from randomly selected sections using sampling frame.

The dependent variable was risky sexual behavior. The independent variables included age, gender, religion, ethnicity, grade level, marital status, family educational level, residence, knowledge of HIV and STI, discussion with parents, alcohol consumption, chat chewing, cigarette smoking, watching pornographic movies, peer pressure, and consequences of risky sexual behaviors (i.e., the prevalence of signs and symptoms of STI, unplanned pregnancy, and abortion).

A self-administrated structured questionnaire was used for data collection. The questionnaire included items on sociodemographic factor**s**, as well as risky sexual behaviors and associated factors. The structured questionnaire was adopted from a study conducted in Jimma, and face validity was checked by an expert in this study (17). The original (English version) questionnaire was interpreted to Amharic version, then back to English to ensure consistency. The data were collected by the graduating class of public health students under supervision. To ensure the quality of data, there was a discussion with data collectors and supervisors following the training on how to collect the data. At the end of each day, the data collectors and supervisors checked the completeness of the data, and an immediate correction was made for the incomplete data.

The data were entered and analyzed using SPSS software (version 21). Data cleaning and editing were carried out, and the frequency distribution of variables was determined in this study. Binary logistic regression was performed to select the candidate variable for multivariable logistic regression. Variables with p-values less than 0.25 in binary logistic regression were chosen for the final multivariable logistic regression model to determine the variables significantly associated with risky sexual behaviors. Multivariable logistic regression analyses were conducted to control the effect of each explanatory variable on the outcome variables, and odds ratios were calculated to determine the strength of the association of selected variables. The significance level of the adjusted odds ratio was determined at 95% confidence interval with p-value less than 0.05.

The study was approved by the Ethical Review Committee of the College of Health Science in Mizan-Tepi University in Tepi, Ethiopia. A permission letter was obtained from Mizan Aman Town Education Office. The directors in the respective schools gave their consent and permission to conduct the study. The participants enrolled in the study were informed about the study objectives. Written consent was obtained from each participant before data collection. For the students with less than 18 years of age, the consultation with their parents and school directors was requested regarding the permission to participate. The confidentiality was preserved at every step of data collection and analysis.

Results
Sociodemographic profile of study participants

A total of 349 students engaged in the study, with a 97% response rate. Out of the total respondents, 193 (55.3%) participants were males. Most (n=278; 79.6%) of the participants were in the age group of 15-18 years. In addition, 333 (95.4%) participants were single. Most (n=168; 48.1%) of the respondents were Bench by ethnicity, and 168 (48.1%) students were Muslim. Moreover, 159 (45.6%) students were in grade 9, and 116 (33.2%) and 98 (28.1 %) fathers and mothers of the participants can read and write, respectively. Out of all parents, 166 (47.6%) participants' mothers were housewives, and 118 (33.8 %) fathers were civil servants. Furthermore, 230 (65.9%) students were from urban areas. In total, 195 (55.9%) families of the participants had a monthly income of 1500 Ethiopian birr and above (Table 1).

Table 1. Sociodemographic profile of high school and preparatory school students in Mizan Town Bench Maji Zone, Ethiopia, in June 2018

Variable	Category	Frequency (%)
Gender	Male	193 (55.3)
	Female	156 (44.7)
Age	10-14	10 (2.9)
	15-18	278 (79.6)
	≥19	61 (17.5)
Marital status	Never married	333 (95.4)
	Married	16 (4.6)
Ethnicity	Bench	168 (48.1)
	Kafa	50 (14.3)
	Amhara	76 (21.8)
	Others	55 (15.8)
Religion	Orthodox	130 (37.2)
	Muslim	168 (48.1)
	Protestant	24 (7.0)
	Catholic	7 (2.0)
	Others	20 (5.7)
Grade level	9-10	248 (71.0)
	11-12	101 (29.0)
Educational level of father	Read and write	116 (33.2)
	Grades 1-8	39 (11.2)
	Grades 9-12	93 (26.6)
	Diploma and above	101 (29.0)
Educational level of mother	Read and write	98 (28.1)
	Grades 1-8	90 (25.8)
	Grades 9-12	70 (20.0)
	Diploma and above	67 (19.2)
	Others	24 (6.9)
Occupation of father	Daily laborer	22 (6.3)
	Civil servant	118 (33.8)
	Private employee	40 (11.5)
	Merchant	59 (16.9)
	Farmer	98 (28.1)
	Others	12 (3.4)
Occupation of mother	Civil servant	69 (19.8)
	Private employee	101 (28.9)
	Housewife	166 (47.6)
	Others	13 (3.7)
Residence	Urban	230 (65.9)
	Rural	119 (34.1)

Sexual characteristics of study population

Out of 349 respondents, 124 (35.5%) subjects reported that they practiced sexual intercourse (sexually active) in the past 12 months. In this study, 75 (60.5%) sexually-active students were male. About 107 (30.7%) subjects had risky sexual behaviors, and the rest (69.3%) did not have risky sexual behaviors. Out of those respondents who were sexually active, the age of 106 (85.5 %) participants during the first intercourse was less than 18 years. The reason for the first sexual encounter was falling in love among 49 (39.5%) students. Among those who were sexually active, 74 (59.7%) subjects had their first intercourse with a steady boy/girlfriend.

Moreover, 92 (74.1%) respondents reported that they had sexual intercourse with one partner. Out of those sexually active, 58 (46.8%) subjects used a condom. Among those participants who did not use a condom during intercourse, the reason was that a condom decreases pleasure (n=24; 36.4%). Out of those

sexually-active, 12 (16%) male respondents reported experiencing sex with commercial sex workers in the past 12 months. About 20 (16.1%) participants had sex after drinking alcohol. Out of 349 participants, 112 (32.1%) students had peer influence to make sex. Approximately, one-fourth (n=84; 24.1%) of the participants watched pornographic movies, and 56 (16%) participants discussed sexual issues with their family (Table 2).

Table 2. Practices related to sexual behaviors among Mizan high school and preparatory school students in Mizan Town, Ethiopia in June 2018

Variable	Category	Frequency (%)
Relation of the first sexual partner	Boy/Girlfriend	74 (59.7)
	Husband/Wife	19 (15.3)
	Casual partner	21 (16.9)
	Commercial sex worker	2 (1.6)
	Others	8 (6.5)
Number of sexual partners	One	92 (74.1)
	Two	9 (7.3)
	Three	11 (8.9)
	>Three	12 (9.7)
Frequency of condom use during any sexual episodes	Sometime	27 (46.6)
	Most of time	8 (13.8)
	Always	23 (39.7)
Having sex after alcohol drinking	Yes	20 (16.1)
	No	104 (83.9)
Having sex with commercial sex workers	Yes	12 (9.6)
	No	112 (90.4)
Use of condom with commercial sex workers	Yes	11 (91.7)
	No	1 (8.3)
Frequency of condom use	Sometime	5 (45.5)
	Most of time	3 (27.3)
	Always	3 (27.3)
A history of sexually transmitted infections	Yes	11 (8.9)
	No	114 (91.1)
Peer influence	Yes	112 (32.1)
	No	237 (67.9)
Watching pornographic movies	Yes	84 (24.1)
	No	265 (75.9)

Consequences of risky sexual behaviors

In this study, 11 (8.9%) students were reported with a history of the signs or symptoms of STIs. Among female participants, 11 (8.9%) students became pregnant, and 7 (63.6%) pregnancies were unplanned. All of the unplanned pregnancies (n=7; 63.6%) ended in abortion. The place of abortion was a public health institution, and the major cause for abortion was being out of marriage (n=3; 42.4%).

Source of information about HIV/AIDS and sexually transmitted infections

The majority of participants responded that they had information about HIV/AIDS and STIs from radio and television (n=194; 55.6%). More than three-fourths (n=268; 76.8%) of the participants believed that HIV was prevented by abstinence. Those students (n=57; 46%) who were sexually active perceived that their sexual practice exposed them to HIV/STIs.

Substance use

Out of 349 participants, 61 (17.5%) subjects responded that they used a substance. The most commonly used substance by the respondents (n=34; 55.7%) was chat (Table 3).

Table 3. Substance use among high school and preparatory school students in Mizan Town, Ethiopia, in June 2018

Variable	Category	Frequency (%)	(%)
Frequency of substance use	Once a day	23	37.7
	Twice a day	8	13.1
	Once a week	5	8.2
	Twice a week	9	14.8
	Others	16	26.2
Type of substance	Chat	34	55.7
	Shisha	14	23.0
	Hashish	11	18.0
	Cigarette	2	3.3
Alcohol consumption	Never drunk	294	84.2
	Drunk	55	15.8
Cigarette smoking	Never smoked	332	95.1
	Smoked	17	4.9

Associated factors with risky sexual behaviors

Table 4. Factors associated with risky sexual behaviors among Mizan high School and preparatory school students of Mizan Town Bench Maji Zone, Ethiopia, in June 2018

Variable		Risky behavior		Crude odds ratio (95% CI)	Adjusted odds ratio (95% CI)
		Yes	No		
Gender	Male	63 (32.6%)	130 (67.4%)	1.00	1.00
	Female	44 (28.2%)	112 (71.8%)	0.811 (0.511-1.285)	0.989 (0.602-1.627)
Age	10-14	3 (30.0%)	7 (70.0%)	1.00	1.00
	15-18	80 (28.8%)	198 (71.2%)	0.943 (0.238-3.737)	1.143 (0.272-4.795)
	≥19	24 (39.3%)	37 (60.7%)	1.514 (0.356-6.431)	1.540 (0.332-7.145)
Grade level	9-10	81 (32.7%)	167 (67.3%)	1.00	1.00
	11-12	26 (25.7%)	75 (74.3%)	0.715 (0.425-1.201)	0.575 (0.324-1.020)
Residence	Urban	56 (24.3%)	174 (75.7%)	1.00	1.00
	Rural	51 (42.9%)	68 (57.1%)	2.330 (1.456-3.735)	2.041 (1.224-3.403)*
Substance use	No	76 (26.5%)	211 (73.55)	1.00	1.00
	Yes	31 (50.0%)	31 (50.0%)	2.776 (1.582-4.873)	1.625 (0.782-3.377)
Alcohol drinking	No	80 (27.2%)	214 (72.8%)	1.00	1.00
	Yes	27 (50.0%)	27 (50.0%)	2.675 (1.480-4.836)	1.659 (0.782-3.377)
Watching pornographic movies	No	64 (25.3%)	198 (74.7%)	1.00	1.00
	Yes	40 (46.6%)	44 (52.4%)	2.812 (1.613-4.474)	2.142 (1.219-3.766)*
Discussion about sex with family	No	78 (26.6%)	215 (73.4%)	1.00	1.00
	Yes	29 (51.8%)	27 (48.2%)	0.339 (0.150-0.661)	0.349 (0.191-0.541)*

NB: Significantly associated variable*

Binary logistic regression analysis was carried out to examine the effect of explanatory variables by controlling the impact of confounders on risky sexual behaviors that exposes them to HIV or STI. At the bivariate level, many variables were identified for multivariable logistic regression. Variables with p-value less than 0.25 were taken in multivariable logistic regression to identify the independent predictors of risky sexual behaviors.

In multivariable logistic regression analysis, three variables were significantly associated with risky sexual behaviors. The results of multivariable logistic regression showed that having risky sexual behaviors was more likely among rural students than urban subjects (AOR=2.041; 95% CI: 1.224-3.403). Those study participants who watched pornographic movies were two times more likely to develop risky sexual behaviors than those who did not watch (AOR=2.14; 95% CI: 1.219-3.766). However, the students who discussed sexual issues with their families were less likely to develop risky sexual behaviors than those who did not discuss (AOR=0.349; 95% CI: 0.191-0.541) (Table 4).

Discussion

In this study, 30.5% of the respondents reported that they had risky sexual behaviors. This figure is lower than that in a study conducted among preparatory school students in Jimma, which showed that 42% had had risky sexual behaviors (17). This discrepancy may be due to the fact that the aforementioned study was conducted in urban areas with a better socioeconomic status than that in the present study. The study conducted in Bahir Dar, Ethiopia, among college students showed that 50.7% had sexual intercourse, which is higher than that in the present study (13). The difference might be due to the fact that college students are living away from their families, and they can freely do what they want.

The results of the present study also revealed that 25.8% of the respondents had two or more sexual partners. The findings of a study conducted in Benishangul Gumuz, Ethiopia, showed that 35.1% of students were reported with having two or more sexual partners, and 74 (19.8%) subjects had risky sexual behaviors, which is lower than the finding of the present

study (18). This inconsistency might be because the present study was performed in the cash crop area. . Moreover, the results of a study conducted among private college students in Bahir Dar, Ethiopia, revealed that 40.6% of sexually active respondents had risky sexual behaviors (19). This might be due to the fact that the majority of college students live alone (far from family), and peer pressure might be higher in this group than that in high school students.

In the present study, 15.8% of the students consumed alcohol, and 24.1% of them watched pornographic movies. In addition, 55.7% of the participants chew khat, and 16% of them discussed sexual issues with their parents. The present study conducted among Jimma University students showed that 37% of the students used alcohol, and 35.5% of them had the experience of watching pornographic movies in the last 6 months. Moreover, 97 (35.5%) students chewed chat in the last 6 months, and two nearly 95% of the students discussed sexuality with their parents (17). This variation might be due to the fact that Jimma is more urban than Mizan Aman. Students in those urban areas have better access to the internet and media.

Furthermore, it might be due to the difference in paternal and maternal educational status. In a study carried out in Jimma University, 42.5% and 31.5% of fathers and mothers had diploma and above, respectively (17). However, in the present study area, paternal and maternal educational levels above diploma were 28.9% and 18.2%, respectively, which might bring the difference to the discussion about sexuality.

In this study, having risky sexual behaviors was more likely among rural students than that in the urban subjects. This might be due to media influence and residence of rural students in rented houses; nevertheless, urban students were living with their parents and under their control. Similarly, the results of a study conducted in Nyanza, Kenya, indicated that sexual behaviors are riskier among young women in rural regions than that in urban areas (20).

Those participants who watched pornographic movies were more likely to

develop risky sexual behavior than those who did not watch. This might be due to the fact that watching pornography increases the sexual desire of adolescents. This finding is in line with the results of studies carried out in Nekemte, Ethiopia, (21) and Debre Tabor, Ethiopia (22). Communication or discussion about sexual issues was a factor affecting risky sexual behaviors. Those who discussed with families about sexuality were less likely to develop risky sexual behavior than those who did not discuss it. This result is in line with the finding of a study conducted among high and preparatory school students in East Wellega, Ethiopia (23). This might be because those students are aware of sexual issues. They may have information and understanding about risky sexual behaviors.

The frequency of self-reported history of signs and symptoms of STIs reported as 8.1%. was among the consequences of risky sexual behaviors in the present study. This magnitude of STIs is lower than that in a study performed among the students of Wolaita Sodo University, Ethiopia (24), which showed that 19.5% of students have a self-reported history of STIs. This discrepancy might be due to a study conducted at Wolaita Sodo University in Ethiopia on university students in which exposure to different factors is high. Furthermore, parental control is low among the university students. The prevalence of abortion in the present study was also lower than that in a study carried out among female high school students in Illubabor zone, Ethiopia, which was 42.9% (25). The difference might be due to the fact that the aforementioned study was performed only on female students.

Conclusion

More than one-third of the participants practiced sexual intercourse in the past 12 months. Approximately, one-third of the subjects had risky sexual behaviors. The signs and symptoms of STIs, unplanned pregnancy, and abortion were the consequences of risky sexual behaviors. The obtained results of the study demonstrated that being the resident of rural areas and watching pornographic films increased the odds of risky sexual behaviors. However, the odds of risky sexual behaviors decreased among the participants who had discussions about sexuality with their families.

School administration and Mizan-Tepi University should inform the students about the consequences of risky sexual activities and benefit of safe sexual behaviors.

Parents should communicate with their children about sexual and reproductive health issues. School stakeholders and families should start sexuality education, especially in rural areas. In addition, it is important to promote open discussion regarding sexuality among families. It is better if each school has a club that increases awareness about the reproductive issues of adolescents. Similarly, local media should work toward the improvement of the reproductive health of young individuals.

The limitation of the present study was the determination of the prevalence of risky sexual behaviors by the responses of the participants. Due to social norms, the students may underreport regarding the variables, such as sexual activity, number of sexual partners, age of sexual intercourse initiation, and sexual intercourse with commercial sex workers.

Acknowledgements

Conflicts of interest
Authors declared no conflicts of interest.

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