

Prevalence and Associated Factors of Risky Sexual Behavior among Debre Markos University Regular Undergraduate Students, Debre Markos Town North West Ethiopia, 2016

Mr. KASSA MAMO¹ Mr. ENDESHAW ADMASU² Mrs. MARTHA BERTA²

1. Ambo University department of Midwifery

2. University of Gondar, Department of Midwifery

Abstract

Background: In adolescents and young people risky sexual behavior is a priority public health concern because of the high prevalence of HIV/AIDS and sexually transmitted infections (STIs). **Objectives:** To assess the magnitude of risky sexual behaviours and associated factors among Debre Markos University students, Debre Markos Town, North West Ethiopia December 2015 – February 2016. **Methods:** A cross sectional study was conducted among 631 undergraduate regular Debre Markos University students. Stratified random sampling technique was used to select the students and a pretested structured self-administered questionnaire was used to collect the data. Epi info version 7.1.2.0 was used to enter the data and transferred to SPSS version 20 for analysis. The association between factors and the risky sexual behaviors were analyzed with bivariate logistic regression and variables with p-value of 0.05 were transferred to multivariate analysis. **Results:** Among 631 study participants 282 (44.7%) had reported they have sexual experience before this survey was conducted. The mean age of sexual debut was 18.25 years. From 282 sexually active students, 164 (58.15%, 95% CI (56.18%, 60.11%)) had at least one of the risky sexual behaviours i.e. inconsistent condom use (80, 48.8%), multiples sexual partners (73, 44.5%) or having sexual intercourse with commercial sex workers (11, 6.7%) in their lifetime. Early sexual debut (AOR 2.234, 95%CI (1.194, 4.178) p = 0.012), Alcohol Drinking (AOR 4.554 95%CI (2.214, 8.591), p=0.005) cigarette smoking (AOR 2.506, 95%CI (1.346, 4.665), p <0.001), khat chewing (AOR 6.989, 95%CI (3.383, 14.027) low self-esteem (AOR 2.506, 95%CI (1.346, 4.665), p <0.001) were factors associated with risky sexual behaviors practiced among students. **Conclusion and recommendation:** This study has showed that risky sexual behaviors are practiced among Debre Markos University students; therefore programs that encourage consistent condom, avoidance of early sexual initiation and prevention and control of substance use in the university compound are recommended..

Introduction

Sexual behavior is the core of sexuality matters in adolescents and youths. In adolescents and young people risky sexual behavior has been recognized as an important health, social and demographic concern in the developing world. It is a priority public health concern because of the high prevalence of HIV/AIDS and sexually transmitted infections (STIs) among this age group (1, 2).

Globally, one-third of the 340 million new STIs cases occur per year in people under 25 years of age. According to the United Nations Program on HIV/AIDS (UNAIDS), in 2008 young people aged 15-24 years accounted for 42% of new HIV infections in people aged 15 and older and nearly 80% of this live in sub-Saharan Africa (1, 3).

In Ethiopia, young people (aged 15–24) represented one of the country's largest groups, comprising about 35% of the population and university students are in this age category and are exposed to risky sexual behaviors such as unprotected sexual intercourse leading to HIV, other STIs and unwanted pregnancies. They are more vulnerable to wider sexual and reproductive health and HIV/AIDS problems due to new environment with poor protection, age and the need to explore life, peer pressure and absence of proactive programs. Living independently away from home was considered important because it facilitated students to have sex with many different partners without fear of social censure from peers or community members. This implies that living a risky sexual lifestyle is socially accepted at university. Their risky behaviors may be further worsened by the fact that they mostly live in campuses without boundaries or security; peer pressure; economic problems and lack of youth friendly recreational facilities (1, 4-6).

Early sexual initiation may predispose young people to HIV as their chances of having several partners before marriage increases. Different studies in Ethiopia shows that young people are engaged in premarital sex, before the age of 18 and intercourse prior to age 16 has been associated with adverse sexual health outcomes (7-9). Understanding the full range of sexual behaviors of young people is crucial in developing appropriate interventions to prevent and control sexually transmitted infections including HIV (2), and requires plenty of researches which look scarce in reality in the country in general and in the study area in particular – Debre Markos University.

Methods and materials

Study design, area and period

An institution based cross sectional study was conducted. The study was conducted at Debre Markos University from November 2015 to March 2016. Debre Markos University is located in Amhara Regional State, East Gojjam Zone, in the town of Debre Markos. Debre Markos is located 300 kilometers North-West of the capital Addis Ababa and 265 kilometers South-East of Bahir Dar, the capital of the Amhara National Regional State (10).

Source population: - All regular undergraduate students attending at Debre Markos University.

Study population: - All regular undergraduate students attending at Debre Markos University during the study period.

Sample size and sampling technique

Sample size determination

The sample size was determined using single population proportion formula taking the following assumptions: $P = 42.7\%$; the proportion of students practicing intercourse with multiple sexual partners from study conducted in Bahir Dar University (1), 95% confidence level and marginal error of 4%.

$$n = \frac{(z)^2 p(1-p)}{d^2}$$
$$= \frac{(1.96)^2 0.427(1-0.427)}{(0.04)^2} = 588$$

Assuming 10% non-response rate, the sample size was: $n = 588 + (588 \times 10\%) = 646.8$. The final sample size is 647.

Sampling technique and procedure

Stratified random sampling was used. From the outset students were stratified based on their colleges/schools where they are assigned by the university and then they were cross stratified in to three/four strata with their year of study from Year I to Year IV and above. After proportional allocation to each year of study simple random sampling technique using table of random numbers was applied to select the final study participants from each batch.

Data collection tool and procedures

A pretested structured and self-administered questionnaire, which was partly adopted from Behavioural Surveillance Survey (BSS) and literatures, was used to collect the data. Due to the sensitive nature of the study and the educational background of the respondents, a privately self-administrated, structured questionnaire in English language was used to obtain information. The data was collected by 6 trained data collectors from November 25 to December 2, 2015. Data collectors have administered the questionnaires to students and recollected it in the assigned hall for data collection in the university campus.

Measurement: Concerning risky sexual behaviours (RSB), participants were asked (1) if they ever had sexual intercourse (yes/no), (2) how many sexual partners they have had in their lifetime (1 or more than 1) (3) how frequent they used condom (always or irregularly/never), (4) with whom they had sex with (boy/girlfriend/spouse or CSWs). Those who have more than one sexual partners, those do not use condom regularly and those who have had sexual intercourse with commercial sex workers were taken to have risky sexual behaviours.

Regarding behavioural factors, respondents were asked (1) if they have an experience of alcohol drinking (yes/no), (2) if they have ever have smoked cigarette (yes/no), (3) if they have ever chewed khat (yes/no), (4) if they have ever used one or more of substances like Shisha, Hashish, or Cocaine (yes/no), (5) if they have ever attended night clubs (yes/no), and (6) if they ever have seen pornographic movie (yes/no). Those who had been drunk at least once in the last month, who have smoked cigarette at least once per week, who have chewed khat at least once per week, who have used substances one or more of shisha, hashish, cocaine at least once per week, who have seen pornographic movie at least once in a month and those who have attended night clubs at least once per month were seen to behave riskily and were observed whether they have any associations with risky sexual behaviours. Categorizations were taken from previous studies on the subject matter (34).

Concerning psychological factor, Self-esteem was assessed using the Rosenberg self-esteem scale [51]. The scale consists of 10 items (5 positive and 5 negative). Each item has a four-point scale ranging from "strongly agree" to "strongly disagree". For each question, the respondents choose the statement that most closely applies to them. The sum score for self-esteem varies from 10 to 40, a higher score indicating higher self-esteem. This variable was dichotomized into high (≥ 20) and low (10 - 19) self-esteem.

Data entry and analysis

All questionnaires were checked for completeness, coded and entered using Epi Info version 7.1.2.0 and transferred to SPSS version 20 software package for analysis. Descriptive statistics such as mean, percentage and standard deviations were determined. The association between factors and the risky sexual behaviours were analyzed with binary logistic regression. All variables having less than a p value of 0.05 in the binary logistic regression were entered to multivariate logistic regression model and through which confounding factors were ruled out. Variables with p value less than 0.05 in the multivariate analysis were taken as factors significantly associated with risky sexual behaviors. Crude and adjusted odds ratios with their 95% confidence intervals were determined.

Ethical consideration

Ethical clearance was obtained from the Institutional Review Committee of Department of Midwifery, University of Gondar, College of Medicine and Health Sciences. A support letter was obtained from Debre Markos University administration office which was a cooperation letter for the 6 colleges and registrar office. The purpose and importance of the research was explained to each of the study participants and the data was collected after a full informed verbal consent was obtained.

Result

Sociodemographic characteristics of the study participants

Six hundred thirty one (n = 631, 395 (62.6%) male and 236 (37.4%) female), students participated in the study making response rate of 97.5%. Approximately 93% of the respondents lie in the age range of 18 – 24 years and the mean age of respondents was 21.56 years (Table1).

Table1: Socio demographic characteristics of study participants among Debre Markos University students, Debre Markos, Ethiopia, 2016 (n=631).

		Frequency	Percent
Age of respondent	< 18	3	0.5
	18 – 24	590	93.5
	> 24	38	6
Sex of respondent	Male	395	62.6
	Female	236	37.4
Religion of respondent	Orthodox	500	79.2
	Muslim	52	8.2
	Protestant	61	9.7
Religious service attendance	Catholic	18	2.9
	Yes	512	81.1
	No	119	18.9
Marital status	Ever married	17	2.7
	Never married	614	97.3
Place of origin	Urban	275	43.6
	Rural	356	56.4
	Amhara	403	63.9
Ethnicity	Oromo	127	20.1
	Tigre	47	7.4
	Wolaita	10	1.6
Year of study	Other	44	7.0
	Year one	194	30.7
	Year two	171	27.1
	Year three	157	24.9
College	Year four and above	109	17.3
	Health science	56	8.9
	Technology	336	53.2
	Agriculture	55	8.7
Monthly income	Business and Economics	82	13.0
	Natural and computational sciences	45	7.1
	Social sciences and humanities	57	9.0
	< 100	39	7.2
Total	100 – 299	202	32.0
	300 – 499	165	26.1
	> 500	225	35.7
		631	100.00

Sexual practice

Among the study participants 282 ((44.7%), 214 (75.9%) male and 68 (24.1%) female)) students were sexually

active i.e. they had sexual experience at least one time in their lifetime. The mean age at sexual debut was 18.182 (SD, 1.97) years (minimum 14 years and maximum 25 years) for males and 17.89 (SD, 1.76) (minimum 14 and maximum of 20 years) for females. The mean age of sexual initiation for both sexes was 18.25 (SD, 2.265) years (Table 2).

Table 2: Sexual practice of the study participants among Debre Markos University Students, Debre Markos, Ethiopia, 2016.

Lifetime Sexual practices of respondents		Frequency	Percent
Ever had sex	Ever had sex	282	44.7
	Not ever had sex	349	55.3
	Total	631	100
Age at first sexual contact			
School level	Primary school	30	10.6
	Secondary school	216	76.6
	University	36	12.8
	Total	282	100
Person had first sex with	Boy/girlfriend	254	90.1
	Husband/wife	17	6.0
	CSW	11	3.9
Reason for having first sexual intercourse	To keep intimacy with boy/girlfriend	130	46.1
	Personal desire	82	29.1
	peer pressure	53	18.79
	Marriage	17	6.03
Total		282	100

Reasons for avoiding sexual debut

Students who have reported they never had started sexual intercourse had mentioned their respective reasons for not having sexual intercourse and the most common reason was they thought sex before marriage is wrong (211, 48.8%) and 23 students had said their reason was they had not the opportunity for having sex (Figure 1).

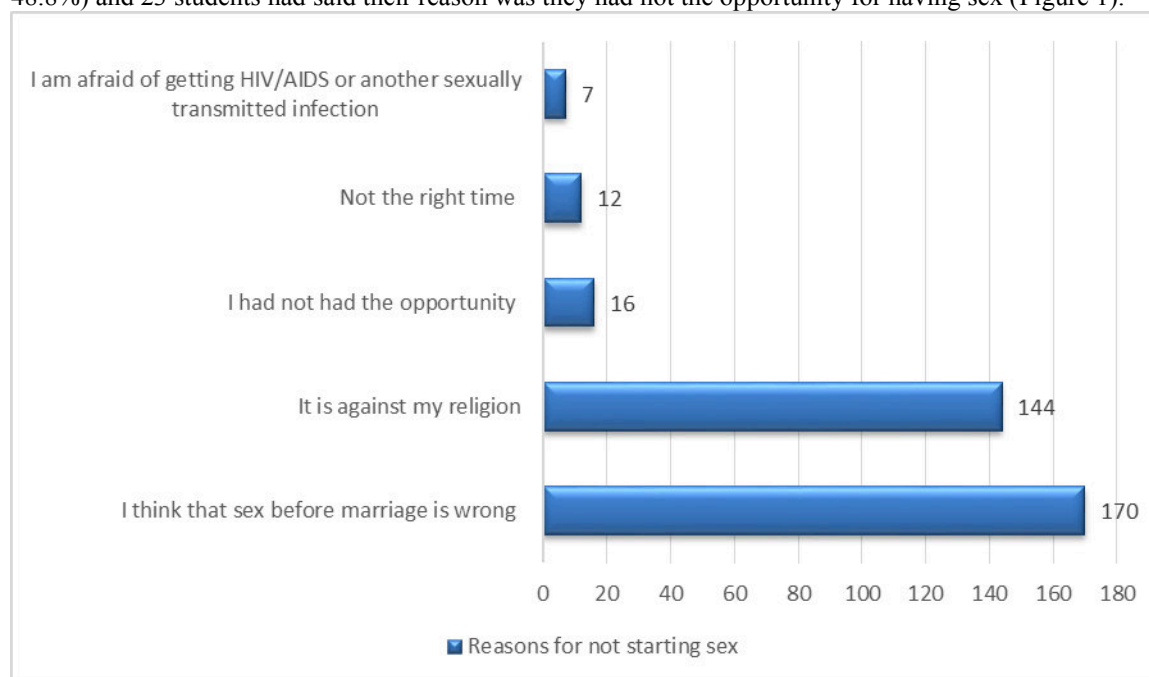


Figure 1: Reasons for not having sexual intercourse of the study participants among Debre Markos University students, Debre Markos, Ethiopia, 2016. (n=349)

Sexual behaviours of respondents in the last 12 months

Among the 282 sexually active students 250 (88.6%) students had been engaged in sexual activities in the last 12 months and majority of them 232 (92.8) reported to engage in sexual activity with their boy or girlfriend but 10 (4%) participants had reported to have sex with CSWs (Table 3).

Table 3: Sexual behaviors in the last 12 months among Debre Markos University students, Debre Markos, Ethiopia, 2016. (n=282)

Sexual behaviours		Frequency	Percent (%)
Ever had sex in the last 12 months	Yes	250	88.6
	No	32	11.4
Person ever had sex with in the last 12 months	Boy/girlfriend	232	92.8
	CSWs	10	4.0
Number of sexual partners	Husband/wife	8	3.2
	1	208	83.2
	2	25	10.0
	≥3	17	6.8

Condom use

Among 282 sexually active students 217 (77%) students have had used condom at least once in their lifetime; the most commonly cited reason for using condom was for prevention of HIV/STIs 148 (68.2%) and the second was To prevent pregnancy 60 (27.65%) (Table 4).

Table 4: Condom use among Debre Markos University students, Debre Markos, Ethiopia, 2016. (n=282)

		Frequency	Percent
Ever used condom	Yes	217	77
	No	65	23
	Total	282	100.0
Reason to use condom	To prevent HIV/STIs	148	68.2
	To prevent pregnancy	60	27.65
	Partner insisted to	9	4.15
	Total	217	100.0
	Always	192	88.5
Frequency of condom use	Occasionally	20	9.2
	Rarely	5	2.3
	Total	217	100.0
	Yes	152	70.04
Ever use condom for first sexual encounter	No	65	29.96
	Total	217	100.0%
	Yes	198	86.17
Ever use condom for last sexual encounter	No	19	18.83
	Total	217	100.0
	Partner trust	37	56.9
Reason for not using condom	Difficult to get condom	13	20.0
	I hate condom	8	3.07
	I think it decreases sexual pleasure	3	4.62
	I have no knowledge of how to use condom	2	3.07
	Partner refusal	2	12.30
	Total	65	100.0

Lifetime number of sexual partner

Regarding the lifetime sexual partner of the students majority (209, 74.11%) of participants reported they had only one sexual partner in their lifetime and (50, 17.73%) have had two sexual partners and 23 (8.15%) students claimed to have 3 or above sexual partners (Figure 2).

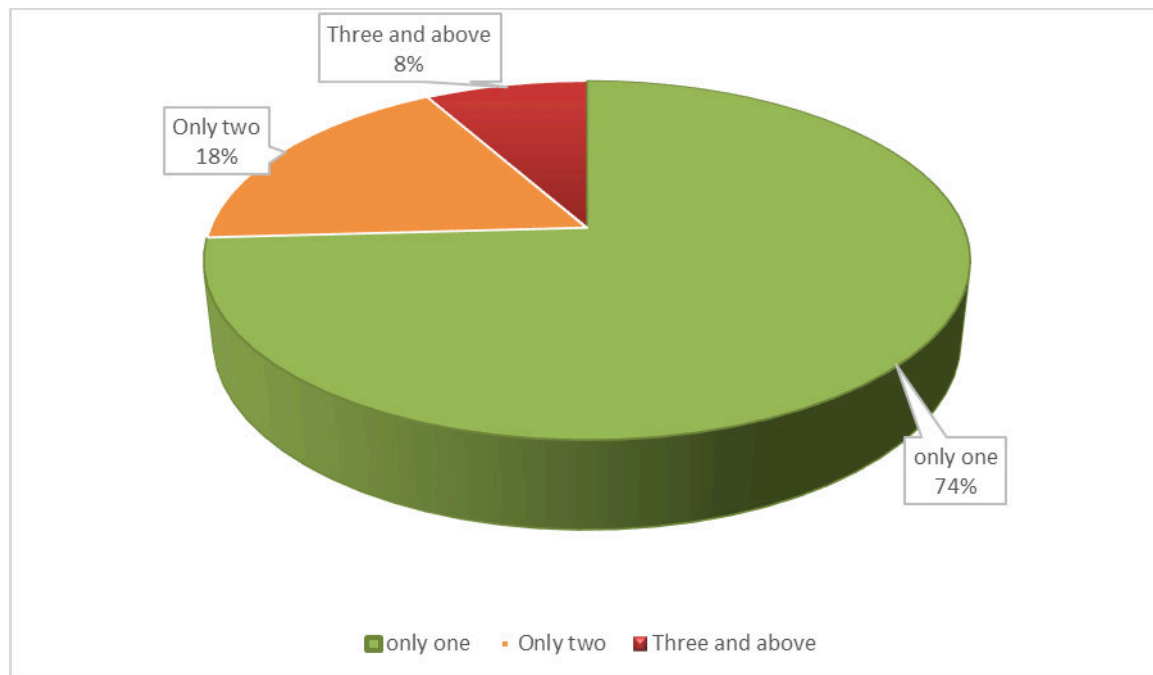


Figure 2: Lifetime number of sexual partners among Debre Markos University students, Debre Markos, Ethiopia, 2016. (n=282)

Substance use and risky behaviours of students

Among 631 participants of this study 176 (27.9) students reported that they have an experience of watching pornographic movie and 162 (25.7%) students say they have had an experience of night clubs attendance (Figure 3)..

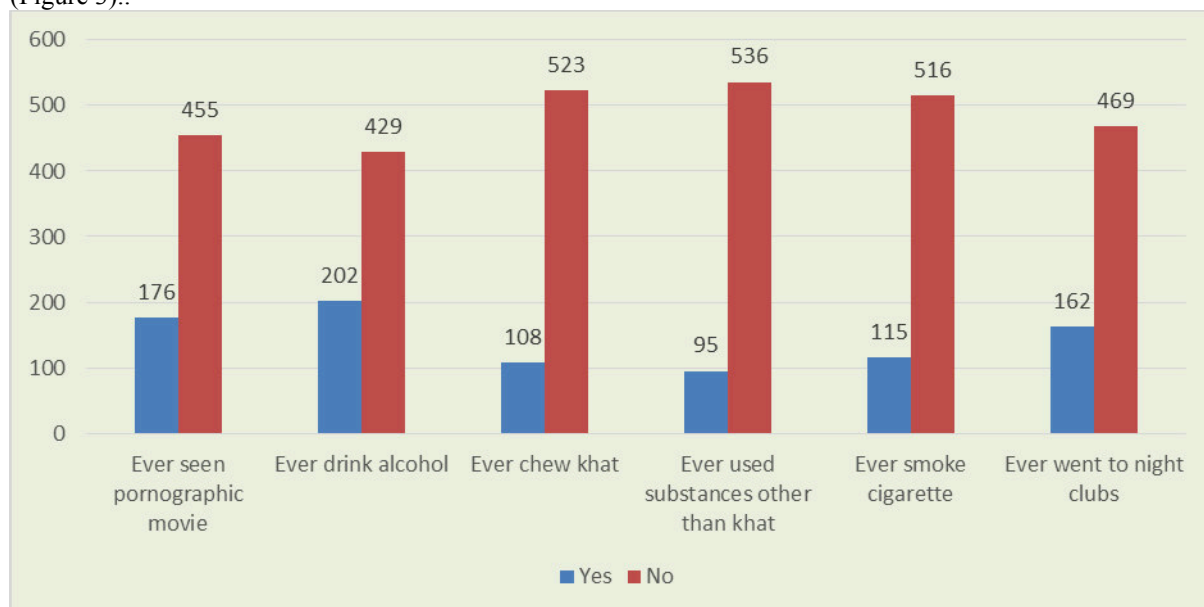


Figure 3 Substance use and health risk behaviours of Study participants of Debre Markos University students, Debre Markos, Ethiopia, 2016. (n=631)

Self esteem

Self-esteem of participants of the study was assessed using Rosenberg self-esteem scale and among 631 participants 226 (35.8%) students reported to have low self-esteem and the rest said they have high self-esteem (Table 5).

Table 5: Self-esteem students among Debre Markos University students, Debre Markos, Ethiopia, 2016. (n=631)

	Frequency	Percent
Low self esteem	226	35.8
High self esteem	405	64.2
Total	631	100.0

Table 6: Bivariate and Multivariate analysis of factors associated with risky sexual behaviours of study participants among Debre Markos University students, Debre Markos, Ethiopia, 2016. (n=282)

	Risky sexual Behavior		COR(CI)	AOR(CI)	P- Value
	Yes (%)	No (%)			
Sex					
Female	52(76.5)	16(23.5)	2.96 (1.590, 5.909)	**	*
Male	112(52.3)	102(47.7)	1		
Monthly pocket money					
≥ 500	112(65.5)	59(34.5)	2.154 (1.322, 3.510)	**	*
0- 500	52(46.8)	59(53.2)	1		
Sex before 18 years					
Yes	103 (64.4)	57 (35.6)	1.807 (1.118, 2.921)		0.012
No	61 (50.0)	61 (50.0)	1	2.234 (1.194, 4.178)	
Ever drink alcohol					
Yes	84(75.7)	27(24.3)	3.539 (2.088, 5.997)		0.000
No	80 (46.8)	91 (53.2)	1	4.554 (2.214, 8.591)	
Ever chew khat					
Yes	76(83.5)	15 (16.5)	5.930 (3.182, 11.052)		0.000
No	88(46.1)	103(53.9)	1	6.989(3.383,14.027)	
Ever smoke cigarette					
Yes	70 (66.7)	35 (33.3)	1.766 (1.069, 2.917)		0.004
No	94(53.1)	83(46.9)	1	2.506 (1.346, 4.665)	
Ever used other substances					
Yes	62(69.7)	27(30.3)	2.049 (1.202, 3.491)	**	*
No	102(52.8)	91(47.2)	1		
Ever went to night clubs					
Yes	89(66.9)	44 (33.1)	1.996 (1.231, 3.236)	**	*
No	75(50.3)	74(49.7)	1		
Self esteem					
Low	89 (67.9)	42 (32.1)	2.147 (1.321, 3.492)		0.030
High	75 (49.7)	76 (50.3)	1	1.961 (1.067, 3.603)	

Discussion

The purpose of this study was to assess risky sexual behaviors among Debre Markos University students, and factors associated with risky sexual behaviors. Among the study participants 282 (44.7%; 95%CI = (40.82, 48.58%) were sexually active; it is higher than studies conducted in other universities in Ethiopia; in Bahirdar 36.4 % (CI 33.1%, 39.69%) (1), among Haramaya University (33.5%) (5), Arbaminch University (21.3 %) (32), in Gondar and Bahirdar Universities jointly (16.5%) (29). However; It is far less than other studies in Africa and other parts of the world; in Enugu Nigeria it was reported to be 76.8%,(41) among female undergraduates' students of Muhimbili and Dar es Salaam Universities in Tanzania it was reported to be 70.4% (95%CI (67.53,73.26%) (33) and students of Ugandan Universities (49%), (60.3%) (30, 39) and 98% of Swedish female students were to be sexually active. This difference may be attributable to differences in the time of study, where all these studies were conducted before year 2014, study area, sample size differences and unpredictability behaviours of sexual behaviors of adolescents.

Majority of the students (254, 90.1%) had their first sexual intercourse with their boy/girlfriends, 17 (6%) said they had their first sexual intercourse with their spouse and 11 (3.9%) male students had reported that they had their first sexual intercourse with CSWs. This is in line with a study from Haramaya University where the proportion of male students who have sexual intercourse with CSWs is 2% (5). However it is a bit less than a study from Bahirdar University and Haramaya University where the proportion was reported to be 7.4% and 16.3% (1, 6). This dissimilarity might be due to the size of the town as the city is bigger there are will be more night clubs and students at the bigger city can have an increased access to night clubs and substance use which may lead them to heightened risk for risky sexual practice. Furthermore sample size differences can have its own role since sample size used in Bahirdar University was greater than this study.

Among students who claimed to be sexually active (n=282), 217 (76.95% (95% CI (72.03%, 81.86%)) students have had used condom at least once in their lifetime, among those participants 192 (88.5%) used

condom consistently and 25 students used condom inconsistently and 65 students have never used condom in their lifetime. Among non-condom users the most common reason for not using or missing is partner trust (56.9%) followed by difficulty of getting condom when they needed. This result goes in line with results from Turkish University where students lifetime condom utilization was (72.27% (95% CI (69.86, 75.53)) (31) and condom users of Chinese college students (82.12% 95% CI (80.28, 83.95)) (19), in contrast this is high compared to lifetime utilization among students of Jimma University and Haramaya University where they have reported (57.6%) (4), (64.1%, 95%CI (61.46, 66.74)) (5) respectively. The setting, skill level of students for condom use, life skill trainings arranged by the universities and availability of condom may have supposedly contributed for such variability.

From 282 sexually active students, 164 (58.15%, 95% CI (52.39%, 63.9%)) had at least one of the risky sexual behaviors in their lifetime. The most frequently reported RSB is inconsistent condom use 80 (48.8%), followed by having multiple sexual partners 73 (44.5%) and having sexual intercourse with commercial sex workers (11, 6.7%). This conforms to the results of Haramaya University students where it was 65.8% (95%CI (59.83%, 71.7%)) (5), and Jimma University which was reported to be 55.8%. Study conducted in Iran among 18-24 years old youths where the prevalence was reported to be 41% (95%CI (36%- 53%)) (45). The result shows that though some studies are conducted in the universities and various interventions were taken in the country the prevalence of risky sexual behaviours seems that it has no reduction after all (9) and reevaluating the intervention strategies is an optional way of addressing the problem.

In this study early sexual debut was independently associated with risky sexual behaviours where students with history of sexual experience before the age of 18 years were more likely to be engaged in risky sexual behaviours (AOR 2.046 95%CI (1.031, 4.062)), this goes coherently to a studies conducted in china (18, 19) and studies conducted among Slovak students (34). This could be due to the strong relationship of sexual life of individual and exposure of the individual to risky sexual behaviours, where, as the sexual life of the individual lengthens so might the exposure or as studies reported they early initiators are less inclined to adapt responsible behaviours than late initiators (18,53) or it might have been traced back to the life History Theory (LHT) where the theory suggests that challenging environmental conditions will lead to early pubertal maturation, which in turn predicts heightened risky sexual behavior (37).

In line with other studies (1, 4, 5,) in this study alcohol use was associated with risky sexual behavior. This strong association between risky sexual behaviours and alcohol drinking might be due to the nature of alcohol in decreasing inhibitions, altering rational decision making, and increasing risk-taking behavior (50) moreover this association supports the disinhibitory effect of alcohol combined with certain social environments at university, such as parties and drinking alcohol at bars, which also facilitate the meeting of new sex partners leading to casual hook ups. The association between alcohol consumption and RSB may probably also be explained by the alcohol expectancy theory. This theory holds that individuals who think drinking alcohol will cause them to become less nervous, more sexually uninhibited, and thus at greater ease in potential sexual situations are more likely to drink before a possible sexual encounter in certain social situations, such as on a date, at a party, or at a bar (48).

Khat chewing has a strong association with risky sexual behavior with an odds of (AOR 6.989, 95%CI (3.383, 14.027)). Different studies in Ethiopia had reported similarly the association between khat chewing and risky sexual behavior (1, 5, 6, 50). According to study on rates sustained release of alkaloids from dried khat has significantly enhanced the sexual motivation and increased the estradiol level in female rates and the same effect may probably explain the association with risky sexual behavior in human subjects (54).

In this study cigarette smoking has an association with risky sexual behaviors with odds of (AOR 2.506, 95%CI (1.346, 4.665)). Similar results were reported in different literatures (1, 5, 6) however, other study has reported that smoking could be acting at different levels in the body to diminish the smokers' sexual frequency even though mechanism is not well understood (55). This may need further and an in-depth study on their relationship.

In line with other studies (25, 34, 52) self-esteem was found to be an independently associated factor with risky sexual behaviours, where students with low self-esteem were more likely to engage in risky sexual behaviours. As different studies reported low level self-esteem students were more likely to engage in substance use and more risky taking behaviours than the high level-esteem students (25, 52) and this may possibly heightened their risk to risky sexual behaviours.

Limitations of the study

This study has a limitation which needs to be considered: The data were collected with a self-administered questionnaire. As a result, it may have suffered from social desirability bias.

Conclusion and Recommendation

Conclusion

This study has showed that risky sexual behaviors are practiced among Debre Markos University students. The most frequently reported RSB was inconsistent condom use followed by having multiple sexual partners. Early sexual debut, alcohol drinking, khat chewing, cigarette smoking and low self-esteem were factors found to be associated with risky sexual behaviors.

Recommendation

Based on results of the study

- Secondary schools needs to take measures like regulation, protection (e.g. fencing the schools, passing strict rules), training in life skills and sensitization of students and their parents about causes and consequences of premarital sex. This is because students engage in sex before joining university.
- Secondary schools in collaboration with student's families are recommended to work on building student's self-esteem since students with low self-esteem are more inclined to practice risky sexual practices.
- It is recommended to Debre Markos University to start programs on sexual and reproductive health for students.
- Consistent condom use should be encouraged among the students irrespective of their sexual partners.
- Debre Markos University should improve the security in the campus by developing strict rules to control substance use like khat, alcohol and cigarette smoking in the campus.

Competing interest

The authors declare that they have no competing interests

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Keywords:- Risky sexual behavior, university students

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