



ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH

SEXUAL VIOLENCE AND SUBSTANCE USE
AMONG FEMALE STUDENTS OF MIZAN-TEPI UNIVERSITY

By: Andualem Henok (B.Sc)

A Thesis Report Submitted to Graduate Studies of Addis Ababa University in
Partial Fulfillment for Requirement of Degree of Master of Public Health

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Dedication

This thesis is dedicated to all Ethiopian females who are suffering from outcomes of sexual violence.

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Abbreviations

AOR	Adjusted Odds Ratio
COR	Crude Odds Ratio
CI	Confidence Interval
FGD	Focus Group Discussion
HIV	Human Immunodeficiency Virus
IPV	Intimate Partner Violence
MDMA	3, 4-Methylenedioxyamphetamine
OR	Odds Ratio
RH	Reproductive Health
SIS	Study Information Sheet
SPSS	Statistical Package for Social Science
STI	Sexually Transmitted Infection
TVET	Technical and Vocational Education and Training
USA	United States of America
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

Abstract

Background: Sexual violence is a common and serious public health problem. The most common place where sexual violence is experienced is school. Sexual violence usually occurs when she is unable to understand the situation. The most important cause for this is substance use.

Objective: The objective of the study was to assess the prevalence of sexual violence and its association with substance use among female students in Mizan-Tepi University.

Methods: Cross sectional institution based survey, using self-administered, anonymous questionnaire and focus group discussions were done among female students of Mizan-Tepi University from January to February 2012 to assess prevalence of sexual violence and its association with substance use. A total of 604 female students were involved in the study. Prevalence was determined using frequencies and logistic regression was used to estimate odds ratios and 95% confidence interval using SPSS statistical package.

Result: Among respondents 66.3% and 63% were sexually harassed since joining the university and in the current academic year respectively. The prevalence of attempted rape was 19.6% and 13.7% since joining the university and in current academic year respectively. The magnitude of rape was 13.5% and 8.9% since joining the university and in current academic year respectively. The life time prevalence of sexual harassment, attempted rape and completed rape was 75.4%, 33.5% and 20.7% respectively. Experiencing of rape in current year was significantly associated with khat chewing (AOR= 4.24: 95% CI 1.92, 9.37), smoking cigarettes (AOR= 6.76: 95% CI 2.99, 15.28), drinking alcohol (AOR= 3.27: 95% CI 1.51, 7.11), having drinking friend (AOR= 5.60: 95% CI 2.46, 12.74) and using other substances like cocaine (AOR= 6.43: 95% CI 1.91, 21.64). FGD discussants explained that sexual violence is prevalent due to lack of facilities and availability of substances around the campus.

Conclusion: The magnitude of sexual violence among female students of Mizan-Tepi University was very high. There was significant association between rape and substance use by female students. Therefore it needs urgent attention from concerned bodies to alleviate the problem.

1. Introduction

Sexual violence is a common and serious public health problem affecting millions of people each year throughout the world. Violence against women and girls is a global epidemic. It affects every aspect of women's lives – from their personal health and safety, to the safety of their families, to their ability to earn a living. One woman out of 3 across the world has experienced rape or sexual assault. Sexual violence is prevalent and most challenging in developing countries. The most common place where sexual violence is experienced is school. There are different factors which increases women's vulnerability to sexual violence. Among these the most important ones are consuming alcohols and other drugs, being young and poverty. The reason why substance abuse increases women's vulnerability to sexual violence is because she is unable to give consent and she is incapable of understanding the situation (1-3).

While many countries have made progress toward achieving gender equality in education, girls continue to face many obstacles that impede their path to learning. The classroom must be a place of learning and should not entertain the problem of school-related violence against girls. In schools where sexual violence against girls is prevalent, the education system itself may increase girl's chances of dropping out, interrupting her studies, experiencing an unintended pregnancy or becoming infected with HIV. Female victims of sexual violence are often reluctant to report the crime to the police or the family. In the developing world the impact of violence on school girls attacks the economic and social well-being. Making schools safe and equitable must be the goal to improve education for girls (4).

There have been increasing reports of gender-based violence in educational settings from around the world. In the developing world, where economic imbalances are extreme, literacy rates low, and the HIV pandemic often devastating, the question of sexual violence and its impact on education is particularly critical. It is a serious problem that until recently was not talked about. Sexual violence can occur at any age but teens and girls early twenties are at high risk (5, 6). Even if the rate of sexual violence is high it is rarely reported. Due to this reason it has been called silent epidemic (7).

Sexual victimization is a risk factor for a variety of unhealthy outcomes. In addition to causing immediate physical injury and mental anguish, violence increases women's risk of future ill

health. Women, who have experienced sexual violence, are at greater risk of subsequent health problems. Sexual violence appears to increase women's risk for many common gynecological disorders, including: vaginal bleeding, painful menstruation, vaginal discharge, sexual dysfunction, pelvic inflammatory disease and painful intercourse. If they cannot control their sexual encounters, they are at risk of unwanted pregnancy. Violence increases STI/HIV risk and undermines prevention programs (8). Violence has also economic cost. The economic costs of violence include the direct costs (e.g. Medical, policing and legal services), and the indirect costs (lost earnings and productivity, lost investments in human capital and reduced quality of life) (9). Domestic and sexual violence in the United Kingdom costs the country £5.7 billion per year, including costs to the criminal justice system, health care costs, housing and the loss to the economy (10).

Even if sexual violence is serious public health problem, there are few studies which were conducted on sexual violence among university female students. Among these very few studies tried to associate sexual violence with substance use. Most studies were concentrated around central Ethiopia. And almost all studies were conducted in old universities. There is no study on sexual violence among female students of newly opened universities. Old universities have better access to education, have better facilities and they have better protection to female students. The absence of these, which we expect in newly opened universities, may increase the risk of sexual violence among female students. Therefore this study will fill these gaps.

The government of Ethiopia is increasing the number of universities as well as the enrollment of female students recently. Mizan-Tepi University is one among newly opened universities. It is important to make school environment safe otherwise it will be impossible to achieve the goal in education sectors. Therefore this study will give information on magnitude of sexual violence and its association with substance use. The result of this study will be beneficial to policy makers and other concerned bodies for planning and implementation of different activities against sexual violence.

2. Literature Review

Sexual violence is defined as: any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to home and work (3).

2.1. Magnitude of sexual violence

The WHO multi country study conducted in ten countries showed that the percentage of women who reported sexual abuse by a partner ranged from 6 % in Japan and Serbia and Montenegro to 59 % in Ethiopia. Majority of the country ranged from 10 % to 50 %. The proportion of women physically forced in to sexual intercourse ranged from 4 % in Serbia and Montenegro to 46 % in provincial Bangladesh and Ethiopia. One third of Ethiopian women reported being physically forced by a partner to have sex against their will within one year prior to interview (11). In a study conducted among North Eastern University students the prevalence of attempted rape and completed rape in life time was 9.9% and 4.8% respectively. The prevalence of rape since joining the university was 4% (12). A study conducted in Minnesota USA in 1992 and 1998 and analyzed in 2003 showed that the magnitude of any type of sexual abuse among female high school students decreased from 17.2 % in 1992 to 12.5 % in 1998 (13). The prevalence of rape or attempted rape in Chile was indicated by 63.16% of subjects who reported dating violence (14).

In a study conducted in 2011 among Rwandan health workers showed that about 39 % of health workers experienced at least one form of work place violence in the twelve months prior to the study. Twenty seven percent (27 %) of respondents reported verbal abuse and 7% experienced sexual harassment (15).

According to a study conducted in Jimma 38.1% have already initiated sexual activity. Among these 25.9% was happened without their will. In the twelve months before the interview, 2.7% of the youth reported to have been victims of non-consensual sex, and 19% experienced unwelcome or non-consensual kissing during one year prior to the study (16). In Asendabo 8.0% of the respondents were victims of one or more forms of sexual assault in their lifetime whereas 1.5% of the respondents were victims of sexual assault in the past one year prior to data

collection. The prevalence of completed rape was 5.9% and attempted rape was 0.3 % (17). According to a study conducted among female students of Jimma high schools 73.3% were sexually harassed. Among sexually active students 20.4% started it forcibly (18). In public schools of Harari regions prevalence of completed rape, attempted rape and sexual harassment were 6.7%, 18.9% and 25.6% in life time and 5%, 11.6% and 16.5% in last 12 months respectively (19).

The study conducted on sexual violence on street adolescent females in Addis Ababa indicated that 15% of respondents were raped 3 months prior to interview. The magnitude of attempted rape among street adolescents was 20.5% (20). A study conducted in Addis Ababa high schools among female students in 2008 showed that 21.2 % of the respondents experienced rape and 25.5 % encountered attempted rape during their life time. The prevalence of sexual harassment (i.e. indecent words and unpleasant sexual request) were 57.5 % and unwanted touching of bottom, breast and hair was 55.7 % in their life time (21). A study conducted among women attending VCT centers in Addis Ababa city indicated that the magnitude of sexual violence in lifetime was 41%. Twenty one point eight percent (21.8%) of women reported experiencing forced sex or rape at their first sex (22). The study conducted among female students of Addis Ababa University in 2004 showed that 12.7 % and 27.5 % of students experienced completed rape and attempted rape in their lifetime respectively. During one year prior to interview the prevalence of completed rape and attempted rape was 1.8 % and 7.4 % respectively. Fifty eight percent (58 %) and 41.8 % of students reported sexual harassment in their life time and during one year prior to interview respectively (23).

A study conducted in Debarq high school showed that 8.8% of respondents were raped. The magnitude of attempted rape was 11.6 % (24). Among female students of Mekelle higher institutions the magnitude of completed rape was 10.4 %, 8.6 % and 5.6 % in their life time, since joining college and during the academic year of interview respectively. The prevalence of attempted rape and sexual harassment in lifetime was 33.7% and 35.4 % respectively. During one year prior to interview the prevalence of attempted rape and sexual harassment were 19.2 % and 21.2 % respectively (25). The study conducted in 2006 among female student of Butajira high school and vocational school showed that about one third (35 %) of the respondents had experienced sexual violence some time in their lives. Twenty eight point nine percent (28.9 %), 27.2 % and 19.2 % of respondents experienced sexual violence before joining high school, since

they joined high school and during one year when the interview was made respectively. The prevalence of completed rape was 8.2 %. Twenty eight point three percent (28.3 %) of students were sexually harassed and the magnitude of attempted rape was 23.2 % (26).

2.2. Magnitude of substance use

In Saudi Arabia the prevalence of khat chewing was 15.2% in colleges and 21.5% in high schools. Three point eight percent of females and 37.7% of males were khat chewers (27). In a study conducted in Tehran showed that the prevalence of smoking among female students was 23.5% (28). The prevalence of smoking among Yemen secondary school teachers was 0 % (29). A study conducted in eastern China indicated that 31% of female students ever smoked cigarettes (30). The study conducted in Australia among women prisoners showed that 62% were regular drug users and 39% were regular alcohol users. More than half (55%) were dependent on drugs and 27% were dependent on alcohol (31). In South Africa the prevalence of alcohol misuse ranges from 5-30% (32). A study conducted on night life and drug use showed that alcohol was the most commonly used party drug (91.5%) during one year prior to data collection. More than half of the respondents (51.8%) reported using an illegal drug. Cannabis (44.4%) was the most popular illegal substance, followed by 3,4-Methylenedioxymethamphetamine (MDMA) (19.1%), cocaine (17.1%) and amphetamine (10%) (33). In South Africa the prevalence of cigarette smoking ranges from 4.9 % to 17.1 % increases with increasing age (34).

The study conducted among female students of Addis Ababa University in 2004 showed that 22.1 % of students were alcohol consumer and 8 % were khat chewers (23). A study conducted in 2008 in Addis Ababa high schools indicated that 10.4 % rape cases used khat and 4.8 % took alcohol before rape (21). A case control study conducted among women attending VCT centers of Addis Ababa city to determine the association between substance abuse and HIV infection. According to this study 55.1 % of HIV seropositives drank alcohol and 45 % of HIV seronegatives drank alcohol during the study. The prevalence of khat chewing was 31.7 % among cases (HIV seropositives) and 14.3 % among controls (HIV seronegatives). Two point six percent (2.6 %) of HIV seropositives tried to abuse cannabis during one year prior to interview (22). There was a study conducted in high schools of Addis Ababa in 2009 among female and male students. According to this study alcohol and khat were the two most common substances abused by both male and female students, 43.3 % and 26.4 % respectively. Twenty

six point four percent (26.4 %), 17.3 %, 4.8 % and 1.7 % of female students were consumers of alcohol, khat chewers, cigarette smokers and illegal drug abusers (21). A cross-sectional study conducted in 2009 among medical students of Addis Ababa University showed that 14% of females consumed alcohol. Khat use was reported by 1.5% of females. The prevalence of cigarette smoking was 1.5% females (35).

A study conducted in Mekelle among female student of higher institution showed that prevalence of alcohol drinking, khat chewing and cigarette smoking were 24.7%, 6.8% and 3.2% respectively (25). In a study conducted in Adamitulu district in 1997 the prevalence of khat chewing was 31.7% (36). The study which was analyzed from the data of 2003 Global Youth Tobacco Survey conducted in Addis Ababa (school based survey) indicated that the prevalence of smoking in life time among females was 5.7 % (37). According to study conducted in colleges of North West Ethiopia the prevalence of khat chewing and cigarette smoking among female students was 9.9% and 2.8 % respectively (38). A study conducted among students of Jimma university indicated that 51.6% of female students were khat chewers (39).

2.3. Factors associated with sexual violence

The 2006 and 2007 south Florida study described economic barrier as both a risk factor for violence and a reason why women tolerated violence. Every women who were participant of FGD described the economic dependency on their partner (40). In a study conducted on domestic violence against women in eastern India showed that urban residence, older age, lower education and low family income were associated with occurrence of sexual violence (41).

The study conducted in 2006 among female student of Butajira high school and vocational school showed that having boyfriend, previous history of physical abuse and being in age range of 16-19 were significantly associated with sexual violence (26). In domestic violence study of Gondar, rape was more likely to occur among rural women (OR=1.98: 95% CI 1.29, 3.04), women who witnessed parental violence (OR=3.81: 95% CI% 2.69, 5.38) and women whose spouses consume alcohol frequently (OR=2.88: 95% CI 1.96, 4.22) while rape was less likely (OR=0.65: 95% CI 0.45, 0.93) to occur among women who shared household decision-making (42). In a study of Jimma town among the socio demographic and behavioral factors considered in the study; age, living arrangements, number of lifetime sexual partners, alcohol use and age at first sex were significant factors affecting lifetime rape (16). According to a study of Harari,

lifetime rape is higher among those having friends (OR= 25: 95% CI 8.9, 72.5), married (OR= 3.2: 95% CI 1.2, 8.5), alcohol drinkers (OR= 2.5: 95% CI 1.4, 8.5) khat chewers (OR= 2.9: 95% CI 1.2, 6.7) and shisha users (OR= 2: 95% CI 1.1, 4.7), low monthly income (OR= 2: 95% CI 1.5, 4) and not getting enough money (OR=3: 95% CI 2, 4) (19). According to study conducted in Awassa comparing with women reporting no experience of both workplace abuse and sexual harassment those experiencing had an eight fold increased risk of depression (OR=8: 95% CI 1.05-60.85) (43). A community based study among Butajira women showed that rural women were less likely than urban women to endorse the view that a wife has the right to refuse sex with her husband under any circumstances. But literate women and those living in urban communities were more likely to accept women's right to refuse sex and to believe that none of the reasons given justified a man beating his wife (44). The other study in the same site indicated depression in the previous 12 months was associated with experience of any form of intimate partner violence (OR = 1.82: 95% CI, 1.06, 3.13) (45).

In Ethiopia lack of information about women's rights, limited access to legal services, insensitivity of law enforcement bodies, and generally poor status of women in the society are some of the main reasons for violence (46).

2.4. Factors associated with substance use

In Brazil the prevalence of drug use (excluding alcohol and tobacco) during one year period was 17.1%. There was association between substance use and parents divorce, poor relationship with mother and father, drug use in household and absence of religious practice (47). In Australian study, drug and alcohol use have been found to be important correlates of criminal offending. Australian prisoners reported a range of negative life experiences related to their drug and alcohol abuse. A negative life experiences which were associated with growing up in families with drug and alcohol problems include early onset of criminal offending and low socio economic status. Families where illegal drugs are used raise the risk of criminal behavior and drug use among the children of drug users. Drug dependency was higher among women who experienced mental health problems and childhood abuse, and who were exposed to family members with drug problems in the family of origin (31). Tehran study showed that smoking was significantly higher among those who get advice on health hazard of smoking than who don't get. Getting anti tobacco message was protective against smoking. Seeing tobacco

advertisement had significantly increased odds of smoking (28). A study conducted in eastern China indicated that more students from families with a relatively lower socioeconomic status had tried smoking or intended to smoke in the near future. It is also associated with peer smoking, positive personal attitudes toward smoking and engagement in other health risk behaviors (30).

Studies done in South Africa showed age, gender, socioeconomic status and degree of urbanization were associated with substance abuse (32). According to study in Saudi Arabia age, gender and residence were associated with khat chewing. Khat chewing among females was significantly higher among urban dwellers (27). A study conducted on night life and drug use showed that respondents who used illegal drugs were 2.5 times more likely to report that they prefer dance music. Having gone to pub in the last month was associated with both more frequent alcohol use and more frequent illegal substance use. Age was found to be positively associated with higher level of alcohol, MDMA, cocaine and amphetamine use (33).

A cross-sectional study conducted in 2009 among undergraduate medical students of Addis Ababa University showed that being male and having friends who are drug abusers were significantly associated with substance abuse (35). In a study conducted in Adamitulu district in 1997, Muslims were more chewers than Christians, males were more chewers than females and age group 15-34 more chewers than other age group. Physical illnesses or injuries, under nutrition, mental distress were found to be associated with khat use (36). The study which was analyzed from the data of 2003 Global Youth Tobacco Survey conducted in Addis Ababa showed that those with one or both parents smokers had more than two fold increase in the odds of smoking compared with those whose parents were non smokers (OR=2.7: 95% CI 1.3, 5.6). Having most or all friends smokers had increased odds of smoking compared to those who had non smoking friends (OR=42.2: 95% CI 18.8, 84.6). Perceptions that smoking was harmful was protective against smoking (OR= 0.3: 95% CI 0.2, 0.5) (37). According to study conducted in colleges of North West Ethiopia, compared to Christians and Muslims other religious groups were at higher risk of smoking or chewing (OR=6). Having family members of khat chewer or cigarette smoker was also risk factor (38). A study conducted among students of Jimma university indicated that Khat chewing was significantly associated with other habits like alcohol drinking and cigarette smoking (39).

2.5. Association of Substance use with sexual violence

Alcohol and other drugs play an important role in many forms of violence and documented as risk factor for sexual violence. Those who are victims of violence may also be at increased risk of substance abuse (whether tobacco, alcohol or other drugs). Substance abuse has been found to increase the likelihood of men committing sexual violence and some forms of youth violence (11). A literature review was done among china studies. Two studies done in general population showed that there was positive association between alcohol and intimate partner violence with odds ratios of 1.26 and 3.09 respectively. Other study indicated that among abused women 18% used alcohol (drinkers were more likely to be victims of IPV (OR= 1.75: 95% CI 1.39, 2.20). Review of a study conducted among college students of two universities revealed that alcohol users were more likely to become victims of sexual violence (OR= 2.96: 95% CI 2.35, 3.73) (48). A study conducted in 2001 among lesbians and heterosexual females showed that 50% of sexual violence victims in USA involve alcohol consumption by the perpetrator, victim or both (49). The USA study on drugs, women and violence in 2006 & 2007 in South Florida showed that substance abuse and violence were closely related problems. The participants of FGD explained substance abuse as risk factors and consequences of sexual violence (40).

A systematic review of African studies examined five studies. According to this review five studies examined the relationship between alcohol use and intimate partner violence and all of them found that alcohol use by a woman and/or partner whether heavily or occasionally was significantly associated with pregnancy related abuse (50). Among heterosexual women substance abuse were consistently correlated with life time and last 12 months alcohol abuse (40). According to study conducted in India 56.7% reported that violence always occurred while their husband was under the influence of alcohol and 40.2 % reported that it sometimes occurred while their husband was under the influence of alcohol (41).

A study conducted in 2008 in Addis Ababa high schools showed that khat chewing and alcohol drinking were significantly associated with sexual violence (21). There was another study conducted in high schools of Addis Ababa in 2009 among female and male students. In this study all substances (alcohol, khat, cigarette and illegal drugs) were significantly associated with initiation of sexual intercourse (51). In the study among Addis Ababa University students alcohol consumption was associated with sexual violence (23). A case control study conducted

among women attending VCT centers of Addis Ababa city to determine the association between substance abuse and HIV infection. About three fourth (74.4 %) of HIV seropositives and 42.8 % of HIV seronegatives who drank alcohol believe that alcohol intake increases sexual desire (52).

In a study conducted in Bale high schools in 2004, 13.6 % and 12.7% of respondents initiated sexual intercourse due to alcohol consumption and khat chewing respectively. Sixty six point seven percent (66.7%) of cigarette smokers and cannabis users were exposed to risky sexual behavior. This study showed that alcohol consumption and khat chewing were significantly associated with risk to HIV (53). A study conducted in Mekelle among female student of higher institution showed that alcohol consumption and having drunken peers were associated with sexual violence (25). (See annex 1)

3. Objectives of the study

3.1 General objective

The general objective of the study was to assess the prevalence of sexual violence and its association with substance use among female students in Mizan-Tepi University.

3.2 Specific objectives

1. To determine the prevalence of sexual violence among female students in Mizan-Tepi University.
2. To assess association between substance use and sexual violence among female students in Mizan-Tepi University.

4. Methodology

4.1. Study Design

Cross-sectional, institution based study was done to assess substance use and sexual violence among female students of Mizan-Tepi university. It was supplemented with qualitative study.

4.2. Study area and study period

The study was conducted in Mizan-Tepi University which is found in Mizan Teferi in Western Ethiopia, 561 km far from Addis Ababa and close to the Sudanese border at an elevation of 1451 meters above sea level. Mizan-Tepi University is one of the new public universities in Federal Democratic Republic of Ethiopia. The university has more than 5,000 students. Among these 2000 are females. It was inaugurated in May 2006 when Mizan - Teferi Agricultural TVET College become the founding center of the university. The university consists of six colleges and many departments under colleges. The study was conducted from January to February 2012.

4.3. Source population

The source population was all female students of Mizan-Tepi University for quantitative study and both male and female students for Focus Group Discussion (FGD).

4.4. Study population

The study population was female students of second and third year in six colleges for quantitative study and both female and male students of second and third year in six colleges for FGD.

4.5. Sample size

The sample size for quantitative method was determined by using single population proportion formula to estimate sample size.

$$n = \frac{(Z\alpha/2)^2 \times P(1-P)}{d^2}$$

Where, n = Sample size

P = In similar study conducted among female students of Mekelle higher institutions estimated prevalence of sexual violence (sexual harassment) in lifetime was 35.4% (25).

d= Error allowed, 4 percent

Z= Z-score associated at 95% degree of confidence=1.96

$$n = \frac{(1.96)^2 \times 0.354(1-0.354)}{(0.04)^2} = 549$$

By considering 10% non response rate, final sample size was

$$549 + 55 = \underline{604}$$

For qualitative method 4 FGDs were prepared, two from male and the other two from female, each containing 8-10 students.

4.6. Sampling procedure

The university has 6 colleges. The list of female students of second and third year in each college was taken from registrar office and used as sampling frame. Study participants were selected by using simple random sampling technique from the sampling frame based on population proportional to sample size (Annex 2). For FGD, students who were not participated in quantitative study and those who can better explain themselves were chosen purposively by their instructors.

4.7. Data collection procedures

Data were collected by using pretested self administered questionnaire. The questionnaire included background characteristics, status of substance use, sexual history and sexual violence status. The questionnaire was adopted from WHO multi country study on women health and life events (11, 54). It was translated in to Amharic and back to English by instructors of Mizan-Tepi University to ensure consistency. The questionnaire was pretested using two bullet pretest among students of Aman College of health sciences which is found in Aman town, 7k.m. away from Mizan Teferi. The first pretest was among 15 students through discussion for understandability of each question. The second pretest was done by filling the questionnaire among 40 students in the same school. The questionnaire was amended based on result of the pretests. Five instructors from college of health sciences from the university were recruited and trained for two days on data collection. They were assigned to help respondents if they have questions, orient the students on the purpose of the study and clarify some terms when respondents do not understand. Since questionnaire contains sensitive questions respondents sat separately in selected class rooms. Boxes were put around the gate so that respondents put the questionnaire in to it when they finished. For qualitative method FGD guide was developed in English and then it was translated to Amharic. The FGDs was moderated by principal investigator. It was tape recorded and notes were taken by rapporteur.

4.8. Measurement of variables

Sexual violence: From the reported acts (**YES** responses) of completed rape, attempted rape and sexual harassment (unwelcome touches, comments and jocks), sexual violence was measured for the three time periods (before joining university, since joining university and current academic year). Life time sexual violence (completed rape, attempted rape and sexual harassment) was measured by adding at least one YES response for the time period of before joining university, since joining university and current academic year.

Substance use: From the reported acts of (**YES** responses) of alcohol consumption, khat chewing, cigarette smoking and other substances like cocaine use substance use was measured.

4.9. Operational definitions

Sexual violence: it includes sexual harassment, completed rape and attempted rape.

Completed Rape: is defined as any non-consensual penetration of the vagina, penetration obtained by physical body harm, by threatening or deception or when the victim is incapable of giving consent.

Attempted Rape: is defined as a trial to have sexual intercourse without consent by physical body harm, by threatening or deception or when the victim is incapable of giving consent but without actual penetration of the vagina.

Sexual Harassments: are unwanted sexual behaviors including physical contacts, verbal comments, jocks, questions and suggestions that are intentionally done on girls.

Substance use: includes alcohol consumption, khat chewing, cigarette smoking and using other substances like cocaine.

4.10. Variables

4.10.1. Dependent Variable

- Sexual violence (Completed rape, Attempted rape and Sexual harassment)

4.10.2. Independent Variables

- Background characteristics – such as age, year of education, religion, having boyfriend etc.
- Family history- such as living status, educational status, income, parental control etc.
- Use of substances - such as drinking alcohol, chewing khat, smoking and using other substances.

4.11. Data Analysis procedures

Quantitative data was cleaned, coded and entered in to EPI data version 3.1. After cleaning data, it was transported in to SPSS (statistical package for social sciences) statistical package for analysis. Univariate analysis was done to calculate frequencies and proportions. On bivariate analysis association of selected exposure variables was done with the outcome variable. Multivariate analysis was used for association of substance abuse and rape in current academic year for adjusting for potential confounding factors. Logistic regression was performed using SPSS. The result was presented using appropriate frequencies, proportions, odds ratio and 95% confidence interval. A P-value of less than 0.05 was considered significant.

Recorded and reported discussions of the FGDs were first transcribed completely to Amharic and fully translated to English then summary was written and presented narratively.

4.12. Data quality management

Data quality was assured by pre testing the questionnaire two times, by using standardized questionnaire, by supervising data collectors for making clarifications to participants and by cleaning data before, during and after data entry. The quality of qualitative data was assured by making homogenous group (by sex), by choosing separate and silent room (since it is sensitive), by tape recording in addition to note taking.

4.13. Ethical consideration

Ethical clearance was approved and obtained from Addis Ababa University School of Public Health research and ethical committee. Permission was asked from Mizan-Tepi University. Informed consent was obtained from study participant. Participants were told the objectives of the study. The names of respondents were excluded from the questionnaire. Since the questionnaire contains sensitive questions respondents sat separately. Data collectors were trained on keeping confidentiality of the respondents. Psychiatrist was recruited to counsel respondents if they develop psychological problems but fortunately there was no such problem during data collection.

5. Results

5.1. Back ground characteristics

Out of 604 female students who were invited to fill self administered questionnaire 570 female students completed the questionnaire with response rate of 94.4%. The remaining questionnaires were discarded due to different reasons. Among these incompleteness and inconsistencies were major ones (4.1%).

Among the total of 570 students almost half of respondents 283 (49.6%) were in the age range of 18-20 years. The mean age was 21 years with standard deviation of ± 1.91 years. The minimum age was 18 years and maximum was 29 years. Most of respondents 296 (51.9%) were Orthodox Christians in religion and 21.4% were Protestants. Before joining the university 208 (36.5%) were living in Oromia region, where as 123 respondents (21.6%) were living in Amhara region. As childhood 311 (54.7%) of respondents were grown in urban area. One hundred sixty four (28.8%) and 149 (26.1%) respondents were from Natural science college and technology college respectively. Majority of the study participants (82.5%) were second year students. One third of study participants have boyfriend (Table 1).

Table 1 Back ground characteristics of female students of Mizan-Tepi university, February 2012 (N=570)

Variables	N	%
Age		
≤ 20 years	283	49.6
21-24 years	254	44.6
> 24 years	33	5.8
Mean ± SD	21 ± 1.91 years	
Religion		
Orthodox	296	51.9
Protestant	122	21.4
Muslim	91	16
Catholic	43	7.5
Others	18	3.2
Region before coming to college		
Oromia	208	36.5
Amhara	123	21.6
SNNPR	84	14.7
Tigray	74	13
Addis Ababa	64	11.2
Other	17	3
Childhood residence		
Urban	311	54.7
Rural	258	45.3
College		
Natural science	164	28.8
Technology	149	26.1
FBE	86	15.1
Agriculture	65	11.4
Social science	63	11.1
Health science	43	7.5
Education		
Second year	470	82.5
Third year	100	17.5
Have boyfriend		
Yes	190	33.3
No	380	66.7

5.2.Family history

Among respondents, 416 (73%) students reported that their parents were living together at the time of the survey, whereas 69 (12.1%) of respondents' parents were divorced. Sixty four (11.4%) of the respondents' mothers or fathers were dead while 3.7% of respondents mothers and fathers were dead. Thirty seven point nine percent of respondents' fathers and 30.5% of respondents' mothers were above grade 12, while 17.7% of the respondents' fathers and 26.8% of mothers have no formal education. Eighty one respondents (14.2%) do not ask parents for help when needed. About one third (34.6%) of respondents don't get enough money for education as needed. More than half (55.8%) of respondents reported that their families income was medium and 97 (17%) reported as low. Parental control was strict among 177 (31.1%) respondents and loose among 98 (17.2%) of respondents (Table 2).

Table 2. Family history of female students of Mizan-Tepi university, February 2012
(N=570)

Variables	N	%
Parent live together		
Yes	416	73
No divorced	69	12.1
Mother or father dead	64	11.2
Both dead	21	3.7
Education of father		
No formal education	101	17.7
Grade 1-8	118	20.7
Grade 9-12	115	20.2
Above grade 12	216	37.9
Don't know	20	3.5
Education of mother		
No formal education	153	26.8
Grade 1-8	158	27.7
Grade 9-12	72	12.6
Above grade 12	174	30.5
Don't know	13	2.3
Ask parents for help when needed		
Yes	489	85.8
No	81	14.2
Get enough money when needed		
Yes	373	65.4
No	197	34.6
Income of parent		
High	155	27.2
Medium	318	55.8
Low	97	17
Parental control		
Strict	177	31.1
Medium	295	51.8
Loose	98	17.2

5.3.Substance use and sexual history

5.3.1. Substance use

Among respondents 123 (21.6%) had khat chewing habit. The prevalence of cigarette smoking was 12.5%. More than quarter of respondents (27.2%) were alcohol drinkers. Among all respondents 102 (17.9%) had friend/s who drink alcohol. Twenty four respondents (4.2%) used other substances like cocaine (Table 3).

According to the FGD discussants, there are many female students who use different types of substances. Both female and male FGD discussant explained that it is becoming common to use different types of substances by female students of the university. Substances are usually available to students around the campus. But one cannot notice this during day time.

“Houses around the campus which we drink tea during day time become hot khat and shisha house during night time. Therefore measures should be taken.” (3rd year female student)

Different female students use different types of substances in and around the campus. Khat, alcohol, cigarettes, shisha and hashish were listed from FGD discussants as substances used by female students.

“I haven’t seen female students while smoking cigarettes but usually female students chew khat and sometimes I noticed female students using hashish.” (3rd year male student)

Another discussant explained it like this.

“We see usually female students using khat and alcohol. Actually I haven’t heard of female students using hashish. But I know they use shisha.” (2nd year male student)

Renting houses outside the campus was explained from discussants as mechanism of using substances.

“These types of cases (substance abuse) happen in our campus because usually female students rent houses outside the campus for mere purpose of chewing khat and using shisha.” (3rd year female student)

5.3.2. Sexual history

Among the study participants 149 (26.1%) started sexual intercourse. The mean age for first intercourse was 17.83 years with standard deviation of ± 2.3 years. Twenty two respondents (15%) started first intercourse before age of 15. Almost half (49%) started first intercourse between the age of 16 and 18 years. Among all respondents 297 (52.2%) discuss about reproductive health with their parents (Table 3).

Table 3 Substance use and Sexual history among female students of Mizan-Tepi university January 2012 (N=570)

Variables	Number	%
Chew khat		
Yes	123	21.6
No	447	78.4
Smoke cigarette		
Yes	71	12.5
No	499	87.5
Drink alcohol		
Yes	155	27.2
No	415	72.8
Have drunk friend		
Yes	102	17.9
No	468	82.1
Uses substances like cocaine		
Yes	24	4.2
No	546	95.8
Ever have sex		
Yes	149	26.1
No	421	73.9
Age when have first sex (n=149)		
10-15	22	15.0
16-18	72	49.0
19-26	53	36.0
Mean \pm SD	17.83 \pm 2.30 years	
Discuss RH with parents		
Yes	297	52.2
No	272	47.8

5.4. Sexual violence

5.4.1. Prevalence of sexual violence

Since joining the university 378 (66.3%: 95% CI 62.3, 70.2) were sexually harassed. This figure is 359 (63%: 95% CI 58.7, 66.8) in the current academic year. Among respondents 118 (20.7%: 95% CI 17.5, 24.3) faced completed rape in lifetime. Attempted rape after coming to the university and in current academic year were 112 (19.6%: 95% CI 16.5, 22.9) and 78 (13.7%: 95% CI 11, 16.8) respectively. Seventy seven (13.5%: 95% CI 10.8, 16.6) and 51 (8.9%: 95% CI 6.7, 11.6) were raped since coming to the university and in current academic year respectively. The life time prevalence of sexual harassment and attempted rape were 75.4% (95% CI 71.7, 78.9) and 33.5% (95% CI 29.6, 37.6) respectively (Table 4).

As new university Mizan-Tepi University has many problems which favor sexual violence against female students. Mizan campus is found some three or four kilometers away from two nearby towns, Mizan and Aman towns. Since there is no facility around the campus like shopping and banking students obliged to go to these two towns. But there is shortage of transportation to and from both towns. Due to this female students exposed to sexual violence. This is described from discussions of female and male FGDs.

“In a place where we are there are many problems. Since there is no transportation facility to Mizan and Aman towns female students forced to ask for lifts. As a result they face many problems starting from harassment to having sexual intercourse without their will.” (3rd year female student)

Coming and going on foot is also another problem. On their way they face many problems.

“One day one female student was coming from Mizan town. In her way to the campus, unknown men came to her and took her mobile phone by force. Then she went to campus without taking her mobile phone. The next day she called to them and they agreed up on returning her mobile and appointed to meet in unknown place and there they raped her.” (2nd year male student)

Lack of gender clubs in the campus and other associations led to occurrence of sexual violence among female students because students do not get any information and support to protect them from sexual violence.

“In our campus there is no association which participates female students. We can’t find counseling service when we face some problems. We live in our way as we know. Therefore we need associations which protect us from being violated. We are facing many problems.” (3rd year female student)

Male discussants also supported this idea.

“I think the big thing is that there is no associations/clubs in our campus. Lack of this clubs led to exposure to such problems.” (3rd year male student)

Discussants of both male and female FGD discussed that lack of water in the campus and lack of fence which separates female students from male students and from nearby community also made contributions for occurrence of sexual violence.

“There is no fence. Since there is no water around dormitories we take showers in Shonga River. During this time young men from outside the campus come to see us. Sometimes they threaten us, throw stones on us and laugh or joke on our body. Therefore we ran away by taking our clothes.” (2nd year female student)

The campus is not separated from outside community. Therefore any one can easily get in to the campus. Due to this students faced sexual violence.

“Last year there was meeting in this campus. I heard this from female students in the meeting. On the side of the females dormitory there is no fence. Therefore men from outside get in to the campus and usually they threaten and attack female students. And I heard that many female students faced many problems related to lack of fence.” (3rd year male student)

Discussant explained that perpetrators use an economic advantage to violate female students. Those students who are unable to get enough money needed for education are vulnerable to violence.

“Sometimes students do sex to unknown men to get money. This happens for students who are economically weak and who are unable to secure money needed for education.”
(2nd year female student)

Both groups argued that the occurrence of sexual violence is very common that in every place female students of the university face it.

“Usually we see sexual harassment/ “lekefa” from male students against female students in a way from dormitory to classes, from classes to library and so on.” (3rd year male student)

Table 4 Magnitude of sexual violence among female students of Mizan-Tepi University, February 2012 (N=570)

	Number	Percent	95% CI
After joining university			
Sexual harassment	378	66.3	(62.3, 70.2)
Attempted rape	112	19.6	(16.5, 22.9)
Completed rape	77	13.5	(10.8, 16.6)
Current academic year			
Sexual harassment	359	63	(58.7, 66.8)
Attempted rape	78	13.7	(11.0, 16.8)
Completed rape	51	8.9	(6.7, 11.6)
Life time			
Sexual harassment	430	75.4	(71.7, 78.9)
Attempted rape	191	33.5	(29.6, 37.6)
Completed rape	118	20.7	(17.5, 24.3)

5.4.2. Forced first sex

Study participants whose first sex was not wanted were asked to report the reason for having sex without will. Among 86 respondents who did sex without will, the reasons for doing so were due to false promise (23.5%), peer pressure (20%) and threatening (20%). Twelve point six (12.6%) were because they drank alcohol (Figure 1).

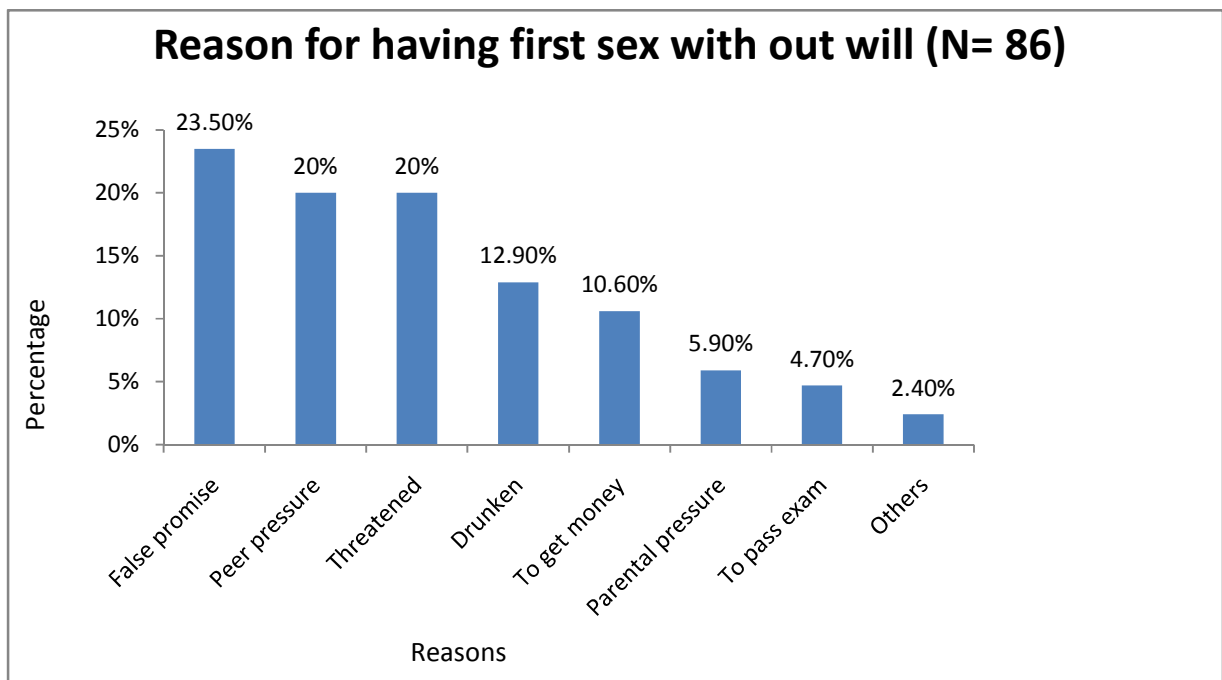
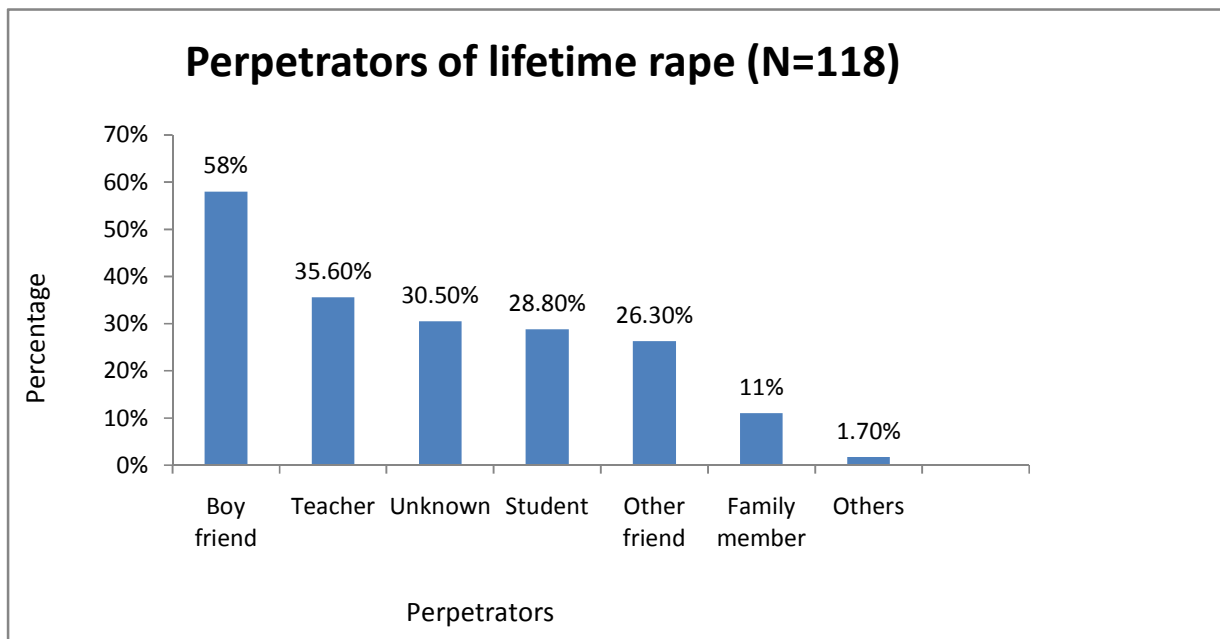


Fig 1 Reason for starting sexual intercourse with out will among female students of Mizan-Tepi University, February 2012.

5.4.3. Perpetrators of lifetime rape

Victims of completed rape in lifetime were asked to report perpetrator/s. According to their report 58% were raped by their boy friend, 35.6% by their teachers, 28.8% by students, 26.3% by other friends and 30.5% by people who are unknown to victims (Figure 2).



Note: figures may not add up to 100% because of multiple responses

Fig 2 Perpetrators of rape victimization in lifetime among female students of Mizan-Tepi University, February 2012

5.5. Association of back ground characteristics and rape

Odds of experiencing rape in current year was higher among third year students (COR= 2.13: 95% CI 1.12, 4.06) and those who have boyfriend (COR= 5.69: 95% CI 3.03, 10.69) as compared with second year students and those who have no boyfriend (Table 5).

Table 5. Bivariate analysis table showing association of background characteristics and Rape in current year among Mizan-Tepi University, February 2012

Variables	Rape in current year		Crude OR (95% CI)
	Yes (%)	No (%)	
Age			
≤20 years	23 (8.1)	260 (91.9)	0.64 (0.21, 1.98)
21-24 years	24 (9.4)	230 (90.6)	0.76 (0.25, 2.33)
> 24 years	4 (12.1)	29 (87.9)	1.00
Religion			
Orthodox	25 (8.4)	271 (91.6)	1.00
Protestant	9 (7.4)	113 (92.6)	0.86 (0.39, 1.91)
Muslim/catholic/others	17 (11.2)	135 (88.8)	1.37 (0.71, 2.61)
Region before coming to college			
Oromia	15 (7.2)	193 (92.8)	1.00
Amhara	12 (9.8)	111 (90.2)	1.39 (0.63, 3.08)
SNNPR	10 (11.9)	74 (88.1)	1.74 (0.75, 4.04)
Tigray /Addis Ababa /Others	14 (9.0)	141 (91.0)	1.28 (0.60, 2.73)
College			
Natural science	14 (8.5)	150 (91.5)	1.00
Technology	16 (10.7)	133 (89.3)	1.29 (0.61, 2.74)
FBE	9 (10.5)	77 (89.5)	1.25 (0.52, 3.02)
Health/Social/Agriculture	12 (7.0)	159 (93.0)	0.81 (0.36, 1.80)
Education			
Second year	36 (7.7)	434 (92.3)	1.00
Third year	15 (15.0)	85 (85.0)	2.13 (1.12, 4.06)
Ever have friend			
Yes	36 (18.9)	154 (81.1)	5.69 (3.03, 10.69)
No	15 (3.9)	365 (96.1)	1.00

5.6. Associations of family history and rape

The odds of experiencing rape was lower among those whose fathers (COR= 0.36: 95% CI 0.20, 0.65) and mothers (COR= 0.32: 95% CI 0.17, 0.60) have formal education as compared with not having formal education. Respondents who ask parents for help when ever they need (COR= 0.19: 95% CI 0.10, 0.35) and get enough money (COR= 0.30: 95% CI 0.17, 0.55) have less odds of experiencing rape in current academic year as compared with those who do not ask their parents for help and do not get enough money when needed respectively. Low income of parent (COR= 3.70: 95% CI 2.01, 6.83) and loose parental control (COR= 11.56: 95% CI 6.20, 21.57) has high odds of experiencing rape as compared with high/medium income of parent and strict/loose parental control respectively. The odds of experiencing rape was lower among respondents who discuss about RH with parents (COR= 0.47: 95% CI 0.26, 0.85) as compared with those who do not discuss about RH with their parents (Table 6).

Table 6 Bivariate analysis table showing association between family history and rape among female students of Mizan-Tepi University, February 2012

Variables	Rape in current year		Crude
	Yes (%)	No (%)	OR (95% CI)
Parent live together			
Yes	32 (7.7)	384 (92.3)	1.00
No	19 (12.3)	135 (87.7)	1.57 (0.69, 3.58)
Education of father			
No formal education	23 (15.0)	130 (85.0)	1.00
Have formal education	24 (5.9)	380 (94.1)	0.36 (0.20, 0.65)
Education of mother			
No formal education	18 (17.8)	83 (82.2)	1.00
Have formal education	29 (6.5)	420 (93.5)	0.32 (0.17, 0.60)
Ask parents for help when ever needed			
Yes	30 (6.1)	459 (93.9)	0.19 (0.10, 0.35)
No	21 (25.9)	60 (74.1)	1.00
Get enough money when needed			
Yes	20 (5.4)	353 (94.6)	0.30 (0.17, 0.55)
No	31 (15.7)	166 (84.3)	1.00
Income of parent			
High/medium	31 (6.6)	452 (93.4)	1.00
Low	20 (20.6)	77 (79.4)	3.70 (2.01, 6.83)
Parental control			
Strict/Medium	19 (4.0)	453 (96.0)	1.00
Loose	32 (32.7)	66 (67.3)	11.56 (6.20, 21.57)

Discuss about RH with parents			
Yes	18 (6.1)	279 (93.9)	0.47 (0.26, 0.85)
No	33 (12.1)	239 (87.9)	1.00

5.7. Associations of substance use and rape

In bivariate analysis all substance uses were significantly associated with rape in current academic year. Those who abuse substances were more likely to experience rape in current year (khat chewing (COR= 9.66: 95% CI 5.17, 18.06), smoking cigarette (COR= 14.97: 95% CI 7.91, 28.33), alcohol drinking (COR= 8.07: 95% CI 4.27, 15.24), having drinking friend (COR= 16.47: 95% CI 8.55, 31.72) and using other substances (COR= 13.00: 95% CI 5.48, 30.84) as compared with those who do not abuse substances (Table 7).

Table 7 Bivariate analysis table showing association between substance abuse and rape among female students of Mizan-Tepi University, February 2012

Variables	Rape in current year		Crude OR (95% CI)
	Yes (%)	No (%)	
Khat chewers			
Yes	34 (27.6)	89 (72.4)	9.66 (5.17, 18.06)
No	17 (3.8)	430 (96.2)	1.00
Cigarette smokers			
Yes	29 (40.8)	42 (59.2)	14.97 (7.91, 28.33)
No	22 (4.4)	477 (95.6)	1.00
Alcohol drinkers			
Yes	36 (23.2)	119 (76.8)	8.07 (4.27, 15.24)
No	15 (3.6)	400 (96.4)	1.00
Have drinking friend			
Yes	36 (35.3)	66 (64.7)	16.47 (8.55, 31.72)
No	15 (3.2)	453 (96.8)	1.00
Uses other substances like cocaine			
Yes	12 (50.0)	12 (50.0)	13.00 (5.48, 30.84)
No	39 (7.1)	507 (92.9)	1.00

A multivariate logistic regression was done to assess the associations between substance use and completed rape in current academic year. After adjusting for potential confounding variables there was a significant association between substance use (khat chewing, cigarette smoking, alcohol drinking, having drinking friend and using other substances like cocaine) and completed rape in current academic year. The likelihood of experiencing rape in current academic year was higher among those who chew khat (AOR= 4.24: 95% CI 1.92, 9.37), smoke cigarettes (AOR= 6.76: 95% CI 2.99, 15.28), drink alcohol (AOR= 3.27: 95% CI 1.51, 7.11), have drinking friend (AOR= 5.60: 95% CI 2.46, 12.74) and uses other substances like cocaine (AOR= 6.43: 95% CI 1.91, 21.64) as compared with those who don't chew khat, smoke cigarettes, drink alcohol, have drinking friend and use other substances like cocaine respectively (Table 8).

Discussant of FGD supported the idea that substance use makes female students to be sexually violated. For this discussant put different reasons. Different parties which were prepared by students were responsible for the occurrence of sexual violence specially rape. Since there is no entertainment in the campus students prepare different parties in Mizan and Aman towns as leisure.

“I heard something which was happened last year. Students of our campus prepared a party in Mizan town. After the party gets finished, both male and female students slept together by having bed room there. This is because they couldn't return back during that evening.” (3rd year male student)

The other explanation which was exclaimed by discussant was that almost always substances like shisha are used outside the campus together with males (weather students or not) in the same room. This makes sexual violence inevitable.

“I believe some substances are responsible for occurrence of sexual violence against female students for example since it is not suitable to use shisha within the campus they use it outside the campus together with males. So this condition makes it suitable for sexual violence.” (2nd year female student)

Both male and female FGD discussant agreed that many substances decrease the conscious level of the users. This could hurt them in many ways. Substance users could not protect themselves

from such attack or they may not know what is happening up on them. This problem happens usually when they use substances together with males.

“Since alcohol or other drugs may decrease the conscious level of abuser it may predispose to sexual violence. One reason for this is that because female student usually use substance together with males. During this time they may spend long time together. The other reason is that the place they use the drugs is usually hidden. Since many substance abusers are males, females consult males when they want to use substances”
(3rd year student)

Wrong perception about female students who use drugs contributes for occurrence of sexual violence. Males usually perceive that female students who abuse substances have a desire to have sexual intercourse. Therefore they advance to have it. Unless females are voluntary, they try to violate them.

Table 8 Multivariate analysis table showing associations between rape and substance abuse among female students of Mizan-Tepi university, February 2012.

Variables	Crude OR (95% CI)	Adjusted* OR (95% CI)
Khat chewers		
Yes	9.66 (5.17, 18.06)	4.24 (1.92, 9.37)
No	1.00	1.00
Cigarette smokers		
Yes	14.97 (7.91, 28.33)	6.76 (2.99, 15.28)
No	1.00	1.00
Alcohol drinkers		
Yes	8.07 (4.27, 15.24)	3.27 (1.51, 7.11)
No	1.00	1.00
Have drinking friend		
Yes	16.47 (8.55, 31.72)	5.60 (2.46, 12.74)
No	1.00	1.00
Uses other substances like cocaine		
Yes	13.00 (5.48, 30.84)	6.43 (1.91, 21.64)
No	1.00	1.00

*Adjusted for year of education, having boy friend, education of mother, ask parents for help when ever they need it, get enough money, income of parent, parental control and discuss about RH with parents.

6. Discussion

The response rate in this study was 94.4%. The high response rate for this sensitive issue shows that study participants give emphasis and show willingness to talk about the problem under study. This study described the prevalence of sexual violence namely sexual harassment, attempted rape and completed rape after joining university, in current academic year and in lifetime. According to our study sexual harassment in current academic year was 63%. This figure is extremely higher than the study conducted in Jimma town, which was 19% (16). This difference could be due to difference in source population. The other possible reason for this difference is the difference in operational definition. The Jimma town study included only non consensual or unwelcome kiss where as in addition to non consensual kiss our study included unwanted touching and unwelcome jocks. In a study conducted in public schools of Jimma zone the prevalence of sexual harassment during one year prior to interview was 25.6% (18). This is also lower than our study. The possible justification for this difference is the difference in target population. This study was done in high schools where as our study was done in university. The prevalence of sexual harassment during one year prior to interview in Addis Ababa high schools, Butajira high school and vocational schools, Addis Ababa University and Mekelle higher institutions were 37.3%, 15.4%, 41% and 21.2% respectively (21, 23, 25, 26). All these findings are lower than our finding. The possible justification for this high prevalence in our study could be, as explained by the FGD discussant, lack of facilities in the campus which favor sexual harassment. Since there is no fence which separates female students' dormitories from that of males, female students were exposed to sexual harassment.

The lifetime prevalence of sexual harassment among female students of Mizan-Tepi University was 75.4%. Unwanted touching of breast and bottom in Nigerian schools was 9% (55). This is lower than our study but it didn't include unwelcome jocks. Our study is comparable to study conducted among school girls in Jimma zone which was 73.3% (18). The life time prevalence of sexual harassment were 25.6%, 57.5%, 58%, 35.4% and 28.3% in studies done in Harari public schools, Addis Ababa schools, Addis Ababa University, Mekelle higher institutions and Butajira high school and vocational schools (19, 21, 23, 25, 26). These figures are lower than results of our study. The possible justification for this difference could be due to lack of facilities and education to protect female students from sexual harassment. This is explained by the FGD discussants. There is no fence which separates female students from male students. Female

students are taking shower in the river. During this time young people around the campus harass female students. There is no club which protects female students from sexual harassment.

In our study 13.7% of respondents experienced an attempted rape in current year. This result is higher than studies conducted in Harari public schools, Addis Ababa University and Butajira high school and vocational school which were 11.6%, 7.4% and 10.7% respectively (19, 23, 26). But our result is lower than study conducted among female students of Mekelle higher institutions which was 19.2% (25).

The magnitude of lifetime attempted rape was 33.5%. This is comparable with the study conducted in Mekelle higher institutions which was 33.7% (25). But it is higher than study conducted in North Eastern University (9.9%), Chile college students (6%), Asendabo (0.31%), Harari public schools (18.9%), Addis Ababa street adolescents (20.5%), Addis Ababa high schools (25.5%), Addis Ababa University students (27.5%) and Butajira high school and vocational schools (10.7%) (12, 17, 19-21, 23, 26, 56). This difference could be due to difference in source population and setting.

The prevalence of completed rape in current academic year was 8.9%. This result is lower than the study conducted among female street adolescents in Addis Ababa which was 15% three months before interview (20). This difference could be due to the difference in source population. The other reason could be due to difference in setting. Since street is more serious place for victimization of sexual violence than being in campus. But our result is higher than the study conducted in Jimma (2.7%), Harari (5%), Addis Ababa University (1.8%), Mekelle higher institutions (5.6%) and Butajira high school and vocational schools (2.5%) (16, 19, 23, 25, 26).

In this study the prevalence of completed rape in lifetime was 20.7%. This is comparable with the study conducted in Addis Ababa high schools (21.2%) (21). But higher than studies conducted in Chile college students (9%), Nigerian secondary schools (5%), North Eastern University (4.8%), Asendabo (5.9%), Harari (6.7%), Addis Ababa University (12.7%), Debarke (8.8%), Mekelle higher institutions (10.4%) and Butajira high school and vocational schools (8.2%) (12, 17, 19, 23-26, 55, 56).

Over all, sexual violence in our study is very high as compared with other studies. Probable reason for this (as explained by FGD discussants) could be due to presence of different problems in the campus. As new University, Mizan-Tepi University has many problems. Lack of fence exposed female students to sexual violence. There is no separation between female and male student dormitories and external community. There are no clubs which support or advice female students. Sometimes female students take showers on the river which passes through the campus. These problems could be reasons for high prevalence of sexual violence in our study.

This study described the prevalence of substance use (khat chewing, cigarette smoking, alcohol drinking and using substances like cocaine). According to our study the prevalence of khat chewing was 21.6%. This is lower than study conducted in Jimma University (51.6%) (39). This difference could be due to difference in source population. Study participants in Jimma University study are older than our study participants. The result of our study is higher than the study conducted in Saudi Arabia (3.8%), Addis Ababa University female students (8%), Addis Ababa high schools (17.3%), Addis Ababa University medical students (1.5%), Mekelle higher institutions (6.8%) and North West Ethiopia (9.9%) (21, 23, 25, 27, 35, 38). In our study 12.5% smoked cigarettes. This is lower than study conducted in China (31%) (30). But higher than study conducted in Addis Ababa high school (4.8%), Addis Ababa University medical students (1.5%), Mekelle higher institutions (3.2%), Addis Ababa (5.7%) and North West Ethiopia (2.8%) (21, 25, 35, 37, 38). Twenty seven point two percent of our study participants were alcohol drinkers. This is comparable with study conducted in Addis Ababa high schools (26.4%) (21). But lower than study conducted in Addis Ababa University female students (22.1%), Addis Ababa University medical students (14%) and Mekelle higher institutions (24.6%) (23, 25, 35). This shows that substance abuse in our study is higher than most other studies. This is supported by FGD discussants. FGD discussant discussed that female students use substances by renting houses outside the campus. There are many vendors around the campus which sell substances to students. They also explained that students prepare parties in Mizan and Aman towns and there they drink alcohol and smoke cigarettes. There is no any entertainment in the campus due to this students including females use different substance as leisure.

In our study there was significant association between substance use (khat chewing, cigarette smoking, alcohol drinking and other substances) and completed rape in current academic year.

This is consistent with other studies. A literature review done among china studies showed that there was positive association between alcohol and intimate partner violence and students who use alcohol were more likely to be victims (48). The 2006/2007 south Florida study explained substance abuse and sexual violence were closely related problems. In American study sexual violence was consistently correlated with lifetime and last 12 months alcohol abuse (40). Systematic review of African studies found that alcohol use by a woman and/or partner whether heavily or occasionally was significantly associated with pregnancy related abuse (50). In a study conducted in Addis Ababa high schools in 2008 khat chewing and cigarette smoking were significantly associated with sexual violence (21). In Addis Ababa University alcohol was significantly associated with sexual violence (23). In a study of Mekelle higher institution alcohol consumption and having drunken peers were significantly associated with sexual violence (25).

Quantitative result of our study was supported by FGD discussions. FGD discussants explained that substance use by female students may decrease conscious level of the substance users and hence expose them to be sexually violated. Substance users cannot understand what is happening to them. And they are unable to give consent. Female students who use substances usually spend a long time with males in the same room by using substances. This increases the chance of getting violated. Males think that females who use substances have a desire to have sexual intercourse. This wrong perception against substance using females makes sexual violence more prevalent among user than non user. Due to these female students who use substances are prone for sexual violence.

7. Limitations and strengths of the study

7.1. Limitations of the study

The magnitude of sexual violence (sexual harassment, attempted rape and rape for periods of before joining university, since joining university and current academic year) may be underestimated for different reasons. One is because the issue is so sensitive that respondents may not disclose the reality. The other reason is that since only the survivors were participated in the study those who were absent due to the outcome of sexual violence were not represented by the study. There may also be recall bias. Since it is cross sectional study it is difficult to assess cause and effect relationship. It is also difficult to know which come first, dependent or independent. For example, khat chewing may precede the act of sexual violence or females may start chewing khat after they get violated.

7.2. Strengths of the study

Use of different data collection method (both qualitative and quantitative methods) is strength of this study. Involvement of male student in FGD may give complete and comprehensive information about the problem under study.

8. Conclusions

The magnitude of sexual violence among female students of Mizan-Tepi University was very high. This study showed that two third and three fourth of respondents were harassed sexually after joining University and in lifetime respectively. Sexual harassment in current academic year was also high (63%). One fifth of respondents experienced attempted rape after joining the university and one third experienced it in lifetime. This study also indicated that many students are suffering from the severest form sexual violence i.e. completed rape. About one fifth of respondents ever been experienced completed rape in their lifetime. Rape after joining the university and in current year was also high, 13.5% and 8.9% respectively.

Using all substances included in this study (khat chewing, cigarette smoking, alcohol drinking and using other substances like cocaine) were significantly and positively associated with experiencing of completed rape in current academic year. Having friend/s that drink alcohol was also positively and significantly associated with rape in current academic year.

9. Recommendations

Based on the result of this study we recommend the followings to concerned body.

1. The university should prepare education/ awareness creation programs through establishing clubs (gender club and anti drug club) that target against sexual violence and substance abuse which participate both female and male students and improve facilities within the campus.
2. The city administration and other stake holders should take measures on those who sell substances around the campus.

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Annexes

Annex 1 Conceptual framework

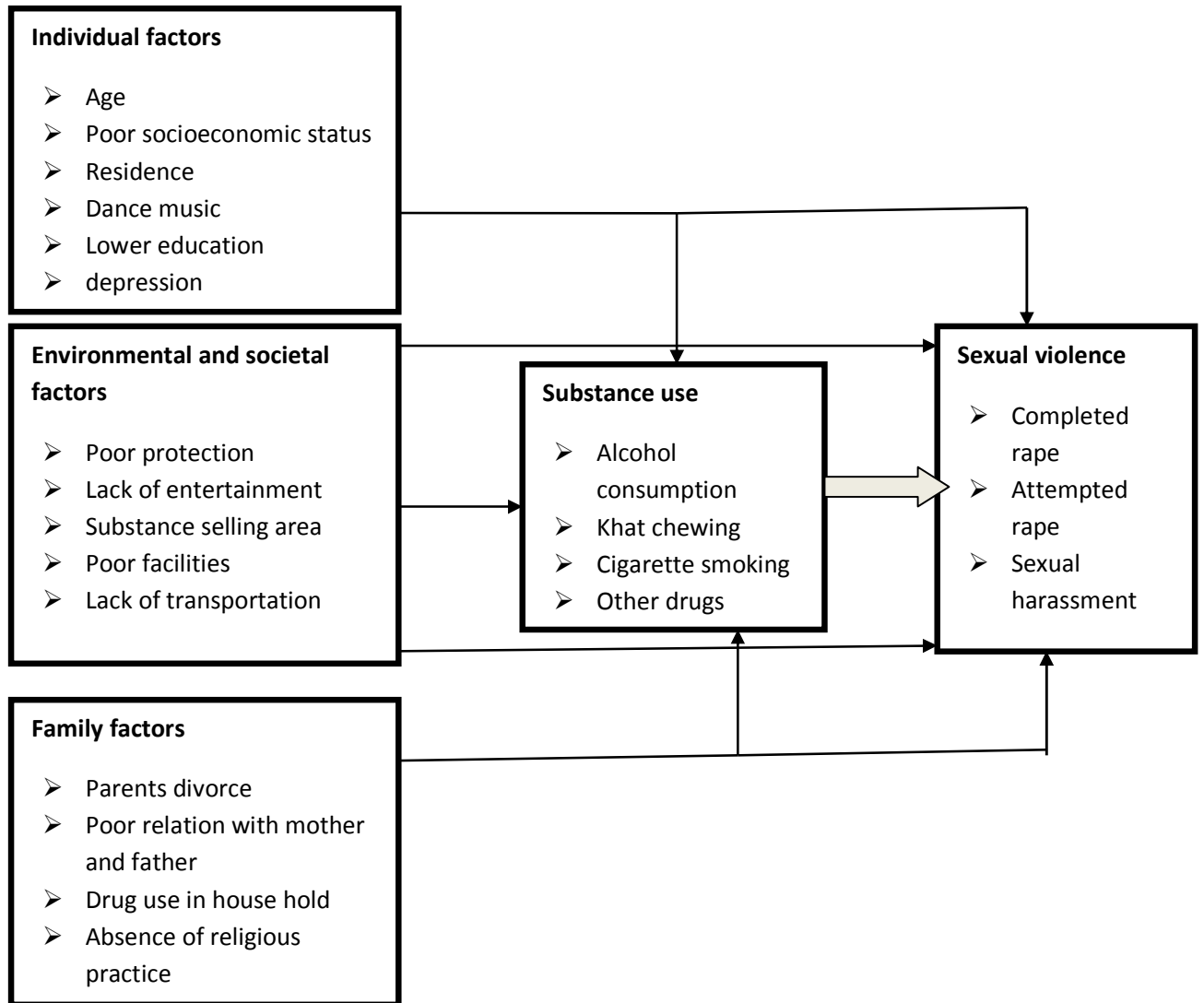


Fig.3 Conceptual frame work showing the association between substance abuse and sexual violence (Developed by the author)

Annex 2 Sampling procedure

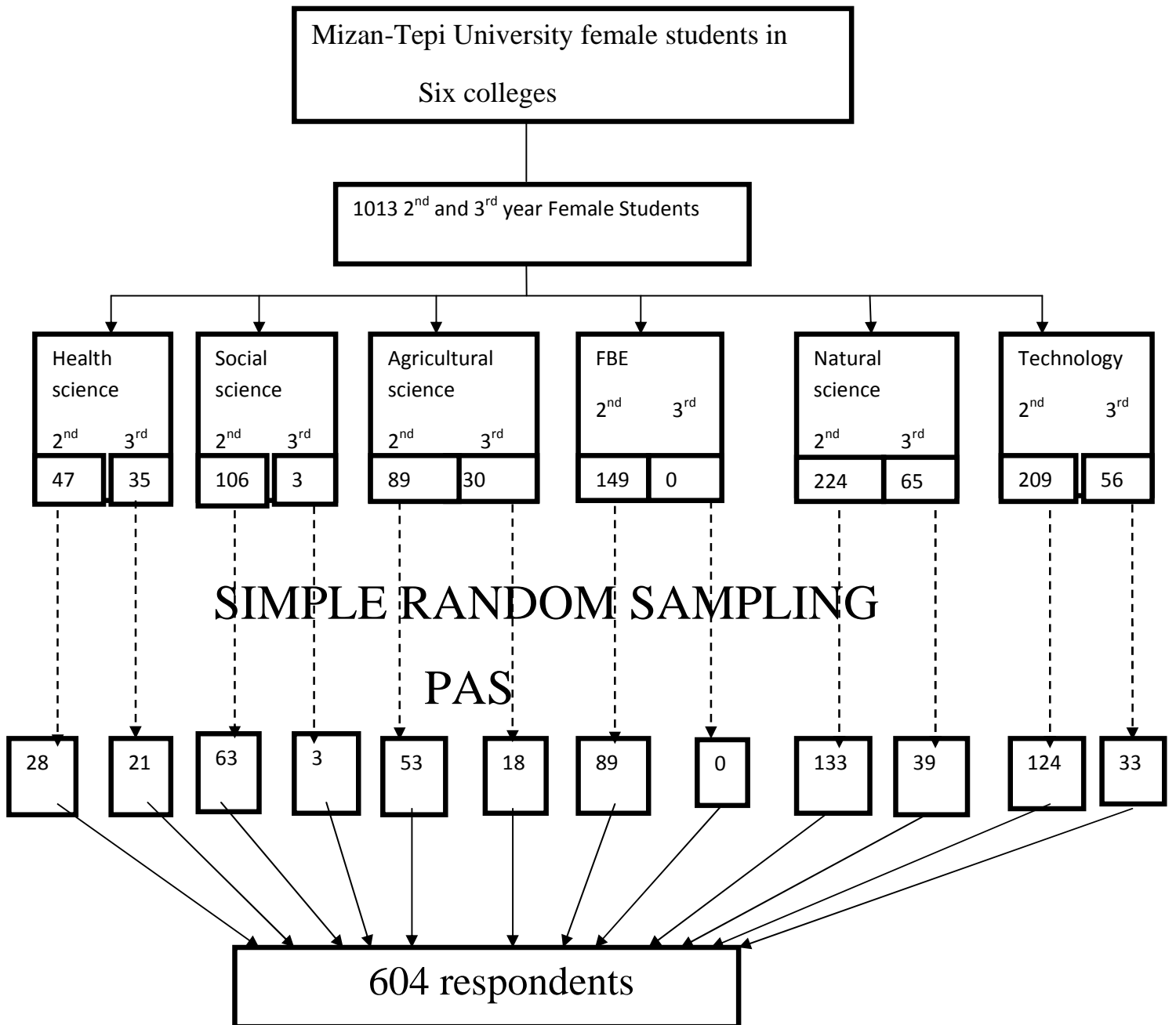


Fig 4 Figure showing sampling procedure to get study participants

Annex 3 Questionnaire: English version

Study Information Sheet (SIS)

- **Title of the project:** Substance abuse and sexual violence among female students of Mizan-Tepi University
- **Background of the study:** Sexual violence is a common and serious public health problem. The most common place where sexual violence is experienced is school. Sexual violence occurs when she is incapable of understanding the situation. The most important cause of this condition is substance abuse
- **Objective:** to assess the prevalence of sexual violence and to determine its association with substance abuse among female students in Mizan-Tepi University.
- **Significance of the study:** The government of Ethiopia is increasing the number of universities as well as the enrollment of female students recently. Mizan-Tepi University is one among newly opened Universities. It is important to make school environment safe otherwise it will be impossible to achieve the goal in education sectors. Therefore this study will give information on magnitude of sexual violence and substance abuse and their association.
- **Study site and period of the study:** The study will be conducted in Mizan-Tepi University which is found in Mizan Teferi in Western Ethiopia. This study will be done from January 2011 to February 2012.
- **Study procedures:** data will be collected from respondents through self administered questionnaires.
- **Potential risks/Benefits associated:** There is no direct benefit that participant are going to get due to their participation. There is also no harm that comes to them due to their participation.
- **Confidentiality:** The response of study participant is completely confidential. They do not need to write their names and will never be used in connection with any of the information they give.
- **Rights of participation:** Participants are not forced to be participated (Voluntary Participation).
- **Address of principal investigator:** [Tel:+251910906749](tel:+251910906749)

Mail: andualemhenok@gmail.com

Consent form

Hello my name is Andualem Henok. I am public health post graduate student in Addis Ababa University. I am currently doing research to assess sexual violence and substance abuse among female students. You have been selected for this study randomly. The finding of this study will be used for better understanding of the problem and hence for better planning and intervention. Therefore, I am requesting you to fill this questionnaire by yourself. There is no right or wrong answer in all the questions. The questions include very personal issues which may be difficult to talk about, but for many, it is found to be useful opportunity to talk. There is no direct benefit that you are going to get due to your participation. There is also no harm that comes to you due to your participation.

Your response is completely confidential. You do not need to write your name and will never be used in connection with any of the information you give. You are kindly requested to answer every question and you may stop filling the form at any time you want to. However, your honest answers to these questions will help for understanding of sexual violence greatly. There can be more than one answer as given on the alternative choices or opinions. The total time needed for filling this questionnaire is about thirty minutes.

Would you be willing to participate? Yes No

If you are willing, please insert the questionnaire yourself in the sealed box around the gate of this hall after you fill it complete.

THANK YOU!!

1 BACKGROUND CHARACTERISTICS

Q. No.	Questions (Q) and Filters	Answers and Alternative Choices for Responses
101	How old are you?	[_____] Years
102	What is your religion?	1. Orthodox 2. Catholic 3. Protestant 4. Muslim 8. Other (Specify) _____
103	Where were you living before joining this college?	1. Tigray 2. Amara 3. Oromiya 4. Addis Ababa 5. SNNPR 8. Other (Specify) _____
104	Where do you grow up (before age 12 where did you live longest)?	1. Urban 2. Rural
105	What is your college/faculty?	1. health science 2. social science 3. agriculture 4. FBE 5. natural science 6. technology
106	What is your education level now?	1. Year 2 2. Year 3
107	What was your last semester education result?	1. GPA [_____]
108	Where do you place your educational (Grade) status currently?	1. Good and above 2. Average 3. Poor
109	Have you ever been married or lived with male partner?	1. YES 2. NO
110	Are you currently married or have boyfriend?	1. YES, Married 2. YES, Boyfriend 3. NO _ Skip to Q 201
111	What is the educational status of your current male partner (husband or boy friend)?	1. No formal Education 2. Grade 1 - 8 complete 3. Grade 9 – 12 complete 4. Above grade 12 9. I don't know
112	What is the employment status of your current male partner (husband or boy friend)?	1. Student 2. Employed - Teacher 3. Other employee _____ 4. Unemployed

2. FAMILY HISTORY

Q. No	Questions	Answers and Alternative Choices for Responses
201	Are your father and mother living together currently?	1. Yes 2. Divorced/separated 3. Only Mother alive 4. Only Father alive 5. Both of them not alive
202	What is the educational status of your father?	1. No formal Education 2. Grade 1 - 8 complete 3. Grade 9 – 12 complete 4. Above grade 12 9. I don't know
203	What is the educational status of your mother?	1. No formal Education 2. Grade 1 - 8 complete 3. Grade 9 – 12 complete 4. Above grade 12 9. I don't know
204	What is your birth order?	1. [_____] 9. I don't know
205	Do any of your families of birth live close enough so that you can easily see/visit them?	1. Yes 2. No
206	When you need help or have a problem, can you usually count on family members for support?	1. Yes 2. No
207	Do you think that you are receiving enough money (e.g. for education materials) according to your demand?	1. Yes 2. No
208	How do you perceive the income status of your family or guardian?	1. Better-off 2. Average 3. Poor
209	How do you perceive the control of your family made on you?	1. Tight 2. Average 3. Loose/free

3. SUBSTANCE USE

Q. No.	Questions	Answers and Alternative Choices for Responses
301	Have you ever chewed chat?	1. Yes 2. No _ Skip to Q 303
302	How often do you chew chat?	1. Every day or nearly every day 2. Once or twice a week 3. 1 – 3 times a month

		4. Occasionally, less than once a month
303	Have you ever smoked tobacco/cigarette?	1. Yes 2. No _ Skip to Q 305
304	How often do you smoke?	1. Every day or nearly every day 2. Once or twice a week 3. 1 – 3 times a month 4. Occasionally, less than once a month
305	Have you ever consumed alcohol?	1. Yes 2. No _ Skip to Q 310
306	How often do you drink alcohol?	1. Every day or nearly every day 2. Once or twice a week 3. 1 – 3 times a month 4. Occasionally, less than once a month
307	Have you ever been drunk in your life?	1. Yes 2. No _ Skip to Q 310
308	Have you been drunk since you joined this university/college?	1. Yes 2. No
309	Have you been drunk in this academic year?	1. Yes 2. No
310	Do you have female or male friend(s) who drink?	1. Yes 2. No
311	Have you ever been used drugs or substances like cocaine?	1. Yes 2. No_ Skip to Q 401
312	How often do you use drug or substances like cocaine?	1. Every day or nearly every day 2. Once or twice a week 3. 1 – 3 times a month 4. Occasionally, less than once a month

4. SEXUAL EXPERIENCES

Q. No.	Questions	Answers and Alternative Choices for Responses
401	Have you ever had sexual intercourse?	1. Yes 2. No _ Skip to Q 408
402	How old were you when you had Sexual intercourse for the first time?	1. [_____] Years 9. I don't know
403	How old was the person with whom you had the first sexual intercourse?	1. [_____] Years 9. I don't know

404	Have you been willing when you have the first sexual intercourse?	1. Yes _ Skip to Q 406 2. No
405	What was the reason for having sexual intercourse unwillingly (without your consent)?	1. Family pressure/Marital engagement 2. Peer pressure 3. Threatened 4. False promise 5. For financial support (money) 6. To pass exam 7. Made me drunken 8. Other(Specify)_____
406	Do you have more than one sexual partner currently?	1. Yes 2. No
407	How many sexual partners have you ever experienced until now?	1. One 2. Two 3. Three 4. Four or more
408	Can you freely discuss about reproductive health with your family members?	1. Yes 2. No

5. SEXUAL VIOLENCE STATUS

Q. No.	Questions	Before Joining College	Since Joining College	This Year
		1=Yes 2=No	1=Yes 2=No	1=Yes 2=No
501	Have you ever been faced with unwelcome touch sexually (e.g. on breasts, genitalia etc.), Verbal jocks, Comments; or made you something that you didn't want to?	1 2	1 2	1 2
502	Have you ever been forced to have sex that you have escaped?	1 2	1 2	1 2
503	Have you ever been had Sexual intercourse forcefully or by any means that you didn't want to or against your interest?	1 2	1 2	1 2
504	Who was the person who forced you for that unwanted sex? (More than one answer applicable)	1. Boy friend/Husband 2. Family member 3. Other relative 4. Teacher 5. Student 6. Stranger 8. Other (specify) _____		

505	How many times have you faced Forced Sex?	1. One time 2. Two times 3. Three times 4. Four times or more
506	Did you share to your family when Forced Sex happened?	1. Yes 2. No
507	Have you ever applied/reported to the legal system or police?	1. Yes 2. No

Annex 4 Questionnaire: Amharic version

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1. ••••• •••

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101	•••• ••• ••?	[_____] •••
102	•••••• ••••• •• ?	1. •••••• 2. •••• 3. ••••••• 4. •••• 8. •• (••••) _____
103	••• ••• •••••• ••• •• ••• ••• ••••••?	1. •••• 2. ••••

		3. 4. 5. 8. .. (.....)_____
104?	1. 2.
105?	1. 2. 3. 4. 4. 5.
106?	1 2. 2 3.
107?	1. GPA [_____]
108?	1. 2. 3.
109 /?	1. 2.
110 /?	1. 2. 3. - 201....
111 /?	1. 2. .1. - 8. 3. .9. - 12.... 4. .12. 9.
112 /?	1. 2. 3. (.....)_____ 4.

2.

../....
201?	1. 2./..... 3. 4. 5.
202?	1. 2. .1. - 8. 3. .9. - 12.... 4. .12. 9.
203?	1. 2. .1. - 8. 3. .9. - 12.... 4. .12. 9.
204?	1. [_____] 9.

205?	1. ... 2. ...
206/.....?	1. ... 2.
207?	1. ... 2.
208?	1. .. 2. 3.
209?	1. ... 2. 3. ...

3. /

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301?	1. ... 2. _ 303 ...
302?	1. 2. / 3.1 - 3 .. 4.
303?	1. ... 2. _ 305 ...
304?	1. 2. / 3.1 - 3 .. 4.
305 (.. ..)?	1. ... 2. _ 310 ...
306 (.. ..)?	1. 2. / 3.1 - 3 .. 4.
307?	1. ... 2. _ 310 ...
308?	1. ... 2.
309?	1. ... 2.
310/.....?	1. ... 2.
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312?	1. 2. / 3.1 - 3 .. 4.

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Annex 5 FGD guide

Introduction

- I. Greeting and introducing the moderator and note taker with participants.
- II. Introducing the main objectives of the study.
- III. Introducing the main objectives of the discussion.
- IV. Obtaining consent.

Questions

- I. List five main problems of female students in the colleges.
- II. Have you ever heard about sexual violence?
- III. Have you ever seen any such practices in this college?
- IV. List substances used by female students
- V. Do you think that substance use contributes to sexual violence?
- VI. What mechanisms should be used to avert the problems?

Summarizing the discussion

- I. Accepting any comments, questions or suggestion
- II. Showing appreciation to participants and closing the discussion

