

Magnitude of Sexual Violence and Associated Factors among Female Students in Jigjiga University, Eastern Ethiopia

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ABSTRACT

Background: Sexual violence is 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. Sexual violence is an extreme restriction of the sexual and reproductive autonomy of women and the problem was endemic in communities around the world. However, there is a limited evidence of the magnitude of sexual violence and associated factors among University students in, Ethiopia which necessitated this study to be conducted.

Material and Methods: Institution based cross sectional study design was conducted. Multi stage sampling technique was used. List of all female students from the selected departments were the sampling frame. Data were collected by self-administered questionnaire by six data collection facilitators. The collected data entered into Epi Data version 3.1 and then exported to SPSS version 20. Bivariate and multivariate analysis were done to identify factors associated with the sexual violence.

Results: Lifetime sexual violence was found to be 36.5%. However, 17% of respondents reported experiencing sexual violence since entering university and in the current academic year. Life time sexual violence was positively associated with rural childhood residence [(AOR=2.931, 95% CI:(1.54, 5.57)], having regular boyfriend [(AOR=1.997, 95% CI:(1.12, 3.57)], maternal education [(AOR=2.113, 95% CI:(1.04, 4.30)], alcohol consumption [(AOR=2.792, 95% CI:(1.46, 5.33)], having friends who drink regularly [(AOR=2.274, 95% CI:(1.05, 4.93)], use of substances like cocaine [(AOR=3.785, 95% CI:(1.12,12.75)] and being sexually active [(AOR=2.733, 95% CI:(1.44, 5.21)] while it was negatively associated with discussing sexual issues with parents [(AOR=0.151, 95% CI:(0.084, 0.269)].

Conclusions: Prevalence of sexual violence was high. The university and other stakeholders should take measures on those who sell substances and alcohol around the campus.

Keywords Sexual Violence, Sexual Harassment, Rape, Female Students, Jigjiga, Ethiopia

INTRODUCTION

World report on violence and health defines violence as an intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation. One of the forms of violence is violence against women, also called Gender Based Violence (GBV). Gender based violence is defined as a form of violence that targets individuals or groups of individuals on the basis of their gender that results in or is likely to result in physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivations of liability, whether occurring in public or private life[1].

World Health Organization defines sexual violence 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 [2].

Students of higher learning institutions are assets of the society and change agents in filling the gap in the past and on whom the future generation is based. It is also clear that this group is on the way of transforming to adulthood; filled with ambition; and building their future academic and social career. Neglecting their sexual and reproductive health can lead to high social and economic costs, both immediately and in the years ahead [3].

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Ethiopia has put in place appropriate and effective legal and policy provisions to promote the rights of women and girls. These rights are enshrined in the Constitution. Ethiopia has also ratified many of the international Convention including the Convention on the Elimination of Discrimination against Women (CEDAW), ICPD Cairo, Beijing Platform. In addition, Ethiopia has established specific legal measures and actions to address violence, including the Revised Family Law in 2000 and the Revised Criminal Code in 2005.

Lack of adequate and reliable information on the prevalence and associated factors with sexual violence among university female students had prompted the undertaking of the study. To the best of our knowledge, studies related to sexual violence had not been conducted in the study area. Based on this understanding, it is important to document the magnitude and associated factors with sexual violence against female students in university. Therefore, this study is aimed to assess magnitude of sexual violence and associated factors among female Jigjiga University Students.

MATERIAL AND METHOD

Study area and period

This study was conducted in Jigjiga University from February 22-30. It is located in the emerging town of Jigjiga the capital city of Ethiopia Somali regional state, 635 kilometres away from Addis Ababa. The university officially started its services with 712 students in 2007. Jigjiga University (JJU) is one of Ethiopia public university which consists of ten colleges. Currently the university has 7273 male and 3908 female (total of 11181) in undergraduate regular program, likewise the university has a total 15619 male and 5760 female (21379 total) number of student by both regular and non-regular programs.

Study design

Institution (University) based cross-sectional quantitative study was used.

Study population

All regular undergraduate female students of Jigjiga University who registered in the 1st year and above in the academic year of 2017/2018, from selected colleges.

Inclusion criteria: All regular undergraduate female students in Jigjiga University who registered in the 1st year and above in the academic year of 2017/2018, in the selected colleges.

Exclusion criteria: Those students who are medically ill and who did not present at the time of data collection.

Sample size and sampling procedure

The required sample size for this study was determined by using formula for single population proportion ($n = \frac{Z^2 pq}{d^2}$) and summarized below with the following assumptions. Prevalence of sexual violence 37.5%, confidence level at 95%=1.96 and margin of error=0.05 [4]. By taking 1.5 design effects and adding 10% for the non-response rate, the final sample size was calculated to be 595.

A multistage sampling technique was used to select the study participants. In the first stage, five colleges were selected at random. In the second stage, after having a list of all departments in five colleges, departments were selected from each of the five colleges by using lottery method. In the third stage, after having the list of

all female students from the selected departments, respective to the year or batch of the students, sample was allocated proportional to each stratum. Finally, a total of 595 samples were taken from each stratum through simple random sampling technique.

Data collection methods

Structured questionnaire was prepared in English after reviewing literatures of similar surveys that have been carried out previously, including [5]. The final modified English questionnaire was translated to Amharic and back translated to English by a colleague who has good command of both languages to ensure its consistency and clarity. The questions are divided into five sections: (i) Background characteristics of participants, (ii) Substance use status of participants (iii) Family history of the participants, (iv) Sexual experience of participants (v) Sexual violence experience of participants (i.e. have you ever had sexual intercourse when you didn't want to because you were, or felt, unable to say no; sexual harassment like unwell-come, unwell-come touching or molesting you through clothes and other verbal advances; attempted sexual intercourse when someone has tried to have sex with you but has not been successful). Sensitive questions such as rape experience were placed later in order to reduce discomforts and to minimize non-response rate. To check clarity, consistency, skipping pattern and order of the questions, the questionnaire was pre-tested at journalism department which is not included in the study among 30 students (5% the total sample size), and modification was made.

Six BSc nurses had facilitated data collection after getting two days training. In addition to the principal investigator, two supervisors were assigned to lead the data collection, to check for completeness and consistency of a questionnaire, and to assist facilitators. Before data collection commenced, Jigjiga University academic and research vice president and student dean's approached by using a letter prepared by Department of public Health. To select eligible students, questionnaire administration halls/rooms were obtained from student deans.

Measurement of outcome variable

From the reported acts (YES responses) of completed rape, attempted rape and sexual harassment (unwelcome touches, comments and jocks), sexual violence was computed for the three time periods. At list one YES response among the three forms (completed rape, attempted rape or sexual harassment) qualifies the respondent for being faced with any form of sexual violence [5]. Finally, sexual violence was computed by using SPSS compute function.

Study variables

Dependent variable: Sexual violence (encountered vs. non-encountered)

Independent variables: Socio demographic, Substance use History, Family history, Sexual experience

Operational definition

Sexual violence: Sexual violence is 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. It includes sexual harassment, attempted rape and completed rape [2].

Rape: Any non-consensual penetration of the vagina, penetration obtained by physical body harm, by threatening or deception or when the victim is unable to give consent.

Attempted rape: A trial to have sex without consent by coercion, by threatening or deception or when the victim is unable to give consent but without actual penetration of the vagina.

Sexual harassment: Unwanted sexual behaviours including jokes, verbal comments and physical contacts (breast, genitalia) that are intentionally done on women or girls.

Substance use: Students those ever used alcohol, khat, cigarette and substances like cocaine [6].

- Frequent - users of the substance on daily or more than two times a week basis
- Infrequent - users of the substance on the basis of fortnightly, monthly or less

Data quality control

Data quality assurance measures were taken by providing adequate training and orientation for the data collection facilitators, supervisors, pre-testing the questionnaire and supervision during data collection. Study participants were clearly orientated about the purpose and usefulness of the survey and thereby creating friendly atmosphere to reduce their stress as the study touches sensitive issues.

Data processing and analysis

The data were first coded, entered and cleaned by using Epi Data statistical software version 3.1 and then exported into SPSS statistical software version 20 for analysis. Descriptive analysis was done for each variable in the study by running frequencies.

Bi-variate analysis was used to see the association between each independent variable and the outcome variable by using binary logistic regression. All variables with p-value ≤ 0.25 were taken into the multivariable model to control for all possible confounders. Multi-collinearity also checked to see the linear correlation among the independent variables by using standard error. Variables with standard error >2 dropped from the multi-variable analysis. Model fitness was checked by hosmerlimshow goodness of fit when the model insignificant considered as fitted the data. The odds ratio was used as the primary measure of strength and direction of the relationship between the independent variables. Odds ratio along with 95% CI were estimated to identify factors associated with sexual violence by using multivariate analysis in the binary logistic regression. Level of statistical significance was declared at p-value <0.05 .

Ethical considerations

Before starting of the data collection process, ethical clearance was obtained from Haramaya University Institutional Health Research Ethics Review Committee (IHRERC). Official letter were written from Haramaya University to Jigjiga University. Informed, voluntary written and signed consent was obtained from each participant after explaining the purpose and benefits of the study. The study participants were informed that the risk of being participating in this study is very minimal and all study participants were informed about the purpose of the study and the right to refuse filling the questionnaire at any stage when they wanted to do so and requested for their consent prior to the distribution of the questionnaire. Effort were done to overcome ethical concerns

of the participants due to the sensitivity of the issue under study by careful designing and structuring the questionnaire; clear explanation about the purpose and usefulness of the study and by excluding names and other identifying numbers from the questionnaire in order to assure confidentiality of information.

This study was a prospective hospital-based cross-sectional observational study that was carried out in the Obstetrics and Gynaecology Department of Al Mawaniteaching hospital in Basra/ Iraq. 100 pregnant women in 3rd trimester in active labor admitted to the labor ward were enrolled in this study. The study period was from January 2019 to December 2019. All pregnant women were subjected to testing serum vitamin D during labor after counselling and informed consent.

RESULTS

Socio-demographic characteristics of the study participants

The response rate was 94.3%. The mean age of the participants were 21.81 (SD ± 2.190) and the maximum and minimum age of participants were 30 and 18 years, respectively. Majority of respondents (81.3%) were between the ages of 20 and 24 years. Among all, 48.7% of the respondents were Orthodox Christians, while 42.8% of the participants were from Amhara ethnic group. Regarding marital status of respondents majority of them (92.3%) were unmarried and around half (53.1%) of the respondents were from rural areas (Table 1).

Family history

Among the study participants, 422(75.1%) of them were from parents living together, and they reported that 371(66.1%) of their fathers and 317(56.5%) of their mothers had attended formal education (grade one and above). Among the study participants, 253(45.1%) witnessed parental violence as a child (i.e. their mothers were beaten by husband or male partner). Regarding free discussion about sexual and reproductive health issues with any of their family members were reported by 346(61.7%) of the study participants (Table2).

Substance-use and related behaviour's

Regarding substance use, 70(12.5%) admitted khat chewing, while 43(7.7%) and 251(44.7%) of the respondents testified cigarette smoking and drinking alcohol some day in their life respectively. About quarter 144 (25.7%) of the respondents witnessed they had either male or female close friends who drink regularly. As shown below, 36(6.4) of participants ever used drugs or other substances in life time (Table 3).

Sexual experiences

Among the total 561 respondents 278(49.6%) admitted that they had experienced sexual intercourse with 33 (11.9%) of them before the age of 15 and another 165(59.3%) between the ages 15 and 17 years. The mean age and Standard Deviation (SD) for having the first sexual intercourse was found to be 16.73 \pm 2.581 years which were roughly six years less than the average age of their first sexual partner. About fifty (18%) of the sexually active respondents reported that they have experienced more than one sexual partner in their lifetime and twenty nine (10.4%) of these sexually active students admitted that they had more than one sexual partner at the time of survey (Table 4).

The first sexual initiation was against their will in 127(45.7%) of the 278 respondents who were sexually active at the time of

Table 1: Socio-demographic characteristics of Jigjiga University female students, 2018, N=561.

Variable	Frequency%
Age	
<20	22(3.9)
20-24	456(81.3)
>24	83(14.8)
Ethnicity	
Somali	63(11.2)
Amhara	240(42.8)
Oromo	102(18.2)
Gurage	21(3.7)
Tigray	52(9.3)
Others*	83(14.8)
Religion	
Orthodox	273(48.7)
Muslim	175(31.2)
Protestant	84(15)
Catholic	14(2.5)
Other**	15(2.7)
Place where they came from	
Urban	263(46.9)
Rural	298(53.1)
Current living arrangement	
In campus	479(85.4)
Off campus	82(14.6)
Currently married	
Yes	43(7.7)
No	518(92.3)
Having boy friend	
Yes	226(40.3)
No	335(59.7)
College	
Health& medical science	120(21.4)
Engineering	291(51.9)
Natural & computational sciences	33(5.9)
Agriculture	39(7)
Business and economics	78(13.8)
Year of study	
1st year	230(41.0)
2nd year	143(25.5)
3rd year and above	188(33.5)
Note: Continue... other*(Hadiya, afar, wolita, gambella, shenasha, sedamo, gamo) other** (yahewamesker)	

the survey. The frequent reasons they cited were family pressure for engagement in marriage 18(14.2%), peer pressure 26(20.5%), financial support 12(9.4) and false promise 44(34.6%). Threatening was reported by 4(3.1%) as a mechanism of engaging to unwanted sexual intercourse.

The prevalence of sexual violence

Lifetime prevalence of any form of sexual violence was reported by 205(36.5%, 95% CI:(32.6, 40.6) while violence in the current academic year and since joining university was reported by 95(17%) respondents. Students who faced sexual violence before joining university were 167(29.8%). Among the 36.5% who experienced

sexual violence, lifetime prevalence of rape was 85(15.2%), while since joining university and in the current academic year were 14(16.5%) and 11(12.9 %) respectively. Sexual harassment and attempted rape in the current year were reported by 54(9.6%) and 31(5.5%) respondents respectively.

Frequency and tendency of reporting about sexual violence

Out of these 85 rape cases, 76.5%, 15.3%, 4.7%, and 3.5% faced it once, two times, three times and four and above times respectively. Only 22 (25.9%) of these rape cases informed the condition to their family and only 17 (20.0%) reported to police. Different

Table 2: Family History of Jigjiga University female students 2018 N=561.

Variable	Frequency%
Parents	
Living Together	422(75.1)
Divorced/Separated	52(9.3)
Only mother alive	57(10.2)
Only Father	16(2.9)
Both of them not alive	14(2.5)
Father's education	
No formal education	175(31.2)
Grade 1 to 8	93(16.6)
Grade 9 to 12	110(19.6)
Above grade 12	168(29.9)
Don't know	15(2.7)
Mother's education	
No formal education	229(40.8)
Grade 1 to 8	101(18.0)
Grade 9 to 12	81(14.4)
Above grade 12	135(24.1)
Don't know	15(2.7)
Witness of violence as child	
Yes	253(45.1)
No	308(54.9)
Free discussion with family members	
Yes	346(61.7)
No	215(38.3)

Table 3: History of Substance-use among Jigjiga University female students 2018, N=561.

Variable	Frequency%
Ever chewed khat	
Yes	70(12.5)
No	491(87.5)
Chewing Frequency (n=70)	
Frequent*	30(42.9)
Infrequent**	40(57.1)
Ever smoking	
Yes	43(7.7)
No	518(92.3)
Smoking Frequency (n= 43)	
Frequent*	18(41.9)
Infrequent**	25(58.1)
Ever drinking alcohol	
Yes	251(44.7)
No	310(55.3)
Drinking Frequency (n=251)	
Frequent*	75(32.2)
Infrequent**	176(67.8)
Have drunken peers	
Yes	144(25.7)
No	417(74.3)
Ever used substances like cocaine	
Yes	36(6.4)
No	525(93.6)

Frequency of using substances like cocaine (n=36)	
Frequent*	11(30.6)
Infrequent**	25(69.4)

Note: *Frequent - users of the substance on daily or more than two times a week basis, **Infrequent - users of the substance on the basis of fortnightly, monthly or less

Table 4: Sexual Experiences among Jigjiga University female students 2018, N=561.

Variable	Frequency %
Ever had sexual intercourse (n=561)	
Yes	278(49.6)
No	283(50.4)
Age at first sexual intercourse (n=278)	
<15 Years	33(11.9)
15-17 Years	165(59.3)
>18 Years	80(28.8)
Mean + SD	16.73±2.581
Age of first sexual partner (n=278)	
<18 Years	25(9.0)
18 -24 Years	163(58.6)
>24 Years	90(32.4)
Mean + SD	22.49 ± 4.372
Willingness at first sexual intercourse (n=278)	
Yes	151(54.3)
No	127(45.7)
Number of sexual partners in lifetime (n=278)	
One	228(82.0)
Two	27(9.7)
Three	7(2.5)
Four and above	16(5.8)
Number of sexual partners currently (n=278)	
Only one	249(89.6)
More than one	29(10.4)

Table 5: Victim students' frequency and tendency of reporting rape to anyone, 2018, (n=85).

Variable	Frequency%
Frequency of facing rape in life time	
One time	65(76.5)
Two times	13(15.3)
Three times	4(4.7)
Four times or more	3(3.5)
Family shared (knew) about the rape	
Yes	22(25.9)
No	63(74.1)
Rape applied/reported to the legal system or police	
Yes	17(20.0)
No	68(80.0)
Reasons for not sharing/telling to anybody about the rape	
Shared/told to some body	1(1.5)
Feeling of shame/guilty	19(27.9)
Afraid of families reaction	10(14.7)
Didn't know what to do	20(29.5)
Afraid of the public reaction	12(17.6)
Afraid of the perpetrator	2(2.9)
Other***	4(5.9)

Note: Other***(what I get, to keep my dignity)

Table 6: Multivariate logistic regression analysis output of factors associated with sexual violence among Jigjiga University female students, 2018.

Sexual Violence				
Variable	Violated	Not violated	COR CI	AOR CI
Childhood residence				
Rural	159(77.6%)	139(39%)	5.396(3.649,7.979)**	2.931(1.542, 5.570)*
Urban	46(22.4%)	217(61%)	1	1
Do you have boyfriend				
Yes	136(66.3%)	90(25.3%)	5.825(4.002, 8.481)**	1.997(1.116, 3.573)*
No	69(33.7%)	266(74.7%)	1	1
Educational status of mother				
No formal education	127(62%)	102(28.7%)	4.055(2.818, 5.833)**	2.113(1.038, 4.301)*
Yes formal education	78(38%)	254(71.3%)	1	1
Alcohol consumption				
Yes	165(80.5%)	86(24.2%)	12.951(8.491,19.753)**	2.792(1.462, 5.332)*
No	40(19.5%)	270(75.8%)	1	1
Have friends who drink regularly				
Yes	114(55.6%)	30(8.4%)	13.613(8.555,21.661)**	2.274(1.050, 4.928)*
No	91(44.4%)	326(91.6%)	1	1
Do you use substances like cocaine				
Yes	30(14.6%)	6(1.7%)	10(4.086, 24.476)**	3.785(1.124,12.747)*
No	175(85.4%)	350(98.3%)	1	1
Ever had sex				
Yes	163(79.5%)	115(32.3%)	8.133(5.422, 12.199)**	2.733(1.435, 5.206)*
No	42(20.5%)	241(67.7%)	1	1
Discussed sexual issues with parents				
Yes	45(22%)	301(84.6%)	0.051(0.033, 0.080)**	0.151(0.084, 0.269)*
No	160(78%)	55(15.4%)	1	1
Age				
<20 years	10(4.9%)	12(3.7%)	3.00(1.12, 8.08)**	1.85(0.35, 9.88)
20-24	177(86.3%)	279(78.4)	2.29(1.32, 3.99)	0.68(0.99, 1.58)
>24	18(8.8)	65(18.3%)	1	1
Current residency				
In campus	184(89.8%)	295(82.9%)	1	1
Off campus	21(10.2%)	61(17.1%)	0.55 (0.33, 0.94)**	1.12(0.47,2.67)
Year of study				
1st year	86(42%)	144(40.4%)	1.995(1.27, 3.00)**	1.37(0.68, 2.75)
2nd year	75(36.6%)	68(19.1%)	3.6 (2.25, 5.8)**	1.09(0.51, 2.33)
3rd and above	44(21.5%)	144(40.4%)	1	1
Witness Parental violence				
Yes	168(82%)	125(35.1%)	8.4 (5.53, 12.74)**	1.62(0.87, 3.05)
No	37(18%)	231(64.9%)	1	1
Khat chewing				
Yes	46(22.4%)	24(6.7%)	4.00 (2.36, 6.79)**	0.87(0.32, 2.34)
No	159(77.6%)	332(93.3%)	1	1
Smoke cigarette				
Yes	26(12.7%)	17(4.8%)	2.9(1.5, 5.5) **	0.50(0.15, 1.74)
No	179(87.3%)	339(95.3%)	1	1
Father education				
No formal education	113(55.1%)	62(17.4%)	5.8(3.95,8.5)**	1.95(0.95, 4.01)
Yes formal education	92(44.9%)	294(82.6%)	1	1

Note: 95%CI=Confidence Interval AOR =Adjusted Odd Ratio COR= Crude Odd Ratio P value <0.25** P value <0.05*

reasons were listed for not telling about the condition to anybody such as feeling of shame/guilty 19(27.9), fear of reaction from family 10(14.7%), not knowing what to do all about 20(29.5%), fear of reaction from the community 12(17.6%) and fear of the perpetrators in 2(2.9%) of the rape cases (Table 5).

Perpetrators of sexual violence

Most(94.2%) of the rapists were known to the victims. Close to half 38(44.7%) of the rapists were intimate partners whereas family members/other relatives accounted for 16(18.9%). Strangers and teachers contributed to the 16(18.9%) of the 85 rape cases while students alone contributed 10 (11.8%).

Factors associated with sexual violence

Results of bi-variable logistic regression analysis: The odds of sexual violence higher among students in age group between 20 to 24 years compared to the older (>24 years category) [(COR: 2.29, 95% CI : (1.32, 3.99)].

The odds of sexual violence among students with rural childhood residence were higher than those from urban [(COR=5.396, 95% CI: (3.65, 7.98)]. Students with current residence were outside the university were more likely reported sexual violence than from their counterparts [(COR=0.552, 95% CI: (0.33, 0.94)]. First year [(COR=1.995, 95% CI: (1.27, 3.00)] and second year students [(COR=3.6, 95% CI: (2.25, 5.8)] times more likely reported sexual violence than from third year and above students. The odds of sexual violence among students who had a boyfriend were found to be five times at a higher compared to those who did not have boyfriend [(COR=5.825, 95% CI: (4.00, 8.48)]. Students those who reported their mother not joining formal education were reported more sexual violence than those who have educated mother [(COR=4.055, 95% CI: (2.82, 5.83)]. The odds of sexual violence among respondents who had witnessed inter-parental violence during childhood were higher compared to their counterparts [(COR=8.4, 95% CI: (5.53, 12.74)]. The odds of sexual violence is four times [(COR=4.00, 95% CI: (2.36, 6.79)] higher among those who had history of khat chewing. Similarly, students who smoke or have a history of smoking were 2 times [(COR=2.9, 95% CI: (1.5, 5.5)] more likely experienced sexual violence than from their counterparts.

The odds of sexual violence is higher among students who drink or have history of drinking [(COR= 12.95, 95% CI: (8.49, 19.75)] and reported to have a friend who drinks regularly (be female or male) [(COR=13.6, 95% CI: (8.56, 21.7)] than those who have never consumed alcohol and have no peers who regularly consume alcohol respectively. Moreover, students who ever used substances or drugs like cocaine were [(COR=10, 95% CI: (4.09, 24.48)] times at a higher risk of experiencing sexual violence as compared to students who have never used substances like cocaine.

The odds of sexual violence among sexually active female students were higher as compared to those students who had not sexually active at the time of the survey [(COR=8.133, 95% CI: (5.42, 12.2)]. Moreover, the likelihood of experiencing sexual violence among students who did not discuss personal affairs with parents increased by 95% [(COR=0.051, 95% CI : (0.03, 0.08)] than those who discuss. All variables with p-value ≤ 0.25 were taken into the multivariable model to control for all possible confounders.

Results of multivariable logistic regression analysis:In multivariable analysis students with rural childhood residence

were about 3 times [AOR: 2.93, 95% CI: 1.54, 5.57] more likely to report sexual violence than those from urban. The odds of sexual violence is around two times [AOR: 1.997, 95% CI: 1.12, 3.57] higher among those who had regular boyfriend.

Similarly, students who drink or have history of drinking were [AOR: 2.79, 95% CI: 1.46, 5.33] and reported to have a friend who drinks regularly (be female or male) [AOR: 2.27, 95% CI: 1.05, 4.93] reported more sexual violence than those who have never consumed alcohol and have no peers who regularly consume alcohol respectively. Regarding family history, those who reported their mother not joining formal education [AOR: 2.11, 95% CI: 1.04, 4.30] reported more sexual violence than those who have educated mother.

Sexually active female students were [AOR=2.73, 95% CI: 1.44, 5.21] times more likely to face sexual violence as compared to those students who were not sexually active at the time of the survey. Similarly, female students who ever used substances or drugs like cocaine [AOR=3.79, 95% CI: 1.12, 12.75] were at a higher risk of experiencing sexual violence as compared to the female students who have never used substances. Moreover, the likelihood of experiencing sexual violence among students who did not discuss personal affairs with parents increased by 85% [AOR: 0.15, 95% CI: 0.08, 0.27] than those who discuss (Table 6).

DISCUSSION

Magnitude of sexual violence

Among 595 female students who participated in the study 36.5% (95% CI: 32.6, 40.6) were experienced sexual violence during their life time. This figure is lower than study's in Nepal which was 46%, [7]. Greece,46%, and also the finding of this study was lower than finding from Nigeria University which was 46.7% [8,9]. These variations could be due to differences in methodology and differences in the socio-cultural characteristics of the study populations.

However the figure of sexual violence in the present study was consistent figures from Nigeria which was 37.5 % and Uganda University's and 33% respectively [4,10]. The prevalence of sexual violence in the present study when compared to figures of sexual violence reported from other African countries, our prevalence was higher than the figures in Cameroun 16% and the figure reported from Sierra Leone 23% [11,12]. This difference could be due to the socio cultural, setting and perception about sexual violence difference between the target populations. The finding of this study was consistent with study in Nigeria Ebonyi University which was 36.7% [13].

A study conducted in Butajira among female high school and technical school students in 2006 revealed that the prevalence of sexual violence in their life time was reported 35% which is consistent with the corresponding value of our finding [14]. Likewise, a study conducted among female college students in Bahirdar showed that life time prevalence of any form of sexual violence was 37.3% which is consistent with the present study [15]. This is comparable with this study. However it was lower than the prevalence among Ambo and Medawelabu university female students 76.4%, 41.1% respectively, [16,17]. This difference might be due to the variations in socio cultural contexts between the study populations. The finding is higher than study conducted in Hossana town among college female students which was 27% life time prevalence of sexual violence [18].

In this study, the prevalence of completed rape in lifetime was 15.2%. This is lower with compared to the study conducted in Addis Ababa high school and MizanTepi University female students which was 21.2%, 20.7%, respectively [19,20]. But it is higher than studies conducted in Mekelle higher institutions 10.4%, Addis Ababa University 12.7%, Bahirdar college female students 6.3%, Butajira high school female students 8.2% and Debark high school students 8.8% [21-28]. Differences in study targets and study setting might be the explanation for the difference of findings.

Factors associated with sexual violence

Our study has assessed some factors which are stated as contributing factors for sexual violence, students whose childhood residence was in rural areas reported higher frequency of sexual violence. Similar findings were reported from studies among university students in WolitaSodo University, students whose childhood residence was in rural areas two times sexually violated than those from urban area and in Bhirdar College female students [5,15]. This might explain as gender relations in urban regions are more distant from traditional patterns and greater presence of women's movement. Similarly, rural communities are usually more conservative and bedrock of the socio-cultural values of traditional societies that may promote the norms and tolerance of sexual coercion [24]. Students from rural area may have a tendency to engage risky behaviour that might be increase the chance to being a victim.

In this study having regular boyfriend was also found to increase the risk of experiencing sexual violence. This finding is in line with study from Madawalabu University and study done among college Female Students in Hossana town, showed that students who have boyfriend were an increased risk of being sexually violated than from their counterparts. Study's revealed that intimate couples might spend time in private places where the boy can force the girl for sex. Forced sex is more likely to occur later in the dating relationship than earlier [16-18,25].

In the present study participants who had history of consuming or currently consuming alcohol and have friends who drink regularly reported higher level of sexual violence than their counterparts. Our study is consistent with studies in HadiyaZone, revealed that sexual violence among high school female students were 5.66 times more likely common in students who had used alcohol than non-alcohol users [26]. Likewise, studies in Medawelabu University and Mekelle higher institutions showed that Sexual violence was significantly associated as risk factors with female students whose having history of alcohol consumption and having drunken peers [6,17]. Though, it is difficult to conclude which one comes first as the timing cannot be determined by cross sectional study the association can be explained by various mechanisms. At a behavioral or psychological level, alcohol may decrease the risk perception and the ability to communicate assertively making an individual more vulnerable to sexual coercion [10]. In Ethiopia, universities and schools are alcohol free as a result students mostly go to bars and night clubs whenever they want to drink eventually students may exposed to sexual violence.

One of the finding from this study, respondents who had sexual intercourse was a significant association with student's exposure to sexual violence. This finding is supported by study conducted among High School Female Students in Dilla Town revealed that students who had sexual intercourse was significant association with student's exposure to sexual violence [27]. The same study conducted in Nigeria indicates that sexual violence was significantly

more experienced by older female sex workers (FSWs) than their younger counterparts, by permanent brothel residents and among those who had been in the sex industry for more than five years [28]. Also this findings helps to conclude that females who had on sexual relation more likely vulnerable to sexual violence than those who had not sexual relation.

In the present study students from mothers who had no formal education were two times more likely sexually violated than mothers who attended formal education. This finding is consistent with a study conducted in Madewelabu University maternal education has a preventive effect on sexual violence. Participants' whose mothers attended grade one to four had 75% lower odds of sexual violence (forced sex) compared to those who cannot read and write [16]. This might be due to the fact that students from mothers who had not attend formal education may haven't a good communication with their daughters which may make the participants doesn't have better informed decisions in the sexual sphere and consequently increase their chances of being sexually violated.

The likelihood of experiencing sexual violence in our study was higher among those students who use substances (like cocaine) as compared with those who don't use substances like cocaine. This finding is supported by study conducted in MizanTepi University showed that the risk of experiencing sexual violence higher among students who uses substances like cocaine than their counterparts [20]. The possible explanation of this finding is marketing process of this substance (cocaine) occurred in secret places and the traders are mostly violent guys eventually the students become sexually violated.

In our study discussing sexual issues with parents or anyone else was negatively associated with sexual violence. This finding is agreeable with study done in Bahirdar town among college female students, revealed that students who had no chance to discuss personal affairs with parents were increased likelihood of experiencing sexual violence than those who had the chance to discuss personal affairs especially on sexual issues with parents [17]. Moreover, Students who had not reported discussion of sexual issues with anyone else showed high prevalence of sexual violence than those who did. Communication with parents on sexual topics helps young women resist partner sexual pressure as what parents have told them and might think influence their decisions about sex and relationships [29-32].

This study is not free of limitations:

First, the error inherent in the method of data collection (self-administered questionnaire) may have introduced miss understanding of questions. Second, when reviewing the finding it is important to note that because of the sensitivity of the subject, the magnitude of sexual violence is underreported. Third, the measures used in the investigations required the students to recall their experiences related to sexual violence; hence there may be recall bias or a social desirability effect. Fourth, to begin with, the studies were done using a cross-sectional study design and temporal (or even causal) relationships among the variables are therefore difficult to establish.

CONCLUSION

This study showed that the prevalence of sexual violence among Jigjiga University female students is high. Factors associated with sexual violence were: childhood residence in rural, having boyfriend, drinking alcohol, having male or female friends who drink regularly, educational status of mother, using substances like cocaine, being sexually active and do not discuss personal

issue with parents are significantly associated with sexual violence. The University should work towards minimizing the risk of sexual violence by implementing strategies like life skill, peer education and strengthening youth friendly services through different outlets. Further attempts should be made to identify factors associated with sexual violence for which this study didn't address.

CONTRIBUTION OF AUTHORS

Ahmed Seid Ahmed- wrote proposal, literature search, performing the analysis, interpretation of the data and writing of the first draft of the manuscript; Yadeta Dessie- participated revised the proposal and manuscript and review of manuscript for important intellectual content; Lemessa Oljira- design of the study Conception/design of the study and review of manuscript for important intellectual content; Ousmen Endris- review of manuscript for important intellectual content. All authors read and approved the final manuscript.

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