

Sexual Violence and Associated Factors among Female Students of Madawalabu University in Ethiopia

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Rec date: May 14, 2015; Acc date: June 08, 2015; Pub date: June 12, 2015

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Abstract

Background: Worldwide, an estimated one in three women are sexually abused and one in five experienced rape or attempted rape in their lifetime. Sexual violence is not only affecting women's health but it is also a serious violation of women's human right. The severity of the problem and scarcity of the information in this area among female university students have prompted the undertaking of the study.

Methods: An institutional based cross-sectional study supplemented by qualitative method was conducted using WHO multi-country study questionnaire. The study participants were drawn using simple random sampling technique. Quantitative data were entered into Epi Info version 3.5 and analysed using SPSS version 21.0 software program. Multiple logistic regression analysis was used to assess the magnitude of associations between sexual violence and risk factors. Thematic analysis was used for qualitative data.

Results: The mean age of participants was 21 years (SD=2). Thirty six percent of the respondents were sexually active at the time of the study. The magnitude of forced sex (rape) was 10.9%. The main mechanisms of forcing to sex were 27.3% hitting and 24.2% making drunken alcohol. Forty four (66.7%) of the victims of forced sex did not share the event to anyone. Only four of the victims sought help from health professionals. Using multiple logistic regression, maternal education was negatively associated with forced sex. Khat chewing, history of mother beaten by partner and having regular boyfriend were positively associated with forced sex.

Conclusions: The magnitude of both rape and other forms of sexual violence among the study participants was considerable; even though lower than the findings elsewhere in Ethiopia. The principal correlates are parents' socio-demographic characteristics and substance use status of students. Understanding of the correlates is the first step for designing strategies to prevent multiple risk factors among university female attendees.

Keywords: Sexual violence; Female students; Factors; Madawalabu University; Ethiopia

Introduction

In the last few years, World Health Organization (WHO) has made statements about the public health importance of violence against women. These statements result from a growing recognition that violence represents a serious violation of women's human rights, is an important cause of injury, and also risk factor for many physical and psychological health problems [1]. Violence against women (VAW) defined as: "any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women" [2]. Since women are more focused than men (95% versus 5%), gender based violence is frequently used interchangeably with violence against women [3]. Worldwide, an estimated one in three women are physically or sexually abused; and one in five experienced rape or attempted rape in their lifetime [1]. Moreover, the most common and universal occurring form of VAW is that perpetrated by intimate partner [4].

Intimate partner violence against women is arguably the most pervasive yet under estimated social and health problem that occur in pandemic proportion [5]. The prevalence is comparable to those for cancer, cardiovascular disease, HIV/AIDS, malaria, and traffic accident in the world [6].

Sexual violence includes the use of coercion, threats, verbal insistence, deception, cultural expectations or economic circumstances; the outcome is a lack of choice to pursue other options without any severe consequences [7]. The perpetrators of the sexual violence tend to be men or boys from the victim's neighbourhood, boyfriends or husbands and strangers. The violent episode most often takes place in the girl's home, in a public area or in the house of a friend, relative or neighbour. Roughly 43% of the girls affected have experienced not just one, but multiple incidents of sexual violence [8]. Whether in childhood or adulthood, sexual violence has serious health consequences. Sexual violence is associated with poor mental health, suicide, unwanted pregnancy, gynaecological complications, an increased risk of HIV and AIDS infection and other STIs [8]. The ground root of determinant factors associated with sexual violence against women are complex and there is no specific factor that explain

further why some group are vulnerable or why violence is more common in some other group [3]. Somewhat, several, complex and interrelated social and cultural factors are involved [9].

In Ethiopian context the problem of sexual violence is worse; where men are considered to be dominant decision makers in the family and society. The women's right practically recognized only recently and women have little awareness about their right. However, studies from Ethiopia on sexual violence are few irrespective of different lifestyles, customs and culture of the society [10]. Few institutional based studies were conducted among female students in the country. For instance, a cross-sectional study conducted among female students of Addis Ababa University revealed that the lifetime completed and attempted rape was 12.7% and 27.5%, respectively.

Sexual harassment in lifetime and 12 month period was reported by 58% and 41.8% of students, respectively [11]. Another study conducted among high school students in Addis Ababa and Western Showa reported that the prevalence of performed rape and attempted rape was 5% and 10%, respectively, and harassment was 74.3% [12]. Lack of adequate and reliable information on the prevalence and associated factors with sexual violence among university female attendees 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.

Methods

Study period and area

The study was conducted in June, 2014 at Madawalabu University. That is found 430 KMs to the Southeast of Addis Ababa (capital city of Ethiopia) in Oromia National Regional State. The university has two campuses, Robe main campus and Goba College of Medicine and Health Sciences. The study included female students in both campuses. In the year 2014 the university has ten schools, one institute, one college and thirty seven departments with the total number of 11511 undergraduate and post graduate students.

Study design and sampling

An institutional based cross-sectional quantitative study design supplemented by qualitative method was used. The source population was all Madawalabu University, undergraduate female students. Students those who were involved in quantitative data collection were excluded from the in-depth interview. Sample size was determined using the formula of estimating a single population proportion taking 58% prevalence of lifetime sexual harassment [11]. Assumptions were made with 5% margin of error, 95% level of confidence and adding 10% allowance for non-response rate. Since the study used multistage sampling technique, design effect of 1.5 was considered and the final sample size became 618. Respondents were selected principally using year based stratified sampling technique. Proportionate allocation to size was used to share the sample size according to the number of female students in each stratified year. After stratifying students by year of study (year one, year two, year three and year four), participants were selected through simple random sampling technique using their registration number as sampling frame.

Data collection method and tools

Anonymous pre-tested self-administered questionnaire was used for quantitative data collection. The questionnaire was adopted from validated WHO multi-country study on violence against women [13]. The questions were divided into four sections: (i) socio-demographic characteristics of participants, (ii) Substance use status of participants (iii) reproductive history of the participants, (iv) 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 kissing, unwell-come touching or molesting you through clothes and other verbal advances; attempted sexual intercourse when someone has tried to have oral, anal or vaginal 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. The quantitative questionnaire was translated into Oromiffa and Amharic local languages and back translated to English by expert in both languages to see its consistency and accuracy. The survey questionnaire was constructed and administered in Oromiffa and Amharic local languages.

Six bachelor degree holders had facilitated data collection after getting one day training. Pre-test was done on 5% (31) of students those who were not included in the actual quantitative data respondents. In addition to the principal investigator, two supervisors (Master's Degree holders) were assigned to closely follow up the data collection process. Quantitative data were collected after gathering students in the lecture rooms of each school. Immediately after distribution of the questionnaire, students were oriented on the purpose of study, sections included and how to follow skipping patterns. Finally, the filled questionnaire was collected back in a sealed boxes found at the gates of lecture rooms. The questionnaire was checked on the spot for completeness by investigators, supervisors and data collection facilitators. If the questionnaire was incomplete or has missing it was counted as non-response.

A semi-structured discussion guide was developed and used during the in-depth interview (IDI). About ten in-depth interviews were conducted based on saturation of information with female students those who were not involved in the quantitative survey. The interviewers were the same sex as the respondents; they took place in a neutral location, and lasted between 30 minutes and one hour. The deliberations of IDI were tape recorded, transcribed and translated from Oromiffa and Amharic into English. Responses were grouped according to their themes and finally writing up and description was performed word to word.

Data management and analysis

Quantitative data were entered and cleaned by Epic Info version 3.5 statistical packages. Data entry was done by investigators. The data after being ready for analysis was exported and analyzed using SPSS 21.0 statistical packages. Descriptive statistics such as means for continuous and proportions for categorical variables including cross-tabulations were used for data summarization. Differences in proportions were compared for significance using Chi Square test, with significance level set at $p < 0.05$. When the assumptions of the Chi Square test were not fulfilled, we used the Fisher exact test.

Finally, multiple logistic regression analyses were used to identify factors associated with sexual violence by controlling for the effect of potential confounding variables. Lifetime forced sex (rape) was

included in the logistic model as dependent variable, while the following factors were included in the model as independent variables: marital status, year of study, substance use such as alcohol, khat and drugs like shisha and hashish, mother's educational status, parental living status, presence of regular boyfriend and history of mother violence. Adjusted odds ratio was used to observe the relative effect of independent variables against the dependent variables. Variables having p-value less than 0.05 were considered as predictors of sexual violence.

Operational and term definitions

Sexual violence: It involves any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic a person's sexuality, using coercion, threats of harm or physical force, by any person regardless of relationship to the victim, in any setting, including but not limited to home and work.

Intimate partner violence: Is actual or threatened physical or sexual violence or psychological and emotional abuse directed toward a spouse, ex-spouse, current or former girlfriend, or current or former dating partner.

Rape: Is an act of non-consensual sexual intercourse. This can include the invasion of any part of the body with a sexual organ and/or the invasion of the genital or anal opening with any object or body part.

Attempted rape: Efforts to rape someone which do not result in penetration.

Performed rape: Is defined as any non-consensual penetration of the vagina by physical or by threatening of body harm, or when the victim is incapable of giving consent.

Sexual harassment: Is unwanted sexual behavior such as physical contacts or verbal comments, jokes, questions, kissing, hugging and suggestions.

Ethical considerations

This study was reviewed and approved by the Institutional Ethical and Review Committee of Madawalabu University. An official permission was communicated with each school directorate through formal letter obtained from Madawalabu University HIV/AIDS Prevention and Control Directorate Office. Participation in the study was completely voluntary and refusal to respond to some of the questions or interruption from the study was possible at any time and never causes any effect on the respondents. Students were informed that questions were anonymous and confidential. Written informed consent was obtained from all study participants before data collection. Names of the students were not recorded anywhere on the questionnaire. Measures were also taken to ensure confidentiality of information both during and after data collection.

Results

A total of 605 students fully responded to the questionnaire making a response rate of 97.9%. The mean age of the participants was 21 years (SD=2). Almost half (52.6%) of the participants were Orthodox Christian by religion. Eighty six percent of the interviewed students were living on campus. Only 10.9% of the respondents were either ever married or cohabited. Majority of the participants (44.6%) were from first year followed by second year. About 52.1% of the students were

from rural background as origin of residence. Regarding parental educational level, 20.6% and 28.6% of the fathers and mothers were reported as they did not attend school, respectively. More than three fourth (77.5%) of respondents' parents live together (mother and father) (Table 1).

Socio- demographic characteristics	Frequency (n)	Percentage (%)
Age group of participants		
<18	14	2.3
19-24	555	91.7
>25	36	6
Religion		
Orthodox	318	52.6
Muslim	85	14
Protestant	184	30.3
Catholic	14	2.3
Others (Adventist and traditional)	4	0.7
Current living arrangement		
In campus	517	85.5
Outside campus	88	14.5
Ever married		
Yes	66	10.9
No	539	89.1
Year of study		
1st year	270	44.6
2nd year	210	34.7
3rd year	103	17
4th year	22	3.6
Origin of residence		
Urban	290	47.9
Rural	315	52.1
Father's educational level		
Can't read and write	71	11.7
Can read and write	54	8.9
Grade (1-4th)	109	18
Grade (5-8th)	115	19
Grade (9-12th)	143	23.6
Grade 12+	113	18.7
Mother's educational level		
Can't read and write	86	14.2

Can read and write	87	14.4
Grade (1-4th)	118	19.5
Grade (5-8th)	129	21.3
Grade (9-12th)	119	19.7
Grade 12+	66	10.9
Do father and mother live together?		
Yes	469	77.5
No	136	22.5
With whom were you living before joining university?		
With both parents	356	58.8
With mother only	90	14.9
With father only	25	4.1
Relatives	34	5.6
With my husband	45	7.4
Living alone	55	9.1
Do you receive enough money?		
Yes	353	58.3
No	252	41.7
History of mother beaten by partner		
Yes	156	25.8
No	449	74.2

Table 1: Socio-demographic characteristics of female students of Madawalabu University, June, 2014 (n= 605).

Sexual History of the Respondents

From the total of the respondents more than half (56.4%) had already boyfriends. More than one third of the participants (36.4%) were sexually active at the time of the study. The rest 385 (63.6%) reported that they never had experienced any sexual intercourse. The median age of sexual initiation was 17 years (10 years minimum and 25 maximum). Of those who have started sexual intercourse, 47 (21.7%) reported marriage is the reason of their first intercourse while personal desire accounted for more than quarter (27.7%). On the other hand almost one out of five (17.7%) of the respondents reported that being forced to have sex. There are also situations where friends or peers of the girls influenced the first initiation of sex (probably unwanted sex). Among the sexually active participants, 81(36.8%) have history of multiple sexual partners. More than two third of the participants did not used condom during their first sex. During in-depth interview one of the respondents reported as:

“Let me tell you what happened to my friend two year ago when we were went home for semester break. Her friend is the one who took her to the house of her boyfriend. When they were there they saw the boy was also coming. Then she told her, you be here talking with this boy; I am also talking with this one outside here and there is nothing he will do on you. Trusting her she began talking with him knowing

that she was outside near. But she had already gone. Then the boy forced her into sex and he had done. A 4th year, 23 years old girl.

History of substance use by respondents

Twenty percent of the respondents stated that they had history of alcohol drinking. Of those who have history of alcohol drinking, more than three forth (75.6%) drinks occasionally. The types of alcohol most frequently consumed by respondents were wine, whisky, beer and draft. Eleven percent of the participants ever had habit of chewing khat (*Catha edulis*) while 11.2% of the respondents chew in their everyday activity. Among total respondents, only 30 (5%) of the participants have history of drug use like shisha, hashish and cocaine.

Experience of unwanted sexual acts

Sixty six percent of the participants have faced unwanted sexual act such as asked to have sex when they do not want to do, verbal jokes using advanced words and comment on physical appearance in relation to sexuality in the lifetime. More than one third (36.5%) of the participants had experienced unwanted sexual act within the past twelve months. Almost one out of five students experienced unwelcomed kiss (22.3%) and unwelcomed touch on their breast or genital (21.5%) within the past one year at the time of the study. One quarter (25.1%) of the participants escaped from attempted forced sex. The prevalence of forced sex (rape) was 10.9%. Twenty two (33.3%) of the forced sex were occurred on the university campus. When victims were asked about the main mechanism used to forces were, 27.3% reported hitting and 24.2% reported making drunken alcohol. Fifty three percent of the victims had experienced more than one time forced sex throughout their lifetime. More than three forth (84.8%) rape or forced sex was perpetrated by boyfriends (Table 2).

Variables	Frequency (n)	Percentage (%)
Face forced sex that you escaped		
Yes	152	25.1
No	453	74.9
How do you escaped (n=152)?		
By crying	22	14.5
Escaped	17	11.2
Fighting	19	12.5
By giving promising words	93	61.2
Others*	1	0.1
Ever had sex without your consent		
Yes	66	10.9
No	539	89.1
Place where the farced sex occurred		
On Campus	22	33.3
Off campus	44	66.7
Time when the farced sex occurred		
Day time	27	40.9

Night time	39	59.1
Mechanism used to force the sex		
Hitting	18	27.3
Point a knife	7	10.6
Point a gun	10	15.2
Made alcohol drink	16	24.2
Provided drug with alcohol	3	4.5
Smoked drug on victim	2	3.0
For passing examination	7	10.6
Promised to give money	3	4.5
Who was the perpetrator?		
Husband	8	12.1
Boyfriend	25	37.9
Stranger	10	15.2
Neighbour	5	7.6
Teacher	11	16.7
Classmate	5	7.6
Relative	2	3.0
How old was the perpetrator?		
Same age with victim	27	40.9
Older than victim's age	27	40.9
Much older than victim's age	12	18.2
Number of lifetime forced sex		
One	31	47.0
Two times	30	45.5
Three times and above	5	7.5
*By saying I am HIV-positive		

Table 2: History of forced sexual acts among female students of Madawalabu University, June, 2014 (n=605).

One of the themes that emerged in the narratives of in-depth interview was the fact victims were trapped by males with whom they were either in romantic relationship or he was otherwise known to female.

One day when I was first year student, one of my village boys asked me to go to town with him to buy clothes. He requested me 'let us have a single beer before we go to dorm.' First I disagreed. But later he convinced me. We started to drink. The time went to night. During the time we were there I couldn't control myself because it was my first time to have three bottles of beer. I do not know where I was at that moment. He had already secured bed at hotel. He just had sex with me. A 3rd year, 20 years old girl.

Acceptance of the forcing to sex as normal behaviour of boys is also another problem. The assumption in this case is that all men force. This is an extent of gender socialization that tends to perpetrate the acceptance of forcing.

It is difficult to refuse having sex because whatever you say, boys will find a way of getting you to convince. Sometimes you might find yourself having sex because you do not want to humiliate your friend. It might turn into conflict if the girl refuses to have sex with him a 3rd year, 22 years old girl.

Forty four (66.7%) of the victims of forced sex did not share the event to anyone. Only four of the victims sought help from health professionals. Almost four out of five (87.9%) victims did not report to legal body. The main stated reasons for not reporting to legal body after experiencing forced sex were lack of knowledge what to do (24.2%), fear of parents (21.2%), fear of the public reaction (shame) (24.2%), fear of the perpetrator (21.2) and perceived legal body is not helpful (4.5%). Some females of the in-depth interview claimed that forced sexual intercourse is hidden problem. This may be due to the interaction of multiple factors. One of these is not reporting of the event because of public reaction.

When I was second year student, the boy started fondling my breast and I asked him why he was doing that. He told me he was just playing with me. Then all of a sudden he pulled me down and had sexual intercourse with me. I did not tell anybody because I afraid my classmates reaction that is very shame on me. Thanks to God nothing was happen a 4nd year, 21 years old girl.

When the victims of forced sex were asked about the consequences after the event, 36.4% experienced induced abortion, 18.2% had unwanted pregnancy, 9.1% had trauma on genitalia, and 7.6% had both unusual discharge from genitalia and swelling on and around the genitalia. With regard to psychological problems, 59.1% feel unhappy to their life, 47% blamed themselves for victimization, and 25.8% thought of ending their life, 24.2% had headache frequently, 18.2% had fear and anxiety and 10.6% had lost appetite.

Factors Associated with Forced Sex (Rape)

Socio-demographic and substance use correlates with sexual violence among the study respondents were assessed using logistic regression. Those variables which were significant on bi-variate analysis (P-value <0.05) were entered to multiple logistic regression analysis to examine the effect of an independent variables (Table 3). Although it is not linear, maternal education has a preventive effect on forced sex. Participants' whose mothers attended grade one to four had 75% lower odds of sexual violence (forced sex) (AOR=0.25, 95%CI: 0.08, 0.76) compared to those who cannot read and write. Participants who have ever seen while mother was being beaten by her husband or male partner had higher odds of sexual violence (AOR=5.77, 95%CI: 2.96, 11.23). Students who have regular boyfriend are more likely to experience sexual violence (AOR=4.78, 95%CI: 2.0, 11.27). Similarly, those who have history of alcohol drinking and drug use like shisha, hashish or cocaine have higher odds of experiencing forced sex. Participants who had history of khat chewing are three times more likely to face forced sex (AOR=3.11, 95%CI: 1.36, 7.11) (Table 3).

Variables	Forced sex (rape)			
	COR (95%CI)	P-value	AOR(95%CI)	P-value

Ever married				
Yes	2.0 (1.0, 3.9)	0.048	1.13 (0.45, 2.81)	0.8
No	Ref		Ref	
Year of study				
1st year	Ref		Ref	
2nd year	1.3 (0.73, 2.40)	0.36	1.31 (0.64, 2.69)	0.45
3rd year	1.5 (0.72, 3.03)	0.28	0.85 (0.34, 2.08)	0.72
4th year	3.0 (1.02, 8.89)	0.046	1.15 (0.28, 4.60)	0.84
Ever drunk alcohol				
Yes	4.6 (2.72, 7.89)	0	1.47 (0.70, 3.07)	0.3
No	Ref		Ref	
Ever used drug				
Yes	3.24 (1.38, 7.61)	0.007	0.73 (0.22, 2.39)	0.6
No	Ref		Ref	
Ever chewed khat				
Yes	8.4 (4.68, 15.1)	0	3.11 (1.36, 7.11)	0.007*
No	Ref		Ref	
Mother's educational level				
Can't read and write	Ref		Ref	
Can read and write	0.68 (0.29, 1.6)	0.39	0.88 (0.31, 2.45)	0.81
Grade (1-4th)	0.29 (0.11, 0.76)	0.012	0.25 (0.08, 0.76)	0.015*
Grade (5-8th)	0.35 (0.15, 0.85)	0.021	0.42 (0.15, 1.22)	0.11
Grade (9-12th)	0.78 (0.37, 1.68)	0.54	0.76 (0.29, 1.96)	0.57
Grade 12+	0.56 (0.21, 1.46)	0.24	0.80 (0.25, 2.60)	0.72
Parents live together				
Yes	Ref		Ref	
No	2.18 (1.27, 3.75)	0.005	2.0 (0.81, 5.32)	0.12
With whom were you living before joining university?				
With both parents	Ref		Ref	
With mother only	2.53 (1.30, 4.92)	0.006	0.71 (0.22, 2.25)	0.56
With father only	1.59 (0.45, 5.66)	0.47	0.57 (0.11, 2.82)	0.49
With relatives	2.51 (0.95, 6.57)	0.06	1.40 (0.36, 5.36)	0.62
With husband	1.46 (0.53, 4.00)	0.45	0.64 (0.16, 2.52)	0.52
Lived alone	1.99 (0.85, 4.63)	0.1	1.36 (0.48, 3.83)	0.56
Receive enough money				
Yes	Ref		Ref	
No	1.92 (1.15, 3.22)	0.013	0.94 (0.47, 1.88)	0.87
History of mother being beaten partner				

Yes	8.26 (4.72, 14.4)	0	5.77 (2.96, 11.2)	0.000*
No	Ref		Ref	
Have regular boyfriend				
Yes	7.7 (3.44, 17.12)	0	4.78 (2.0, 11.27)	0.000*
No	Ref		Ref	
*Significant at P<0.05				

Table 3: Multivariate analyses of selected factors contribute to forced sex among female students of Madawalabu University, June, 2014.

Discussion

More than one third of the participants were sexually active at the time of the study. The median age of first sexual initiation was 17 years. This figure is comparable to the 17.8 years reported among female students at Haramaya University, Ethiopia [14-20]. Among sexually active participants, 81(36.8%) had history of multiple sexual partners. Despite the study involved both females and males, out of those who had sex in the past 12 months, more than 24.5% of students had history of multiple sexual partners [20]. More than two third of the participants did not used condom during their first sex. The reason for not using condom at first sexual initiation is that the traditional value given for girl's virginity. One quarter of never married women perceived that virginity protects partners from HIV/STIs transmission during first sexual intercourse [14].

Although it is not very high, this study has revealed that the magnitude of both rape and other forms of sexual violence (harassment) among undergraduate female students was considerable. Twenty two (33.3%) of the forced sex were occurred on campus. One quarter (25.1%) of the participants escaped from forced sex. This is in agreement with findings in the study conducted among female students of Addis Ababa University which revealed that 12.7% lifetime completed and 27.5% attempted rape [11]. Similarly in America, 15% of college women, and 12% of adolescent girls have experienced sexual abuse and assault during their lifetimes [15]. In this study 66% and 34% of the participants had experienced lifetime and 12 months unwanted sexual acts, respectively. Almost twenty two percent of the students experienced unwelcomed kiss and unwelcomed touch on their breast or genital within the past one year. Similar study in Addis Ababa revealed that 58% lifetime and 41.8% twelve month period sexual harassment [11].

Greater than half of the victims of rape experienced multiple incidents of lifetime forced sex (rape). Similarly, 43% of the girls affected have experienced not just one, but multiple incidents of sexual violence [8]. Rape or forced sex mostly perpetrated by individuals known (trusted) to the victims seen as intimate partners, male family members, acquaintances and individuals in position of authority [15]. In this study majority of the forced sex (rape) was perpetrated by the boyfriend of the victims. The main mechanism used for the forced sex were hitting and making drunken alcohol.

Forced sexual intercourse may place victims at risk for HIV, other STIs and unwanted pregnancy. Therefore, rape survivors should come for care immediately or as soon as possible after the incident. However, in this study of those who experienced forced sex, only small number of the victims sought help from health professionals, and majority did not report to legal body. The main reasons for not

reporting to legal body were lack of knowledge on what to do, afraid of the public reaction or shame and fear of attacker. Women themselves frequently do not challenge accepted norms of female behaviour because of the fear of being attacked. Thus, this status helps to create their vulnerability to violence, which in turn fuels the violence perpetrated against them [5]. Further the fear of violence and stigma inhibits many victims' willingness to use health services [1]. This could undermine the seeking of medical and psychological support needed to the victims and may end up with sexually transmitted infections and psychological disturbance of the victims. Similarly, in this study, majority of the victims have experienced abortion. Females who experienced forced sex are more likely got negative health outcomes than those who do not exposed to the event [16,17].

Maternal education has preventive effect on forced sex of the daughters. Achieving secondary education by either the woman or her partner was associated with decreased intimate partner violence [18]. Mothers who attended school may have good communication with their daughters which may make the participants better informed decisions in the sexual sphere and consequently increase their chances of avoiding unwanted sexual intercourse. The study indicated that there is a positive association between khat chewing and forced sex (rape). Though it is not statistically significant several studies in developing countries have also found a strong association between consumption of alcohol or drugs and the risk of violence [19].

Participants who have history of mother beaten by partner had six times higher more likely to experience sexual violence. Sexual violence has devastating consequences, not only for the person experiences it, but also those who witness it, in particular children and it was strongly associated with the later experience of intimate partner violence [13,18]. Participants who had regular boyfriends are five times more likely to experienced forced sex. The possible suggestion might be those girls who have boyfriend might be less likely to say no for the fear of friendship discontinuation. Women who were cohabiting with a partner without being formally married were at increased risk of intimate partner violence [18].

This study is not free of limitations. First, the error inherent in the method of data collection (self-administered questionnaire) may have introduced some response biases. Second, the study used a descriptive single cross-sectional design that cannot establish trends and causality between sexual violence and potential risk factors. Third, when reviewing the finding it is important to note that because of the sensitivity of the subject, the magnitude of sexual violence is under-reported. Thus, these results might be more accurately thought of as representing the minimum level of violence occurred.

Conclusions

The study had revealed that the magnitude of both rape and other forms of sexual violence (harassment) considerable. The main principal factors associated with sexual violence are maternal education, khat chewing, participants history of mother beaten by partner, and having regular boyfriend. Understanding of these factors associated with sexual violence is the first step for designing and implementing comprehensive intervention strategies that concurrently prevent multiple risk factors among university female attendees.

The university has an ethical responsibility to aware female students on what services are available for people who have been raped; what rape survivors would benefit from seeking medical care; where to go for treatment. Educational programs dealing with sexual violence

prevention should be provided in the university, and should include information regarding different types of violence, and protective measures, including appropriate behavior regarding seeking help in the event of becoming a victim. Further studies are important to determine the actual magnitude and predictors of the problem in female students in Ethiopia.

Authors' Contributions

TB involved in conceived the original idea, proposal writing, designed the study, got funding for the study, data collection, drafting of the manuscript and participated in all implementation stages of the project. He drafted and finalized the write up of the manuscript. MK involved in, proposal writing, got fund for the study, data collection and participated in all stages of the project implantation. AG involved in data entry, analyzing the data, drafted the write up of the manuscript and participated in all stages of the project implementation. WD involved in drafting, analysis, and reviewed the manuscript critically for important intellectual contents and participated in all stages of the research implementation. All authors read and approved the final manuscript.

Acknowledgements

We would like to acknowledge Madawalabu University for giving us the opportunity. We gratefully acknowledge HIV/AIDS Prevention and Control Office at Madawalabu University for financial support. Our acknowledgement also goes to our friends those gave us comments on the proposal structure and arrangement. Last but not least we would like to acknowledge our supervisors, data collection facilitators and study participants for their time and sharing their experiences.

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