

# Sexual Assault Magnitude, Complications and Associated Factors among Females Who Visited Gynecologic Outpatient Department of Hawassa University Comprehensive Specialized Hospital

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## Research

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# Abstract

## Background

Sexual assault is a major form of sexual violence affecting one out of every five women in the world. It is a complex problem with many consequences including sexually transmitted infections, posttraumatic stress disorder and risk of unintended pregnancy in reproductive-aged survivors of sexual assault.

## Objective

To assess the magnitude, complication and factors associated with sexual assault among female visited gynecologic outpatient department of Hawassa University Comprehensive Specialized Hospital.

## Methods

Cross sectional study was conducted from January 1 to October 30, 2019. Self-administered questionnaire developed using variables taken from WHO multi-country study on women health and from sexual violence medical evaluation certificate format were used to collect data. Descriptive analysis was done on sexual assault related characteristics and binary and multivariate logistic regression analysis were done to identify factors associated with sexual assault.

## Results

399 clients were participated in the study and prevalence of sexual assault was 10.8% (43) of which 79.1% (34) of the victims were under the age of 18 years. 25% of the victims tested for pregnancy were positive and 7% (3) of each were positive for Hepatitis B and Trichomonas vaginalis. Age less than 18 years [AOR = 95.9, 95%CI (17.93, 512.96)], being single [AOR = 9.2, 95% CI (2.11, 40.42)], being in primary school [AOR = 18.0, 95% CI (1.63, 199.19)] and monthly income of < 1500 birr [AOR = 6.7, 95% CI (1.54, 29.50)] were significantly associated with sexual assault.

## Conclusions

In this study, Age, marital status, monthly income and educational level were significantly associated with sexual assault.

## Plain English Summary

Sexual assault, which includes rape, attempted rape, sexual abuse and sexual exploitation, is a major form of sexual violence affecting women and its consequences may be manifested biologically,

psychologically and sociologically. Though sexual assault is currently an issue at the forefront of public life, there are limited institutional based studies in Ethiopia. So, this study was aimed to identify the magnitude of sexual assault and associated factors among females who visited gynecologic outpatient department of Hawassa University Comprehensive Specialized Hospital. Data was collected from 399 clients by a questionnaire developed using variables taken from WHO multi-country study on women health and from sexual violence medical evaluation certificate format. The magnitude of sexual assault among the female clients was found to be 10.8%. 25% of the victims tested for pregnancy were positive and 7% were positive for Hepatitis B and Trichomonas vaginalis. Our study also revealed that females who were younger, unmarried, low educational status and financially instable were directly associated with being a victim of sexual assault.

## Background

Sexual violence is defined as a sexual act committed against someone without person's freely given consent [1]. Sexual assault is a major form of sexual violence affecting women and it includes rape, attempted rape, sexual abuse and sexual exploitation [2].

Globally 1 in 5 women, experienced completed or attempted rape during their life time [1, 2]. According to a 2013 WHO analysis conducted using existing data from over 80 countries, 1 in 3 women have experienced physical and/ or sexual violence. Large population-based surveys indicated a life time prevalence of 13-39% sexual violence among women and 3% among men though vulnerable groups are not included in the study [2, 3].

In Ethiopia, according to the 2016 DHS report, more than one-third of ever-married women (35%) reported that they have experienced physical, emotional, or sexual violence from their husband or partner at some point in time and 11% experienced sexual violence [4].

Consequences of a sexual assault may be manifested biologically, psychologically, and sociologically [5]. Medical consequences of sexual assault include sexually transmitted infections; mental health conditions, including posttraumatic stress disorder; and risk of unintended pregnancy in reproductive-aged survivors of sexual assault [6].

The risk of sexual assault varies among individuals and some groups of individuals are at a higher risk of sexual assault. Women who are young, poor, living in social housing, in poor health, single and separated or divorced, migrant and trafficked women and those involved in the sex industry are more likely to encounter sexual violence [7].

## SUBJECTS AND METHODS

**Study area and period:** The study was conducted at Gynecologic Outpatient Department of Hawassa University Comprehensive Specialized Hospital from January 1 to October 30, 2019.

**Study design:** Cross sectional study design was applied.

**Study participants:** Females who visited gynecologic outpatient department of Hawassa university comprehensive and specialized hospital for service care.

**Exclusion criteria:** Females with psychiatric and critical illness were excluded from the study.

**Sample size determination:** The desired sample size was calculated using a single population proportion formula.

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

**Where**

**n** = the minimum sample size.

**Z $\alpha/2$**  = 1.96 for 95% confidence level.

**d** = Margin of error = 0.04

**p** = Proportion of sexual assault.

Based on a study conducted at selected hospitals in Tigray region [8], the prevalence of sexual assault was 12.7% (0.127). Thus, considering 1.5 design effect and 5% non-response rate, the total sample size was:

$$n = \frac{(1.96)^2 \times 0.127(1-0.127)}{(0.04)^2} = 266$$

$$n = (266 + 13) \times 1.5 = 418$$

**Sampling technique and procedure:** The study participants were selected by systematic random sampling. Data obtained from OPD registry book showed that, ten months prior to the study period, around 5000 clients visited Hawassa University Comprehensive Specialized Hospital Gynecologic Outpatient Department. Considering 10 months of data collection, a total population of 5000 were used to calculate the sampling interval. Thus, dividing the total population with the sample size, the sampling interval was found to be 12. After random selection of the first sample, every 12<sup>th</sup> unit were included in the study.

**Data collection:** Self-administered questionnaire developed using variables taken from WHO multi-country study on women health and from sexual violence medical evaluation certificate format were used to collect data. Additional data was extracted from information documented by senior or year four residents on assaulted patient's chart and from attendants for minors and children's. The data was collected by

trained year two residents during working hours and completeness of the data was consistently checked by the principal investigators.

**Data processing and analysis:** Each questionnaire was checked for completeness and consistency and cleaned. The data was analyzed using SPSS version 21. Descriptive analysis was done on socio-demographic characteristics and sexual assault related characteristics. Binary and multivariate logistic regression analysis were done to identify factors associated with sexual assault. A level of  $p < 0.05$  was considered statistically significant.

## Results

### Socio-demographic Characteristics of the Study Participants

Table 1 summarizes socio-demographic characteristics of the study participants. A total of 399 clients were participated in the study. The mean age of the respondents was  $28.97 \pm 10.61$  and about 79.1% (34) of the victims were under the age of 18 years. Most of the victims were single (90.7%,  $n = 39$ ), primary school attendees (88.4%,  $n = 38$ ) and average monthly family income of less than 1500 birr (60.5%,  $n = 26$ ).

### Characteristics of Sexual Assault

The overall prevalence of sexual assault was 10.8% (43). Rape was the most prevalent type of sexual assault (72.1%,  $n = 31$ ) followed by rape attempt (25.6%,  $n = 11$ ). About 14.3% (7) of the victims had a previous history of sexual assault and 62.8% (27) were assaulted by someone known by the victim or their family. 83.7% (36) of the victims were assaulted by a single assailant and 60.5% (26) of sexual assault cases happened in assailants home. Majority of the victims (55.8%,  $n = 24$ ) came to the hospital after 5 days (Table 2). However, duration of presentation to the hospital after sexual assault ranges from 1 day to 120 days with the mean duration of 17 days.

Table 1  
Socio-demographic characteristics of the study participants.

Variables	Category	Sexual assault	
		Yes, n (%)	No, n (%)
Age	< 18 years	34 (79.1)	6 (1.7)
	≥ 18 years	9 (20.9)	350 (98.3)
Marital status	Married	4 (9.3)	304 (85.4)
	Single	39 (90.7)	52 (14.6)
Education status	Primary school	38 (88.4)	119 (33.4)
	High school	4 (9.3)	99 (27.8)
	Above high school	1 (2.3)	138 (38.8)
Religion	Orthodox	13 (30.2)	107 (30.1)
	Muslim	5 (11.6)	97 (27.2)
	Protestant	25 (58.1)	152 (42.7)
Residence	Urban	23 (53.5)	221 (62.1)
	Rural	20 (46.5)	135 (37.9)
Monthly income	< 1500 birr	26 (60.5)	78 (21.9)
	≥ 1500 birr	17 (39.5)	278 (78.1)

Table 2  
 Characteristics of sexual assault in the study participants.

Characteristics	Category	Frequency (n = 43)	Percentage
Type of sexual assault	Rape	31	72.1
	Rape attempt	11	25.5
	Sexual abuse	1	2.4
Previous history of sexual assault	Yes	7	14.3
	No	36	83.7
Place of sexual assault	Own Home	13	30.2
	Assailants home	26	60.5
	Other place	4	9.3
Perpetrators relationship	Stranger	16	37.2
	Known by the victim	27	62.8
Number of assailants	1	36	83.7
	≥ 2	7	16.3
Brought to the hospital by	Herself	3	6.9
	Family	26	60.4
	Police	14	32.7
Duration of presentation to the hospital	≤ 1 day	5	11.6
	2–3 days	9	20.9
	4–5 days	5	11.6
	≥ 6 days	24	55.8
Time of sexual assault	Day	22	51.2
	Night	21	48.8
Alcohol or drug use by assailants	Yes	10	23.3
	No	33	76.7

#### Complications Associated With Sexual Assault and Emergency Service Provision

Table 3 shows the laboratory tests and sexual assault associated injuries among the victims. Pregnancy test was done for 65.1% (28), HIV test for 90.7% (39) and STI screening for all of the cases. Among the victims tested, 25.0% (7) of them were positive for pregnancy at time of presentation and 7% (3) of each were positive for Hepatitis B and Trichomonas vaginalis, however all tested victims were negative for HIV

test. Among sexual assault cases, 72.1% (31) and 32.6% (14) had sexual assault associated genital injuries and non-genital injuries respectively.

Among the cases who were potentially eligible for emergency contraception, 46.7% (7) of them were provided with the service. Those victims who came to the hospital within the first 72 hours after sexual assault (50%, n = 7) were provided with post exposure prophylaxis for HIV and 74.4% (32) victims were provided with STI prophylaxis (Table 4).

Table 3  
Laboratory tests and sexual assault associated injuries in the study participants.

Variables	Category	Frequency	Percentage
Pregnancy test (n = 28)	Positive	7	25.0
	Negative	21	75.0
Screening test for STI (n = 43)	Hepatitis B	3	7.0
	Trichomonas vaginalis	3	7.0
	Gonorrhea	1	2.3
	None	36	83.7
HIV test (n = 39)	Positive	0	0.0
	Negative	39	100.0
Genital injury	Fresh hymenal tear	19	44.2
	Old hymenal tear	9	20.9
	Perineal tear	3	7.0
	None	12	27.9
Non-genital injury	Bruise	7	16.3
	Abrasion	4	9.3
	Laceration	4	9.3
	None	28	65.1



Table 4  
Emergency care provision by time of presentation to the hospital after sexual assault.

Variables	Response Options	Time of presentation to the hospital after sexual assault				
		≤ 1 day	2–3 days	4–5 days	≥ 6 days	Total (n = 43)
Provision of Emergency Contraceptive	Yes	0	6(66.7)	1(20)	0	7(16.3)
	No	5(100)	3(33.3)	4(80)	24(100)	36(83.7)
Provision of post exposure prophylaxis	Yes	3(60)	8(88.9)	2(40)	1(4.1)	14(32.6)
	No	2(40)	1(11.1)	3(60)	23(95.9)	29(67.4)
Provision of STI prophylaxis	Yes	3(60)	9(100)	4(80)	16(66.7)	32(74.4)
	No	2(40)	0	1(20)	8(33.3)	11(25.6)

### Factors Associated With Sexual Assault

Table 5 evaluates factors associated with sexual assault. Among the risk factors assessed in the study participants, being younger than 18 years old [AOR = 95.9, 95% CI (17.93, 512.96)], and monthly income less of than 1500 birr [AOR = 6.7, 95% CI (1.54, 29.50)] were significant determinant factors associated with sexual assault. In this study, being married was found to be less likely to be sexually assaulted. Single females were about 9.2 times more likely to be sexually assaulted. In addition, being in primary school [AOR = 18.0, 95% CI (1.63, 199.19)] were also significantly associated with sexual assault.

Table 5  
Factors associated with sexual assault in the study participants.

Variables	Category	Sexually assaulted		OR (95% CI)	AOR (95% CI)
		Yes	No		
Age	< 18 years	34	6	220.4 (73.99, 656.32)	95.9 (17.93, 512.96)
	≥ 18 years	9	350	1.00	1.00
Relationship status	Married	4	304	1.00	1.00
	Un married	39	52	57.0 (19.55, 166.21)	9.2 (2.11, 40.42)
Education status	Primary school	38	119	44.1 (5.96, 325.83)	18.0 (1.63, 199.19)
	High school	4	99	5.6 (0.61, 50.65)	3.3 (0.19, 55.22)
	Above high school	1	138	1.00	1.00
Religion	Muslim	5	97	1.00	1.00
	Orthodox	13	107	2.4 (0.81, 6.85)	1.8 (0.16, 18.94)
	Protestant	25	152	3.2 (1.18, 8.62)	2.0 (0.21, 18.44)
Place of residency	Urban	23	221	1.00	1.00
	Rural	20	135	1.4 (0.75, 2.69)	1.5 (0.36, 6.14)
Monthly income	< 1500 birr	26	78	5.5 (2.82, 10.56)	6.7 (1.54, 29.50)
	≥ 1500 birr	17	278	1.00	1.00
Previous history of sexual assault	Yes	7	5	13.7 (4.12, 45.22)	14.9 (0.70, 319.48)
	No	36	351	1.00	1.00

## Discussion

The results of the present study showed a 10.8% (43) prevalence of sexual assault. Our result is comparable with previous studies conducted in different parts of Ethiopia. A 12.7% (117) rape prevalence was reported among women who visited Gynecologic Outpatient Departments of Selected Hospital in Tigray region [8]. Studies conducted among high school and university students in Ethiopia reported a

prevalence of sexual violence ranging 16.6% (55) to 37.3% (200) [9–11]. In the USA, approximately 1 in 5 (21.3%) women reported completed or attempted rape at some point in their life time [2]. The most likely cause of lower rate of assault in this study may be due to poor reporting and disclosure of sexual assault in due to different cultural reasons.

Most of sexual assault cases will end up with some sort of sexual and reproductive health problems like unwanted pregnancy, sexually transmitted infections and other genital and non-genital injuries. The rate of pregnancy and sexual transmitted infection among sexual assault cases at the time of presentation in this study was were comparable with the results of the study done at Jimma university comprehensive hospital [12]. However, in this study, among the victims who were potentially eligible for emergency contraception and post exposure prophylaxis for HIV, only a small number of victims were provided with the service. This indicates that the coverage for these services in this institution is very low and the victims didn't get proper care provision.

According to the WHO report, being a younger age is one of the risk factors for sexual assault [2]. Studies done in Jimma university comprehensive hospital, Adigrat hospital and Mekelle University reported a similar finding [12–14]. Similarly, in the present study, being under the age of 18 years was significantly associated with sexual assault.

Our study showed that female with low monthly income were more likely to be a victim of sexual assault. Our finding was supported by the WHO report which indicated that factors like low socioeconomic status increases females risk of sexual assault [2].

In this study, educational status of primary school was significantly associated with being sexually assaulted. Our result was consistent with the study done among female administrative staff of Mekelle University which reported that female with educational status of secondary school or less [AOR: 1.981 (1.126–3.485)] were significantly associated with sexual violence [14].

In this study, being married were less likely to be associated with sexual assault. This finding was comparable with the study conducted in Butajira Town, South Ethiopia and in Nairobi, Kenya which showed that being unmarried were significantly associated with sexual assault [9, 15]. However, our result was inconsistent with the WHO report which showed that one of the most important risk factor for women in terms of their vulnerability to sexual assault is being married or cohabiting with a partner [2]. This might be due to the fact that most women in our country don't report sexual violence committed by their husband.

## Conclusions

In this study, the prevalence of sexual assault was unacceptably high, and most of the victims were under the age of 18 years. The common type of sexual assault was rape and most of the victims had genital injuries. The overall provision of emergency contraception, post exposure prophylaxis for HIV and

prophylaxis for STI was very low, even though screening tests were offered for most survivors. Age, Monthly income, educational level and marital status were significantly associated with sexual assault.

## Recommendations

1. Awareness should be created at different levels, like in the school, families and community about the problem and its associated complications to decrease the magnitude.
2. Institutions at community level should help the survivors and should bring them to the hospital as early as possible after sexual assault for possible care.
3. The government should act to empower women and should take steps to eliminate gender inequalities.
4. The hospital should prepare training on the management of sexual assault for care providers as soon as possible.

## Abbreviations

AOR: Adjusted Odds Ratio; ART:Antiretroviral Therapy; BMI:Body Mass Index; CI:Confidence Interval; DHS:Demographic Health Survey; HIV:Human Immune Virus; OPD:Outpatient Department, OR:Odds Ratio; SPSS:Statistical Package for Social Sciences; STI:Sexually Transmitted Infection; WHO:World Health Organization.

## Declarations

## Availability of data and materials

All the available data and material used in this study is presented in the main paper.

### Ethics approval and consent to participate

Ethical clearance and approval were obtained from the ethical review board of Hawassa University College of Medicine and Health Sciences. Permission to conduct the study was asked and obtained from the Hospital chief clinical service officer. Written informed consent was obtained from the study participants and parents or guardians for those whose age is below 18 years. Any refusal of the parents, guardians or child to participate in the study was respected and confidentiality of response was maintained throughout the study.

### Consent for publication

Not applicable in this section.

### Competing interests

The authors declare that they have no competing interests.

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## Authors' contributions

GWZ, MWG and ANA designed the study and involved in drafting and correcting the manuscript. GWZ and MWG carried out the data collection, ANA did the statistical analysis and interpretation. All the authors read the manuscript, critically revised it for important intellectual content and approved the final version of the manuscript.

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