

Original Research Article

## A Retrospective Study of Sexual Assaults in Southern Range of Himachal Pradesh

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### ABSTRACT

**Context:** Sexual violence against women is considered as one of the most common crime all over the world which violates our cultural and religious values. With ever increasing population, degradation of socio-cultural and moral value, such incidences are increasing day by day. The present study was undertaken with objectives to reveal the different aspects of sexual assault in four districts of Himachal Pradesh.

**Aims:** To study the trend of sexual violence in four districts of Himachal Pradesh and to analyze the data with respect to socio-demographic characteristics, relationship between accused and victim, medico-legal examination and evaluate the role of forensic examination in dealing with sexual assault cases.

**Settings and design:** Retrospective study.

**Materials and Methods:** This retrospective study was conducted on 414 cases of sexual assault received for examination at State Forensic Science Laboratory, Southern Range, Junga, Himachal Pradesh during the year 2010-2014. The details pertaining to socio-demographic factors such as age, sex, religion, marital status, profession, place of incidence, relationship with accused, time interval between last incidence and medico-legal examination and results of different exhibits submitted for forensic examination were entered on a self designed performa.

**Results:** This study revealed that incidences of sexual assault were maximum in Shimla district followed by Solan, Sirmour and Kinnaur district. The cases of female sexual assault (95.89%) outnumbered the male sexual assault (2.66%) and bestiality (1.45%). The most commonly sexual assault crimes were reported in monsoon or rainy season (30.68%) followed by winter (29.47%), summer (25.85%) and autumn (14.00%). The common site of offence was the house of accused (33.33%). This study revealed that most vulnerable age group was 14-17 years. 41.06% of the alleged sexual assault victims were students. Most commonly sexual crimes were performed by the person familiar to the victim (86.76%). 91.06% victims were Hindus followed by Muslims (7.72%), Sikhs (0.96%) and Christians (0.24%). 80.91% victims were unmarried and 16.18% married. Maximum numbers of victims were medico-legally examined second day (27.05%) of the assault. 1.48% female victims were murdered after sexual assault and 0.99% committed suicide. 6.45% female victims got pregnant. Invalid consensual rape was found in 59.80% cases followed by forcible rape in 23.77% and consensual rape in 14.46% cases. Hymen was found intact in 10.42% female victims and torn/ruptured with old tear in 60.79%. Recent tear was noticed in 7.44% female victims. Spermatozoa were detected in 23.42% cases on vaginal swabs/vaginal smear slides.

**Conclusion:** The study may help to enhance public awareness to eliminate the sexual violence from the society and implement strategies to make the society a safe place for females.

**Key-words:** Sexual assault, female victims, male victims, assailants, bestiality, medico-legal examination.

## INTRODUCTION

Sexual offences are considered as a crime against women all over the world and have always been a part of human culture. Victim is not only robbed of her dignity and pride by way of seduction by men outside but may become a victim of cruelty by her saviors within the four walls of her own house. [1] This type of violence transgresses the boundaries of caste, creed, religion and prevalent in almost all societies. Sexual offences, when assume the form of sexual violence may lead to murder, suicide and acute depression and ultimately disturbs the social well being of the victim. They may be rejected by those close to them, ostracized by their communities and in extreme cases murdered by the perpetrator. [2]

In India, sex crimes against women and girls are mainly manifested in the form of rape, molestation, sexual harassment, kidnapping and abduction for sexual purposes and trafficking of girls for sexual exploitation. [3] According to a US report on human right violation, rape is the fastest growing crime in India but still remains under-reported. [4] Rape is particularly complex crime to analyze partly because many sexual assaults are never reported. These crimes are such a menace that no age is exempted and they comprise of various natural and unnatural sexual offences. [5] Man commits the crime to fulfill his sexual urge, to show his masculinity, to get control of the victim, to take revenge and out of abnormal mind, out of ignorance of the law of land etc. [6]

The increasing crime scenario of sexual assault has proved to be a hazard to women's freedom and a menace for the law enforcement agencies. [7] The mental trauma experienced by the victim may linger till the end of her life. [8] The most recent international data shows that one in three women worldwide experience physical or sexual violence by a partner or

sexual violence by a non-partner in their families. [9] Another heinous sort of crime is committed on children who are too young to resist or even understand the consequences of the act. The protection of children from sexual offences (POCSO) act, 2012 aims to provide protection of children below 18 years of age from sexual violence. India is a country where one-third of population falls below 18 years of age and survey revealed that 53% children has been subjected to some form of sexual violence. [10] According to National Crime Records Bureau (NCRB) statistics 2014, there is an increase of 9.16% crime against women in India. Despite escalating public outcry against rape, reported cases have increased steadily. As per 2014 statistics, New Delhi has the highest number of rape cases (1815) among Indian cities. [11] For the first time in history, Delhi is officially the "Rape Capital" of India. [12]

Despite its pervasiveness and wide spread ranging and often devastating impacts of sexual assault of victims across the world, the responses of criminal justice system is problematic. Conviction for rape is notoriously difficult to secure. According to 2014 NCRB statistics, only 28% rape cases brought to court in India resulted in conviction. [11]

The purpose of present study was to ascertain sexual violence in four districts of Himachal Pradesh and to analyze the data with respect to socio-demographic characteristics, relationship between accused and victim, medico-legal examination and evaluate the role of forensic examination in dealing with sexual assault cases.

## MATERIALS AND METHODS

This retrospective study was conducted in Biology and Serology Division of State Forensic Science Laboratory, Southern Range, Junga, Himachal Pradesh. It was based on the

cases of alleged sexual assault registered under section 376, 377 IPC and other different sections of the Indian Law received for examination from four districts (Shimla, Solan, Sirmour and Kinnaur) of Himachal Pradesh during the year 2010 to 2014. The data was retrieved from police forwarding letter, medico-legal certificates, history revealed by the victim during examination and results of forensic laboratory examination of the exhibits. The details pertaining to socio-demographic factors such as age, sex, religion, marital status, profession, place of incidence, relationship with accused, time interval between last incidence and medico-legal examination and results of different exhibits submitted for forensic examination were entered on a self designed performa. The data was then statistically analyzed and discussed.

## RESULTS

In the present study, 414 cases of sexual assault were examined during the years 2010 to 2014. Maximum cases of sexual assault were received from district Shimla (37.68%), followed by district Solan (32.12%), district Sirmour (23.91%) and district Kinnaur (6.28%). Out of 414 cases, 397 (95.89%) were of female sexual assault, 11 (2.66%) were of male sexual assault and 6 (1.45%) were of bestiality (sexual assault with animal) [Table-1]. All the cases of bestiality were with cow. It was found that age of the victim ranged from 10 months old child to 68 years old women. The most vulnerable age group was that of 14-17 (45.16%) years followed by 18-30 (31.64%). The maximum number of female victims 65 (16.12%) were from 16 years of age followed by 17 years 46 (11.41%). So individually 16 year was the most affected age group. In six cases of sexual assault, there were two victims so the total number of victims were 414 excluding bestiality.

Most of the victims were Hindus 377 (91.06%) followed by Muslims 32 (7.72%), Sikhs 4 (0.96%) and Christians

(0.24%). 335 (80.91%) victims of sexual assault were unmarried followed by 67 (16.18%) married, 9 (2.17%) widows and 3 (0.72%) divorcee. All the male victims were unmarried. The majority of the victims 170 (41.06%) were students followed by housewives 50 (12.07%), factory worker/labourer 40 (9.66%), servant/household work 30 (7.24%), preschooler below 5 years 9 (2.17%), mentally retarded, physically handicapped and deaf and dumb 9 (2.17%) and baby 1 (0.24%). Most commonly, sexual assaults were reported in monsoon (30.67%) followed by winter (29.46%), summer (25.84%) and autumn (14.00%) [Table-2]. The common site of assault was the house of accused in 138 (33.33%) cases followed by the house of the victim 70 (16.90%). 65 (15.70%) cases occurred in jungles/ fields and 40 (9.66%) in hotels [Table-3]. In 343 (86.39%) cases of female sexual assault, sexual assault was committed by familiar persons, while 46 (11.58%) cases assailant was unfamiliar to the victims. Most of the alleged accused 148 (37.27 %) were male friends of the victims, neighbour in 115 (28.96%) cases and familiar person in 47 (11.83%). In 20 (5.03%) cases, female victims were sexually assaulted by family members including father, stepfather, brother, grandfather, brother in law and father-in-law, while 13 (3.27%) cases by close relatives including cousin brother, moya, jija etc. [Table-4]. In 23 (5.79%) cases of reported female sexual assault, assault was committed by two to three assailants with maximum number of four assailant in one case, while rest of the cases 374 (94.20%), the assault was committed by one assailant. Gang rape was done by familiar persons in 16 (4.03%) cases, while unfamiliar persons were involved in 7 (1.76%) cases. 6 (1.48%) female victims were murdered following the sexual assault and 4 (0.99%) committed suicide. 26 (6.45%) female victims got pregnant following the act of sexual assault. The youngest sexual assault-murder victim was of a two and

half years old child. All the victims of male sexual assault were assaulted by familiar persons. Neighbors were involved

in 8 (72.72%) cases, close friend in 1 (9.09%) and familiar person in 2 (18.18%) cases of male sexual assault.

**Table 1: Socio-demographic profile of cases of sexual assault**

Category	Frequency		Percentage (%)	
<b>Sex:</b>				
Female	397		95.89	
Male	11		2.66	
Animal (cow)	6		1.45	
<b>Age:</b>				
<b>Age group (in years)</b>	<b>Females N=403</b>	<b>Males N=11</b>	<b>Frequency</b>	<b>Percentage (%)</b>
0-6	16	3	19	4.58
7-13	36	4	40	9.66
14-17	184	3	187	45.16
18-30	131	-	131	31.64
31-40	28	-	28	6.76
41-60	7	1	8	1.93
Above 60	1	-	1	0.24
<b>Religion</b>				
Hindu	377		91.06	
Muslim	32		7.72	
Sikh	4		0.96	
Christian	1		0.24	
<b>Marital status</b>				
Unmarried	335		80.91	
Married	67		16.18	
Widow	9		2.17	
Divorcee	3		0.72	
<b>Profession</b>				
Students	170		41.06	
Housewives	50		12.07	
Government employees	4		0.96	
Private sector employees	8		1.93	
Factory worker/Laborer	40		9.66	
Servant/ household work	30		7.24	
Preschooler below 5 years	9		2.17	
Baby	1		0.24	
Mentally retarded/ deaf and dumb/ physically handicapped	9		2.17	
Others	9		2.17	
Information not available	84		20.28	

**Table 2: Distribution of cases of sexual assault according to season**

Season	Frequency	Percentage (%)
Winter (Dec. –Mar)	122	29.46
Summer (Apr-June)	107	25.84
Monsoon (July-Sept)	127	30.67
Autumn (Oct-Nov.)	58	14.00

**Table 3: Distribution of cases of sexual assault according to place of incidence including bestiality cases**

Place of incidence	Frequency	Percentage
Victim's home	70	16.90
Accused's home	138	33.33
Third person's home	20	4.83
Open air (fields/jungle)	65	15.70
Hotel	40	9.66
Car/vehicle	7	1.69
At different places	20	4.83
Cowshed	10	2.41
Under Construction building	5	1.20
Cave/kutiya	2	0.48
School campus	1	0.24
Bal Ashram	1	0.24
Data not available	35	8.45

**Table 4: Distribution of cases of female sexual assault according to relationship to accused**

Relation to accused	Frequency	Percentage
Close friends	148	37.27
Neighbor	115	28.96
Unfamiliar person	46	11.58
Familiar person	47	11.83
Relative	13	3.27
Father	9	2.26
Stepfather	3	0.75
Brother	1	0.25
Grandfather	1	0.25
Brother in law	5	1.25
Father in law	1	0.25
Data not available	8	2.01

Only 31 (7.48%) cases of sexual assault were medico-legally examined on same day of incidence followed by second day in 112 (27.05%), within a week in 117 (28.67%), within a month in 47 (11.35%) and after months in 35 (8.57%) cases of assault. In 13 (3.14%) cases of sexual

assault, victims denied for medico-legal examination [Table-5].

**Table 5: Distribution of cases of sexual assault according to alleged incidence and medical examination**

Time Interval	Frequency	Percentage (%)
Same day	31	7.48
Second day	112	27.05
Third day	13	3.14
Fourth day	50	12.07
Up to 7days	54	13.04
Up to 14 days	27	6.52
Up to one month	20	4.83
Months	35	8.45
Data not available	59	14.25
Denied for MLC	13	3.14

Invalid consensual rape was found in 244 (59.80%) cases followed by forcible rape in 97 (23.77%) and consensual rape in 59 (14.46%) cases. Only 50 (12.59%) female victims and 5 (45.45%) male victims showed injuries either on genitalia, anus or multiple parts of the body. Injuries on genitalia involving vulva/vagina were noted in 46 (11.41%) of the female victims. Bleeding from hymen and vaginal orifice was also noted in 11 (2.72%) female victims below age 10. Anal injuries were noted in 5 (1.24%) female victims of age below 10 years. Out of 11 male victims, anal injuries were noted in 5 (45.45%) victims. In 3 (50%) cases of bestiality, injuries on vulva of animal were present.

**Table 6: Condition of Hymen**

Hymen	Frequency	Percentage (%)
Hymen Intact	42	10.42
Hymen ruptured/torn old tear	245	60.79
Hymen ruptured/torn recent tear	30	7.44
Hymen absent	63	15.63
Denied for MLC	13	3.22
Data not available	10	2.48

Hymen was found intact in 42 (10.42%), ruptured/torn with old tear in 245 (60.79%), ruptured/torn with recent tear in 30 (7.44%) and absent in 63 (15.63%) female victims of sexual assault [Table-6]. This parameter was not applicable for male sexual assault and bestiality crime cases. Semen was detected in 172 (43.32%) cases of female sexual assault on undergarments, pubic hair, clothes and bed sheets. Spermatozoa were

detected in 93(23.42%) cases on vaginal swabs/vaginal smear slides indicating recent vaginal intercourse. 3 (50%) bestiality related cases were linked by animal hair or animal blood present on assailant's undergarments or clothes.

## DISCUSSION

Sexual violence against women is considered as one of the most common crime all over the world and violates our cultural and religious values. The number of cases of sexual violence could be higher because many victims do not report for the reason that they are ashamed, embarrassed and afraid of being blamed by the community where they live. [13]

In our study, sexual assault was most commonly observed in young girls of age group of 14-17 years, majority of them being unmarried and students. Although offenders are almost exclusively male, victims of such offences may be of either sex.

The present study showed that incidences of sexual assault were maximum in Shimla district (37.68%) followed by Solan (32.12%) and Sirmour (23.91%) and Kinnaur (6.28%) districts. This can be explained by geographical location and population of the districts. Our study showed rising trend from 2012 to 2014 though a slight drop was observed in 2011.

Majority of the victims were females (95.89%) followed by male (2.66%) and bestiality (1.45%) in our study. These results are in agreement with the study of Bhowmik and Chaliha, [7] Tamuli *et al* [2] and Sarkar *et al* [5] Male victims were only 2.66% and 10 (90.90%) victims were below the age of 15, which is in accordance to the study of Bhowmik and Chaliha, [7] Tamuli *et al* [2] and Bandyopadhyay *et al*. [14] All the male victims were reported with alleged anal intercourse. There were 5 (1.24%) female victims of anal intercourse below age 10 in this study.



In our study, most vulnerable age was 14-17 years in 45.16% cases followed by 18-30 years in 31.64% cases. Our study is in agreement with study of Tailor *et al* [15] where majorities (71.6%) of female victims were in the age group of 14-17 years. In a study by Demireva *et al* [16] 38.73% victims were in the age group of 14-17. In a study of Sharma *et al*, [17] it was observed that incidences of alleged rape were most amongst girls of 15-18 years. Tamuli *et al*, [2] Haider *et al*, [6] Arif *et al*, [18] Pal *et al* [19] and Yadav *et al* [20] reported 11-20 years as the highly affected age. It was also reported that majority of the victims were within the age group of 15-20 years by DuMont and Parnis. [21] Bandyopadhyay *et al* [14] reported 36% victims below 18 years of age. 11-15 years was highly affected age group according to study conducted by Suri and Sanjeeda [22] and 10-19 years by Tariq *et al*. [23] From these different studies conducted in different regions, it can be concluded that no age is safe from sexual assault.

Most of the victims were Hindus 377 (91.06%) followed by Muslims 32 (7.72%), Sikhs 4 (0.96%) and Christian (0.24%). The findings are in agreement with study of Pal *et al*, [19] Yadav *et al* [20] and Bhowmik and Chahila. [7] This can be explained by Hindu predominating areas which were under study. 335 (80.91%) victims of sexual assault were unmarried as compared to 66 (16.18%) married. 9 (2.17%) victims of sexual assault were widows. Pal *et al* [19] reported 77.14% victims were unmarried. Similarly Sukul *et al* [24] and Bhowmik and Chaliha [7] observed respectively that 77% and 66.93% victims were unmarried. Bandyopadhyay *et al*, [14] Parveen *et al* [25] and Tamuli *et al* [2] found 63% unmarried cases. Suri and Sanjeeda [22] in their study revealed that 96% victims were unmarried and only 4% were married.

In our study, most of the victims were students 170 (41.06%). Pal *et al* [19] reported that 48.57% victims were students, while Tailor *et al* [15] reported that

one quarter (23.4%) of the victims were students and Yadav *et al* [20] reported that 51% were students. Individuals with physical or mental disabilities may also be at increased risk. [26,27] In our study we observed that 9 (2.17%) victims were mentally retarded, physically handicapped and deaf and dumb.

Most commonly, sexual crimes were reported in monsoon (30.67%) and winter (29.46%) followed by summer (25.84%) and autumn (14.00%). These results are contrary to study of Demireva *et al*. [16] They reported highest incidence of sexual assault in summer (34.14%) followed by spring (26.15%) and least in winter (19.80%). In our study, the highest numbers of cases were reported during the month of September (10.86%). Tamuli *et al* [2] observed that most of the cases occurred during month of October, November and April. Sukul *et al* [24] reported that majority of the cases were occurred during summer months i.e April to August with peak in May (14.94%). This can be explained by geographical and seasonal variations between countries.

In our study, the common site of offence was the house of accused in 138 (33.33%) cases followed by the house of victim in 70 (16.90%) cases. Our findings are consistent with the study of Pal *et al* [19] who reported house of accused as common site of offence in 31.42% cases followed by the house of victim in 20.0% cases. This may be due to the reason that majority of the victims either kidnapped or eloped for pretext of marriage and taken to accused's home in our study. Sarkar *et al* [5] and Grossin *et al* [28] reported house of victim as common site of assault in 41.1% cases followed by house of accused in 28.9% cases. Arif *et al* [18] reported commonest place of offence was isolated place in 66.2% cases followed by house of accused in 17.5% cases.

In 354 (86.76%) cases, sexual assault was committed by familiar persons while 46 (11.58%) cases assailant was unfamiliar to the victims. Our study is in

collaboration with the study of Bandyopadhyay *et al* [14] who reported that in 89% cases, the alleged assailants were familiar to the victims while unfamiliar in only 11% cases. According to NCRB statistics 2014, 86% of rapes involved an assailant that was known to the victim. [11] Yadav *et al* [20] reported that 90.4% victims knew the assailant. Tamuli *et al* [2] reported that about 77% of the perpetrators were known to the victim. In our study, we observed that most of the alleged accused 148 (37.27 %) were friends of the victims and neighbors in 28.96% cases. Our study contrasts with the study of Pal *et al* [19] who reported that in 54.28% cases, accused were close friends and known to the victim and in 20% cases strangers were involved. Bhowmik and Chaliha [7] reported that most of the alleged accused (55.4%) were male friend of the victim and strangers accounted for 16.06% of the accused. Suri and Sanjeeda [22] in their study revealed that in 78% cases, the assailant was known to the victims and only in 22% cases strangers were involved. In a study by Demireva *et al* [16] 50.10% of the cases familiar person were involved, while the offender was unknown to the victim in 22.09% cases. Arif *et al* [18] reported that nearly half (45.9%) of the assailants were known to the victim. From these studies, it can be concluded that most of the alleged sexual assault crimes are committed by person known to the victim.

In our study 20 (5.03%) cases, victims were sexually assaulted by family members, while 13 (3.27%) victims were sexually assaulted by close relatives. Total of 33 (8.31%) victims were assaulted by family members and relatives, while Bhowmik and Chaliha [7] reported 6.55 % of female victims were assaulted by family members and relatives. Pal *et al* [19] reported that 8.55% victims were sexually assaulted by family members. The most common reported type of incest was father-daughter incest in 9 (2.26%) cases. El-Ememi *et al* [29] reported father-daughter incest in 3 (7.5%) cases.

In 23 (5.79%) cases sexual assault was committed by two to three assailants with maximum number of four assailants in one case, while in 374 (94.20%) cases by one assailant. Gang rape by familiar person was done in 16 (4.03%) cases, while by unknown person in 7 (1.76%) cases. Pal *et al* [19] reported 8.57% cases of gang rape. Suri and Sanjeeda [22] found 7% cases of gang rape with maximum of five assailants in one case. Al-Azad *et al* [30] revealed that 5.22% victims were gang raped by more than one assailant. El-Ememi *et al* [29] and Riggs *et al* [31] reported more than one assailant in 20% cases. Sarkar *et al* [5] observed 7.8%, Arif *et al* [18] 31.01%, Parveen *et al* [25] 31.18% and Hassan *et al* [32] 30% cases of similar incidence.

In our study, all the male victims were sexually assaulted by familiar person which corroborates with the study of Demireva *et al* [16] and Bandyopadhyay *et al*. [14] In male sexual assault cases, the alleged accused were neighbors in 72.72% cases, while Bhowmik and Chaliha [7] reported that alleged accused were neighbors in 45.45% cases. In our study, all the male victims reported with alleged act of anal penetration which corroborates with the study of Bhowmik and Chaliha. [7]

The time duration between sexual act and medico-legal examination is very important to establish the case of sexual assault. The present study showed that maximum number of victims 112 (27.05%) were examined on second day of assault and 35 (8.45%) were examined after months of assault. In a study by Arif *et al*, [18] 24.3% victims were examined on second day of incidence and 17.5% were examined after months of assault, which is in accordance with our study. 37.93% victims were examined on second day of incidence in a study by Haider *et al*, [6] while Pal *et al* [19] reported that 42.85% cases were examined on second day of the incidence. Sarkar *et al* [5] reported that 10% of the victims were examined on same day of assault, while in our study only 7.48% cases were examined on same day. In our

study, 37.67% cases reported early for medical examination, while Tamuli *et al* [2] found that only 23 % cases were reported early for medical examination. This finding highlights the time of reporting for medico-legal examination after sexual assault which is very important for establishment of rape, but majority of the victims were reluctant to report because of embarrassment, shame and feeling of guilt.

In our study, invalid consensual rape was in 244 (59.80%) cases followed by forcible rape in 97 (23.77%) and consensual rape in 59 (14.46%) cases. Our study contrasts with the study of Pal *et al* [19] who revealed forcible rape in 45.71% cases followed by consensual rape in 31.42% cases. Suri and Sanjeeda [22] found 44% cases of forcible rape followed by invalid consensual rape in 25% cases. The highest percentage of invalid consensual rape implies that most of the victims in our study were below 18 years of age.

In our study, old hymenal tear was found in 245 (60.79%) female victims and recent tear in 30 (7.55%) female victims. Hymen was found to be intact in 42 (10.42%) cases and absent in 63 (15.63%). Pal *et al* [19] found hymenal tear or rupture of hymen in 88.57% cases and hymen intact in 11.42 % cases. Sukul *et al* [24] in their study observed old hymenal tear in 86.20% cases, recent tear in 6.9% cases and hymen intact in 6.9% cases. Bhowmik and Chaliha [7] found hymen intact in 8.88% cases. Sarkar *et al* [5] reported rupture of hymen in 85% cases. Haider *et al* [6] found old hymenal tear in 63.8% cases, recent tear in 32.8% cases. Arif *et al* [18] observed old hymenal tear in 77.6% and fresh tear in 22.3% cases. Tamuli *et al* [2] reported 5% cases of recent hymenal tear and in 6.65% cases hymen was intact.

Physical evidence of violence either on genitalia, anus or multiple parts of the body were observed only in 50 (12.40%) female victims and 5 (45.45%) male victims in our study. Injuries on genitalia were noted in 46 (11.41%) of the female victims. Bleeding from hymen and

vaginal orifice were also noted in 11 (2.72%) female victims below 10 years of age. Out of 11 male victims, anal injuries were noted on 5 (45.45%) victims. Pal *et al* [19] reported 11.42% victims had genital injuries and 20.0% victims had extra genital injuries. Extra genital injuries were found in 10.8% of the victims in study by Arif *et al*. [18] The study by Al-Azad *et al* [30] revealed that 39.57% victims had genital injuries and 36.09% victims had extra genital injuries. Physical evidence of violence on the body was present in only 15% of the victims in study by Hassan *et al*. [32] In 3 (50%) cases of bestiality; injuries on vulva of animal were present.

The present study showed that 26 (6.45%) female victims became pregnant following the act of sexual assault. The findings of our study are consistent with studies of Pal *et al* [19] who found that 2.85% victims became pregnant after the sexual assault, Arif *et al* [18] and Sukul *et al*, [24] who found that 1.3% and 16.09% victims became pregnant respectively. Suri and Sanjeeda [22] in their study found that 2% adult and 4% minor rape victims became pregnant. A study by Bhowmik and Chaliha [7] reported 5% cases of pregnancy.

Detection of semen and spermatozoa is of utmost importance so that a case can be linked with assailant. Semen was detected in 172 (43.32%) cases of female sexual assault. Semen was detected on undergarments, pubic hair, clothes, bed sheets recovered from the spot, vaginal swabs and vaginal smear slides of the victims. Spermatozoa were detected in 93(23.42%) cases on vaginal swabs/vaginal smear slides. This can be explained by the fact that the probability of detection of semen decreases as the interval between assault and medical examination increases. This is in agreement with study of Arif *et al* [18] who reported that swabs collected for semen detection were positive in 18.2% cases. Bandyopadhyay *et al* [14] detected semen in 24.07% cases. Pal *et al* [19] reported



positivity for spermatozoa in 22.85% cases. Sarkar *et al* [5] revealed positivity for spermatozoa in 5.55% cases. The chances of yielding positive result diminish if the victim had washed genitalia after the assault or washed or changed the clothes. 3 (50%) bestiality related crime cases were linked by animal hair or animal blood present on assailant's undergarments or clothes.

Killing after an illicit sexual act could be either in panic or in order to destroy a witness of crime. [33] Only in 10 to 20 per cent cases murder is prompted by the urge of sexual gratification. [34] In our study, 6 female victims (1.48%) were killed after alleged sexual assault, while in a study by Sarkar *et al*, [5] 4 (4.44%) victims were killed following rape. There was history of sexual assault under the influence of drugs, alcohol or sedatives in 13 (3.22%) female victims in our study, which is consistent with the study of Arif *et al* [18] who reported 4% victims were under the influence of alcohol or drugs.

## CONCLUSION

The physical violence against women is a significant public health problem as well as fundamental violation of women's human rights and is universally condemned. Those who have actually committed rape but are acquitted by the courts for want of adequate evidence should be socially ostracized as these beasts are not worthy of being accepted in civilized society. The study led us to conclude that most vulnerable age group belonged to age of 14-17 years. Most commonly, sexual crimes were committed by person familiar to the victim.

In majority of the cases, there was no evidence of forceful sexual intercourse at the time of medical examination due to long post coital interval. Delay in medical examination resulted in loss of vital trace evidence. Hence prompt reporting is of vital importance to collect medical evidence so that reports generated by

forensic experts ultimately help judiciary to prosecute the assailants. Health professionals have a large role to play in supporting the victims of sexual assault both medically as well as psychologically. Along with the criminal justice functionaries, investigating agencies, NGOs, media people, political leaders, researchers, health sector and even the common man should play their role to eliminate the sexual violence from the society.

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