

COLLECTION OF FORENSIC EVIDENCE AND HISTORY TAKING IN ADULT FEMALE SEXUAL ASSAULT VICTIMS: A RETROSPECTIVE STUDY.

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ABSTRACT

Introduction: Sexual assault can be described as any unpleasant physical or sexual contact carried out without the consent of other person. Healthcare professionals in the emergency department are the first line help accessible to victims and they play most important role in managing the case. Evidence sampling requires excellent techniques as it is the main factor associated to identify the convict. Low conviction rate in Pakistan has been most frequently linked to inappropriate forensic sampling and unavailability of expertise. **Method:** This is a retrospective study conducted in the Peoples Medical University Hospital, Nawabshah. During the time period of August 2017 to December 2019, all cases having female sexual assault victims were taken. We identified 112 sexual assault cases having female victims. Women medical officer carried out complete medical examination and biological samples were collected using vulvar, vaginal and rectal swabs. **Results:** In the time period of August 2017 to December 2019, there were 112 sexual assault cases having female victims were found on record. The ages of patients were in the range of 15-40 years and mean age was found to be 22.4±3.12 years. Among 112 females, 66.9% victims were unmarried and 65% victims belong to lower socioeconomic class. Out of 112 victims, 74.1% had given a positive penetration history. Samples from all victims had been analyzed by the laboratory and only 40.1% samples having penetration history were found to be positive for male DNA. **Conclusion:** Healthcare system in Pakistan need to be improvised and training of individuals in the emergency department to manage assault victims should be done. Forensic sampling and handling of specimens must be performed according to protocols for accurate results. Focused training on specialized forensic techniques is the key to identifying the convict. Recording of victim's history and documentation of final medical report is also necessary. Awareness campaigns must be run in the rural areas to aware masses about sexual assault and its long term effects on one's life.

Key words: Forensic Evidence, Sexual Assault, Victims

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Introduction

Sexual assault can be described as any unpleasant physical or sexual contact carried out without the consent of other person. Rape is defined as sexual intercourse performed unlawfully to a woman by a man without her consent or done forcefully. Consent obtained by the victim under fear, force or if the woman is under 14 years old it is considered to be a crime¹. It is one of the most frequently encountered crimes in developed and developing countries. Healthcare professionals and forensic scientists are the first ones to encounter these cases according to WHO². Official data from ISTAT survey 2014 shows that 31.5% of women between the ages 16 to 70 have been sexually

assaulted at some point in their life and 5.4% of women have suffered severe sexual violence³. Healthcare professionals in the emergency department are the first line help accessible to victims and they play most important role in managing the case. A healthcare professional must be trained to cater the physical and psychological needs of assault victim. History taking and complete examination of the victim is necessary for medicolegal purposes and forensic evidence collection⁴. In the emergency department a doctor should approach the victim with empathy and must listen to the patient well. The most effective management step in assault victims is sampling of biological evidence for

forensic investigation⁵. Sexual assault in Pakistan has always been an underreported crime and has been used for suppressing women since long time. As awareness has been created in rural and urban areas regarding sexual assaults, there has been increase in the prevalence of sexual assault reports⁶. The NCMC report 2008-2013 shows that Punjab has the highest number of sexual assault cases reported followed by Sindh and KPK. One of the most difficult tasks is to collect evidence from the victim in the form of history, complete medical examination and forensic sampling. After the woman medicolegal officer has taken complete history, the forensic experts are called in for evidence sampling and medicolegal examination. Evidence sampling requires excellent techniques as it is the main factor associated to identify the convict⁷. Low conviction rate in Pakistan has been most frequently linked to inappropriate forensic sampling and unavailability of expertise. Prior to sexual assault, any substance intoxication may lead to impair the responses and incomplete history. It is necessary to perform routine toxicology screening in such cases for medicolegal purposes⁸. A study was conducted to assess the attitude of Sindh police over the use of modern forensic techniques and its implementation. Since the police force comprises of individuals with varying levels of educations so it could have impact on the use of new technologies. After the survey 81% of the respondents said that they were satisfied from police forensic techniques whereas 19% thought that Sindh police has lack of good forensic skills and knowledge⁹. Conviction rate in sexual assault cases can be increased by overcoming the traditional methods and use of scientific methods and tools. The police should be trained regarding ethics, professionalism and training regarding new tools¹⁰.

METHOD

This is a retrospective study conducted in the Peoples Medical University Hospital, Nawabshah. Data was collected through retrospective analysis of data recorded by the department of forensic medicine. During the time period of August 2017 to December 2019, all cases having female sexual assault victims were taken. We identified 112 sexual assault cases having female victims. Women medical officer carried out complete medical examination and biological samples were collected using vulvar, vaginal and rectal swabs. Samples were dried and were stored at temperature of -20°C until they were needed. Body swabs were being tested for presence of any spermatozoa using Christmas tree assay method. DNA was extracted from the swabs by forensic experts and was matched with possible suspect to identify the convict. Patient's history was correlated to the medical reports and laboratory findings to rule out any lies from the victim. Informed consent from the victim was

taken before using their data. Data was collected and analysis using SPSS version 22 was done.

RESULTS

In the time period of August 2017 to December 2019, there were 112 sexual assault cases having female victims were found on record. The ages of patients were in the range of 15-40 years and mean age was found to be 22.4±3.12 years. Table-1 shows the age distribution among the victims. Age group 15-25 years female were most commonly reported in cases and age 36 or above years had the least number of victims. Out of 112 victims, 74.1% had given a positive penetration history. Samples from all victims had been analyzed by the laboratory and only 40.1% samples having penetration history were found to be positive for male DNA. The Y haplotype was obtained in only 18 cases out of 112 cases. Within the initial 48 hours, 62.5% of cases were reported to the hospital or nearest police station. Few cases (n= 27) had history supporting the assumption that no semen could be found in her vaginal canal.

DISCUSSION

Previous study in Italy on evidence collection of sexual assault victims showed that more than 50% cases had evidence of convict's biological specimen on the victim's body. Other important factor for forensic investigation is the time elapsed from assault to the evidence collection¹¹. It is very important to keep in mind that delay in forensic evidence sampling may lead to negative results in 40% of cases with penetration report in history. Delay in gynecological examination is also a factor for inappropriate evidence collection as the victim may change clothes or bathing which could cause loss of evidence¹². Therefore emergency medicine doctors should be trained enough to carry out complete medical and gynecological examination in time. During retrospective analysis various factors have been found detectable for inaccurate investigation. It includes missing details in patient's history, collecting vaginal swabs 24 hours after the assault and incomplete medical examination of the victim¹³. Discrepancies between the victim's history and forensic findings also need to be eliminated by accurate recording of details. The forensic investigation is also affected if the victim has changed any clothes or underwear before biological specimen sampling¹⁴. Victim should be asked about the fact that if she has been involved in any consensual sexual activity after the assault as male DNA of the convict should be differentiated from it. Few cases have a vague history because of altered sense of consciousness of victim when reported to the hospital¹⁵. Confounding factors discussed above can be eliminated by better hospital care services to sexual assault victims. Studies focused on interviewing and recording information must be done to improve the consistency of medical reports. A victim giving false records to

medicolegal officers is directly linked to the psychological support provided to her at the hospital. The victim may undergo fear as a result of acute post-traumatic stress and it alters the assault history ¹⁶. Any kind of sexual assault can

lead to chronic effects on psychological and physical health. Post-traumatic stress disorder in victims has chronic effects on their life and they require treatment from psychologists.

TABLE NO.1 AGE DISTRIBUTION OF VICTIMS (n=112)

| Age of victim | No. of Patients(n) | Percentage(%) |
|---------------|--------------------|---------------|
| • 15-25 years | 58 | 51.78% |
| • 26-35 years | 39 | 34.82% |
| • ≥ 36 years | 15 | 13.39% |

Table-2 shows the frequency of socioeconomic variables of the victim. Among 112 females, 66.9% victims were unmarried and 65% victims belong to lower socioeconomic class.

TABLE NO.2 SOCIOECONOMIC VARIABLES OF VICTIMS (n=112)

| Socio-economic Variables | No. of Patients(n) | Percentage(%) |
|-----------------------------|--------------------|---------------|
| Marital Status | | |
| • Unmarried | 75 | 66.96% |
| • Married | 37 | 33.03% |
| Occupation | | |
| • Student | 20 | 17.85% |
| • Working | 43 | 38.39% |
| • Not working | 49 | 43.75% |
| Socioeconomic Status | | |
| • Lower class | 73 | 65.17% |
| • Middle class | 38 | 33.92% |
| • Upper class | 1 | 0.89% |

Table No.3; PENETRATION HISTORY(n=112)

| Samples | Frequency (n) | Percentage (%) |
|------------------------------|---------------|----------------|
| Positive penetration history | 45 | 40.1 |
| Negative penetration history | 67 | 59.8 |

Emergency medicine doctors should be trained to record history and forensic evidences to protect victim’s legal rights. Previous study correlating literacy level of assault victim and convict showed that only 40% of them had received some education. In a study in South Delhi only one third of the rape victims were reported to the hospital during the initial 72 hour time period. Early reporting is also found in urban areas compared to rural areas rooting to awareness ¹⁷.

CONCLUSION:

Healthcare system in Pakistan need to be improvised and training of individuals in the emergency department to manage assault victims should be done. Forensic sampling and

handling of specimens must be performed according to protocols for accurate results. Focused training on specialized forensic techniques is the key to identifying the convict. Recording of victim’s history and documentation of final medical report is also

necessary. Awareness campaigns must be run in the rural areas to aware masses about sexual assault and its long term effects on one's life.

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