

# Sociodemographic Characteristics and Forensic Evidence of Sexual Assault Victims

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## ABSTRACT

**Objective:** To evaluate sociodemographic characteristics and forensic evidence of sexual assault victims.

**Study Design:** Retrospective study.

**Place and Duration of Study:** Medicolegal section of Peoples Medical College Hospital (PMCH) and Department of Forensic Medicine & Toxicology, Peoples University of Medical & Health Sciences, Nawabshah District Shaheed Benazirabad from 1<sup>st</sup> January 2019 to 31<sup>st</sup> December 2021.

**Methodology:** One hundred and forty female victims of sexual assaults were enrolled.

**Results:** The reports of sexual assaults were higher in females of 15-25 years age group (55.71%) as compared to the age group of 26-35 years (34.29%). With reference to marital status, occupation, and socio-economic class, most of the females were unmarried (66.43%), nonworking (44.29%), and from the lower class (65.71%). A discrepancy was found between positive penetration history (72.14%) and positive laboratory findings (43.57%) which could be attributed to reporting of a sufficient number of sexual assaults after 48 hours (37.86%).

**Conclusion:** The women of younger age (15-25 years) and having low access to paid employment were more prone to sexual assaults. The time-lapse between the occurrence of incidence and collection of forensic evidence could impact the agreement between penetration history and laboratory analysis.

**Keywords:** Sociodemographic, Forensic evidence, Sexual assault victim

## INTRODUCTION

Sexual assault is a prevailing offense against women throughout the world.<sup>1</sup> The National sexual violence center of the United States reported an increase of sexual assault victimization in the country among every 1,000 persons aged 12 or older from 1.4 victimizations in 2017 to 2.7 victimizations in 2018 with sexual violence being the only type of crime that had a significant year to year increase in comparison to other types of crimes.<sup>2</sup> The global estimate of data from 161 countries from 2000 to 2018 indicated that 30% of women have confronted sexual and/or physical violence. The WHO has further reported that 6% of women globally faced sexual assault by person other than their intimate partner.<sup>3</sup> Although the possibility of sexual assault exists both for man and women, females are at higher risk. A US-based study found that 43% of males and 81% of females reported undergoing some type of sexual assault and/or harassment at least once in their lifetime.<sup>4</sup> Similarly, global estimates by WHO showed that 1 in 3 women have been subjected to either sexual and/or physical assault in their lifespan.<sup>5</sup>

Sexual assault refers to the nonconsensual penetration of the vulva, anus, or oral cavity with the penis, another body part, or object.<sup>3,6</sup> The consequences of sexual assault involve sexually transmitted infections including HIV, unwanted pregnancies, negative effects on physical, sexual, and reproductive health, depression, and deleterious form of trauma.<sup>7,8</sup> A higher risk of mental disorders and stronger associations for suicidality and posttraumatic stress among sexual assault victims have been found in studies that compared various forms of psychopathology in survivors of sexual assault and unassaulted individuals.<sup>8,9</sup> Furthermore, the lifetime cost of a rape victim has been estimated to exert a population economic burden of around \$3.1 trillion in the US.<sup>10</sup> These negative effects of sexual assault on health make it a global public health problem.<sup>1</sup>

The adverse effects of sexual assault on the life of victims are severe in Pakistan due to societal humiliation and discrimination.<sup>11</sup> Sexual assault is underreported<sup>6</sup> and it is estimated that less than a quarter of survivors of sexual assault report the incidence to the police.<sup>7</sup> The data of sexual assault is further limited in literature with reference to forensic evidence. Therefore, the present study aimed to analyze sociodemographic characteristics and forensic evidence of sexual assault victims

presented for medical examination at the medicolegal section of Peoples Medical University, Shaheed Benazirabad, Pakistan. The study could help to identify and design strategies to prevent such incidences in vulnerable groups of females in nearby localities of the hospital.

## MATERIALS AND METHODS

This retrospective study was carried out at Medicolegal Section of Peoples Medical College Hospital (PMCH) and Department of Forensic Medicine & Toxicology, Peoples University of Medical & Health Sciences, Nawabshah District Shaheed Benazirabad. The data was collected from the documented findings and the collection of the evidence for the individuals who reported or were suspected of sexual assault and were presented for medicolegal examination from 1<sup>st</sup> January 2019 to 31<sup>st</sup> December 2021. The age of victims ranged from 15 years to 40 years. The data was gathered through a predesigned data collection sheet and was transferred for descriptive data evaluation to IBM SPSS Statistics for Windows, version 24.

## RESULTS

The mean age was 22.4±1.2 years. Majority of non-working females from lower-income class and having an age range of 15-25 years were brought to the medicolegal section for the forensic evaluation of alleged sexual assault. A substantial number of victims (37.86%) were presented for forensic examination after 48 hours of reported sexual assault. Out of 140 presented cases, 101 females (72.14%) provided positive penetration history. However, the laboratory analysis could only confirm the presence of male DNA in 43.57% of samples (Table 1).

Table 1: Frequency Distribution of Various Variables and Penetration History of the Victims of the Sexual Assault (n=140)

Characteristics	No.	%
Age (years)		
15-25	78	55.71
26-35	48	34.29
≥ 36	14	10.00
Marital status		
Unmarried	93	66.43
Married	47	33.57
Occupation		
Student	25	17.86

Working	53	37.86
Not working	62	44.29
Socioeconomic class		
Lower	92	65.71
Middle	47	33.57
Upper	1	0.71
Reporting time-lapse		
Within 48 hours	87	62.14
After 48 hours	53	37.86
Penetration history		
Positive	101	72.14
Negative	39	27.86
Laboratory confirmed penetration		
Positive	61	43.57
Negative	79	56.43

**DISCUSSION**

The results of the current study indicate that younger and adolescent females are more vulnerable to sexual assault among other age groups (Table 1). The highest frequency of sexual assaults was reported for the age group of 15-25 years (55.71%) followed by the age range of 26 to 35 years (34.29%). The least number of reported sexual assaults was observed for the females aging 36 and above. The studies having objectives similar to the present study have also reported younger age as vulnerability for sexual assaults. Khan et al<sup>12</sup> reported 19.24±7.33 years as the mean age of sexually assaulted victims that were presented at Jinnah Postgraduate Medical Center of Karachi. Approximately 64% of the victims were aged between 10 and 19 years in a study of medico-legal assessment of the victims of sexual assault in Lahore.<sup>13</sup> Similarly, Alam and Colleagues<sup>14</sup> found 11 to 30 years of age as the most vulnerable age group to sexual assaults at Districts Peshawar. It has been also reported in the literature from other countries that youthful women (16 to 24 years old) have a 4-times higher risk of sexual assault than women belonging to all of the other age group.<sup>15</sup> Date rapes or dating violence have also been higher in younger aged females.<sup>6,16</sup> The higher vulnerability of younger women to sexual assaults may pertain to their physical attraction and their increased involvement in routine activities that could increase their exposure to potential offenders.<sup>17</sup>

The present study showed that a higher number of females facing sexual assault were unmarried (66.43%). The studies of sex-related assaults among female students have reported a substantial risk of sexual assault for unmarried females than married females.<sup>18,19</sup> El-Din et al<sup>17</sup> studied the pattern of sexual assaults in females in Egypt and found that unmarried women had a higher degree of reporting sexual assault than unmarried women. Descriptive studies of alleged victims of sex crimes have reported that more than 60% of survivors of sexual assault were unmarried.<sup>20,21</sup>

The majority of sexual assault victims belonged to non-working (44.29%) and lower socioeconomic class (65.71%) in the present study (Table 1). The low access of women to paid employment is considered a factor associated with sexual violence against women.<sup>3</sup> This can also be attributed to the low level of education among females in the region of the present study, which is also characterized mostly by rural areas, rendering them lesser opportunities for paid employment. A study of vulnerable victims of sexual assault observed that the majority of the victims were unemployed (93.5%), lived in rural areas (65.2%), and had low education or belonged to illiterate groups (88%).<sup>22</sup>

Most of the alleged sexual assaults were brought to the medicolegal department within 48 hours of the reported time of the incidence. However, a substantial number of cases were presented after 48 hours. A discrepancy occurred between the reported positiveness of penetration (72.14%) and laboratory-confirmed positivity of the penetration (43.57%). A study of medicolegal examination of sexual assaults in Multan found that 73.6% of examined cases were reported 72 hours after the offense and the agreement between medical reports and laboratory findings existed in only 43.6% of the cases.<sup>23</sup> The delays in the sampling of evidence for forensic investigation may lead to opposing results in 40% of cases that reported positive penetration

history.<sup>24</sup> The collection of vaginal swabs not before 24 hours of the incidence has been shown as a strong cofounder leading towards the difference between positive penetration history and negative laboratory findings.<sup>25</sup> The findings of the present study are consistent with the recommendations by other studies to adopt reasonably short time in collection of biological evidences in order to avoid discrepancies between assessment by medico-legal department and reports by forensic laboratories in order to facilitate the justice to be prevailed.<sup>25,26</sup>

**CONCLUSION**

The younger women of nonworking and lower socioeconomic class are more vulnerable to sexual assaults. The increased gap between the time of incidence and forensic evaluation can lead towards differences between positive penetration history and laboratory-based confirmation of the sexual assault. A faster process of reporting the incidence of sexual violence is recommended which can facilitate the process of providing justice to the victims.

**REFERENCES**

- McQueen K, Murphy-Oikonen J, Miller A, Chambers L. Sexual assault: women's voices on the health impacts of not being believed by police. *BMC Women's Health* 2021;21(1):217.
- Morgan RE, Oudekerk BA. *Criminal victimization, 2018*. Bureau of Justice Statistics. 2019;845.
- World Health Organization. *Key Facts: Violence against women* Geneva: WHO; 2021
- Kearl H. The facts behind the #MeToo movement: A national study on sexual harassment and assault. 2018.
- World Health Organization. *Violence against women prevalence estimates, 2018: global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women*. 2021.
- Luce H, Schrage S, Gilchrist V. Sexual assault of women. *Am Fam Phys* 2010;81(4):489-95.
- Welch J, Mason F. Rape and sexual assault. *BMJ* 2007;334(7604):1154-8.
- Dworkin ER, Menon SV, Bystrynski J, Allen NE. Sexual assault victimization and psychopathology: A review and meta-analysis. *Clin Psychol Rev* 2017;56:65-81.
- Dworkin ER. Risk for mental disorders associated with sexual assault: a meta-analysis. *Trauma Violence Abuse* 2020;21(5):1011-28.
- Peterson C, Kearns MC, McIntosh WL, Estefan LF, Nicolaidis C, McCollister KE, et al. Lifetime economic burden of intimate partner violence among US adults. *Am J Preventive Med* 2018; 55(4):433-44.
- Rasool N, Rasool M. DNA evidence in sexual assault cases in Pakistan. *Med Sci Law* 2020; 60(4):270-7.
- Khan M, Aziz S, Qamar N, Memon JQ. Frequent factors for women and children subjected to sexual assaults presenting at Jinnah Postgraduate Medical center, Karachi. *J Pak Med Assoc* 2014;64(6):649-52.
- Hassan Q, Bashir MZ, Mujahid M, Munawar AZ, Aslam M, Marri MZ. Medico-legal assessment of sexual assault victims in Lahore. *JPMA* 2007; 57(11):539-42.
- Alam N, Naveed S, Ahmad MS, Aziz I. Prevalence of sexual assault at district Peshawar. *J Med Sci* 2018;26(3):225-8.
- Danielson CK, Holmes MM. Adolescent sexual assault: an update of the literature. *Curr Opin Obstet Gynecol* 2004;16(5):383-8.
- Wincentak K, Connolly J, Card N. Teen dating violence: A meta-analytic review of prevalence rates. *Psychol Violence* 2017;7(2):224-41.
- El-Din AAS, Elkholly SM, Metwally ES, Farag HA. Pattern of female sexual assault in Qalyubia Governorate, Egypt, during the period from 2009 to 2013: a retrospective study. *Am J Forensic Med Pathol* 2015;36(4):276-84.
- Worthen MGF, Wallace SA. "Why should I, the one who was raped, be forced to take training in what sexual assault is?" sexual assault survivors' and those who know survivors' responses to a campus sexual assault education program. *J Interpersonal Violence* 2021;36(5-6):NP2640-74.
- Cantor D, Fisher B, Chibnall SH, Townsend R, Lee H, Thomas G, et al. Report on the AAU campus climate survey on sexual assault and sexual misconduct. 2015.
- Bhowmik K, Chaliha R. A descriptive one year study on the alleged male and female victims and accused of sex crimes. *J Indian Acad Forensic Med* 2011;33(3):214-20.
- Tamuli R, Paul B, Mahanta P. A statistical analysis of alleged victims of sexual assault a retrospective study. 2013.
- Sahu G, Mohanty S, Dash JK. Vulnerable victims of sexual assault. *Med Sci Law* 2005; 45(3):256-60.
- Ali F, Khalid S, Zarif P, Safdar M, Murtaza M, Tariq F. Medicolegal examination of sexual assault survivors. drug resistant TB and bone marrow stem cells. 2021;32(3):126.
- Awan EA, Samad A, Mal H, Noonari MA, Rasheed A, Muhayudin G. Collection of forensic evidence and history taking in adult female sexual assault victims: a retrospective study. *JPUMHS* 2020;10(3).
- Tozzo P, Ponzano E, Spigarolo G, Nespeca P, Caenazzo L. Collecting sexual assault history and forensic evidence from adult women in the emergency department: a retrospective study. *BMC Health Serv Res* 2018;18(1):383.
- Alam N, Naveed S, Ahmad MS, Ahmad I. Physical and laboratory findings in adult female sexual cases at district Peshawar. *J Med Sci* 2018;26(4):322-5.