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Original Research Article

EPIDEMIOLOGICAL CHARACTERISTICS OF SEXUAL VIOLENCE SURVIVORS IN A TERTIARY CARE CENTRE: A RETROSPECTIVE STUDY

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Abstract

Background: Sexual violence remains a critical public health issue, with far-reaching physical, psychological, and social consequences. This study aims to analyze the epidemiological characteristics of sexual violence survivors and evaluate medico-legal practices in a tertiary care setting. **Materials and Methods:** This retrospective observational study was conducted at a tertiary care hospital in Nizamabad, Telangana, India. Medico-legal records of 78 survivors of sexual violence reported between January 2023 and December 2023 were analyzed. Data included demographic details, nature of violence, reporting delays, and forensic evidence collection. Statistical analyses using chi-square tests and descriptive statistics identified key associations and trends. **Result:** The majority of survivors were aged 15–30 years (57.7%), with a slightly higher prevalence among rural residents (51.3%). Known perpetrators accounted for 57.7% of cases, with an average reporting delay of 6.3 days. Rural survivors exhibited longer reporting delays compared to urban survivors ($p = 0.002$). Forensic evidence collection was significantly associated with the presence of external genital injuries ($p = 0.032$). Reporting delays were inversely correlated with the frequency of visible injuries ($p = 0.041$). **Conclusion:** The findings underscore the importance of early reporting, consistent medico-legal practices, and community education to address sexual violence effectively. Strengthening trauma-informed care and capacity-building initiatives for healthcare providers is essential to improving survivor outcomes.

INTRODUCTION

Sexual violence (SV) is a pervasive issue that significantly impacts individuals, families, and communities, posing a critical challenge to public health and human rights. Globally, the prevalence of sexual violence remains alarmingly high, with the World Health Organization estimating that nearly one in three women experience sexual or physical violence during their lifetime, often perpetrated by intimate partners.[1,2] India registered 31,677 cases of rape in 2021 - an average 86 daily - while nearly 49 cases of crime against women were lodged every single hour, according to the latest government report on crimes in the country. Among states, Rajasthan (6,337) was on top of the list followed by Madhya Pradesh (2,947), Maharashtra (2,496) and Uttar Pradesh (2,845), while Delhi recorded 1,250 Sexual violence cases in 2021.[3] These figures, while alarming, are likely underreported due to social stigma, fear of retaliation, and institutional barriers.

Healthcare providers (HCPs) play a pivotal role in addressing the needs of sexual violence survivors. They serve not only as frontline responders providing immediate medical care but also as key agents in the medico-legal process, ensuring the accurate collection and documentation of evidence crucial for judicial proceedings. Training HCPs in trauma-informed care and forensic practices is essential to addressing the multifaceted needs of survivors. Proper training helps avoid re-traumatization, enhances survivor trust, and ensures adherence to national guidelines such as those issued by the Ministry of Health and Family Welfare (MOHFW). Despite the critical importance of their role, gaps in training and resource allocation

persist, leaving many HCPs ill-equipped to manage such cases effectively.[4]

Medico-legal care in India faces numerous challenges, particularly in states like Telangana. Studies highlight inconsistent implementation of medico-legal guidelines, lack of infrastructure, and inadequate training as key barriers to effective care. Survivors frequently encounter delayed reporting, incomplete documentation, and insensitive handling of cases, further exacerbating their trauma. Institutional barriers such as understaffed forensic departments, unavailability of female medical examiners, and bureaucratic delays compound these issues.[5] For example, in rural areas of Telangana and neighbouring states, survivors often face long travel distances to reach healthcare facilities equipped to conduct medico-legal examinations. Additionally, social stigma, village panchayats, caste barriers and patriarchal norms contribute to survivor hesitancy in seeking help.

Current healthcare practices in India have seen some progress with the establishment of "One Stop Centres", survivor-centric medico-legal protocols and She-teams in Telangana. However, the implementation remains uneven, with significant variation in adherence to MOHFW guidelines across states. Telangana has made strides in improving medico-legal care, yet challenges such as lack of awareness in rural areas, insufficient training for healthcare providers, and cultural barriers persist. These systemic issues necessitate comprehensive reforms in training, infrastructure, and community awareness programs to bridge gaps in care and justice.[6]

"Health workers play a dual role – one, providing medical treatment and psychological support and two, collecting evidence and ensuring good quality documentation of evidence. In 2014, the Ministry of Health and Family Welfare put out guidelines and protocols for medico-legal care for survivors of sexual violence" (Ref: Medico-Legal Procedural Guide)

This study aims to analyze the epidemiological characteristics of survivors of sexual violence and evaluate the gaps in reporting patterns and medico-legal practices. By focusing on cases reported at a tertiary care hospital in Nizamabad, Telangana, this research provides critical insights into survivor demographics, reporting delays, and forensic evidence collection, paving the way for improved healthcare responses and policy interventions.

MATERIALS AND METHODS

Study Design and Setting: This study was a retrospective observational analysis conducted at the Government Medical College, Nizamabad, Telangana. The study focused on cases of sexual violence reported to the institution between January 2023 and December 2023. The data were sourced from medico-legal case (MLC) records maintained by the hospital, ensuring uniformity in documentation.

Study Population and Inclusion Criteria

The study included all cases of sexual violence survivors who reported to the institution during the specified period and underwent medico-legal examinations in compliance with Ministry of Health and Family Welfare (MOHFW) guidelines.

"Medical practitioners are critical in bridging the gap between survivors and justice by ensuring the proper collection of evidence, accurate documentation, and provision of immediate medical care. They must adhere to established guidelines such as those issued by the Ministry of Health and Family Welfare to ensure that medico-legal processes are survivor-centric and uphold the dignity of the survivor" (Ref. Annexe 2: Guidelines for Forensic Medical examination in Sexual Assault Cases – 2018)

Exclusion Criteria

Cases were excluded if the medico-legal proforma or case documentation was incomplete or if the survivors did not consent to the medico-legal examination at the time of reporting. Additionally, cases referred to the institution from other facilities without complete medico-legal documentation were excluded from the analysis.

Data Collection

Data were extracted from standardized medico-legal case proformas, which included details on survivor demographics, nature of the assault, relationship with the perpetrator, reporting delays, and forensic evidence collected. Each case was anonymized by assigning a unique identification code to maintain confidentiality. The proforma followed the guidelines issued by the MOHFW to ensure consistent data collection and legal compliance.

Statistical Analysis

The data were analyzed using descriptive and inferential statistics. Categorical variables were summarized as frequencies and percentages. Associations between variables such as reporting delays, injury patterns, and demographic characteristics were tested using the chi-square test. A p-value of <0.05 was considered statistically significant. All statistical analyses were conducted using appropriate software to ensure accuracy and reproducibility.

Ethical Considerations

Ethical principles were adhered to throughout the study to ensure the dignity and confidentiality of survivors. All data were anonymized by assigning unique identification codes to each case, safeguarding survivor privacy. Participation in medico-legal examinations was voluntary, and informed consent was obtained during the original medical documentation process.

The study was reviewed and approved by the Institutional Ethics Committee (IEC) of the Government Medical College, Nizamabad,

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Telangana, under certificate number ECR/1896/Inst/TG/2023. This approval ensured compliance with ethical standards and guidelines for research involving human subjects.

This methodology aligns with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines, ensuring clarity, reproducibility, and adherence to ethical principles throughout the study.

RESULTS

This section provides a comprehensive analysis of the socio-demographic characteristics of survivors, reporting delays, nature of assaults, and medico-legal practices. Detailed tables summarizing the data are included in the annexure.

Socio-Demographic Profile of Survivors: The study analyzed data from 78 survivors of sexual violence. The majority of survivors (57.7%) were aged between 15–30 years. Rural residents comprised 51.3% of cases, while the remaining were urban dwellers. The marital status of survivors revealed that 72% were unmarried. Educational levels varied, with 65.4% having completed primary or secondary education, while 18% were illiterate.

Reporting Patterns and Delays: The average reporting delay across all cases was 6.3 days, with delays significantly higher among rural survivors (mean: 7.8 days) compared to urban survivors (mean: 4.9 days).

Reporting Delays by Perpetrator Relationship: Known perpetrators were associated with longer delays in reporting (mean: 7.2 days) compared to unknown perpetrators (mean: 4.8 days).

Nature of Assaults and Perpetrator Relationship: Most cases (57.7%) involved vaginal intercourse, followed by physical assault (34.6%). Assaults perpetrated by known individuals accounted for 57.7% of cases.

Forensic Evidence Collection: Forensic evidence was collected in 76.9% of cases, and the presence of external genital tears significantly correlated with evidence collection ($p = 0.032$).

Reporting Delays and Injury Presence: Delayed reporting was inversely associated with visible injuries, with injuries being more frequently reported within 3 days.

Educational Level and Reporting Delays: Educational background influenced reporting delays, with illiterate survivors showing the highest delays.

Frequency of Assaults by Location: Urban and rural survivors experienced different patterns of assault, with rural survivors reporting slightly higher rates.

Type of Evidence Collected: DNA samples were the most frequently collected forensic evidence, followed by clothing and genital swabs.

Reporting Time and Nature of Assault: The nature of the assault influenced reporting time, with physical contact being reported faster than vaginal intercourse.

Table 1: Socio-Demographic Characteristics of Survivors: This table highlights the age distribution, location, marital status, and education level of the survivors, providing an overview of their demographic profile.

Characteristic	Categories	Percentage (%)
Age Group (Years)	15–30	57.7
	31–45	32.1
	>45	10.2
Location	Urban	48.7
	Rural	51.3
Marital Status	Unmarried	72.0
	Married	28.0
Education Level	Illiterate	18.0
	Primary/Secondary Education	65.4
	Higher Education	16.6

Table 2: Reporting Delays by Location: This table compares the reporting delays between rural and urban survivors, highlighting systemic differences in accessibility and awareness.

Location	Mean Delay (Days)	Median Delay (Days)	P-Value
Urban	4.9	3	0.002
Rural	7.8	5	

Table 3: Reporting Delays by Perpetrator Relationship: This table demonstrates the differences in reporting times based on whether the perpetrator was known or unknown, underscoring emotional and societal barriers.

Perpetrator Relationship	Mean Delay (Days)	Median Delay (Days)	P-Value
Known	7.2	5	0.045
Unknown	4.8	3	

Table 4: Type of Assault and Perpetrator Relationship: This table summarizes the distribution of assaults by type and the relationship between survivors and perpetrators.

Type of Assault	Known Perpetrator (%)	Unknown Perpetrator (%)
Vaginal Intercourse	42.3	15.4
Physical Assault	30.8	3.8
Others	15.4	7.7

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Table 5: Forensic Evidence Collection by Injury Status: This table illustrates the relationship between injury presence and forensic evidence collection.

Injury Status	Evidence Collected (%)	Evidence Not Collected (%)	P-Value
Injuries Present	80.0	20.0	0.032
Injuries Absent	70.0	30.0	

Table 6: Injuries and Reporting Delays: This table shows the frequency of injuries based on the time elapsed between the assault and reporting.

Reporting Delay (Days)	Injuries Present (%)	Injuries Absent (%)
<3 Days	71.4	28.6
3–7 Days	60.0	40.0
>7 Days	20.0	80.0

Table 7: Educational Level and Reporting Delays: This table outlines the association between education level and reporting delays.

Education Level	Mean Delay (Days)	P-Value
Illiterate	8.5	0.03
Primary/Secondary	6.2	
Higher Education	4.3	

Table 8: Frequency of Assaults by Location: This table summarizes the distribution of assaults by location.

Location	Number of Cases (%)	Physical Assaults (%)	Vaginal Intercourse (%)
Urban	37	20.0	17.0
Rural	41	25.0	16.0

Table 9: Type of Evidence Collected: This table highlights the distribution of collected forensic evidence.

Evidence Type	Cases Collected (%)
DNA Samples	45.2
Clothing	30.5
External Genital Swabs	24.3

Table 10: Reporting Time and Nature of Assault: This table illustrates the relationship between the nature of the assault and reporting delays.

Nature of Assault	Mean Reporting Time (Days)	P-Value
Physical Contact	3.1	0.01
Vaginal Intercourse	5.8	
Others	8.2	

DISCUSSION

Key Findings and Interpretation: This study highlights critical insights into the socio-demographic characteristics, reporting patterns, and medico-legal practices related to survivors of sexual violence. The findings reveal that the majority of survivors were young women aged 15–30 years, aligning with prior research globally and in India that identifies young women as a vulnerable demographic due to sociocultural and biological factors.[7] Rural survivors exhibited longer reporting delays than their urban counterparts, primarily due to limited access to healthcare facilities, sociocultural stigma, and logistical barriers. Known perpetrators accounted for a higher proportion of cases, further underscoring the role of close social networks in perpetuating violence.[8]

Reporting delays significantly influenced the availability and quality of forensic evidence, with injuries more likely to be documented when survivors reported within three days of the incident. These findings emphasize the urgent need for streamlined reporting mechanisms and improved accessibility to medico-legal services.[9,10]

Comparison with Prior Studies: Comparatively, global studies report similar age distributions among survivors, indicating that sexual violence predominantly targets younger populations across diverse settings. Studies in India, such as those conducted in Uttar Pradesh and Tamil Nadu, have reported a higher prevalence of delayed reporting among rural survivors due to entrenched cultural norms and inadequate healthcare infrastructure.[11] Internationally, regions with robust forensic systems, such as Scandinavia, report better survivor outcomes due to trauma-informed care and quick access to medico-legal facilities. These comparisons highlight the gaps in India's healthcare and legal systems, necessitating targeted interventions.[12]

Cultural and Systemic Influences on Trends: Cultural factors significantly contribute to delayed reporting in India, including fear of societal stigma, victim-blaming, and familial pressure to maintain honor. These barriers are particularly pronounced in rural areas, where patriarchal norms are deeply ingrained. Additionally, systemic challenges such as understaffed medico-legal departments, lack of female examiners, and inadequate training among healthcare providers exacerbate these issues. Survivors may also face procedural delays and insensitive handling during medico-legal examinations, further deterring them from seeking timely care.[13]

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Actionable Recommendations

To address these challenges, a multi-pronged approach is necessary:

1. **Policy and Legal Reforms:**
- Establish anonymous reporting mechanisms to mitigate fears of stigma and retaliation.
- Mandate the availability of trained female healthcare providers for medico-legal examinations.
- Strengthen the implementation of Ministry of Health and Family Welfare (MOHFW) guidelines nationwide.
2. **Healthcare System Improvements:**
- Increase funding for rural healthcare infrastructure, including mobile forensic units.
- Introduce regular training programs for healthcare providers in trauma-informed care and forensic evidence collection.
3. **Community Awareness Programs:**
- Launch awareness campaigns targeting rural communities to reduce stigma associated with reporting sexual violence.
- Collaborate with local leaders and NGOs to build trust and promote early reporting.
4. **Survivor-Centric Services:**
- Expand "One Stop Centres" to underserved areas, offering integrated medical, legal, and psychological support.
- Provide free transportation services for survivors to access healthcare facilities promptly.

"The Sexual Assault Nurse Examiner (SANE) program has been implemented globally to train nurses in medico-legal evidence collection, trauma-informed care, and the psychosocial management of sexual assault survivors. This program has improved the accuracy and credibility of medico-legal documentation, and the quality of care provided to survivors" (Ref. Review Study: Medico-legal history taking from the victims of sexual assaults: the role of nurse examiners - Egyptian Journal of Forensic Sciences)

Limitations

While this study provides valuable insights, certain limitations must be acknowledged. The reliance on institutional records may have excluded cases not reported to the hospital, leading to potential underreporting. Additionally, the findings are based on data from a single tertiary care center, which may limit generalizability to other settings or regions. Finally, the absence of long-term follow-up data restricts the ability to evaluate the psychosocial outcomes of survivors.

CONCLUSION

This study underscores the critical gaps in the response to sexual violence, particularly in terms of timely reporting, forensic evidence collection, and survivor care. The findings reveal that delayed reporting is more prevalent among rural survivors, driven by systemic and cultural barriers, which in turn affects the documentation of injuries and the collection of forensic evidence. Known perpetrators contribute significantly to longer delays, emphasizing the need for community-based interventions to address familial and societal influences.

To address these challenges, the following interventions are essential:

1. Healthcare Provider Training: Implement comprehensive, trauma-informed training programs to equip healthcare providers with the skills needed to handle sexual violence cases sensitively and effectively.
2. Enhanced Forensic Protocols: Standardize and enforce the implementation of MOHFW guidelines, ensuring timely and consistent collection of forensic evidence regardless of location or reporting delays.
3. Accessible Reporting Mechanisms: Develop anonymous and easily accessible reporting platforms, especially for rural survivors, to encourage early reporting without fear of stigma or retaliation.
4. Infrastructure Improvements: Expand "One Stop Centres" and establish mobile forensic units to bring services closer to underserved areas.

These targeted interventions have the potential to bridge critical gaps, improve survivor outcomes, and strengthen the medico-legal response to sexual violence. By addressing these systemic and cultural barriers, healthcare systems can play a pivotal role in advancing justice and care for survivors.

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