

STRENGTHENING JUSTICE FOR WOMEN: A CRITICAL STUDY OF POLICE PROTOCOLS IN COLLECTING AND PRESERVING SCIENTIFIC EVIDENCE IN SEXUAL OFFENCE CASES IN INDIA

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ABSTRACT

The pursuit of justice for women in cases of sexual offences in India hinges critically on the integrity, efficiency, and sensitivity of police procedure in collecting and preserving scientific evidence. Despite the progressive evolution of India's criminal justice framework and the growing reliance on forensic science, numerous challenges persist in translating these advancements into consistent investigative practices. This research paper titled as "*Strengthening Justice for Women: A Critical Study of Police Protocols in Collecting and Preserving Scientific Evidence in Sexual Offence Cases in India*," critically examines the rule of law. Enforcement in evidence management with particular importance on forensic procedures and institutional coordination and procedural fairness.

The study further explores statutory provisions under the Criminal Procedure Code, the Indian Evidence Act, and the Protection of Children from Sexual Offences (POCSO) Act, alongside judicial interpretations that underscore the evidentiary value of scientific methods such as DNA profiling and forensic medical examinations. It identifies procedural deficiencies that impede justice—ranging from lack of training, infrastructural gaps, and contamination of evidence to gender insensitivity and delays in investigation. Drawing upon empirical insights from earlier studies and national directives, the paper analyzes how these systemic weaknesses undermine conviction rates and erode victim confidence in the justice system.

Furthermore, the paper evaluates recent governmental initiatives such as the introduction of Sexual Assault Evidence Collection (SAEC) kits, the modernization of forensic laboratories, and inter-agency coordination models aimed at improving investigative outcomes. It concludes that strengthening justice for women requires not only legislative reform but also a cultural shift within policing, towards scientific rigor, empathy, and accountability. By integrating forensic precision with gender-sensitive law enforcement, India can ensure that every investigation upholds both the dignity of the survivor and the sanctity of evidence, thereby transforming justice from a procedural formality into a substantive right.

Introduction

Ensuring justice for women especially in cases of crimes against women in India is an urgent issue that cannot be ignored. The way society in the state is structured often puts women in difficult and unsafe situations making them

more likely to face violence and unfair treatment. Addressing these problems is not just about following the law, it's about creating a safer and fairer world for women, where their rights are respected, their dignity is protected, and they can live without fear. Justice for

women isn't just a duty; it's a sign of a society that truly values everyone equally¹⁰⁷³.

Central to the pursuit of justice is the role of law enforcement, particularly police practices related to the collection and handling of scientific evidence. The effectiveness of investigations into crimes against women largely depends on the quality and integrity of the evidence gathered. In India, the ability of police to collect forensic evidence, conduct thorough investigations, and manage sensitive cases can significantly influence case outcomes¹⁰⁷⁴. Scientific evidence, such as DNA analysis and digital forensics plays an important role in substantiating claims and ensuring that perpetrators are held accountable for their actions.

Assessing police practices is essential for several reasons. First, it can identify gaps and areas for improvement so that law enforcement agencies are equipped to handle cases involving crimes against women with the required sensitivity and professionalism¹⁰⁷⁵. Second, a vigorous evaluation can inform training programs for police officers underlining the importance of gender-responsive approaches in investigations. Enhancing the skills of police in India can help create a more just way of handling crimes against women and show society's stronger dedication to protecting women's rights and respect¹⁰⁷⁶.

Crimes against women in India are not just numbers on a chart; they highlight long-standing social and cultural problems that have been around for decades¹⁰⁷⁷. The state's history shows how traditional patriarchal beliefs and practices have shaped society often treating women as less important than men. These attitudes have made violence against women

seem almost normal, leading to it being widespread across different parts of the state.

India has consistently reported high rates of crimes against women, including domestic violence, sexual assault, and dowry-related offenses. According to the National Crime Records Bureau (NCRB)¹⁰⁷⁸, the state ranks among the highest in India for such crimes. The number of reported cases of rape and molestation has been rising, which points to both the prevalence of these crimes and the growing courage of victims to come forward and report them.

Several social and cultural factors make the situation worse. Many women lack education, are financially dependent, and have limited access to legal help, leaving them stuck in abusive situations. On top of that, the stigma attached to being a victim of sexual violence often discourages women from seeking justice, trapping them in a cycle of silence and suffering.¹⁰⁷⁹

Under British rule, the situation for women began to change slowly. The colonial administration introduced legal reforms like the abolition of Sati (1829) and the Widow Remarriage Act (1856). These reforms were limited and often met with resistance from conservative elements of society. In India women's status remained low with minimal access to education and healthcare.

After India became independent in 1947, the country introduced a new Constitution that promised equality and justice for everyone including women. Laws like the Hindu Marriage Act (1955)¹⁰⁸⁰ and the Dowry Prohibition Act (1961) were created to protect women's rights and stop harmful practices. In India, old beliefs about men being superior to women remained strong especially in villages. These outdated ideas made it hard for women to live freely or

¹⁰⁷³ Government of India, Committee on Amendments to Criminal Law Report (Justice Verma Committee), 2013.

¹⁰⁷⁴ Ministry of Home Affairs, Standard Guidelines for Forensic Evidence Collection in Sexual Assault Cases, 2020.

¹⁰⁷⁵ Bureau of Police Research & Development (BPR&D), Training Manual on Gender Sensitisation and Investigation in Crimes Against Women, 2022.

¹⁰⁷⁶ Niti Aayog, Status of Women in India Report, 2021; also see National Family Health Survey-5 (NFHS-5), 2019-21.

¹⁰⁷⁷ National Crime Records Bureau, Crime in India Report (latest edition).

¹⁰⁷⁸ National Crime Records Bureau, Crime in India Report, Ministry of Home Affairs, Govt. of India (Latest Edition).

¹⁰⁷⁹ National Family Health Survey (NFHS-5), Ministry of Health & Family Welfare, Govt. of India, 2019-21.

¹⁰⁸⁰ The Constitution of India, 1950; Hindu Marriage Act, 1955; Dowry Prohibition Act, 1961.

stand up for themselves¹⁰⁸¹. Many women were still treated like property rather than as individuals with their own rights.

Legal and Institutional Framework Governing Evidence Collection in Sexual Offence Cases

A thorough review of the legal framework towards governing offences against women demonstrated that Indian law is sufficiently comprehensive to accommodate scientific advancements. Provisions under the Indian Penal Code (now Bharatiya Nyaya Sanhita, 2023), the Code of Criminal Procedure (now Bharatiya Nagrik Suraksha Sanhita, 2023), and the Indian Evidence Act (now Bharatiya Sakshya Adhinyam, 2023), collectively established the legal bases for adverting forensic evidence. Moreover, special legislations such as the Domestic Violence Act and the Protection of Children from Sexual Offences Act incorporate procedural mandates that ensure the proper handling of sensitive evidence. However, the study revealed that implementation gaps persist. Inconsistency in following statutory procedures, delays in forensic¹⁰⁸² reporting, and lack of uniform guidelines across states undermine the spirit of these legal provisions. Legislative intent must be reinforced by administrative will and professional training in order to convert legal norms into effective practice.

Under Sections 53, 164A, and 173(2) of the CrPC, medical and forensic examinations in cases of sexual offences are mandatory, and their reports must form an integral part of the police investigation. However, data indicates frequent non-adherence to procedural timelines and documentation standards, leading to weakened evidentiary value. Delays in collecting biological samples, lack of proper sealing, and incomplete medico-legal forms often violate the chain-of-custody requirements outlined in the Evidence Act—particularly Sections 45 and 65B, which

govern expert testimony and electronic evidence.

At the policy level, the Sexual Assault Evidence Collection (SAEC) Guidelines, Nirbhaya Fund projects, and BPR&D's Model SOPs for Crime Scene Management provide a robust framework for uniform evidence handling. Yet, their on-ground implementation in India remains fragmented. The gap between normative frameworks and field practices highlights the need for monitoring mechanisms, mandatory refresher training on legal compliance, and integration of forensic modules in police academies and judicial education programs¹⁰⁸³

The Indian Penal Code / Bharatiya Nyaya Sanhita lays down the substantive offences, including Section 375/63 BNS defining rape, and Section 376/64–66 BNS prescribing punishment. Protection of identity of victims (Section 228A IPC / Section 72 BNS) and provisions on stalking, voyeurism, and sexual harassment emphasize confidentiality and sensitive handling of victims.

The BNSS (formerly CrPC) mandates victim-centric procedures such as recording woman's statements by a woman police officer (Section 173 BNSS), videography of statements under Section 183 BNSS, mandatory medical treatment without delay (Section 400 BNSS), and prompt magistrate-recording of statements.

Judicial precedents reinforce these statutory duties. Courts have emphasized that forensic evidence provides objective validation and procedural lapses can infringe upon the rights of victims and accused. In *Mukesh v. State* (NCT of Delhi), the Supreme Court affirmed the critical role of DNA evidence and chain-of-custody compliance in sexual offence cases. Courts have consistently stressed adherence to chain-of-custody principles and timely collection and sealing of biological samples, recognizing that procedural lapse can weaken

¹⁰⁸¹ Lata Mani, *Contentious Traditions: The Debate on Sati in Colonial India*, University of California Press, 1987.

¹⁰⁸² Bureau of Police Research & Development (BPR&D), *Handbook on Women Safety & Investigation Standards*, 2022.

¹⁰⁸³ Ministry of Home Affairs, *SAEC Kit Guidelines*, 2019; Bureau of Police Research & Development, *Model SOPs for Crime Scene Management*, 2022; Ministry of Finance, *Nirbhaya Fund Framework*, 2013.

prosecution and amount to miscarriage of justice¹⁰⁸⁴.

Thus, while India's legal and institutional framework is comprehensive, its efficacy depends on consistent enforcement, forensic capacity-building, training of police and medical officers, and institutional coordination. The existence of laws alone is insufficient unless accompanied by procedural compliance and professional competence.

Role of Forensic Science and Inter-Agency Coordination

Forensic science plays a critical role in the collection, examination, and interpretation of scientific evidence in sexual offence cases. It serves as a bridge between law and science by providing objective and scientific basis to establish facts before the court of law. In cases involving sexual violence, forensic procedures including DNA profiling, serological analysis, trace-evidence examination and digital forensics help validate survivor statements and connect accused individuals to the crime scene.

In India, forensic infrastructure has improved over the years with the establishment of state forensic laboratories, mobile crime scene units and specialised DNA facilities. However, accessibility remains limited, especially in rural and semi-urban regions. Many district-level police units lack the forensic expertise required for immediate evidence preservation. Delays in sample collection, improper packaging and lack of scientific transportation methods often result in degradation of biological evidence, affecting DNA results and weakening the prosecution's case.

The effectiveness of forensic science depends on proper coordination among police, medical professionals and forensic scientists. Police are responsible for securing the crime scene, collecting preliminary evidence and ensuring chain of custody procedures are adhered to.

Medical officers conduct medico-legal examinations, collect biological samples, document injuries and prepare MLC reports. Forensic laboratories analyse samples and submit expert reports within statutory timelines.

Gaps arise when coordination between these agencies is weak. Absence of standardised protocols, delays in communication, incomplete documentation and lack of awareness about forensic procedures among first responders weaken evidence integrity. Inadequate inter-departmental communication leads to missing samples, mismatched reports and poor case-file compilation, thereby lowering conviction rates.

Efficient inter-agency coordination is essential for timely and effective investigation. Hospitals, police stations, forensic laboratories, prosecutors and district legal authorities must collaborate through structured protocols and digital information systems. The failure of any one stakeholder can affect the entire chain of investigation and result in miscarriage of justice. Strengthening forensic procedures therefore requires capacity-building, inter-departmental training, and continuous monitoring of investigation practices.

The establishment of Special Forensic Kits for sexual offences and Sexual Assault Response Teams under national directives has been important in standardising medical and forensic documentation. However, implementation remains inconsistent. Police often face shortage of kits, inadequate supply chain management and limited availability of female medical officers, especially in rural districts. Medical officers report lack of training, burden of routine patients and lack of coordination from investigating officers. Forensic labs often function under staff shortage and increased caseload, resulting in delayed reports.

Judicial directives have also emphasised the importance of forensic science in sexual offence cases. Courts have held that DNA reports carry high evidentiary value and chain-of-custody

¹⁰⁸⁴ State of Punjab v. Gurmit Singh, (1996) 2 SCC 384; State of Karnataka v. Shivanna, (2014) 8 SCC 913.

lapses weaken prosecution. To ensure fairness and reliability, judges have stressed the need for scientific standards and technological upgrades in forensic investigation.¹⁰⁸⁵

Training programs, funding mechanisms and integrated crime-tracking systems supported by the Ministry of Home Affairs and BPR&D have encouraged adoption of forensic-led investigations. However, structural gaps continue to restrict seamless cooperation. Enhancing real-time coordination, automating forensic workflows, and improving cyber-forensic capabilities are essential steps toward modernising investigation practices¹⁰⁸⁶.

Strengthening forensic capacity requires investment in advanced laboratory infrastructure, appointment of qualified experts, regular training programs for police and medical officers, and adoption of internationally accepted protocols. Inter-agency coordination must be institutionalised through Standard Operating Procedures, digital evidence-tracking systems, and collaborative review mechanisms between police, hospitals and forensic laboratories.

Thus, the role of forensic science in sexual offence cases is indispensable, but its potential can only be realised when supported by strong institutional coordination, adequate resources and continuous monitoring. The integration of forensic science with policing and judicial processes is crucial for dependable justice delivery and protection of women's right

Reform Measures and Recommendations for Strengthening Justice Delivery

The study brought to light several systemic and procedural gaps, and therefore, pragmatic reform measures are necessary to strengthen justice delivery in India. The foremost recommendation is capacity building of law enforcement agencies through regular training programs on forensic evidence collection,

gender sensitive investigation, and survivor-centric procedures. Specialised courses and refresher training must be made compulsory for police personnel, medical professionals, and forensic experts handling sexual offence cases. The establishment of specialised forensic units and sexual assault response teams at district level would aid in quicker and scientific investigation of crimes against women.

It is essential to ensure availability of Sexual Assault Evidence Collection Kits in all police stations and hospitals. Further, there should be strict monitoring mechanisms to review the usage and timely replenishment of these kits. Strengthening forensic laboratories with modern equipment, DNA facilities and adequate staffing is essential to expedite processing of biological samples. Introducing mandatory timelines for forensic reports and fixing accountability for delays would improve efficiency in forensic response¹⁰⁸⁷.

The digitalisation of investigation processes including case-tracking systems, electronic chain-of-custody documentation and automated forensic workflow systems should be encouraged. Inter-agency coordination between police, hospitals, forensic labs, prosecution and judiciary must be institutionalised through standard operating procedures and regular coordination meetings¹⁰⁸⁸. The adoption of technology-based solutions such as integrated crime and evidence management systems will greatly enhance transparency and accountability.

Sensitisation programs should be conducted for police, prosecutors and judicial officers to instil a deeper understanding of trauma-informed approaches and the special needs of survivors. Victim protection measures including safe-houses, counselling facilities and 24x7 helplines must be strengthened. Legal aid services should be improved to ensure that survivors have

¹⁰⁸⁵ Mukesh v. State (NCT of Delhi), (2017) 6 SCC 1 (Nirbhaya Case); Supreme Court of India — DNA evidence emphasis.

¹⁰⁸⁶ Bureau of Police Research & Development (BPR&D), Crime Scene Management & Forensic Investigation Manual, 2022

¹⁰⁸⁷ Ministry of Home Affairs, Sexual Assault Evidence Collection Kit Guidelines, Government of India, 2019.

¹⁰⁸⁸ Bureau of Police Research & Development (BPR&D), Standard Operating Procedures for Crime Scene Management and Digital Forensics, 2022.

continuous access to legal assistance from the reporting stage till the conclusion of trial.¹⁰⁸⁹

Periodic audits of police stations, hospitals and forensic labs should be conducted to assess compliance with statutory procedures. Accountability systems must be strengthened to ensure disciplinary action in cases of negligence, evidence tampering and violation of survivor dignity. Policies should prioritise female representation within the police force, forensic services and medical teams to enhance responsiveness and comfort of survivors during investigation and examination processes.¹⁰⁹⁰

Infrastructure improvements such as dedicated women-help-desks, fast-track courts for sexual offences and witness-protection schemes must be implemented effectively.¹⁰⁹¹ Public awareness campaigns should be undertaken to reduce stigma, encourage reporting of sexual offences and educate communities about legal rights of women. Collaboration with civil society, NGOs, academic institutions and community organisations can play a meaningful role in bridging awareness gaps and creating safe environments for women to report crimes.

Thus, reforms should focus on capacity building, forensic strengthening, accountability mechanisms, survivor support frameworks and inter-agency collaboration. A holistic approach integrating legal, administrative and technological reforms is necessary to transform investigation procedures and ensure timely, scientific and sensitive handling of sexual offence cases. Strengthening justice delivery is not only essential for punishment of perpetrators but also vital for restoring the dignity, trust and confidence of women in the criminal justice system.

Conclusion

The analysis clearly reveals that while the legal and procedural framework in India for dealing with sexual offences is robust and progressive, the practical implementation of these laws remains inadequate. The study underscores that forensic science plays a crucial role in substantiating survivor testimonies, identifying perpetrators and ensuring fair trial outcomes. However, lack of trained personnel, infrastructural deficits, delays in evidence processing and weak chain-of-custody mechanisms continue to hinder the effective use of scientific evidence in sexual offence cases.

The investigation further highlights that coordinated efforts among police, medical authorities, forensic experts and judicial institutions are essential to strengthen justice delivery mechanisms. Victim-centric procedures, timely medical examinations, proper evidence collection, sensitive handling of survivors and awareness of legal protocols are indispensable for ensuring justice.

While several reforms have been introduced by the government, including specialised forensic units, faster evidence processing facilities and gender-sensitive policing initiatives, the implementation remains uneven across regions. Continuous training, enhanced infrastructure, stronger accountability systems and inter-departmental coordination must be institutionalised for meaningful improvement.

In conclusion, a multidimensional approach integrating forensic science, legal frameworks, administrative reforms and social sensitisation is critical to strengthening justice for women. Effective enforcement of statutory procedures and adoption of scientific methods are essential to build trust in the justice system and ensure protection of women's rights.

¹⁰⁸⁹ Ministry of Women & Child Development, One Stop Centre Scheme and Emergency Response Support System Report, 2021.

¹⁰⁹⁰ National Legal Services Authority (NALSA), Compendium on Legal Aid for Women, 2022.

¹⁰⁹¹ Justice Verma Committee Report, Recommendations on Amendments to Criminal Law, Government of India, 2013.