

## Research Article

### Investigating Crime against Women - Can Forensic Scientists Bridge the Gap?

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#### Abstract

We in India have learnt to compromise and take blatant denial of justice in our stride. When the social evils become outrageous and impossible realities, a way of life then reacting to such situation obviously takes a stand still. But to choose not to react is unthinkable for forensic personnel, especially when the issue pertains to crime against women. The precursors of these reactions have been the varied number of cases we have examined and our interaction with the police personnel, the judiciary and at times different cross-sections of the society which include young dynamic students pursuing courses in Forensic Science, Law & Medicine. The objective of this manuscript is to bring together a concise set of practical recommendations for improving police behavior towards women and creating awareness among the citizens about the importance of forensic evidence in nailing the culprits responsible for crime against women.

**Keywords:** Crime; Evidence; Forensic science; Sexual assaults; Violence; Women

#### Introduction

Most of us start our day with the morning newspaper. The newspapers puts before us the one feel good news like women empowerment and we feel elated that finally things are changing but simultaneously dozens of tragic events like rape, murder, molestation, racial attacks, verbal assaults pertaining to women throughout the world in general and India in particular makes us ponder that nothing has changed and the miserable state of women still continues. For the orthodox patriarchal society, woman has always remained a demographic compulsion in human geography. Ours is a plural society and we all are governed by two laws- the social law and the state law. Both these laws operate simultaneously with blurring of boundaries. There are numerous examples where

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caste panchayats (group of respectable people in society whose words are taken as law-running parallel law) rule the roost, expel couples and torture family members for trespassing the caste boundaries. The number of women being killed for dowry seem so ordinary now, it keeps mowing young innocent girls throughout India but few guilty are convicted. The question of survival exists not only in the undeveloped countries or the under-privileged society but it is rampant everywhere. The need of a woman is thought to be dispensable and in a situation of scarcity, it is invariably sacrificed. When the social set-up is such inside her own house where she is subjected to shame and prejudices on a daily basis; it is only natural that the chauvinistic mindset of the males translates in the professional domains and outside the four walls as well. A group of young Africans found themselves in the middle of a political and media furore in Delhi accused of being part of a "prostitution and drug racket". The women, mostly from African countries, complained that they were assaulted by "people not in uniform" with "racist remarks" [1]. Shame is a revolutionary sentiment as defined by Karl Marx "Shame is introspective and another name for introverted anger". A nation ashamed is a 'lion crouched to spring'. The shattered faith in authority is an indicator to rising unrest and the society in such cases are bound to react fearlessly to preserve its integrity and dignity [2]. Today the Indian society is willing to address the curse with which her daughters are literally born. In the aftermath of the gruesome and brutal rape of the young girl student, on 16 December 2012 the real Indian society where violence against women is normal seems to have mellowed a bit and its defenses are down, accepting the bitter truth of male domination and female subjugation. Lack of respect for women and demand for respect is considered a noise but now this noise has reached a crescendo and commands to be heard. The society has heard and is introspecting. The daughters of India have given the fourth dimension to the society's struggles. After fighting poverty, untouchability and communalism now women are 'Fighting Rape' to stop sexual terrorism [3].

A careful review of these crimes and very nature of these problems show that they owe their roots to state neglect, corruption and deliberate denial of social justice, inefficiency, abuse of power and office as well as impunity. Crime against women include sexual violence, rape including marital rape, vitriol age, female infanticide, feticide, sexual harassment at workplace and even in prisons, cyber stalking, pornography, physical battery, kidnapping, threats, intimidation, coercion, stalking, humiliating verbal abuse, arson, destruction of property, dowry related violence, threat of exploitation through prostitution, trafficking or violence against household workers. Specially of all these, sexual violence further takes many forms, including rape, sexual slavery or forced pregnancy and incest. Sexual violence also varies by scale and context [4]. Delayed judicial processes, the lack of independent police and investigating agencies, absence of independent and competent prosecutors, the absence of witness protection programs and now an increasing perception of lack of integrity in the judiciary can be identified as some of the major causes. When the democratic content in governance diminishes, the sanction of impunity to law enforcement agencies increases [5]. We have learnt from editorials of eminent leading dailies that the

armed forces and para-military forces in Jammu & Kashmir had been part of extra judicial killings. The north-eastern states have also been like occupied territories. Irom Sharmila has been incarcerated for her nonviolent action in Manipur where, she raised her voice and laid unprecedented protest against rape, murder and brutal assault of Thangjam Manorama by Assam Rifles personnels [6]. Raj Kaur loses both her legs to landmines in Fazilka (Punjab) the Behmai widows suffer in oblivion, women are forced to take up bows and arrows in Lalgarh. All these are faces of crime against women, a preventable tragedy and these crimes on women had nothing to do with hormonal stimulation of males in proximity of females. In any conflict as we know the consequences for women are same whichever side they are on [7]. There have been reports of inconsistencies in the way police handles cases which are pertaining to crime against women and some of them are: refusing to order inquiry, not given access to post-mortem report, not even registering FIR's (First Information Report) trying to impose moral guardianship and unavailability's of forensic reports. Here it is imperative to mention that convention on the elimination of all forms of discrimination against women was adopted by the United Nations General Assembly in 1979. India is a signatory to all major covenants and conventions on the rights of women and children in particular. 'Cruelty by husband and relatives' continues to occupy the highest share (43.6%) among the crimes committed against women in 2012 followed by 'assault on women with intent to outrage her modesty' (18.6%). 15.7% cases were that of kidnapping and abduction, 10.2% of rape, 3.8% of 'insult to the modesty of women' and 3.7% of 'dowry prohibition act' [8]. Millions of women and girls throughout the world remain powerless, voiceless and without rights. The negative consequences thus reverberate across the globe. A world fit for women is a world fit for children they are inseparable and indivisible and thus empowering women fighting for justice and preventing crime against women is a step towards creating a society that any civilization can be proud of [9]. On 22 December 2012 a judicial committee headed by J. S.Verma a former Chief Justice of India was appointed by the Central government to submit a report within 30 days to suggest amendments to criminal law to sternly deal with sexual assault cases. The suggestions have now been incorporated in the Criminal Law (Amendment) Act 2013. This new Act has expressly recognised certain acts as offences which were dealt under related laws. These new offences like acid attack, sexual harassment, voyeurism stalking have been incorporated into the Indian Penal Code [10,11]. We have graduated in our policy from welfare to development and finally to empowerment of women but a police officer in the police station still asks a woman to strip and demonstrate how she was raped and this happens in Delhi the national capital! Inequality is tragic and fatal. A strong positive message to the society has been conveyed when Delhi Police suspended the errant police officer in this case and similarly they showed spine in the African women assault case in Delhi [1,12].

## The Forensic Approach to Investigation of Crime against Women

The main task of the forensic scientist is conducting and supervising analyses and interpreting the results. It is during the course of analysis of the exhibits pertaining to DNA, viscera, blood, arson, narcotics, drugs, documents, firearms, audio-video tapes and trace evidence etc. That a forensic scientist witnesses the various dimensions of the case which includes the sociological and psychological aspects apart from the technicalities and the fundamental scientific grounds [13]. In addition to the initial forensic

investigation, the forensic personnel answer additional case-related questions participate in case conferences and case reconstructions initiated by the police or the prosecutor and give testimony in courts. The role of forensic science in the fight against crime is growing manifold in guiding investigations and in providing evidence in order to combat the changing face of crime [14]. In female victimization cases it is necessary to collect and preserve the biological and non-biological samples very carefully because any negligence in sample collection makes alteration in nature of crime or would lead to destruction of the exhibits which may have been very useful in investigation. Women victims of violence face immense problems during investigations due to general apathy from the police personnel which includes lack of expertise, motivation, interest in collecting evidence and examining witnesses. Misplacing and destroying of evidence of rape or unnatural death results in delays in court proceedings in receiving forensic reports, in charge filing and finally this all results in the perpetrator's acquittal. We summarize here some of the fundamental pointers which makes or breaks a case from the forensic perspective.

### The importance of evidence collection

Poorly managed crime scenes are indicated as a root cause of poor evidence collection and for higher risk of wrongful convictions. Biological evidence refers to samples of biological material - hair, tissue, nails, bones, teeth, blood, semen, saliva or other bodily fluids. Biological evidence preservation is to ensure the integrity, prevent the loss and reduce the premature destruction of biological evidence after collection through post-conviction proceedings. In a sexual assault case however the victim's body is the most important source of physical evidence. The survivor is in every sense "a walking and talking crime scene". DNA evidence which is known as the "fingerprint of the 21<sup>st</sup> century" has the unequalled ability to identify rapists and exonerate innocent suspects. But the use of DNA evidence has not kept pace with its potential. DNA evidence from numerous rape and murder cases are collected by police but sent to labs for analysis after considerable time has elapsed. As this clinching piece of evidence remains backlog it creates the biggest impediments to getting rapists off the streets [15]. Digital evidence includes information on computers, audio files, video recordings and digital images. This evidence is essential in computer and Internet crimes and is also valuable for facial recognition, crime scene photos and surveillance tapes. Many software and hardware packages available offer forensic capabilities but it should be ensured that they can support the court testimony of digital evidence [16]. Striving to strengthen sexual assault investigations and set national uniform standards for sexual assault case coding and documentation the International Association of Chiefs of Police (IACP) has released IACP Sexual Assault Guidelines for the Police Response to Violence against Women Project [17].

### Laboratory at the Door of Crime Scene

Mobile crime scene units are the demand of the day keeping in view the spate of crime the logistics involved with the scene of crime and the importance of the collection of evidence. Such units make processes more efficient, services faster as devices involved are more compact and portable.

### Tracing the traces

The advanced technical instruments like, ICP-MS, GC-MS-MS, IRMS help to improve the detection screening and analysis of even small traces of components thus bringing to light information that can

make the crucial difference in an investigation or prosecution. The impetus is given to the fact that for trace evidence analysis, the sensitivity of the tool upto nano level is appreciated so that even a miniscule amount or piece of evidence does not go undetected. The use of new communication, satellite and geolocation technology can crack up even the mysterious cases where evidence seems to be lost. In recent years many crimes have been exposed in videos and images taken by soldiers and officers themselves [18].

### Speed and accuracy

In criminal investigations it is pertinent to generate information or the results of analyses rapidly and accurately in order to take the investigation further. The latest technologies, new tools and techniques are now available and this is a blessing for the Forensic Science Laboratories to make scientific investigations more effective and time-efficient. This development is noticeable in all forensic disciplines - from forensic microbiology, DNA to digital forensics, forensic chemistry and forensic medicine. Forensic fraternity at the international level can work in tandem. A team approach leads to cracking up the most stubborn cases as it happened in the Bhanwari Devi nurse case, where only some pieces of charred bones were found from the Indira Gandhi canal (Jadol village) and the FBI laboratories (USA) confirmed that the bones were indeed of the missing government nurse establishing that the tribal women is dead [19].

### Innovations justified

Scientific and technical progress follows an exponential not a linear curve. The policy of investing in innovation by studying closely the needs of a particular challenging aspect of analysis is desired by an institution which believes in the competency of its human resource. Where appropriate, entering into partnerships with organisations working in the similar domain / Centre of excellence the forensic community strives to continue to direct research in those core areas where it will have the greatest impact and enable to best serve our society's needs by assisting the Judiciary. Here it is pertinent to mention the applaudable approach taken by the Tamil Nadu Police as they are believed to be the first force in the country to use an unmanned aerial vehicle in the murder investigation of 23 years old female software engineer Uma Maheshwari. A drone was used as the scene of crime was a largely inaccessible area and the footage is further reported to be used for searching the evidences left behind by the killers. The 3-D image of the location was used to reconstruct the crime scene [20].

### Suggestions

Forensic Science is a fascinating confluence of inter-disciplinary streams and it provides an intelligent panorama of technical expertise. The interplay of science, technology, law, aesthetics and human behavior can truly strengthen the training modules for the police forces and give rise to a dynamic women friendly culture. As part of its mission to strengthen the rule of law the Forensic Science Laboratories play a lead role by embracing advanced forensic instrumental techniques to render more efficient and effective services. In our interaction with the trainees we have observed that they take keen interest during the discussion on the issues related to evidence collection, preservation and aspects in crime scene management specially when the issues were up for deliberations in reference to crime against women. They appreciate the information shared by us and accepted the limitations of forensic science in an event

of improperly preserved specimens and shoddy investigations. We present here some indicators and suggestions in the caution to be taken in context of evidence collection and preservation gathered from our experience after handling hundreds of such sticky events.

### Evidence collection issues

When an investigating officer suspects that a sexual assault may have been facilitated with date rape drugs, sedatives or alcohol he should immediately determine the time frame of the incident. At a maximum a forensic examination should be conducted with a victim when the sexual assault occurred within 72-96 hours of the report otherwise the most significant exhibits the body fluids in these cases would give negative tests as these drugs have very short window period [21]. In all sexual assault cases the investigating officer must evaluate the need for a search warrant to identify and collect evidence from the suspect. The survivor's interview must be conducted patiently.

**In hanging cases:** Look for any type of material evidence underneath the nails (body tissues, flesh which may have been deposited as result of scuffle of the deceased with the culprit) fallen hair, any foreign material or piece of trace evidence.

**In burning cases:** Okasana Makar, 18-year old Ukrainian woman was brutally raped, strangled and set to fire. She later succumbed to death with 55% burns as reported [22]. In burning cases a search for any type of cooking stove, burner, cigarette lighter, match box, burnt or unburnt matchsticks, lantern, container containing any inflammable liquid (odour can give an indication even if the container is dried) exhibits should be packed in glass containers to avoid loss of the volatile components in the residue.

**In cases of vitriolage:** A number of cases of vitriolage and the presence of acid and corrosive substances have been detected by instrumental techniques conclusively including the Begumpur acid attack case in the capital [23]. Control sample should be collected from the scene of crime and packed in glass containers, any type of lying container even if it is dry should be collected from the scene of crime.

**In suspicious death/poisoning cases:** Any kind of medicine, pesticide, tablets, loose powder, empty wrappers/bottles, sharp edged objects, ropes, fire arms, fiber shreds, any inflammable material etc. should not be overlooked. In a dowry death case due to intake of phenyl by a young female the detection of phenolic constituent in the viscera and the bottle seized corroborated the death due to phenyl poisoning. Gastric lavage should be collected and packed properly. Similarly in fall from height cases blood and urine collection for alcohol and drugs detection and estimation is suggested to rule out any intoxication.

**In sexual assault cases including child abuse:** Biological evidences of the survivor as well as the alleged assaulter strictly as per the national/international guidelines for forensic examination should be collected and preserved properly and not be left to rot at the malkhanas (police store rooms). Also look for non-biological evidences which create suspicion. Clothing and personnel belongings should also be included in the seizure memos. In Hetal Parekh rape case one cream coloured button of the shirt of the assaulter found, was one of the most clinching evidence apart from other biological specimens [24]. Physical evidences lying in and around the scene of crime any containers containing cream/jelly etc., should not be overlooked.

**Documents:** Incidences of murder of single ladies and senior citizens with a motive to grab their property has been found to be widespread. Suicide notes, forged signatures will etc., are vital exhibits and therefore should be searched for exhaustively and preserved properly in waterproof covers. In the Rehtah Parson's case cyber bullying lead to suicide of the 17-year old Canadian girl which was the result of shaming and harassment stemming from her rape pictures going viral [25]. Portable devices, CD, DVD, laptops, desktops, mobile phones, digital/video cameras, recorders, answering machines, credit cards and any other electronic gadget which creates suspicion should be seized and data recovered at the earliest, specially in case of the mobile phones before the battery dies. Complete photography and videography of scene of crime is mandatory which will be helpful in crime reconstruction.

### **Evidence preservation and recovery**

The investigating officer must evaluate the evidence that has been impounded in the case and determine which items might have probative value. At that point, the investigating officer must submit a service request to the appropriate crime laboratory and forensic discipline (e.g., DNA/Biology, Latent Finger Print Examiner, Trace and Toxicology). Exhibits should be collected properly and submitted to FSL at the earliest because with passage of time exhibits which are volatile will not respond to test. Some exhibits may deteriorate with time and thus have no forensic importance. Corrosive acids when packed in plastic or pouches is useless and further contaminates other exhibits if packed together. Each exhibit should be packed separately, ensured that they are tightly packed to avoid spillage and cross contamination otherwise the vital constituents may be lost at the time the forensic scientist undertake them for analysis or examination thus the sanctity of the examination and the exhibits both get diluted.

### **Gender sensitization and training**

Police officers conduct their law and order duties as well as investigate cases and this result in insufficient time for investigations. Recruiting new staff and making special provisions for recruitment of female police staff is no doubt a proactive step but this will not change the general apathy towards gender based crimes. In some instances the investigating officers are ill-equipped or biased which results in no justice. It is intriguing to witness the situation as it prevails in the police forces where we find that there is a peculiar admixture of emergency duties, piling cases and inadequate resources both in terms of staff and infrastructure. Integral part of the training should be grooming in communication skills. The Karnataka State Police in partnership with UNICEF initiated a structured three day training programme, "The Gender Sensitisation and People Friendly Police Project (GSPP)" with the objective of making the police more gender and child sensitive. Trained police personnel displayed a more positive outlook towards handling cases of violence against women and children [26]. Hence mandatory gender-sensitisation training for all police personnel at all levels across the country including the army and the para-military forces. Structured training should be designed as per UNODC guidelines [27].

### **Community based initiative**

Communities can consider forming police-community partnerships of their own to address domestic violence and issues related to dowry deaths more effectively. It is for the police leadership to

demonstrate commitment to addressing domestic violence by setting appropriate staff levels and developing mechanisms to enforce policy.

### **Zero FIR**

On January 18, 2013, the Delhi police chief Neeraj Kumar announced that Zero First Information Reports (FIRs) may be registered on the basis of a woman's statement at any police station irrespective of jurisdiction on basis of woman's complaint verbatim.

### **CCTNS project**

The introduction of e-FIRs will send a message to all criminals that rape will not go unpunished. The online filing of FIRs will be made possible only upon the implementation of the Crime and Criminal Tracking Network and Systems (CCTNS) a platform for sharing real time information by law-enforcement agencies which is an ambitious 1,00,000 million \$ project of the Home Ministry which was supposed to be completed by March 2015 [28].

### **Media trial of cases**

The reporting in relation to forensic contexts involves rights of the victims, assailants as well as their family members. The media reports some very good news about the criminal justice system effectively responding to the cases pertaining to violence against women and at times they are brutally critical about lackadaisical approach of the entire government machinery in some very sensitive cases involving sexual assaults against women. The media trial of these gender sensitive cases is not appreciated as there have been a number of instances where the identity of the deceased/survivor has been disclosed and this adds to the trauma of the person and the family. Moreover in a race to become a part of the 'Breaking News Syndrome' sometimes our media personnel forget that for them it may be a very rational approach of sharing the news with the world but for a survivor or an investigator who is involved with the case it becomes a double whammy and as forensic personnel we believe that some information can always be distilled from case details.

### **Human rights are not for beasts**

The Juvenile offenders who are the party to the most brutal assaults like those of Junko Furuta and Nirbhaya gang rape case which fall under the 'rarest of the rare case' screamed to be dealt with a more practical and logical approach in reference to their mental maturity as to commit such heinous acts than to be lenient to them on account of their biological age [29].

### **Conclusion**

The latest development in the investigating techniques in Forensic science is set to herald a quantum leap and truly the technologies that only yesterday were in the realm of science fiction scintillating in our minds as imagination today smiles at us in reality. State of the art technology coupled with the thirst for profound analysis of the cases by law enforcement agencies can open a whole new chapter in the investigation techniques and add immense credibility to it. We have referred to the existing literature for this research paper and then used the minute details available in the number of cases examined with a clear focus on the issue from a gender perspective in this manuscript. The intent is not to provide an exhaustive list of suggestions but the intention is to present a selection of indicators and components for reform-both in context to justice and dealing with dignity in cases related to crime against women. Our intention further resonates in



sync with the importance of forensic science and forensic evidence not only as a weapon to fight crime against women but also as a deterrent to such crimes.

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