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FORENSIC TOXICOLOGY AND THE INDIAN CRIMINAL JUSTICE SYSTEM: EXAMINING THE NEXUS

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ABSTRACT

Toxicology is the study of drugs, chemicals and substances of like nature. It can also be called as the scientific study of Poisons. Forensic toxicology utilises the term toxicology in subjects like Pharmacology, etc. The subject assumes more significance in cases of medico-legal cases and the other related matters and how the Indian Criminal Justice System treats them. The meeting point of Forensic toxicology and the Criminal Justice System is one that provides more scope for research and analysis. With the advancements of technology and other surrounding factors, forensic toxicology is a subject that remains open for a more deep research in the future. This paper shall analyse the nexus or the relation between Forensic toxicology and the Indian Criminal Justice System from multiple perspectives. The system's responsive nature shall be a part of this paper while certain significant case studies shall also be mentioned which have emphasised the importance of forensic toxicology.

KEYWORDS: *Forensic Toxicology, Indian Criminal Justice System, Crimes, Investigation*

INTRODUCTION

The study toxicology enables a person to make a study of aspects that deal with pharmacology, chemistry, and medicine, etc. It revolves around the research and analysis of chemicals and their pragmatic effects on living beings. The subject experts in this specific branch identify the effects of chemicals, etc. and handle medical issues brought on by a variety of toxicants.

As the subject kept evolving throughout the years, the subject experts of toxicology became curious to investigate the characteristics of diverse types of poisons and offer different types of strategies with evidence for safety purposes. By examining both the advantages and disadvantages of certain substances utilized by people, the experts' research kept developing by analysing the multiple dimensions of the subject.

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FORENSIC TOXICOLOGY AND CRIME INVESTIGATION

Toxicology experts with their subject expertise identify the effects of chemicals through scientific analysis and investigations beforehand. So as to reduce the health risks and or any other adverse impact that these chemicals could have on human health, they put the information in the public domain for the benefit of the public. Not only for the public, but the public information is also for the Government and public authorities to take suitable action to ensure the safety of the citizens.

Experts take into consideration variety of factors and circumstances to ensure, that the results of research and analysis or any other medical test for that matter, are given in a time bound manner. For this purpose, the subject experts in this discipline make use of the advanced technologies, Computers, and chemicals in toxicology labs.

So as to detect chemicals and determine as to how the Chemicals damage the health system of a human being and to study the precise adverse effects, the subject follow a specific methodologies². Such experts can seclude specific Chemicals or compounds during a Criminal investigation and analyse how they might be connected to the particular case.

The advancements made so far in this area of study have assisted Investigating authorities, Judges by enabling them to investigate the related offences efficiently and pass Judgments based on the proper medical evidence presented.

Toxicology is a robust procedure that could turn out to be efficient in achieving Forensic investigation objectives because of its capability to identify the scientific aspects. The area in the current advanced scenario has demonstrated proven results of its capability of assisting in the delivery of justice to many persons since there are several chemicals that, are hazardous in nature and possess the power to influence human actions, goals and nature that could turn out fatal for them.

In Post mortem cases, when police officers investigate the case to ascertain the cause of death, toxicology plays a pivotal role. In such cases, the investigators could be eager to examine and

² T. Millo, A K Jiaswal, Kulbushan Prasad, The Indian Laws Relating to Drugs and Poisons, Volume 3, Journal of Forensic Chemistry and Technology, Pg. 17, (2017).

determine whether a particular dose of medicine could be connected to the targeted fatality³. Players in the criminal court system would be able to accomplish their objectives using this strategy.

Similarly, toxicology subject became an enabling method, which scientists use to track and investigate the characteristics of specific Chemicals that are thought to be dangerous. Experts can determine how the persons of different ages, take in the particular substances, including illegal drugs and chemicals and this conclusion or ideas are results of the study of toxicology.

Commission of Suicides for multifarious reasons are still frequent in various parts of the world. During the course of investigation, the experts in actual identify the particular drugs and chemicals that are used in the commission of suicide⁴. After a period of time, when the subject developed into multiple dimensions, it became easier for the investigating authorities to seek the help of these toxicology experts to in order to find out, which specific drug or chemical or poison was used by the deceased.

The study of forensic toxicology can assist governments in creating stronger efficient regulations for the ownership and usage substances that are categorised as poisons.

Toxicology assists the parties to a Criminal case in enabling them to get knowledge involving dosages of dangerous poisons or chemicals by explaining the particular chemical or poison, its nature, effect, etc. Further, it also suggests the most efficient treatments for the sufferer.

The Toxicology has been helpful in determining the environmental discharges and contaminations that may have detrimental or adverse effects on wildlife, aquatic life, etc. In the investigation of cases relating to traffic, foreign immigration, drug trade, both at the national and international level, the study or the field of forensic toxicology has helped individuals to be more prepared while presenting their case before the Courts in Criminal Cases. These developments in the field of forensic toxicology demonstrate that it will assume more

³ Shreenya Sharma, Forensic Toxicology and Indian Laws, LEGALDESIRE, (December 2 2022, 5.05 PM) <https://legaldesire.com/forensic-toxicology-and-indian-laws/>

⁴ Anusree, Forensic Psychological test and Human Rights of the Accused, SCHOOL OF LEGAL STUDIES COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY, (December 2, 2022, 4.45 PM) <https://dyuthi.cusat.ac.in/xmlui/handle/purl/5323>

importance in the coming days with respect to forensic investigations.⁵

FORENSIC TOXICOLOGY AND MEDICINE IN INDIA

The Forensic Medicine and Toxicology Department handles all the post-mortem and Medico-legal examinations. All the requests that are made for post-mortem examinations should be made to the Chief Medical Officer⁶. The cases that are taken into, consideration for analysis are mentioned herein below. Cases from the designated area, Cases of Post-mortem, Cases sent to the Institutes by the CBI or any other investigating agency and any other case as prescribed.

TOXICOLOGY AND ITS IMPACT ON HUMANS

The nexus between Toxicology and Humans, gets established when it deals with the effects of alcohol and drugs on human behaviour, and the medico-legal outcomes of drug and alcohol consumption by Humans. This can include cases and investigations of rash driving due inebriated state of the human, vehicular assault and homicide, drug facilitated and other related Crimes.⁷

Forensic toxicologists analyse the drugs contained in the biological samples. This involves the analysis of how the specific drug was administered, what was the administered quantity, how the specific drug has been impacting both physical and mental health of the concerned person.

PREVENTION OF DOPING IN SPORTS

Preventing the usage of doping in sports to uphold an even and fair competition is a significant area within the realm of Forensic toxicology. A Simple understanding of this could mean that, it could so happen that, certain players of in competitions like Olympics, etc. could consume certain drugs that could make them respond to the situation in a way that is beyond normal proportion. A legal angle to this is to understand the unfair means which is also punishable under the relevant laws.

When investigating the possible presence of illegal drugs in a human body, forensic

⁵ Abhitha. K, Significance of Forensic Toxicology in The Indian Criminal System, International Journal of Law Management & Humanities, Vol. 6, Issue No.3, 2023

⁶ Anusree, Forensic Psychological test and Human Rights of the Accused, SCHOOL OF LEGAL STUDIES COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY, (December 2, 2022, 4.45 PM) <https://dyuthi.cusat.ac.in/xmlui/handle/purl/5323>

⁷ Drummer OH, Gerostamoulos J., Postmortem drug analysis: Analytical and Toxicological aspects, 24(2) Therapeutic Drug Monitoring, 199-209 (2002)

toxicologists use the analytical methods employed by other experts so as to arrive at a precise conclusion.

LEGAL FRAMEWORK GOVERNING FORENSIC AND TOXICOLOGY

The legislature, in its wisdom has inserted legal provisions, in order to curb the abuse of poison and ensure the admissibility of the results of medical examinations into the legislations owing to the growing concern over the rising nature of poisoning worldwide.⁸

Under the Bharatiya Nyaya Sanhita, 2023, a couple of provisions deal with certain offences wherein poisons are majorly used. Section 272⁹, Section 273¹⁰, Section 275¹¹, Section 277¹² and Section 278¹³ of the Bharatiya Nyaya Sanhita, 2023 assume significance here.

OPINION OF EXPERTS

The Bharatiya Sakshya Adhinyam, 2023, allows evidence or testimony of opinions of people who possess special knowledge, upon a point of foreign law, science, art, or as to identity of handwriting or finger impressions, etc. The opinions of the subject experts of Forensic toxicology also fall under the category of the expert opinions within the meaning contained under the Bharatiya Sakshya Adhinyam, 2023.

Hence, the opinion given by the experts of forensic toxicology also will fall within the ambit of Expert opinion under the Bharatiya Sakshya Adhinyam, 2023. However, the Hon'ble Supreme Court in certain cases has stated that medical jurisprudence is not a precise study in a case hence, expert opinion is only useful as a corroborative evidence and not a substantive piece of evidence.¹⁴

⁸ Manish Yadav, Anindhya Tiwari, Forensic Toxicology and Its Relevance with Criminal Justice delivery system in India, Volume 4 Issue 4, Forensic Research & Criminology International Journal, pg.122, pg. (2017) <https://medcraveonline.com/FRCIJ/forensic-toxicology-and-its-relevance-with-criminal-justice-delivery-system-in-india.html>

⁹ The Bharatiya Nyaya Sanhita, 2023 (Act 45 of 2023), Section 272

¹⁰ Ibid, Section 273

¹¹ Ibid, Section 275

¹² Ibid, Section 277

¹³ Ibid, Section 278

¹⁴ O. P Murthy, General aspects of Forensic Medicine and Toxicology in Indian Set-up: Working arrangement and Problems of Medico-legal work, Volume 27, Journal of Forensic Medicine and Toxicology, pg.1, pg. 4 (2010) https://www.researchgate.net/publication/282123208_General_aspects_of_forensic_medicine_and_toxicology_in_Indian_set-up_Working_arrangement_and_problems_of_medico-legal_work_-_OPMurty/link/5603c1dd08ae08d4f1717df1/download

DRUG USAGE AT WORKPLACE

The workers or employees, using drugs is a serious threat not only to the institution where they are employed but also to the individuals. Hence, several laws making it unlawful for workers have been brought into existence. Drug testing at workplace has become more common in order to curb this practice.

Previously from a limited a scope, this drug testing at workplace process has now extended to multiple professions. Certain institutions seldom conduct this drug testing with their employees just to comply with a mandate, but its high time the seriousness of the process should be understood else, the same could lead to different kinds of complications which could turn out to be fatal to both employer and employee.

SIGNIFICANT CASE STUDIES

In both criminal investigations and legal trials, Forensic is an essential subject. Toxicology is used at many places to gather sufficient evidence that could be help in disproving convictions.¹⁵

A first case where toxicology as a subject came up to light is where a 4-year-old boy who passed away strangely. The mother of the child testified that, forthwith after receiving prescription for lunesta, the boy passed away. The subject experts started the toxicology test, research and analysis. The outcome of a thorough analysis, revealed the presence of various substances including hazardous substances.

The investigating authorities were unable to bring home any charges against the boy's parents as a result of the research and analysis. The investigation also showed that the child had not suffered any kind of internal trauma or harm. This case is an example as to how toxicology is a discipline that can assist lawyers and judges in reaching a just conclusion.

The Janie Lou Gibbs case was the second unresolved case that that stood resolved with the help of toxicology. A woman was alleged to have murdered her husband and her grandchildren. It was alleged that Gibbs gave a soup laced with arsenic. Gibbs used chemicals in all of these killings. One of the sons Gibbs was subjected to toxicology test. Forensic toxicologists

¹⁵ Balvant S Khajja, Mukesh Sharma, Rajveer Singh and Girish K Mathur, Forensic Study of Indian Toxicology Plants as Botanical Weapon A Review, Volume 1 Issue 4, Journal of Environmental and Analytical Toxicology, pg.1, pg.2 (2011)

discovered that every person in the family had died from poison-related homicide. The analysis ensured the conviction of Gibbs.¹⁶

In the Tandoor case murder, Delhi, The culprits attempted to hide a shooting homicide by setting the dead body on fire in the first criminal case in India to be solved with the use of forensics. After a thorough forensic investigation, it was found out that, the victim was shot by the victim's spouse, Sushil Sharma, and then placed in a tandoor in the incident at hand. Based on forensic evidence effectively, the Accused Sushil Sharma was found and guilty and punished.¹⁷

In another significant Judicial Decision, the Court propounded certain important essential aspects that the prosecution is required to prove, in cases of poisoning. First, it has to be proved with stable evidence that, the death occurred due to poisoning, the accused had access to the poison, which was used in the commission of the offence or the Crime, and the accused gave the poison to the deceased. If these are established or proved without an iota of doubt, it can be concluded that, the death occurred due to poisoning and the same was due to the accused's involvement.¹⁸

CONCLUSION

A Reasonable conclusion regarding toxicology would be to understand that the subject of toxicology or forensic toxicology is a beneficial science that will continue to influence forensic investigations. The subject experts in the field have made it simpler proper, precise and straight conclusions that make the conclusions understandable for legal professionals and judges to reach the most apt conclusions.

The concerned authorities should promote the subject of forensic toxicology so as to create a sufficient awareness in the public forum to ensure that no one remains ignorant about the subject. Another major importance is the utilisation of the subject in the Crime investigations and Criminal trials in appropriate cases. Sufficient training to the persons concerned in the Criminal Justice system can efficiently promote the subject of forensic toxicology.

¹⁶ Gibbs vs State 235 Ga. 480 (1975)

¹⁷ State vs Sushil Sharma 2007 CriLJ 4008

¹⁸ Anant Chintaman Lagu vs State of Bombay, 1960 SCR (2) 460