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ON

**FORENSIC EVIDENCE ON HOMICIDE INVESTIGATIONS: A
COMPREHENSIVE ANALYSIS OF ITS CRUCIAL ROLE AND
IMPACT IN CASE RESULATION**

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Declaration

I, Rahanuma Nubain Urmi, bearing student ID 2020-1-66-014, declare that, this dissertation titled “Forensic Evidence on Homicide Investigation: A Comprehensive Analysis of its Crucial Role and Impact in Case Resolution” was entirely prepared by me under the supervision of Dr. Nabaat Tasnima Mahbub, Chairperson and Assistant Professor of East West University. This is my original work and all the contents and materials used in this paper are acknowledged duly and cited properly. This paper has not been published in any journal, newspaper, or article.

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Abstract

Homicide, a serious social concern, demands rigorous investigation to ensure justice and prevent future occurrences. With the advancement of globalization, the standard of forensic evidence is increasing day by day all over the world. Through the analysis of forensic methods and their application in homicide investigations, this study aims to highlight the key role of forensic evidence in solving cases. Forensic evidence is essential for law enforcement agencies in criminal investigations to establish links between crimes and criminals. Forensic experts and investigators use forensic methods and technologies such as fingerprints, DNA analysis, and ballistics and trace evidence, etc. Such evidence contributes to the establishment of presumptions and this effect on the identification of the perpetrators. But this requires a proper system that brings together police, lawyers and forensic experts to apply forensic evidence to help deliver justice. Moreover, there are procedural gaps and legal loopholes in the existing law of Bangladesh, no precise guidelines on the use of forensic evidence and how a judge should determine the reliability of such evidence. Many cases are pending due to misconduct in the use of forensic evidence. Law enforcement agencies face challenges while investigating crime scenes. Therefore, significant improvements are needed to maintain the quality of forensic evidence.

List of Abbreviations

AD	Appellate Division
ALR	All India Report
BBC	British Broadcasting Corporation
BCL	Bachelors of Civil Law
BD	Bangladesh
BDLD	Bangladesh Law Digest
CID	Crime Investigating Department
CrPC	Code of Criminal Procedure
DB	Detective Branch
DIG	Deputy Inspector General
DLR	Dhaka Law Report
DNA	Deoxyribonucleic Acid
FIR	First Information Report
HCD	High Court Division
HDRC	Human Resource Development Centre
IO	Investigating Officer
PRB	Police Regulations Bengal
RAB	Rapid Action Battalion
RNA	Ribonucleic Acid
SCOB	Supreme Court of Bulletin
UK	United Kingdom
USA	United States of America
WHO	World Health Organization

CHAPTER 1

Introduction

1.1 Background of the Study

Forensic science is the backbone of crime investigation which plays a significant role in the examination and collection of forensic evidence at crime scenes. At almost every crime scene, investigating officers find something that serves as a clue.¹ That is why forensic science pioneer Dr. Edmund Lockard said "**Every contract leaves a trace**". Forensic science uses many scientific disciplines to help connect time, people and criminal activity.² It plays an essential role not only in investigation but also in trial proceedings. But lawyers, police and judges in Bangladesh are not skilled enough unlike other countries in using forensic evidence to ensure justice. Moreover, Bangladesh also lacks expert manpower for collection, examination and preservation of forensic evidence.³

With the help of advanced technology, forensic evidence has become an integral part of our justice system as it helps courts deal with complex issues.⁴ It has become indispensable to the courts as it is used as a tool to establish the guilt of the accused.⁵ Apart from this, the reliability of the evidence can be corroborated through these forensic methods. Forensic evidence is often referred as the "silent witness". If it is properly analysed and explicated, it can be more reliable than testimonial evidence.⁶

Homicide means the killing of another person by one person. It is a global problem that hampers not only social but also economic security of people as well as national development⁷. Forensic evidence has become a key factor in the investigation and prosecution of homicide cases. In homicide, forensic science contributes through "Visum et Repertum" also

¹ Sayedul Husan, 'Role of Forensic Evidence in the Criminal Investigation: A Legal Analysis in Bangladesh Perspective' (2022) 1 TRADITIONAL JOURNAL OF LAW AND SOCIAL SCIENCES 181.

² Ibid

³ Md Ayub Ali and Shalina Akter, 'Forensic Use of Scientific and Physical Evidence in Bangladesh'. " (2014) Uttara University Law Journal 1(1) : 79-103

⁴ Nisha Kumari "Forensic Evidence and Their Admissibility" (2020) International Journal of Legal Science and Innovation 2 (2):769-775

⁵ Chinmoyanad "Evidentiary value of Forensic Fingerprints in India"(2020) International Journal of Law Management & Humanities 3(3): 1801-1813

⁶ Ali and Akter (n 3).

⁷ Z Hossain and others, 'Pattern of Homicidal Death among the Post-Mortem Cases in a Metropolitan City of Bangladesh' (2019) 31 Journal of Medical Science & Research 32.

known as post-mortem report.⁸ In many cases, crimes would not have been prosecuted without the help of forensic evidence, especially those with tenuous links to the crime. It serves as a method of reducing homicides because of the possibility of getting caught as it can establish the exact timeline of events as well as understand the manner of death. The impact of forensic evidence in homicide investigations can never be underestimated. It also serves as a detective's toolkit that helps solve wrongful accusations and convictions. Although forensic evidence is very helpful, it is a very complex process that can implicate the wrong person. Several obstacles may arise in the process of collecting and presenting forensic evidence in court for trial.⁹ That's why forensic evidence should be used with care and professionalism in the investigation of murder cases to ensure accurate justice and truth.¹⁰

1.2 Research Question

What is the role and impact of forensic evidence in homicide investigation?

1.3 Research Justification

This research paper aims to contribute to the existing literature on forensic evidence, its role in homicide investigation and the challenges and obstacles encountered in its implementation. In homicide investigation, forensic evidence is the most important way to link a suspect. Forensic evidence is a method in which rules are applied to determine whether a person is guilty or not. Although it plays an important role in criminal trials and investigations, it can also be misused. If it is not used properly in homicide investigations, it can lead to an invalid investigation or injustice.

As time progresses, not only technology and science are changing or developing but crimes are also becoming more sophisticated and digital. As the nature of crime changes, the use of forensic evidence must become more effective in making justice and prosecutions more impactful. Justice can be better attained in the criminal justice system with the help of forensic evidence. This

⁸ Muhammad Arif, Faisal Abdaud and Huzaiman Huzaiman, 'The Role of Forensic Science in Proving Murder Cases at the Investigation Stage' (2023) 5 AL-MANHAJ: Jurnal Hukum dan Pranata Sosial Islam 1019.

⁹ Ibid

¹⁰ Ibid

research will try to explore the quality, reliability and admissibility of forensic evidence in Bangladesh homicide investigations and case resolution.

The objective of this research paper are:

- To determine the role of forensic evidence in homicide investigation
- To know the evidentiary value of the forensic evidence
- To identify the challenges that investigator face while doing crime scene investigation
- To find out the obstacles forensic experts faced in providing expert opinion and helping investigator to find the material truth of homicide cases.
- To recommend some steps that should to be taken for improvement of forensic related services.

1.4 Research Methodology

The research will be conducted by following qualitative research methodology to achieve its purpose. This research will focused on both primary resources and secondary resources. As primary sources, this research will rely on both domestic and other countries statutes as well as judicial decisions .On the other hand, for the secondary sources journals, articles, relevant books, newspaper publications and other resources that are relevant for this research will be discussed and analyzed. As this is a qualitative research, it will be based on collecting and analyzing the existing literature to understand the role of forensic evidence in homicide investigation. This study will combine all the materials to make this research paper more analytical and useful for the readers. The footnotes and bibliography have been properly cited using the OSCOLA referencing system.

1.5 Literature Review

In exploring the landscape of forensic evidence in homicide investigations, understanding the existing literature is essential for better results in my current research. Some studies have been conducted on the role of forensic evidence in criminal investigations and court proceedings. However, no comprehensive research has been conducted on the role and impact of forensic evidence in homicide cases. Although in homicide scenes forensic evidence is collected and analysed in laboratories, its role in investigations and prosecutions has not received much attention

from the researchers. By exploring the various works of researchers, this review aims to identify gaps and contribute to current research.

Muh. Arif, Faisal Abdaud and Huzaiman in their journal article "Role of Forensic Science in Evidence of Murder Case at Investigation Stage"¹¹ discuss the role of forensic science in helping the investigator to uncover the material truth of murder case. Although the authors talked about the obstacles faced by the investigator they did not provide any solution to eradicate this obstacle. The gap in this study was that it did not elaborate on the development of advanced technology in forensic science. Besides, it does not discuss anything about how evidence should be collected and preserved in murder cases.

Another study by Md. Ayub Ali and Shalina Aktet "Forensic Use of Scientific and Physical Evidence in Bangladesh"¹² discussed about the "Dubert and Frye test"¹³ as the most common theory used by expert witnesses to meet some qualification before being used in court. This study mainly deals with the role of physical and scientific evidence in criminal investigations as well as the evidentiary value of this evidence in court. The procedure to use it in the court has also been described here. It also pointed out the loopholes of legal framework of Bangladesh with the development of technology. This study describes the role of forensic experts and investigators as well as the obstacles they face. It mentions problems in the investigation system but does not say anything about how to investigate crime scenes to avoid obstruction.

"Role of Forensic Evidence in the Criminal Investigation: A Legal Analysis in Bangladesh perspective"¹⁴ by Sayedul Hussan explained the role, significance and legal framework of forensic evidence. Nevertheless, it did not mention anything about how the crime should be investigated neither did the obstacles in criminal investigations. Forensic experts and investigating officer plays an important role in a criminal investigation which was absent in this study.

¹¹ Arif, Abdaud and Huzaiman (n 8).

¹² Ali and Akter (n 3).

¹³ Ibid.

¹⁴ Husan (n 1).

1.6 Scope and Limitations

This study aims to explore the role that forensic evidence plays in investigating and solving cases of homicide in Bangladesh. Furthermore, this study also focuses on different types of forensic evidence that are used in homicide cases. With the passage of time, technology in forensic science has become so widespread that it has become essential to deliver justice and is the most modern way to identify a criminal. This research will involve challenges that are faced while doing homicide investigations. This study will also assess the potential implications of the forensic evidence in criminal investigations.

Although this study seeks to provide a comprehensive analysis, still the authors of this paper were aware of its limitations. As there was a lack of access to relevant materials, this research paper will rely on publicly accessible documents such as journals, newspapers, articles, and blogs. Besides, the author did not find much work on this topic from a Bangladesh perspective. Field work would have helped a better understanding of the situation on this research topic, but as there is a time limitation to complete this research paper, no field work has been done.

1.7 Dissertation Outline

This dissertation consists of five chapters.

The first chapter elaborates on the background of the study, research question, research justification, objective, research methodology, literature review, and limitations of the study.

The second chapter is about the conceptual framework and importance of forensic evidence, where the definition of forensic evidence, its historical background, different types, importance, and evidentiary value will be discussed.

The third chapter discusses the legal framework along with cases of forensic evidence in the criminal justice system of Bangladesh. It includes the procedure, applicability, and admissibility of forensic evidence in investigation and trial proceedings under the Evidence Act of Bangladesh, the Code of Criminal Procedure, The Police Regulation Act, and The DNA Act.

The fourth chapter is about the role and impact of forensic evidence in homicide investigation and trial proceedings, which includes the impactfulness and limitations of forensic evidence in

homicide investigation as well as the challenges and obstacles faced by forensic expert and investigating officer in homicide investigation.

Finally, the fifth chapter of this study will conclude including overall findings and recommendations.

CHAPTER 2

Forensic Evidence: Concept, Background, and Importance

2.1 Introduction

With the development of time forensic evidence has become an inseparable part of criminal justice system. It is a field that combines scientific methods, historical development and great importance in criminal investigation. This chapter explores how the concept of forensic evidence developed, its evidentiary value in judicial proceedings and its importance in criminal investigations and disposal.

2.2 Concept of Forensic Evidence

Forensic evidence means an evidence that can be used in the court established on the basis of science¹⁵. The term “forensic” derives from the Latin term “forensic” which refers to “on or before the forum”¹⁶. But in modern times, forensic refers to “legal” or “related to courts”.¹⁷ In the legal system of Bangladesh forensic evidence term has been interpreted under section 3 of the Evidence Act of Bangladesh. It says that forensic or physical evidence refers to all material or objects associated with the body such as blood, semen, hair and any other body parts or things like fingerprints, footprints, palm prints, iris prints, DNA etc. Can help understand whether a crime has been committed and link a crime to a victim or perpetrator.¹⁸ Besides, they can prove or disprove any facts about the case.¹⁹ They are key evidence to help investigators during investigations.

2.3 Historical Background of Forensic Evidence

The precise moment when forensic evidence started to impact on the courtroom is difficult to determine. In the fifth century, Germanic and Slavic civilizations were the first to embrace a law that required the involvement of medical experts in homicide cases.²⁰ Although it is very ambiguous where the concept of forensic science was established but many scholars believe that

¹⁵ Black’s Law dictionary, 2nd edition

¹⁶ Shorter Oxford English Dictionary (UK: Oxford University Press, 2007).

¹⁷ Husan (n 1).

¹⁸ The Evidence Act, 1872, s 3

¹⁹ Ibid

²⁰ Ali and Akter (n 3).

the journey of forensics started in China in the sixth century, and the first book on medical evidence called Xi Yuan Lu (The Washing Away of Wrongs) was published by Song Ci published in the early 13th century.²¹ The book writes about how to use medicine and entomology to solve crimes.²² Although the formal journey of forensics began in the 18th and 19th centuries, many scholars trace its early development to medical jurisprudence. Paolo Zacchia, an Italian physician, scholar, and teacher, used the term “forensic”, equivalent to medical jurisprudence.²³ Edmond Locard, the father of modern medicine, established the first crime laboratory in 1910 in France.²⁴ For his revolutionary work in this field, he is known as “The Sherlock Holmes of France”.²⁵ However, it was rarely used in Bangladesh in the 19th and 20th centuries, even though the forensic evidence journey began way before.

2.4 Different Forms of Forensic Evidence

Forensic evidence is collected and examined in the laboratory to identify the real perpetrator involved in the crime. It is regularly used in court all over the world, along with Bangladesh. Although there are numerous types of forensic evidence but it is basically classified into two types, which are physical and biological.²⁶ Physical evidence includes objects like fingerprints, footprints, drugs, and bullets etc. On the other hand, biological evidence includes organic substances like blood, urine, sperm, hair etc.²⁷ The most common types of forensic evidence are:

2.4.1 DNA Evidence

DNA, or deoxyribonucleic acid, is one of the most powerful investigative tools because no human except identical twins has the same DNA due to its uniqueness.²⁸ Blood, hair or skin cells are

²¹“How Forensic Science has Evolved Over Time”(2018) IFF Lab <<https://ifflab.org/history-of-forensic-science/#:~:text=The%20earliest%20application%20of%20forensic,use%20in%20past%20murders%20possible>> accessed 21 November 2023

²² Ibid

²³Anon,“Paolo Zacchia--the spiritual father of forensic medicine”(2003)PubMed. <<https://pubmed.ncbi.nlm.nih.gov/14639809/>> accessed 23 November 2023

²⁴ Husan (n 1).

²⁵ Ibid

²⁶ ‘Crime Scene and DNA Basics for Forensic Analysts | Types of Evidence | National Institute of Justice’ <<https://nij.ojp.gov/nij-hosted-online-training-courses/crime-scene-and-dna-basics-forensic-analysts/evidence-crime-scene/types-evidence>> accessed 11 January 2024.

²⁷ Ibid

²⁸ “Understanding DNA Evidence:A guide for victim service providers” National Institute of Justice <<https://www.ojp.gov/pdffiles1/nij/bc000657.pdf>> accessed 25 November 2023

highly reliable sources of DNA evidence.²⁹It mainly works in two different ways, which are matching a suspect's DNA with the crime scene evidence and matching crime scene DNA to offender profiles in a database for identification.³⁰ But it alone cannot establish guilt or conviction, it has to be combined with other forensic evidence like fingerprints, witness testimony etc. which form a strong case in the investigation.³¹ For the analytical methods of DNA profiling, it is known as the gold standard of forensic science.³²

2.4.2 Fingerprint

Fingerprints play an important role in solving a crime and are commonly used as an infallible tool to reveal a person's identity. No two individuals have the same ridge variation, even identical twins, and fingerprints do not change over a person's lifetime.³³ This is an irrefutable evidence because it is incredibly difficult to create or fabricate identifier like fingerprints.³⁴ Even if a person tries to leave or discard a fingerprint, opportunistic criminals often inadvertently reveal the back of these distinct identifiers.³⁵ Earlier investigating officer used to collect fingerprint through tape and powder but now use digital scans³⁶. Fingerprint plays a crucial role in confirming the involvement of a suspect and linking suspects to crime scenes.³⁷

2.4.3 Serology and Body fluid

Body fluids such as blood and semen are an important component of forensic science as they are often key to a criminal investigation and are relied upon by courts.³⁸ Blood fluid are not visible often time or present in very small quantities or mixtures, so identification is not always

²⁹ Husan (n 1).

³⁰ Varun Kumar, "Forensic Evidence:Types and Its Admissibility"*Law Audience Journal* 3(2)(2021):2581-6705

³¹ Husan (n 1).

³² Ibid

³³ Vasudha, "Fingerprints: A Forensic Tool for Criminal Investigation" (2022) Legal Service India <<https://www.legalserviceindia.com/legal/article-2463-fingerprints-a-forensic-tool-for-criminal-investigation.html>>accessed 27 November 2023

³⁴ Husan (n 1).

³⁵ Ibid.

³⁶ Kumar (n 25)

³⁷ Ibid

³⁸ S.Titia and H.SallyAnn, "On the Identification of Body Fluids and Tissues: A Crucial Link in the Investigation and Solution of Crime" (2021)National Library of Medicine <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8617621/>>accessed 27 November 2023

straightforward³⁹. But now with the innovation of new technologies, RNA and protein techniques increases specific identification and help in criminal investigations.⁴⁰

2.4.4 Forensic Odontology

Forensic odontology uses dental expertise as vital evidence in criminal investigations to identify the victim and link crime suspect's.⁴¹ Every individual's dental patterns are unique, as is their fingerprint. The dental tissues of a deceased person remain well preserved even after the decomposition, burning, or dismemberment of the body.⁴² Experts use different methods to determine the gender, age and ethnic background⁴³ and they can also detect sexual abuses of the deceased person.⁴⁴ Dentists compare dental records and utilize techniques like bite marks.⁴⁵

2.4.5 Forensic Entomology

Forensic entomology analyzes insect behaviour and climate factors, which helps in pinpointing the day of death and indicating crime scene locations.⁴⁶ This discipline includes collecting insect evidence from crime scenes and decomposed bodies to differentiate between natural death and murder and suicide from potential homicide.⁴⁷

2.4.6 Autopsies

An autopsy, also known as a post-mortem examination, in the external and internal examination of a dead person to determine the cause of death, identify the deceased, and determine the time of death.⁴⁸ These examinations are categorized as forensic for investigating death, diagnosing disease, and determining if the death was an accident, homicide, or suicide.⁴⁹

³⁹ Harbison S, Fleming R, "Forensic body fluid identification: state of the art" (2016) Dovepress <<http://dx.doi.org/10.2147/rrfms.s57994>>.

⁴⁰ Avijit Sarker, 'Use of Forensic Evidence in the Criminal Justice System of Bangladesh' [2019] Avijit Sarker <https://www.academia.edu/39684939/Use_of_Forensic_Evidence_in_the_Criminal_Justice_System_of_Bangladesh> accessed 28 December 2023.

⁴¹ Husan (n 1).

⁴² J.Nadeem, R.Shivani, and T. Radhika "Current trends in forensic odontology"(2017) National Library of Medicine <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5887632/>> accessed 2 November 2023

⁴³ Ibid

⁴⁴ Husan (n 1).

⁴⁵ Sarker (n 39).

⁴⁶ "Cases Solved by Forensic Entomology & How Insects Helped Solve Crime" BuzzAboutBees.net; <<https://www.buzzaboutbees.net/cases-solved-by-forensic-entomology.html>> accessed 2 December 2023

⁴⁷ Ibid

⁴⁸ Husan (n 1).

⁴⁹ Stöppler MC, "Autopsy (Post Mortem Examination, Necropsy) 3 Levels & Benefits" (2022) MedicineNet <<https://www.medicinenet.com/autopsy/article.htm>> accessed 2 December 2023

2.5 Importance of Forensic Evidence in Investigation and Disposal

Forensic evidence plays a multifaceted role in crime investigation and judicial proceedings, especially in cases involving crimes against human bodies. Homicide and murder cases are often committed in obscure ways, so it is difficult to prosecute using conventional investigative methods alone.⁵⁰ In reconstructing crime scenes, a more comprehensive investigative method like forensic analysis is needed, which helps to get a clearer picture of what happened during the incident, establish a timeline of events, and also corroborate statements made by victims, suspects, or witnesses.⁵¹ Forensic experts play a crucial role in criminal investigations, they analyze the evidence collected from crime scenes and other sources to convict criminals and exonerate those who are innocent.⁵² Without the existence of forensic evidence, those who have committed crimes like homicide, murder or rape are likely to roam freely and escape punishments.⁵³ Besides, in an investigation, forensic evidence can help in identifying suspects, narrowing down the range of possible suspects, linking crime to suspects, determining the cause of death, and more.⁵⁴

Many crimes have been committed in secretive and mysterious circumstances that make it very difficult to obtain confession or eyewitness testimony.⁵⁵ Testimonial evidence is subjective, on the other hand, forensic evidence is objective, unbiased, and more reliable; its validity and usefulness remain the same even after years, as opposed to testimonial evidence.⁵⁶ This highlights the importance of forensic evidence in investigations even years after an offense has been committed. Forensic evidence provides a certainty and precision that other evidence cannot match, promoting transparency and accountability in the criminal justice system.⁵⁷ Science is objective and does not lie, that's why a judge in court is more likely to favor the side that presents compelling forensic evidence to prove an individual's guilt or innocence.⁵⁸ It is clear that forensic evidence

⁵⁰ Husan (n 1).

⁵¹ Ali and Akter (n 3).

⁵² Husan (n 1).

⁵³ "The Importance of Forensic Science in Criminal Investigations and Justice" (2018) IFF Lab <<https://ifflab.org/the-importance-of-forensic-science-in-criminal-investigations-and-justice/>> accessed 4 December 2023

⁵⁴ Husan (n 1).

⁵⁵ Ibid.

⁵⁶ Ali and Akter (n 3).

⁵⁷ 'Role of Forensic Evidence in Criminal Justice Delivery System in India' <<https://legalserviceindia.com/legal/article-10415-role-of-forensic-evidence-in-criminal-justice-delivery-system-in-india.html>> accessed 30 December 2023.

⁵⁸ "The Importance of Forensic Evidence in Court" (2021) Bangerter Law <<https://bangerterlaw.com/the-importance-of-forensic-evidence-in-court/>> accessed 4 December 2023

serves as a comprehensive tool to solve cases and is essential in criminal investigations and court proceedings to ensure justice.

2.6 Evidential Value of Forensic Evidence

Forensic evidence plays a crucial role in criminal investigations and court proceedings by providing objective and scientific support in establishing a fact, but there has been controversy over the discussion on the evidentiary value of forensic evidence, as there has been inconsistency and disagreement among the opinions of experts. Although according to section 45 of the Evidence Act⁵⁹, expert opinion in forensic evidence was considered relevant before, but in the case of *Prafulla Kamal Bhattacharya vs. Ministry of Home Affairs Govt. of Bangladesh*⁶⁰, court said that expert opinion is not binding upon the court. The reliability of forensic evidence is checked through forensic methods so this evidence gives accurate results frequently.⁶¹ Fingerprints hold initial importance as they're mostly the first evidence to be found at a crime scene, and their reliability in identifying suspects often leads to the accused being caught or the case being resolved.⁶² But in the case of forensic odontology, not the even minimum evidential value has been achieved and there has been no precedent to show specific features required for conclusive identification beyond reasonable doubt.⁶³ Although bite marks can be vital evidence, mostly in rape cases, but the disagreement about analysis methods leads to inconsistent opinions which hampers their reliability and pushes them away from mainstream evidence.⁶⁴ In the case of *Abdul Quddus vs. The State*, the court said that forensic evidence is corroborative in nature⁶⁵, so it can be corroborated with other evidence like testimonies or witnesses. Forensic evidence like DNA profiling and fingerprints are known for their uniqueness and individuals, which enhances the probative value of this evidence. The courts in different landmark cases relied on forensic evidence, which introduced the legal reliability of such evidence in judicial proceedings.⁶⁶

⁵⁹ The Evidence Act, 1872, s 45

⁶⁰ 39 28 DLR (1976)123.

⁶¹ Nisha Kumari, 'Forensic Evidence and Their Admissibility'.

⁶² Chinmoyanad (n 5)

⁶³ Priyangi Mohi, Om Shankar Kiradoo "Dental Evidence in Forensic Identification: Critical Analysis" *International Journal of Legal Science and Innovation* 3(3) (2020) :509

⁶⁴ Ibid

⁶⁵ 43 DLR AD (1991) 234.

⁶⁶ Kumari (n 60).

2.7 Conclusion

Technology evolves with time and so does forensics. Although jurists differ in opinion, it cannot be denied that many landmark cases have been solved with the help of forensic evidence and the use of forensic evidence is increasing day by day. In modern times, we cannot think of criminal investigation and justice system without the use of forensic evidence.

CHAPTER 3

Legal Framework and Case Law on Forensic Evidence in Criminal Justice System of Bangladesh

3.1 Introduction

The criminal investigation in Bangladesh is primarily run through three laws: the Evidence Act 1872, the Code of Criminal Procedure 1898, and the Bengal Police Regulations 1943.⁶⁷ Although the primary law of criminal investigation provides some relevant provisions for criminal investigation, there are no specific provisions indicating the collection of forensic evidence.⁶⁸ However, in 2014, the Bangladesh government established a new law called the DNA Act.⁶⁹ It is considered a significant tool in criminal investigations to determine the crime.⁷⁰

3.2 Existing Legal Framework for Forensic Evidence in Bangladesh

3.2.1 The Evidence Act, 1872

Section 45 is considered the first and fundamental provision regarding the use of forensic evidence in criminal investigations and trials.⁷¹ As a forensic evidence, it incorporates forensic arts, fingerprints, and handwriting analysis.⁷² According to this section the opinion of experts skilled in foreign law, science, forensic evidence, digital records, art or handwriting, fingerprint are considered relevant for the court to form an opinion on such matter.⁷³ The opinion of experts are generally submitted first in their report. But the court does not act upon their opinion until the experts come to the court and depose their opinions personally and the experts are submitted to regular examination like any other witness.⁷⁴ **Section 45A** states that no witness can be testify as expert on forensic or physical matters without sharing a copy of their report to all the parties

⁶⁷ 'Nothi_10314_2021_07_30_71627641306.Pdf'

<https://ictd.portal.gov.bd/sites/default/files/files/ictd.portal.gov.bd/page/6c9773a2_7556_4395_bbec_f132b9d819f0/nothi_10314_2021_07_30_71627641306.pdf> accessed 15 December 2023.

⁶⁸ *ibid.*

⁶⁹ 'Legal Framework for Introducing Forensic Evidence in the Criminal Courts of BD'

(*lawyersclubbangladesh.com*, 7 December 2021) <<https://lawyersclubbangladesh.com/en/2021/12/07/legal-framework-for-introducing-forensic-evidence-in-the-criminal-courts-of-bangladesh/>> accessed 16 December 2023.

⁷⁰ *Ibid.*

⁷¹ Husan (n 1).

⁷² *Ibid.*

⁷³ The Evidence Act, 1872, s 45

⁷⁴ Islam M, Reflections of The Law of Evidence (3rd Ed, Kamrul Book House 2021), p 243

involved in the case unless the court permits otherwise.⁷⁵The experts reports needs to be directed to the court not to the party who enlisted their expertise.Besides, the expert is bound to help the court in understanding the matter.⁷⁶

Section 46 implies that fact which generally are not considered as relevant can become relevant if they are supported or contradicted by expert opinion.⁷⁷An expert maybe both corroborated or contradicted by standard treatises or text books on the subject if the author is dead or cannot be found.⁷⁸ **Section 51** states that whenever the opinion of any living person is relevant the grounds on which such opinion is based are also relevant.⁷⁹ **Section 60** states for oral evidence to be valid it must come from the person of same opinion and that they must be considered as witness in the case.⁸⁰It also allows the court to ask for physical items if their existence or condition is mentioned in the testimony.⁸¹This section lays out the outline of oral evidence and provide provisions for expert opinions and physical evidence in forensic cases. Expert evidence helps court to draw a conclusion but experts are only advisors they are not witnesses as they were not present there.

Section 73B permits the court to compare collected samples like blood, D or body parts with known ones to determine their connection to a person.⁸²It also allows the court to request someone to present in the court for comparison if there a claim about a sample belonging to them.⁸³Additionally, it clarifies that certain sections cannot hinder the court from asking for physical or forensic evidence in court along with essential identification evidence.⁸⁴ **Section 89A** says that if there is no other proof which says otherwise, then the court will think this physical or forensic evidence has been taken or made by the person who is related to it.⁸⁵

⁷⁵ The Evidence Act,1872,s 45A

⁷⁶ Ibid

⁷⁷ The Evidence Act,1872,s 46

⁷⁸ Islam M, Reflections of The Law of Evidence (3rd Ed,Kamrul Book House 2021),p 249

⁷⁹ The Evidence Act,1872,s 51

⁸⁰ The Evidence Act,1872,s 60

⁸¹ Ibid

⁸² The Evidence Act,1872,s 73B

⁸³ Ibid

⁸⁴ Ibid

⁸⁵ The Evidence Act,1872,s 89A

3.2.2 The Code of Criminal Procedure (CrPC), 1898

Section 174 of CrPc lays down guidelines for conducting inquests and post-mortems, which fall under the field of forensic pathology or forensic medicine.⁸⁶ The police will submit the report to the authorized magistrate, which includes a civil surgeon's inquest report, Surat-haal report, and post-mortem report.⁸⁷ A case states that Surat-Haal is mandatory if a person dies suspiciously. The Surat-Haal report can be used as evidence in court to prove the cause of death and injury.⁸⁸**Section 176(2)** empowers the Magistrate to order the exhumation of the body from the grave if there is any uncertainty about the cause of death, the autopsy report, or the burial of the body, as it is a matter of forensic evidence.⁸⁹ **Section 509 of CrPc** states that evidence of a civil surgeon or medical witness can be considered at any stage of inquiry, trial, or any other proceeding. A specialist in medicine who always follows the technical examination of the subject in question must give testimony of a medical witness.⁹⁰ **Sections 464** of the Criminal Procedure Code and 84 of the Penal Code, 1860: These prescribe the procedure for the trial of an insane person. Forensic psychology and psychiatry will come to the aid of the court in this regard.⁹¹

Section 509A of the Crpc states that the report prepared by the civil surgeon or medical officer who prepared the postmortem report is admissible as evidence in court at any stage of the court proceedings if he is dead or unable to give a statement, or is out of the country.⁹² In *State vs. Mokbul Hossain*, it was said that the report of civil a sergeant or doctor will not be admissible until it is proved that he is dead or cannot be present in the court.⁹³ **Section 510** of the CrPc states that if the government appoints a chemical examiner, assistant chemical examiner, serologist, handwriting expert, or firearms expert in any matter submitted for examination as part of any proceedings under this code, the same shall be used as admissible evidence without requiring their direct testimony in any inquiry, trial, or other proceeding under this Code.⁹⁴

⁸⁶ The Code of Criminal Procedure, 1898, s 174

⁸⁷ Ibid

⁸⁸ 11 BLC 467

⁸⁹ The Code of Criminal Procedure, 1898, s 176 (2)

⁹⁰ The Code of Criminal Procedure, 1898, s 509

⁹¹ Ali and Akter (n 3).

⁹² The code of Criminal Procedure, 1898, s 509A

⁹³ 37 DLR 156

⁹⁴ The Code of Criminal Procedure, 1898, s 510

3.2.3 Deoxyribonucleic Acid (DNA) Act, 2014

The Parliament of Bangladesh enacted the Deoxyribonucleic Acid (DNA) Act, 2014, which deals with the collection, establishment and testing of DNA samples as well as provisions for establishing a forensic DNA laboratory and national DNA database, as mentioned in its preamble.⁹⁵ In 2005, the National Forensic DNA profiling was established at Dhaka Medical College Hospital, with the DNA Act in 2014 strengthening its legal framework.⁹⁶

A police officer conducting an investigation may ask the victim, suspect, accused or any other person connected with the crime to provide a DNA sample for the investigation of the crime, but if the person is a child, minor, mentally unstable, or physically disabled, the investigating officer may, under **Section 4** of this Act, Under this the permission of the legal guardian can be sought to collect DNA samples from the suspect.⁹⁷ **Sections 5 and 6** accordingly state that DNA samples may be collected from the crime scene if any are found and that no DNA sample shall be collected from any person for investigation without the written consent of that person or his legal guardian and the presence of not less than two witnesses.⁹⁸ In **Section 7**, it is clearly mentioned that if the requested person does not give consent within 3 hours, it will be considered that he refused to give a DNA sample and this will be recorded in a form.⁹⁹ Besides, **Section 8** provides that if consent is not given by the person, the police officer may apply to the court for the collection of a DNA sample, after hearing both the sides court can order for collection of samples.¹⁰⁰ Lastly, **Section 37** of this Act states that reports of DNA profiles will be considered admissible in court.¹⁰¹

⁹⁵ Husan (n 1).

⁹⁶ Ali and Akter (n 3).

⁹⁷ The Deoxyribonucleic Acid Act, s. 4

⁹⁸ The Deoxyribonucleic Acid Act, s. 5,6

⁹⁹ The Deoxyribonucleic Acid Act, s.7

¹⁰⁰ The Deoxyribonucleic Acid Act, s.8

¹⁰¹ The Deoxyribonucleic Acid Act, s.37

3.3 Forensic Evidence used in the Disposition of Cases in Bangladesh

In the case of **The State vs. Oyshee Rahman**¹⁰², Oyshee Rahman. In this case, murdered her parents and even gave a confessional statement about it. During the investigation, the police collected DNA samples from the crime scene and matched them to Oyshee and hence she was convicted. Another problem arose in this case where Oyshee was questioned, so he was tested, and the report showed that he was 19 years old. Based on this conclusion, the trial court sentenced him to death on November 12, 2015, and on June 5, 2017, the High Court Division commuted his sentence from death to life imprisonment.

In the case of **Jagadish Devnath vs. State**¹⁰³ the convicted appellant killed his wife out of prior enmity. In this case, a post-mortem report was submitted to identify the cause of death, but after further tests and chemical analysis, it was found that the wife died due to suffocation, resulting in suffocation and asphyxiation. Besides, the accused in his confessional statement stated that it was an accident due to suffocation. Although the court in this case relied heavily on circumstantial evidence as there were no eyewitnesses, the cause of death provided a corroboration of the confession, which influenced the court's decision-making process.

In the **Abrar Fahad case**¹⁰⁴ 25 BUET students who were members of Chhatra League beat Abrar Fahad to death on October 7, 2019. Dr. Sohail Mahmood, Head of Forensic Department of Dhaka Medical College Hospital confirmed through his autopsy that Abrar was beaten to death with a blunt object; Hence, he died due to internal bleeding and numerous body injuries during the test. In their confession, the accused claimed that cricket stumps beat Abrar. The forensic report was corroborated here with the confessional statements of the accused.

In the case of **Ayub Ali and Ors. vs. the State**¹⁰⁵, Ayub kidnapped and killed Abdus Sobhan and the postmortem report showed that there were sharp stab marks on the chest wall and upper abdomen, ligature marks on the neck and other physical injuries on the dead body. Although

¹⁰² 12 SCOB [2019] HCD

¹⁰³ 75 DLR (2023) 156

¹⁰⁴ Staff Correspondent, 'Horrible Accounts of Cruelty' (*The Daily Star*, 12 October 2019) <<https://www.thedailystar.net/frontpage/horrific-accounts-cruelty-in-abrar-murder-case-1812670>> accessed 28 December 2023.

¹⁰⁵ 202020 ALR (HC D) 33,

the body was decomposed, the post-mortem report revealed severe injuries. Expert reports, witness statements and confessional statements enhance the credibility and evidentiary value of forensic evidence in these cases.

The **Gulshan attack case**¹⁰⁶ was a deadly Islamic attack in Bangladesh. In 2016, on July 1, five men armed with guns and grenades entered Holy Artisan Cafe and took customers hostage, killing 20 of them. In this case, police were able to identify the assailants after collecting DNA samples. After confirming the DNA reports, the court sentenced seven accused to death.

In the case of **State vs. Abdur Rahim**¹⁰⁷ Abdur Rahim sexually harassed and raped the rape victim Nurunnahar according to the autopsy report. Eyewitness testimony corroborated the forensic evidence and the circumstances surrounding the incident. The expert witness who conducted the post-mortem stated that death was caused by head injuries with intracranial hemorrhage and asphyxia and were homicidal in nature. The accused was sentenced to life imprisonment with fine. In the case of **Rafiqul Islam Sheikh and Ors. vs. State**¹⁰⁸, several people murdered Enamul Hasan and the postmortem report revealed that hemorrhage and shock due to multiple injuries were the cause of death. The court relied on confessional evidence, witness testimony and forensic evidence. Although there were inconsistencies between the confession and the forensic evidence, the court found the overall evidence and circumstances sufficient to prove guilt.

In the case of **Bangladesh Jatiyo Mahila Ainjibi Samity vs. Bangladesh**, DNA test was conducted to determine the fatherhood, and the case was successfully solved with the help of DNA evidence. A former DIG was alleged to procure seven child to traffic them and claimed that he is the father of these children, but with the help of DNA samples, it was found that the children are unlikely to be related to each other.¹⁰⁹ In the case of **The State and Others vs. Md. Foyzal Bin Nayem and others**, DNA report was used to determine the victim and blood-strained dagger.¹¹⁰

¹⁰⁶ 'Holey Artisan Cafe: Bangladesh Islamists Sentenced to Death for 2016 Attack' *BBC News* (27 November 2019) <<https://www.bbc.com/news/world-asia-50570243>> accessed 30 December 2023.

¹⁰⁷ 72 DLR (2020) 633

¹⁰⁸ 74 DLR(AD) (2022) 251

¹⁰⁹ AZM Arman Habib, 'Deoxyribonucleic Acid (DNA) Act, 2014: A New Era In Criminal Justice System Of Bangladesh – Bangladesh Law Digest (BDLD) 2023' (7 January 2016) <<https://bdlawdigest.org/deoxyribonucleic-acid-dna-act-2014-a-new-era-in-criminal-justice-system-of-bangladesh.html>> accessed 17 December 2023.

¹¹⁰ Husan (n 1).

Moreover, there are other cases, like the **Rana Plaza collapse** and the **Tazrin Fashion Fire incident**, where DNA tests were used to identify the decomposed victims.¹¹¹ This law is undeniably a new era in the criminal justice system of Bangladesh.

3.4 Conclusion

The above legal framework provides a lot of information regarding forensic evidence and how it works but at the same time it suffers from many shortcomings as most of the provisions are outdated. These provisions need to change with the progress of time.

¹¹¹ Ibid.

CHAPTER 4

Role and Impact of Forensic Evidence in Homicide Investigation and Trial Proceedings

4.1 Introduction

Forensic evidence plays a very important role in the investigation and trial process of murder to ensure justice. Homicide deaths are increasing day by day, so proper legal measures should be taken to present such incidents. Although forensic evidence helps solve murder cases, it presents many difficulties this chapter discusses the multifaceted dimensions of forensic evidence in the context of homicide investigations.

4.2 Procedure of Homicide investigation

WHO defines homicide as death by injury purposely inflicted by others that may be lawful or unlawful.¹¹² The Criminal Investigation Department (CID) in Bangladesh is one of the oldest and specialized units of the Bangladesh Police that investigates and detects serious crimes such as murder, homicide, terrorism, etc.¹¹³ A case of criminal nature starts with an FIR and is investigated after its receipt. The officer records the complaint under Section 154 of the Code of Criminal Procedure, 1898 and initiates the investigation process.¹¹⁴ The IO proceed to the crime scene, gather forensic evidence, records witness testimony and may arrest suspect on primary findings and conduct initial interrogations with the suspects.¹¹⁵

Post mortem is one of the crucial evidence in homicide investigation and so the procedure of post mortem is proceed by inquest investigation conducted by the police officer in charge of police station.¹¹⁶ If there is any uncertainty arise regarding the cause of the death the police officer

¹¹² Z Hossain and others, 'Pattern of Homicidal Death among the Post-Mortem Cases in a Metropolitan City of Bangladesh' (2019) 31 Journal of Medical Science & Research 32.

¹¹³ Ibid.

¹¹⁴ The code of Criminal Procedure, 1898, s 154

¹¹⁵ Shahid M Shahidullah (ed), *Crime, Criminal Justice, and the Evolving Science of Criminology in South Asia: India, Pakistan, and Bangladesh* (Palgrave Macmillan UK 2017) <<https://link.springer.com/10.1057/978-1-137-50750-1>> accessed 22 December 2023.

¹¹⁶ Ali and Akter (n 3).

will send the dead body for post mortem to the nearest Civil Surgeon and body shall be accompanied by a copy of the inquest report and a triplicate challan in B.P. format.¹¹⁷

The CID relies on its expert opinion to carry out the process and has fingerprint bureaus and fingerprint experts to help analyze fingerprints collected from crime scenes and compare them with suspects as well as past convicts.¹¹⁸ After collecting the post-mortem report and interrogating the suspect, if there is reason to believe that the suspect is related to the crime, the IO may seek remand and the Magistrate may grant remand for a maximum period of 15 days under Section 167 CrPc.¹¹⁹ After collecting information from the arrested persons, the investigating officer collects forensic and oral evidence and presents it through charge sheet under Section 173 CrPC for trial.¹²⁰ If sufficient evidence is not found or the witness or the victim's family does not cooperate, the investigator may file a final report instead of a charge sheet.¹²¹ It is the responsibility of the police to prevent crime and prosecute the accused, they must abide by the rules, refrain from using threats or promises to obtain proper confessions.¹²²

4.3 Challenges faced while doing crime scene investigation

Investigators face significant challenges during crime scene investigations. Although forensic evidence plays very important role in homicide investigations, there are several factors that can hinder the collection and analysis of forensic evidence.¹²³ Challenges faced during crime scenes investigation in Bangladesh are:

¹¹⁷ Ibid.

¹¹⁸ Sarker (n 39).

¹¹⁹ Shahidullah (n 114).

¹²⁰ Ibid.

¹²¹ Ibid.

¹²² Janmejy Singh and Taru Mishra, 'Police and Criminal Justice System: A Critical Analysis' (2020) 3 Issue 6 Int'l JL Mgmt. & Human. 730.

¹²³ Arif, Abdau and Huzaiman (n 8).

4.3.1 Delay in Crime Scene visitation: Crime scene inspection is the most important factor in the investigative process. Investigation officers in Bangladesh are often delayed in reaching crime scenes due to late information or limitations leading to destruction, deterioration or loss of important clues.¹²⁴ Furthermore, due to lack of public awareness as well as IOs, securing crime scenes becomes very difficult.¹²⁵ An inspection must not include forensic experts, crime photographers, legal counsel, but only investigating officers who do not have valuable forensic evidence missing.¹²⁶

4.3.2 Environmental Factors: Environment is also a factor that can hinder proper forensic evidence collection. For example, during the rain, if the crime scene unfolds, it will damage all the strong evidence.¹²⁷

4.3.3 Fault in search and seizure procedure: It is the duty of the police to seize evidence from the place of occurrence but sometimes evidence is seized from the informant at the police station.¹²⁸ In cases of homicide or sexual violence, evidence such as blood-stained clothes should be seized and if the IO is unable to collect such vital evidence, he should provide an explanation for this.¹²⁹

4.3.4 Lack of modern equipment: In many police stations there are lacking evidence collection kits and storage facilities to preserve evidence¹³⁰. Due to modern equipment like audio-visual surveillance and cameras etc. the police are handicapped in conducting effective investigations.¹³¹

4.3.5 Limited Resources: Limited resources are one of the major obstacles forensic agencies possess¹³². There are limitations in laboratory facilities, forensic experts, lack of furniture, space,

¹²⁴ ‘A Study On Forensic Services in Criminal Investigation in Bangladesh: Impacts, Challenges and Capacity Building Issues, Conducted for Bangladesh Police, CID, Dhaka (Year 2020) – HDRC – Human Development Research Centre’ <<https://www.hdrc-bd.com/a-study-on-forensic-services-in-criminal-investigation-in-bangladesh-impacts-challenges-and-capacity-building-issues-conducted-for-bangladesh-police-cid-dhaka-year-2020/>> accessed 27 December 2023.

¹²⁵ *ibid.*

¹²⁶ Singh and Mishra (n 120).

¹²⁷ Arif, Abdaud and Huzaiman (n 8).

¹²⁸ Hussain Mohammad Fazlul Bari, ‘An Appraisal of Criminal Investigation in Bangladesh: Procedure and Practice’ (2015) 60 *Journal of the Asiatic Society of Bangladesh (Humanities)*[2015] 139.

¹²⁹ *Ibid.*

¹³⁰ ‘A Study On Forensic Services in Criminal Investigation in Bangladesh: Impacts, Challenges and Capacity Building Issues, Conducted for Bangladesh Police, CID, Dhaka (Year 2020) – HDRC – Human Development Research Centre’ (n 122).

¹³¹ Bari (n 126).

¹³² Arif, Abdaud and Huzaiman (n 8).

and so on.¹³³ Human resource shortage is common, and although all specialists receive basic training, many do not receive advanced training in their respective disciplines.¹³⁴ This lack of resources hampers the effectiveness of rapid forensic evidence collection and analysis.¹³⁵

4.3.6 Expert Opposition: In some cases, there may be disagreements between forensic experts regarding forensic evidence, which can lead to uncertainty and create suspicion between judges, lawyers, and investigators.¹³⁶ The court has full power to reject such expert opinion if it cannot assist in finding material truth.¹³⁷

4.3.7 Lack of efficient officer and proper supervision: Criminal investigation requires technical expertise, legal clarity and socio-economic understanding, but our investigative agencies lack forensic experts and designated officers¹³⁸. Also, lack of peer supervision leads to an ineffective investigation.¹³⁹

The loopholes in the legal framework of forensic evidence in Bangladesh are one of the major obstacles that are hindering forensic evidence in finding the material truth of homicide cases. Many provisions that were enacted hundreds of years ago remain unamended and do not incorporate the generally accepted scientific advancements that have evolved during that time.¹⁴⁰ For example, Section 45 of the Evidence Act of 1872 talks only about the relevance of forensic expert opinions, but there is nothing in this section that stipulates any criteria about the standard and admissibility of such evidence before the court.¹⁴¹ It is known that forensic evidence is accepted in court if it meets the requirement of admissibility, but it has become difficult for judges to determine the admissibility of forensic evidence as there is no rule or guideline regarding this in Bangladesh. Besides, the advocates and judges do not get any special training regarding forensic

¹³³ Ibid.

¹³⁴ ‘A Study On Forensic Services in Criminal Investigation in Bangladesh: Impacts, Challenges and Capacity Building Issues, Conducted for Bangladesh Police, CID, Dhaka (Year 2020) – HDRC – Human Development Research Centre’ (n 122).

¹³⁵ Arif, Abdaud and Huzaiman (n 8).

¹³⁶ Arif, Abdaud and Huzaiman (n 8).

¹³⁷ Ibid.

¹³⁸ Bari (n 123).

¹³⁹ Ibid.

¹⁴⁰ Ali and Akter (n 3).

¹⁴¹ The Evidence Act, 1882, s 45

evidence; therefore, it has become very difficult to determine the credibility and reliability of this evidence.¹⁴²

The duration of the investigation procedure is another reason that hinders the investigator from finding the material truth. The delayed investigation leads to a delayed trial. Although there is a time limit under Section 167(1) of the Code of Criminal Procedure to complete the investigation within 24 hours, in practice, such a time frame is merely discretionary.¹⁴³The CID, DB and RAB take more time than police to complete an investigation.¹⁴⁴ Furthermore, delay in investigations results in disappearance of many clues and articles that are important in finding the truths.¹⁴⁵

In Bangladesh, investigators undertaking modern scientific techniques in order to find necessary evidence still remain unexplored.¹⁴⁶ Besides, investigating officers often neglect recording the statements of witnesses, and they just summarize the statement in their “free time, which leads to missing crucial details.¹⁴⁷ Therefore, it creates a significant gap, which impacts the outcome of the trial as there is a difference between the witness's statement and recordings.¹⁴⁸ This inaccurate statement recording hinders the investigating process and has an impact on the reliability of evidence and ability to ascertain the truth.

4.4 Acceptance and Admissibility of Forensic Evidence

Forensic evidence plays an important role in delivering justice and helps the court reach a good decision but its evolving nature makes it difficult for courts to determine its reliability and admissibility. The reliability of forensic evidence is always a complex issue because its reliability is always influenced by the courts and depends on the opinions or interpretations of judges, which leads to inconsistent application over time.¹⁴⁹ Through section 45 of the Evidence Act, 1882

¹⁴² Ali and Akter (n 3).

¹⁴³ Bari (n 123).

¹⁴⁴ Bari (n 123).

¹⁴⁵ Ibid.

¹⁴⁶ Ibid.

¹⁴⁷ Mohi Uddin and Muhammad Farhad Hosen, ‘Role of Investigating Officer (IO) in Criminal Proceeding: Bangladesh Perspective’.

¹⁴⁸ Ibid.

¹⁴⁹ Kumari (n 59).

recognize forensic evidence but its inadequate guidelines makes the admissibility of this evidence suffers.¹⁵⁰

Courts always examine reliability of evidence before it is considered relevant, and evidence must meet standards established by the court and maintain its integrity before being admitted.¹⁵¹ The first significant development in the admissibility of forensic evidence occurred in 1923 with the landmark decision in *Frye v. United States* in which the admissibility of evidence was based on the systolic blood pressure test, a precursor to the modern polygraph.¹⁵² *Daubert v. Merrell Dow Pharmaceuticals*, on the other hand, set the standard for admitting expert scientific testimony in the court.¹⁵³

There are basically two American cases that help determine the admissibility of forensic evidence using two types of tests, one if the Frye standard and the other the Daubert standard. The Frye standard is known as the general acceptance test for determining the admissibility of forensic evidence because courts say that scientific evidence must be substantially admissible.¹⁵⁴ It also outlines criteria for expert witnesses, allowing them to testify if their testimony is based on hard facts and reliable methods that they use in compliance cases.¹⁵⁵ The Daubert test, on the other hand, requires four things to be fulfilled, namely (a) that the theory is testable, (b) that the theory has been peer-reviewed as this generally minimizes the possibility of error in the theory, (c) that 100% reliability and error rate though 100% Reliability and zero error are not required, but rates should be considered by the trial judge and (d) amount to general acceptance by the scientific community.¹⁵⁶

4.5 Impact of Forensic Evidence in Homicide Cases

The role and impact of forensic evidence in homicide cases are irreplaceable and can make a substantial difference in the case outcome. It helps the investigator find the material truth about

¹⁵⁰ Ali and Akter (n 3).

¹⁵¹ Kumari (n 59).

¹⁵² Sakhawat Sejan, 'Application of Forensic Evidence in Bangladesh: A Long Way to Go' (*SCLS*, 8 August 2017) <<https://sclsbd.org/application-of-forensic-evidence-in-bangladesh-a-long-way-to-go/>> accessed 22 December 2023.

¹⁵³ Sakhawat Sejan, 'Application of Forensic Evidence in Bangladesh: A Long Way to Go' (*SCLS*, 8 August 2017) <<https://sclsbd.org/application-of-forensic-evidence-in-bangladesh-a-long-way-to-go/>> accessed 22 December 2023.

¹⁵⁴ *Ibid.*

¹⁵⁵ Forensic Evidence Admissibility and Expert Witnesses <<https://www.crime-scene-investigator.net/forensic-evidence-admissibility-and-expert-witnesses.html>> accessed 22 December 2023.

¹⁵⁶ Ali and Akter (n 3).

the death. In cases of murder, autopsies plays a vital role, which helps the forensic experts determine the cause and time of death and whether the death was caused by homicide or not.¹⁵⁷ Exact time of death helps the investigator narrow down the murder timeline, enabling a traumatic search for relevant evidence.¹⁵⁸ Forensic analysis also helps in collecting and preserving evidence found at crime scenes.¹⁵⁹ Forensic experts analyse the blood, fingerprints, gun powder, and other clues, which helps to find out what exactly happened at the crime scene and who was involved in the murder.¹⁶⁰ DNA, a forensic evidence, found in victim or suspects body assist the investigator to link the perpetrator to the murder. Besides, the role of forensic evidence is also related to justice and truth.¹⁶¹ With the help of forensic expert the forensic evidence can provide a better understanding which will help in punishing the guilty one and acquit the innocent one.¹⁶² That's why forensic evidence not only plays an impactful role in homicide cases but also in the whole criminal justice system of Bangladesh.

Many crimes have been committed in secretive and mysterious circumstances that make it very difficult to obtain confession or eyewitness testimony¹⁶³. Testimonial evidence is subjective, on the other hand, forensic evidence is objective, unbiased, and more reliable; its validity and usefulness remain the same even after years, as opposed to testimonial evidence¹⁶⁴. This highlights the importance of forensic evidence in investigations even years after an offense has been committed. Forensic evidence provides a certainty and precision that other evidence cannot match, promoting transparency and accountability in the criminal justice system.¹⁶⁵ Science is objective and doesn't lie, that's why a judge in court is more likely to favor the side that presents compelling forensic evidence to prove an individual's guilt or innocence.¹⁶⁶ It is clear that forensic evidence

¹⁵⁷ Arif, Abdaud and Huzaiman (n 8).

¹⁵⁸ Ibid.

¹⁵⁹ Ibid.

¹⁶⁰ Ibid.

¹⁶¹ Al Halim, Erlin Indarti and Budi Santoso, 'The Role of Forensic Science in Criminal Acts of Murder Cases in Indonesia' (2022) 10 Open Access Macedonian Journal of Medical Sciences 951.

¹⁶² Ibid.

¹⁶³ Ibid

¹⁶⁴ Ayub Ali, 'Forensic Use of Scientific and Physical Evidence in Bangladesh' (2014) 1.

¹⁶⁵ P. Abhinav "Role of Forensic Evidence in Criminal Justice Delivery System in India" Legal service India <<https://www.legalserviceindia.com/legal/article-10415-role-of-forensic-evidence-in-criminal-justice-delivery-system-in-india.html#:~:text=Forensic%20evidence%20is%20objective%2C%20unbiased,in%20the%20criminal%20justice%20system>>

¹⁶⁶ "The Importance of Forensic Evidence in Court" (2021) Bangerter Law < <https://bangerterlaw.com/the-importance-of-forensic-evidence-in-court/>>

serves as a comprehensive tool to solve cases and is essential in criminal investigations and court proceedings to ensure justice.

4.6 Poor application of forensic evidence in Bangladesh

While the world is adopting advanced technology in criminal detection, Bangladesh lags behind and persists with outdated methods.¹⁶⁷ Misuse of DNA tests, outdated fingerprint tests and unreliable fingerprint analysis are the most controversial and cast doubt on their effectiveness.¹⁶⁸ Also, unlike many other countries, lawyers, investigators and judges in Bangladesh are rarely skilled in using forensic evidence to ensure justice.¹⁶⁹ Additionally, not only the legal infrastructure, but also the skilled personnel to collect, analyze and preserve forensic evidence.¹⁷⁰ According to Regulation 306(b) of PRB, the police officer should seek guidance from the Civil Surgeon for any doubt regarding the medical report but the reality is different as the Dooks perform all the procedures and the doctors only sign the report.¹⁷¹ Also, many doctors who perform autopsies are untrained and incompetent and the situation worsens when the cause of death is not specified in the autopsy report because of their incompleteness.¹⁷²

Traditional investigative methods slow down the evidence collection process, leading to delays in the outcome of cases. Moreover, with the development of technology, criminals use sophisticated techniques to commit crimes. That is why thousands of murders, homicides are buried and pending without any proper investigation in Bangladesh. In this context, two sensational case can be mentioned ; They are “Journalists Sagar Sarwar and Mehrun Runi” and “Tonu Murder Case”.¹⁷³

In the case mentioned *Sagar Sarwar and Mehrun Runi*, it was discovered that no organs were examined in the first postmortem, which was one of the most important pieces of evidence, and numerous people entered the crime scene, which later led to the contamination of the DNA

¹⁶⁷ Sejan (n 150).

¹⁶⁸ Ibid.

¹⁶⁹ Ali and Akter (n 3).

¹⁷⁰ Ibid.

¹⁷¹ Ayub Ali, ‘Forensic Use of Scientific and Physical Evidence in Bangladesh’ (2014) 1.

¹⁷² Ibid.

¹⁷³ ‘Bangladesh’s Poor Application of Forensic Science in Criminal Justice. Apathy or Legal Ambiguity?’ (*The Business Standard*, 6 January 2022) <<https://www.tbsnews.net/thoughts/bangladeshs-poor-application-forensic-science-criminal-justice-apathy-or-legal-ambiguity>> accessed 22 December 2023.

sample of the detective during laboratory analysis.¹⁷⁴ Then, after about two-and-a-half months, the court ordered for another post-mortem, but by then the bodies were severely decomposed and the forensic expert said that the case would have been easier to solve if the test had been done during the first post-mortem.¹⁷⁵

In the case of *Sohagi Jahan Tonu murder*, two post-mortems have been conducted to help investigators as the first post-mortem was criticized badly as it said Tanu was not raped but the second post-mortem said that sperm of three people were found on the body.¹⁷⁶ If forensic evidence was used properly, the conviction rate would be better than it is now.

4.7 Conclusion

Forensic evidence indeed has an influential role in the investigation homicide cases but due to procedural problems and legal loopholes it is not being used properly. So numerous cases are pending in court. But as technology develops and methods evolve, the impact of forensic evidence will remain an indelible mark on society's pursuit of justice.

¹⁷⁴ Ibid.

¹⁷⁵ Ibid.

¹⁷⁶ Khalid Bin Nazrul, 'Not a Single Arrest in 7 Years' (*The Daily Star*, 20 March 2023) <<https://www.thedailystar.net/news/bangladesh/crime-justice/news/not-single-arrest-7-years-3276146>> accessed 25 December 2023.

CHAPTER 5

Conclusion

Justice should not only be merely done, but it must also be seen to be done. In homicide cases, forensic evidence plays a role in determining the cause of death and is also referred to as the gold standard of evidence. With forensic evidence, forensic experts can assist crime scene investigators in gathering strong scientific evidence. However, further technical development and training of experts are needed to collect, preserve, and analyse evidence to ensure justice. Although the use of forensic evidence in Bangladesh is somehow limited and there are various obstacles to forensic evidence helping the investigators, such as limited resources, environmental factors, expert opposition, etc., some progress in Bangladeshi investigations strengthens its process and judicial system to identify. Offender easily and accurately. Moreover, it is difficult to proceed with investigation and prosecution in the absence of a strong legal framework, which leads to the failure of cases and criminals escaping punishment, which ultimately leads to more crime in society. So now is the right time to make a new law. Amend forensic evidence or existing laws; otherwise, the use of forensic evidence in criminal investigation and resolution will remain a myth in Bangladesh.

5.1 Findings of the Study

- 1) Bangladesh's legal framework is not sufficient for the proper use of forensic evidence, as there is no proper guidance in the law on how a judge should determine the relevance of forensic evidence. This makes it very difficult for judges and lawyers to confirm and identify the perpetrator.
- 2) Even though the DNA Act provided some guidelines, this Act is also not fulfilled.
- 3) Investigating officers only investigate, and they decide whether to refer the body to the Civil Sergeant for medical examination, where they do not have expertise in this field. Let alone investigating officers, judges and lawyers in Bangladesh do not have proper knowledge of forensics.
- 4) There are many forensic labs in Bangladesh, but most of them lack manpower, medical equipment and advanced technology. Also, there is a lack of digital forensic labs and a national database to identify evidence.
- 5) Medical specialists and civil sergeants are not sufficiently trained; therefore, forensic evidence can be misused, leading to false proof.

- 6) Although the admissibility of forensic evidence requires support from other evidence, the discussion shows that forensic evidence has a strong presence in solving homicide cases.
- 7) Traditional investigative methods slow down the process of gathering evidence, thereby delaying the outcome of cases.
- 8) In the case of investigation, traditional methods are still used, which leads to delay in outcome of cases. Furthermore, no legal criteria have been developed to determine the admissibility of the testimony of forensic experts.

5.2 Recommendations

1. Forensics requires a separate law, or reform of existing laws, that prescribes the use of forensic evidence and how forensic evidence is to be collected, stored or analyzed. There should also be a code of conduct for forensic scientists. Current legislation does not provide adequate guidance on any of these matters.
2. Every Police Department and Forensic Service in Bangladesh should be provided with special equipment including latest investigative kits so that they can identify and arrest criminals more easily and quickly. Police should be trained in advanced technology and aware of new investigative methods. IOs must go through some systematic training to understand scientific investigation.
3. Increased funding in the forensic department could be another factor that would allow staff to do better research and training and learn about more advanced technology.
4. Police, lawyers and judges need to be trained about forensic evidence, as forensic evidence plays an important role in most cases like murder, manslaughter, rape etc. Therefore, newly appointed advocates and judges should undergo training that includes police work and forensic laboratory, which will help them understand investigative procedures intertwined with forensics.
5. There is no codification of police, investigators, judges, magistrates and experts, unlike in the UK or US, to maintain minimum standards of investigation and justice. This lack of balance often fails to resolve a case. Therefore, there should be new training to ensure a high standard of micro-investigation where all law enforcement agencies understand how to work together to solve a case.

6. In Bangladesh expert witnesses are considered as lay witnesses. Such practices discourage professionals from participating. Therefore, they should be considered as experts and not as lay witnesses. Also, courts must have a certain standard for determining expert witness testimony. For example, Frye or Daubert standard.
7. National DNA databases, which contain genetic profiles, should be treated with care and respect to protect people's privacy.

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