



**DISSERTATION**

**ON**

**Admissibility of DNA Evidence in Bangladesh: Prospects and  
Challenges**

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## Consent Form

The dissertation titled ‘Admissibility of DNA Evidence in Bangladesh: Prospects and Challenges’ prepared by Sadia Afroze, ID: 2016-2-66-071 submitted to Dr. Nabaat Tasnima Mahbub, Assistant Professor, Department of Law, for the fulfillment of the requirements of Course 406 (Supervised Dissertation) for LL.B. (Hons.) degree offered by the Department of Law, East West University is approved for submission.

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## **ABSTRACT**

DNA evidence is used for revealing the complex issues. It is one of the most significant evidence that the investigating officer collect from crime scenes and the samples will be examined by the forensic laboratories. This research provides the possible areas where DNA evidence may be considered as admissible evidence in the court of Bangladesh. There is a law enacted in Bangladesh, that is DNA Act 2014, where it provides the entire procedure to use DNA as evidence and it should be admissible. However, there are many lacking found for using DNA evidence. People have faced many challenges for asking the admissibility of DNA evidence. This research will critically analysis the legislations, relevant cases and relevant articles in regard to the use of DNA evidence in Bangladesh. The aim of the study to discuss about admissibility of DNA evidence in Bangladesh. In this research work I tried to find out the way by which the DNA evidence may admissible in Bangladesh and it may reduce the crime and find out the criminals.

## **ACKNOWLEDGEMENT**

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## **DECLARATION**

I, hereby, confirm that this research paper is totally completed by me and any portion of this research paper does not submit anywhere. I solemnly declared that the research work does not contain any material work published by others aside from where due reference is made in the content. This research has been conducted for the fulfillment of the requirement of the course LAW 406 Supervised Dissertation.

## **LIST OF ABBRIVIATIONS**

UDHR – Universal Declarations of Human Rights.

ICCPR – International Covenant on Civil and Political Rights.

ICESCR – International Covenant on Economic, Social and Cultural Rights.

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# Chapter 1

## Introduction

### 1.1. Background of the Study

Evidence means and includes all the statements which the Court permits or requires to be made before it by witnesses, in relation to matters of fact under inquiry: such statements are called oral evidence and all documents produced for the inspection of the Court, such documents are called documentary evidence.<sup>1</sup> DNA evidence is one of the most conclusive prove to identify a person or confirm the suspect or eliminate the person from a crime. Now-a-days, DNA evidence became a significant because the investigating officer can collect the samples from the crime scene that can be used for concluding the investigation. It has been said in ‘Exchange Principle’ of Edmond Locard’s that ‘every contact leaves a truce.’ So, there can be any kind of DNA samples present in the crime scene that should be examined in the forensic lab. And it can give an end to the investigation as it finds the perpetrator or offender.<sup>2</sup>

However, DNA evidence has become a challenging legal procedure in Bangladesh.<sup>3</sup> There are legal and technical mechanism that is not easy to provide by the Judges, Lawyers and Police officer. In Bangladesh, the Judges, Lawyers and Police officer are not enough trained to examine the DNA evidence. Due to the lacking of forensic lab and DNA centers, unskilled officer, insufficient examining kits and improper implementations of forensic evidence, there are huge number of unsolved cases in Bangladesh.<sup>4</sup> Bangladesh can enhance the standard of justice

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<sup>1</sup> Inserted by The Evidence Act 1872; (I of 1872) section 3.

<sup>2</sup> Md Ayub ali, ‘Admissibility of DNA Evidence in Bangladesh: Options and Challenges’ (December, 2016) 02 01 15  
<[https://www.researchgate.net/publication/334942838\\_Admissibility\\_of\\_DNA\\_Evidence\\_in\\_Bangladesh\\_Options\\_and\\_Challenges](https://www.researchgate.net/publication/334942838_Admissibility_of_DNA_Evidence_in_Bangladesh_Options_and_Challenges)> accessed 7<sup>th</sup> March 2022.

<sup>3</sup> Ibid.

<sup>4</sup> Sakhawat Sajjat Sejan, ‘The importance of forensic evidence in our justice system’, The Daily Star (Dhaka, 11<sup>th</sup> June, 2019) <<https://www.thedailystar.net/law-our-rights/law-analysis/news/the-importance-forensic-evidence-our-justice-system-1755037>> accessed 7<sup>th</sup> March 2022.

by implementing the DNA evidence as a constructive structure. This research paper seeks to provide to the law of evidence by way of determining the obstacle and reduce those obstacles for the admissibility of DNA evidence. There are many areas that should be covered by this law for the seeks of better justice in Bangladesh. The cases should be solved for reduce the load and give the justice on time.<sup>5</sup>

## **1.2. Research Question**

This Dissertations aims to provides answer to the question that will play an effective role in law and it is useful for further study. Research question are:

1. To what extent DNA evidence are admissible within the current framework of the evidence law in Bangladesh?
2. What are the challenges and prospects of admissibility of DNA evidence in the judicial proceedings in Bangladesh?

## **1.3. Research Justification**

The Law of Evidence is a procedural law which is used for proving and disproving the facts in issue. It takes a significant part in deciding civil and criminal cases in the current day of Bangladesh. There are many cases under the Evidence Act and can be solved by the DNA evidence. But the DNA evidence is not properly admissible before the Courts of Bangladesh. This paper will discuss about the proper application of DNA evidence and how to overcome the obstacles to use DNA evidence. This research paper will discover the capacity, application and significance of using the DNA evidence as the admissible evidence in the proceedings of Courts in Bangladesh. As the Bangladesh has been enacted the DNA Act, 2014, it is clearly shown that Bangladesh deliberately agreed for the use of DNA Evidence. So, this research is all about the standard admissibility of the DNA Evidence. The standard use of the DNA evidence can lead to the end of fair justice.

## **1.4. Research Methodology**

The research is tried to follow all the possible primary and secondary data. It is directed by the qualitative research method. Textbooks, websites, online journals, newspaper articles will also be

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<sup>5</sup> Ali.Md Ayub, (N.2) accessed 7<sup>th</sup> March 2022

followed for analyzing this research. This research will also look on the legal perspective regarding the DNA Evidence of various countries for compare the applicability of DNA Evidence. All the data of this study will be combined for made the research paper more analytical and beneficial for the readers. The most significant part of this research is all about the analytical method and it improve the research activity.

### **1.5. Literature Review**

A.Z.M. Arman Habib says that DNA evidence has become the most leading forensic technique for identifying perpetrators and eliminating suspects. He also added that Bangladesh government should establish a national DNA database which will maintain secrecy of information about DNA profiling. Undeniably this is a start of a new era in the proceedings of Bangladesh. He also says that it's a phenomenal new mechanism in the shield of crime detention with much effective future application.<sup>6</sup> Sakhawat Sajjat Sejan says the pattern of committing crime is becoming more critical with the changes of science and technology. But the pattern of obtaining forensic evidence remains previous one. The first thing required to solve these complications regarding forensic evidence is enacting separate legislation for adducing them in the court and their procedures. The Evidence Act 1872 may also be amended complying with the practice of forensic evidence. The government may start taking DNA samples for DNA database under the Act. All things may be made before the judicial magistrate to avoid false and forged examinations.<sup>7</sup>

Taslima Yasmin says that without any suspicion, DNA evidence can emphasize the investigations and prosecutions regarding rape cases. She also added that DNA tests are considered as the conclusive proof in the rape case because it can identify an accused suspect to determine the involvement of the accused in that crime. In the investigation of rape cases, the investigating officer can collect the available DNA of victim or accused and directly send samples to the DNA laboratory for examining under the procedure of DNA Act, 2014. She also says that all cases under section 32A of Women and Children Repression Prevention Act, 2000

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<sup>6</sup> A.Z.M.Arman Habib, 'Deoxyribonucleic Acid (DNA) Act, 2014: A New Era in Criminal Justice System of Bangladesh' ( June, 2015) <[<sup>7</sup> Sakhawat Sajjat Sejan, \(N.4\) accessed 9<sup>th</sup> March 2022.](https://bdlawdigest.org/deoxyribonucleic-acid-dna-act-2014-a-new-era-in-criminal-justice-system-of-bangladesh.html#:~:text=The%20new%20law%20has%20a,conducting%20illegal%20forensic%20DNA%20activities.> accessed 9<sup>th</sup> March, 2022.</a></p></div><div data-bbox=)

DNA examination have to be done for both victims and accused irrespective of their consent to such examinations.<sup>8</sup>

Ibrahim Khalil says about the changes of Evidence law and how far the changes should go. He also added that section – 155 (4) of the Evidence Act should be updated. According to the constitution, this section should not remain in the Act. There are other possible sources for dealing with the rape cases, for instance ‘DNA evidence’. Nowadays, collecting and examining DNA samples is become easy for the investigating officer and laboratories. In rape cases, DNA evidence should be applied as the significant evidence. So, Evidence Act should be updated because it is 100 years old legislation. As committing crime is updated day by day, the legislation should also be updated for the better justice.<sup>9</sup>

Md. Ayub Ali says that the DNA evidence should be use as the type of evidence in the proceedings of courts in Bangladesh. And Bangladesh has enacted DNA Act in the year of 2014 but it remains only in legislation. It is not properly admissible before the courts of Bangladesh. He also added that DNA evidence is most vital evidence that is collect from the crime scene by the investigating officer and that can be leads to the end of the better justice. Now-a-days, there are many latest machineries that can use for collecting, keeping, examining the DNA evidence in the laboratories.<sup>10</sup> So, he also found the importance of DNA evidence.

## **1.6. Scope and Limitations of the Study**

This research has been focused on the admissibility of DNA evidence as to the national DNA database, enough forensic lab & DNA centers, skilled investigation officer, trained judges and lawyers, sufficient examining kits in the light of the Evidence Act 1872 and DNA Act 2014, and a comparative view with other countries. The focus of this research study will be on the fact that the application of DNA evidence should be more effective and admissible I the proceedings of the court. The limitation of this research is the less resources that has been discussed by the

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<sup>8</sup> Taslima Yasmin, ‘Mandating DNA evidence in all violence against women cases’ The Daily Star (Dhaka, 27<sup>th</sup> October, 2022)

<<https://www.thedailystar.net/opinion/news/mandating-dna-evidence-all-violence-against-women-cases-1984661>> accessed 2nd April 2022.

<sup>9</sup> Ibrahim Khalil, ‘Evidence Act: How far should the changes go’ (5<sup>th</sup> March, 2022)

<<https://www.tbsnews.net/thoughts/evidence-act-how-far-should-changes-go-211219>> accessed 2<sup>nd</sup> April 2022.

<sup>10</sup> Md Ayub Ali, (N.2)

<[https://www.researchgate.net/publication/334942838\\_Admissibility\\_of\\_DNA\\_Evidence\\_in\\_Bangladesh\\_Options\\_and\\_Challenges](https://www.researchgate.net/publication/334942838_Admissibility_of_DNA_Evidence_in_Bangladesh_Options_and_Challenges)> 16 accessed 2<sup>nd</sup> April, 2022.

experts and scholars. Due to some of the limitations, this research paper is failed to conduct interview, survey. Moreover, it concludes by analyzing all legal provisions, UDHR, articles and including existing scenario in Bangladesh.

### **1.7. Chapter Outline**

This provides a summary of every chapter of this research to understand the purpose of this study.

Chapter 2 titled ‘DNA Evidence: Concept, Process and Context in Bangladesh’ provides the meaning of DNA evidence, process of collection DNA samples and the context in Bangladesh.

Chapter 3 titled ‘Admissibility of DNA evidence in the Courts of Bangladesh’ discusses about the meaning of admissibility, the Act and application of DNA evidence and discuss judicial decisions.

Chapter 4 titled ‘Prospects and Challenges of using DNA Evidence in Bangladesh’ deals with the areas where DNA evidence is used, and the challenges faced for using it.

Chapter 5 titled ‘DNA Evidence and International Standard’ focuses on the international of standard of using DNA evidence and relevant cases.

Chapter 6 concludes the study with findings and gives the possible recommendations.

## Chapter 2

### DNA Evidence: Concept, Process and Context in Bangladesh

#### 2.1. Introduction

DNA evidence is used in various countries for solving dispute rapidly. It includes the physical samples for identifying the evidence. In this chapter, it will elaborate the concept of DNA evidence, collection of DNA evidence and its legal views in Bangladesh. To apply the DNA evidence, all should produce the proper and particular report according to the Evidence Act 1872 and DNA Act 2014 before the courts. It will also discuss about the legal aspects of this DNA evidence. Here, this chapter will explore the concepts of the DNA evidence in the view of legal provisions in Bangladesh.

#### 2.2. Concept of DNA Evidence

DNA was first recognized and identified by the Swiss biologist, **Johannes Friedrich Miescher** in 1869 during his research on white blood cells.<sup>11</sup> But DNA first applied as evidence into the courts in 1987, when police in England asked molecular biologist Alec Jeffery, who had begun investigation the use of DNA for forensics. It took many years to understand and realize the importance of DNA evidence.<sup>12</sup> DNA evidence was first applied in the legal proceedings of criminal case in USA in the year of 1987, the case was '*Andrews v. State*'.

The scientific name of DNA is 'Deoxyribonucleic Acid' because it is an acid that is found in every cell of human body. This is a chemical which is found in virtually every cell in the body and which carries genetic information. Except for identical twin, each person's DNA is different.<sup>13</sup> This is a significant structure of DNA for forensic purposes is that no two individuals have the same DNA configuration except identical twins.<sup>14</sup> The DNA inspection concede forensic scientists to monitor the DNA molecules form an individual or a piece of evidence

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<sup>11</sup> Ian Terry, 'The History of DNA' (24<sup>th</sup> April 2019) <<https://www.lunadna.com/history-of-dna/>> accessed 22<sup>nd</sup> March, 2022.

<sup>12</sup> Md Ayub Ali, (N.2) accessed 24<sup>th</sup> March, 2022.

<sup>13</sup> W.J. Stewart, 'Collis Dictionary of Law' (Harper Collins Publisher, 2006) <<https://legal-dictionary.thefreedictionary.com/admissibility>> accessed 24<sup>th</sup> March, 2022.

<sup>14</sup> Hocking & Ann Barbara, 'DNA, Human Rights and The Criminal Justice System' (1997) 3(2) 11 <<http://classic.austlii.edu.au/au/journals/AUJIHRights/1997/11.html>> accessed 23<sup>rd</sup> March, 2022.

consider and compare them with DNA samples from other sources.<sup>15</sup> The DNA evidence may initiate to case for the accused that the court may link or eliminate a person to or from a crime.<sup>16</sup> The DNA inspection report which is made under the government DNA laboratory sustainable piece of evidence. Nowadays, DNA evidence is more effective evidence in worldwide because of its sensible scientific method for various grounds including persistence of portion.<sup>17</sup>

### **2.3 Collection of DNA Evidence**

DNA evidence is supposed to be very accurate and authentic because it is a scientific method which will be considered as the valid one. Science provides authentic results of any kind of tests. Collection of DNA evidence is very challenging in the context of its process of examination, reservation and application. The massive challenge of collection of DNA evidence is the admissibility of the DNA evidence before the court and the reservation and consideration. The DNA evidence should be accurate, properly collected, reserved and documented because it has to satisfy the court that the evidence put in front of it is truthful. The prosecution has to appear before the court the enumeration of every ground of collecting the evidence, the testing procedure followed and the result found in the laboratories and an interpretation of DNA evidence so that the submission of DNA evidence can be admissible by the court.<sup>18</sup> However, a complete guideline on the use of DNA evidence has yet to be consolidated. The Deoxyribonucleic Acid (DNA) Act, 2014 has been provided the guidance for collecting DNA evidence but it has become problematic for the absence of execution of rules.<sup>19</sup>

#### **(a) Collection of DNA samples from body of victims, accused and others**

DNA samples can be taken in many ways but there must be appropriate discretion for taking DNA samples from the body of human being. There are many issues that comes for human rights in accordance with the collection of DNA samples. As there is a recognized principle that every individual person has their own DNA and no one should use the DNA samples without their

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<sup>15</sup> U.S. Congress Office of Technology Assessment, 'Genetic Witness: Forensic Uses of DNA Tests', (U.S. Government Printing Office, 1990) <<https://www.princeton.edu/~ota/disk2/1990/9021/9021.PDF>> accessed 24<sup>th</sup> March, 2022.

<sup>16</sup> George Bundy Smith and Janet A. Gordon, 'The Admission of DNA Evidence in State and Federal Courts' 65 6 2465 (1997) <<https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=3374&context=flr>> accessed 25<sup>th</sup> March, 2022.

<sup>17</sup> Ali Md Ayub, (N.2) 18 accessed 25<sup>th</sup> March, 2022.

<sup>18</sup> Ibid.

<sup>19</sup> Inserted by the Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) section 39.

approval.<sup>20</sup> When collecting DNA samples from a person, one should ensure their privacy, dignity and human rights. There is a provision in DNA Act Bangladesh 2014, that is taken from Article 7 of the International Covenant on Civil and Political Rights (ICCPR). This article says that ‘No one shall be subjected to medical and scientific experimental without their free consent.’<sup>21</sup> Sections 4, 6, 10 of Deoxyribonucleic Acid (DNA) Act 2014, provides that without written consent of the concerned person or the order of the competent court, as the case may be, and without the presence of at least two witness, DNA sample cannot be collected.<sup>22</sup> As per section 4 of the Deoxyribonucleic Acid (DNA) Act 2014, the police officer will request any person who can be victim, suspect or accused or involved in the alleged crime from providing a DNA sample.<sup>23</sup> In section 6(1) of Deoxyribonucleic Acid (DNA) Act 2014, police officer cannot force any person to give DNA samples without the previous mentioned procedure.<sup>24</sup> In section 7 of the Deoxyribonucleic Acid (DNA) Act 2014, says that if any person so requested for DNA samples and is not giving consent within 3 hours, it will be considered as he/she has refused to give consent and the fact of such refusal shall be written in a prescribed form to be submitted to a competent court praying for an order of collecting DNA samples.<sup>25</sup> According to section 8 of the Act, the court after hearing both the parties and considering the documents before it may order for the collection of DNA samples.<sup>26</sup>

Once all the above procedure has done then DNA samples will be collected and sent forward to the laboratory. The collection of DNA evidence in rape cases has been done in this manner as the forensic samples like cloth worn by the victims, undergarment, bed sheets etc., internal vaginal swabs and slides of microscopic examination, along with blood sample of the victim or the accused person, will be collected. But the vaginal swabs should be collected within 72 hours of the charged occurrence. Even if all the mentioned examination is delayed more than 72 hours, the forensic sample must be sent to the laboratory along with the victim/victim’s blood sample. For collecting DNA samples from a suspect with a murder, the National Forensic DNA Profiling

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<sup>20</sup> Ali Md Ayub, (N.2) 18 accessed 27<sup>th</sup> March, 2022.

<sup>21</sup> International Covenant on Civil and Political Rights (ICCPR), (adopted 16th December 1966, entered into force 23rd March 1976) Art 07.

<sup>22</sup> Inserted by the Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 4,6 & 10.

<sup>23</sup> Inserted by the Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 4.

<sup>24</sup> Inserted by the Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 6.

<sup>25</sup> Inserted by the Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 7.

<sup>26</sup> Inserted by the Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 8.



Laboratory (NFDPL) requires the sources of forensic samples that might remain in the crime spot from the suspects, for instance, weapon, garments, hat, eyelashes, chewing gum, cigarette, tooth picks etc., tissue samples from the victim and blood sample from the suspects. And if the victim is declared as dead then the nearest relations like mother, father, husband, wife and children's blood samples and the biological sample or objects relevant to the case, body parts, body remains such as bones, teeth and hairs with root, used, clothes etc., are required. All the samples should be packed and sealed in paper bag without using polythene or plastic bags.<sup>27</sup> All the sample should accompany a forwarding Note (form 1), a sexual assault examination form for the victim (form 3), an identification form (form 2) for the accused duly filled in and signed in the presence of a witness that should be Magistrate/Public Representative/Medical Officer.<sup>28</sup>

#### **(b) Collection of DNA samples from the crime scene**

Crime scene is a place where a crime has been committed or where an object is found from the victim's body or from the body of any suspected person or an object carried in there by any relevant person, or where an object related to the crime is found, according to section 2 (1) of the Deoxyribonucleic Acid (DNA) Act 2014.<sup>29</sup> The investigation of a crime scene is one of the most effective for a crime investigation because DNA evidence is most significant evidence which are collected from the crime scene. The investigating officer needs to know the proper procedure of collecting DNA evidence that where DNA evidence can be existed, how the collection should be made and how the packaging should be done. The most common things have been found in crime scene are blood, semen, hair and saliva. But DNA has also be found in urine, teeth, bone, skin cells and internal organs of human being. If the murder has been done with a bullet, it can be tested for the examination of DNA. As the DNA can be marked on anything relevant from dirty laundry o eyeglasses, cigarettes, bottles and drinking glasses, partial fingernails, masks, globes, the steering wheel of a car, door knobs and handle, and cabinets. All these items should be collected and tested for the purpose of determining DNA and make a report.<sup>30</sup>

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<sup>27</sup> Ali Md Ayub, (N.2) 19,20 accessed 29<sup>th</sup> March, 2022.

<sup>28</sup> Ibid.

<sup>29</sup> Inserted by the Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 2 (1)

<sup>30</sup> Ali Md Ayub, (N.2) 20 accessed 30<sup>th</sup> March, 2022.

There are some procedures prescribed by the National Forensic DNA Profiling Laboratory (NFDPL) that should be followed to avoid desecration. Such as:<sup>31</sup>

- i) to wear gloves while handling evidence,
- ii) to avoid touching the area where DNA might exist,
- iii) to handle an item at a time and change the gloves before starting another one,
- iv) to avoid talking, sneezing and coughing over the evidence,
- v) to avoid eating, drinking, smoking when collecting the evidence, and to avoid touching nose, face and mouth when collecting evidence

After collecting DNA evidence from the crime scene, the samples should be packaged and transported the same to the laboratory. The DNA evidence should be packaged by the paper bags or envelopes after air-dried, and it should be properly labeled and sealed by the investigation officer in the presence of witness such as Magistrate, Public Representative and Medical Officer. Then the DNA evidence will be sent to the laboratory with proper documentation. The investigating officer will have to ensure complete documentation as well as the legality, relevance, authenticity, integrity and continuity of the chain of possession of DNA evidence.<sup>32</sup>

#### **2.4. DNA Evidence in the Context of Bangladesh**

DNA Act 2014 has been enacted for making evidences more reliable and proving the fact. As some of the major crime is involved complex medico-legal issues and forensic science plays an important role in every part of the collection of evidence. In Bangladesh, there are huge scope to use DNA evidence to solve many cases. But there are no proper applications of DNA evidence. In fact, some complex and medico legal issues can hardly be resolved without considering scientific and physical evidence. Despite many shortcomings, the existing laws of our country can be solved many cases and bring justice to the victims. This is the demand of time that centuries old legal framework dealing with the forensic use of scientific and physical evidence be amended. And all the existing laws should be followed and utilized by the law and order.<sup>33</sup>

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<sup>31</sup> Md. Ayub Ali (N.2) 20

<[https://www.researchgate.net/publication/334942838\\_Admissibility\\_of\\_DNA\\_Evidence\\_in\\_Bangladesh\\_Options\\_and\\_Challenges](https://www.researchgate.net/publication/334942838_Admissibility_of_DNA_Evidence_in_Bangladesh_Options_and_Challenges)> accessed 30<sup>th</sup> March 2022

<sup>32</sup> Ibid.

<sup>33</sup> Sakhawat Sajjat Sejan (N.4) <<https://www.thedailystar.net/law-our-rights/law-analysis/news/the-importance-forensic-evidence-our-justice-system-1755037>> accessed 30<sup>th</sup> March, 2022.

David Lazer and Michelle N. Meyer says that “DNA analysis has become a mainstay of the criminal justice system – the gold standard for identification.” As it is the process to identify the criminal and save the innocent people from a crime. This is the easiest technique for the courts of law to give punishment the criminals. But in Bangladesh, they still working on it for operating this modern era of the scientific revolution. Even if the DNA Act 2014 has been enacted but there is still a lot of things that yet to be done. No developments in forensic law have been observed in Bangladesh except for the enactment of the Deoxyribonucleic Acid (DNA) Act 2014 and Deoxyribonucleic Acid (DNA) Rules 2018.<sup>34</sup> As these Act and Rules provides a proper procedure to sample collection, preservation, examination, sign, documentation and submission, it should be implemented in all cases and submitted before the court.

## **2.5 Conclusion**

DNA evidence is exclusive evidence in criminal cases because the crime scene has remained any kind of sample of any person that can lead to the end of the case and bring the justice to the victim. The collection of DNA samples is a simple process but the value of the evidence is shown in the judgment. And investigating officer should be enough skilled of collecting the samples. In Bangladesh, there are many issues arises regarding the application of DNA evidence. In this chapter, it is discussed that how the DNA samples should be collected and some of the barrier of using it as evidence in Bangladesh. However, DNA evidence should be admissible in our country.

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<sup>34</sup> Al-Hamadi Jehan, ‘Laws in Bangladesh on DNA technology: why isn’t it working as intended?’ (2019), 2 <[https://www.academia.edu/41220312/Laws\\_in\\_Bangladesh\\_on\\_DNA\\_technology\\_why\\_isnt\\_it\\_working\\_as\\_intended](https://www.academia.edu/41220312/Laws_in_Bangladesh_on_DNA_technology_why_isnt_it_working_as_intended)> accessed 30<sup>th</sup> March, 2022.

## Chapter 3

### Admissibility of DNA Evidence in the Courts of Bangladesh

#### 3.1 Introduction

DNA evidence is used for proving the criminal cases by collecting the DNA samples from crime scene. Bangladesh has been enacted the Deoxyribonucleic Acid (DNA) Act 2014 for the improvement of criminal proceedings. But at present scenario of 2022, Bangladesh did not apply the DNA Act 2014 in all the relevant cases. Further it has been arisen a question that whether it is admissible before the court or not. The law provides many criteria for developing the DNA evidence as admissible evidence and it should be applied in all relevant cases. However, the admissibility of DNA evidence has not yet accepted and has been question. In this chapter, it will discuss the meaning of admissibility and application of DNA Act 2014 for the admissibility of DNA evidence in the courts of Bangladesh.

#### 3.2. The Meaning of Admissibility

Admissibility means the law of evidence that determines whether or not the evidence can be received by the court. The evidence must first be relevant but even relevant evidence will be tested for its admissibility.<sup>35</sup> Admissible means capable of being allowed or conceded in the court. Admissible is a term that is used to describe information that is relevant to a determination of issues in any judicial proceeding so that such information can be properly considered by a judge or jury in making a decision. Evidence is admissible if it is of such a character that the court is bound to accept it during the trial so that it may be evaluated by the judge or jury. Admissible evidence is the foundation of the deliberation process by which a court or jury decides upon a judgment or verdict.<sup>36</sup> Admissible evidence is evidence that may be presented before the trier of fact (i.e., the judge or jury) for them to consider in deciding the case. Rules of evidence determine what types of evidence is admissible, and the trial court judge applies these rules to the case. Generally, to be admissible, the evidence must be relevant and not outweighed by countervailing considerations (e.g., the evidence is unfairly prejudicial, confusing, a waste of

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<sup>35</sup> W.J. Stewart, 'Collis Dictionary of Law' (Harper Collins Publisher, 2006) <<https://legal-dictionary.thefreedictionary.com/admissibility>> accessed 31st March, 2022.

<sup>36</sup> Ibid.

time, privileged, or, among other reasons, based on hearsay).<sup>37</sup> Evidential relevance is a question of fact which is duty of lawyers to prove, that means the counsels need to decide whether to tender such evidence in the court for the purpose of admissibility. Any evidence can be admissible if that have quality of something for being admitted by the court. If the evidence is found relevant then it will be considered as admissible evidence.<sup>38</sup>

### **3.3 The DNA Act, 2014 and the Evidence Act, 1872**

There is a maxim in the Evidence Act that ‘all admissible facts are relevant but all relevant facts are not admissible.’ But once a fact is proved to be relevant there cannot be any presumption that the fact would be admitted by the court as there maybe bars in law to its admission into evidence.<sup>39</sup> For example, ‘privileged communication’ may be shown to be relevant, yet the court may not admit them generally in evidence.<sup>40</sup> Section 136 of Evidence Act 1872\_says when either party proposes to give evidence of any fact, the Judge may ask the party proposing to give the evidence in what manner the alleged fact, if proved, would be relevant; and the Judge shall admit the evidence if he thinks that the fact, if proved, would be relevant and not otherwise. If the fact proposed to be proved is one of which evidence is admissible only upon proof of some other fact, such last-mentioned fact must be proved before evidence is given of the fact first mentioned, unless the party undertakes to give proof of such fact, and the Court is satisfied with such undertaking. If the relevancy of on alleged fact depends upon another alleged fact being first proved, the Judge may, in his discretion, either permit evidence of the first fact to be given before the second fact is proved, or require evidence to be given of the second fact before evidence is given of the first fact.<sup>41</sup> It is also given in the Evidence Act 1872, that admission of evidence may be done by the judges or jury and it will depend on the relevancy, authenticity.

The purpose of the Deoxyribonucleic Acid (DNA) Act 2014 is found in the preamble of this Act. This Act was established to create the procedure for collection and analysis of DNA samples, to operate the use of DNA sample and DNA profile, to build forensic DNA laboratory,

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<sup>37</sup> Legal Information Institute, ‘Admissible Evidence’ 1992  
<[https://www.law.cornell.edu/wex/admissible\\_evidence](https://www.law.cornell.edu/wex/admissible_evidence)> accessed 31st March, 2022.

<sup>38</sup> Ali Md Ayub, (N.2) 20  
<[https://www.researchgate.net/publication/334942838\\_Admissibility\\_of\\_DNA\\_Evidence\\_in\\_Bangladesh\\_Options\\_and\\_Challenges](https://www.researchgate.net/publication/334942838_Admissibility_of_DNA_Evidence_in_Bangladesh_Options_and_Challenges)> accessed 1<sup>st</sup> April, 2022.

<sup>39</sup> Ibid.

<sup>40</sup> Inserted by The Evidence Act 1872 (I of 1872) s 121-131.

<sup>41</sup> Inserted by The Evidence Act 1872 (I of 1872) s 136.

to settle down National DNA Database, and to formulate rules on other related matters.<sup>42</sup> Section 11 of Deoxyribonucleic Acid (DNA) Act 2014 says, a qualified person, upon analyzing the DNA sample, prepares and signs a DNA Profile. The report shall include the followings:<sup>43</sup>

- a) Forwarding note signed by the Head of DNA Laboratory;
- b) Brief of the conduct process of DNA analysis;
- c) The procedure of DNA analysis;
- d) Others prescribed by the rules

Section 12 of Deoxyribonucleic Acid (DNA) Act provides that DNA sample and DNA Profiles cannot be used except on the following purposes:<sup>44</sup>

- a) Identification of a person,
- b) The person associated with crime,
- c) Identification of a missing or anonymous person,
- d) Determination of relation between two or more persons,
- e) Identification of dead bodies,
- f) Resolving disputes,
- g) Any other purpose prescribed by rules

According to section 13 of the Deoxyribonucleic Acid (DNA) Act 2014, DNA sample and DNA profile need to be preserved in the DNA Laboratory and the National DNA Database respectively for a definite period according to the procedure prescribed by rules.<sup>45</sup> Section 14 of Deoxyribonucleic Acid (DNA) Act, 2014 says about the establishment of DNA laboratory. It provides that the Government may establish one or more DNA laboratory by issuing gazette notification and if needed then Government may take advise from the advisory board. In Dhaka, there is a National Forensic DNA Profiling Laboratory which is considered as established under this Act.<sup>46</sup> Section 15 of Deoxyribonucleic Acid (DNA) Act, 2014\_says that the standard of DNA activities should be maintained by the author and ensures the process is followed in well mannered. To ensure the standard of DNA activities they should appoint qualified and trained

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<sup>42</sup> Inserted by the Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) Preamble.

<sup>43</sup> Inserted by The Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 11.

<sup>44</sup> Inserted by The Deoxyribonucleic Acid (DNA) Act 2014, (X of 2014) s 12.

<sup>45</sup> Inserted by The Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 13.

<sup>46</sup> Inserted by The Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 14.

staffs, follow the actual process for DNA analysis, maintain security and secrecy for preserving information and use effective and accurate machineries for maintaining the standard.<sup>47</sup>

According to the section 45 of Deoxyribonucleic Acid (DNA) Act 2014, when the court has to form an opinion upon a point of science, or art, or as to identify of handwriting or finger impressions, the opinions upon that point of persons specially skilled in science or art, or in questions as to identify of handwriting or finger impressions are relevant facts. As such forensic evidence, which includes DNA evidence, is relevant fact.<sup>48</sup> This section of DNA Act 2014 categorically provides that a report containing DNA profile may be treated as admissible evidence.<sup>49</sup> But still there is a question that what would be standard of admissibility. As the question comes in the admissibility of evidence, there is still some difficulty faced by the legal persons that whether the evidence is valid and reliable or not and whether it is authentic and accurate in the terms of scientific grade. There are some problems may be faced for keeping the validity and reliability that is the inadequate laboratory and techniques, for example; insufficient DNA sample size, erosion and defilement of the DNA sample, inappropriate test procedures, false positive identification and false negative identification and false negative results.<sup>50</sup>

### **3.4 Application of DNA Evidence in the Courts of Bangladesh**

In Bangladesh, there was no legislation formed for DNA analysis before 2014. But section 45 of Evidence Act 1872 was used for the expert opinion regarding the scientific evidence that seems to be relevant fact and produce before the court.<sup>51</sup> It was only solution for any kind crime happened that need to examine the DNA samples. In the year of 2014, the DNA Act has been enacted in our country for the acceptance of DNA evidence. There are many cases under DNA Act 2014 that has come to the end and there are also many cases those are pending.

In the case of '*Beautiful Bibi vs. Sydur Rahman*', the question of legitimacy of the child Md. Biman has been arise in maintenance and dower case. Then the plaintiff Beautiful Bibi filed an application for DNA test of the child Md. Biman and also the defendant Sydur Rahman for the purpose of recording evidence on the said matter. Then the High Court Division held that the

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<sup>47</sup> Inserted by The Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 15.

<sup>48</sup> Inserted by The Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 45.

<sup>49</sup> Inserted by The Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 37.

<sup>50</sup> Ali Md Ayub, (N.2) 20 accessed 3<sup>rd</sup> April, 2022.

<sup>51</sup> Inserted by The Evidence Act 1872 (I of 1872) s 45.

DNA test report prepared by the government DNA laboratory is credible evidence. The report is consistent with the admitted birth of the child during continuance of the marriage.<sup>52</sup>

In the constitutional case of '*Bangladesh Jatiyo Mohila Ainjibi Samity (BJ MAS) vs. Ministry of Home Affairs and Others*', on the basis of DNA evidence it was held that the accused former Deputy Inspector General of Police have the illegal custody of more than seven children. He claimed that his wife gave birth of seven children at one pregnancy. When the news of having seven children get spread then there was no witness or any other evidence that prove found about the pregnancy of the accused's wife. That makes a serious doubt created about their parenthood among the people as he was former DIG. The seven children that prompted different organization to move the Court with a writ petition for an order of DNA test of the seven children. DNA test did not match with the father and between 7 children as siblings.<sup>53</sup> These are some of the cases that has been proved by the DNA test. And there are some other cases that did not prove by the DNA test method. Specially in rape case, it is clearly defined that DNA test must be conducted in all sexual assault or rape cases and DNA sample should be sent to the lab within 48 hours.<sup>54</sup>In *Tonu murder case*, investigation cannot come to an end and they did not find the actual culprit. They can only identify that the Tonu was being gang raped before murder. This is not enough for a rape case and in the year of 2016 when there is DNA Act existed in Bangladesh. If the legislation has been enacted before then it should be applied in all the relevant cases.<sup>55</sup> Application of DNA evidence in Bangladesh is not progressive. The DNA Act 2014 should be applied in all the relevant case so that the case may give the judgment and punish the offender. It will reduce the tendency of committing crime. Now, we can say that Bangladeshi court should focus on the application of DNA evidence.

### 3.5 Conclusion

DNA evidence may be admissible evidence under the DNA Act and DNA Rules. It is useful for time saving, quick investigation and reliable judgement if all the given procedure strictly

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<sup>52</sup> Beautiful Bibi vs. Sydur Rahman, 67 DLR (2015) P.1.

<sup>53</sup> Writ Petition No. 5369 of 2006.

<sup>54</sup> Ali Md Ayub (N.2) 27

[https://www.researchgate.net/publication/334942838\\_Admissibility\\_of\\_DNA\\_Evidence\\_in\\_Bangladesh\\_Options\\_and\\_Challenges](https://www.researchgate.net/publication/334942838_Admissibility_of_DNA_Evidence_in_Bangladesh_Options_and_Challenges)> accessed 3<sup>rd</sup> April, 2022.

<sup>55</sup> Rafiul Islam, 'Justice for Tonu: All are hoping against hope' (Dhaka, 28<sup>th</sup> April, 2016)

<https://www.thedailystar.net/frontpage/all-are-hoping-against-hope-1215766>> accessed 4<sup>th</sup> April, 2022.



followed. In Bangladesh, DNA evidence is not properly admissible before the court. There are many unsolved cases and also some solved cases under DNA Act 2014. When establishing DNA evidence as admissible, there are many challenges appear. And there are also many areas where we can expect the use of DNA evidence.

## Chapter 4

### Prospects and Challenges of using DNA Evidence in Bangladesh

#### 4.1 Introduction

DNA evidence has been applied for making the evidence reliable. There are many grounds where DNA evidence may apply for the validity of the evidence such as, determining genetic relationship or determining legitimacy of children, identification of dead bodies and also investigation and prosecution of the serious kind of offences such as rape, culpable homicide, burglary and so forth.<sup>56</sup> It will discuss all the possible areas that should be covered under this act. There are many prospects for using DNA evidence and that will also face challenges at some points. So, this chapter will discuss about the prospects and challenges of using DNA evidence.

#### 4.2 Prospects of using DNA Evidence

There are many prospects where DNA evidence can use for the identification or determination the relation or find out the offender.

##### 4.2.1. Determining Genetic Relationship

DNA sample is scientific formula that each person has it but each one is different from another except twin. It is a unique set that indicates an individual's physical characteristics identity and this passes from one generation to the next generation. In this world, each and every person has their own DNA but science can identify the genetic relationship by the DNA analysis. As the DNA sample comes from the blood cells, hair then identify the actual matched DNA is the easy process for identifying genetic relationship. In the case of '*Bangladesh Jatiyo Mahila Ainjibi Samity vs. Ministry of Home Affairs and others*', where the respondent claimed that his wife gave birth of seven children at once pregnancy but there are no witnesses. And the petitioners applied before the court for the DNA test of all the children and parents. Then the court permitted for DNA test and directed two types of DNA test; one is sibling DNA test and another is DNA

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<sup>56</sup> Ali Md Ayub, (N.2) 23

<[https://www.researchgate.net/publication/334942838\\_Admissibility\\_of\\_DNA\\_Evidence\\_in\\_Bangladesh\\_Options\\_and\\_Challenges](https://www.researchgate.net/publication/334942838_Admissibility_of_DNA_Evidence_in_Bangladesh_Options_and_Challenges)> accessed 11<sup>th</sup> April, 2022.

paternity test. All DNA reports were not related to each other. Hence, it is proved that they are not real parents of these seven children. So, this genetic relationship can be identified by the DNA test and this DNA evidence assist the court to come up with a conclusive decision on the cases concerning genetic relationship.<sup>57</sup> These are the validation of a case and should be applied in the court.

#### **4.2.2. Determining Legitimacy of Children**

The term legitimacy of children has been come up when the father of the children denies that the child is not born in the period of marriage and when there exists incertitude as to the paternity. In this situation, DNA evidence is used for the validation of the legitimate children. And before that one should identify that the child was born during the time of valid marriage. In section 112 of the Evidence Act 1872, if a child is born during the continuance of a valid marriage between his mother and any man, or within two hundred and eighty days after its dissolution, the child shall be conclusively presumed to be legitimate unless it can be shown that the parties to the marriage had no access to each other at any time when the child could have been begotten.<sup>58</sup> This section provides that it is a conclusive proof as to the legitimacy of a child born during a valid marriage or within 280 days of dissolution of a marriage. In the case of *Md. Mostafa vs. Bedena Khatun and Another*,<sup>59</sup> Bedena Khatun alleged that she was raped by the Md. Mostafa (her cousin brother) and become pregnant which she could not yet feel. Then she got married to another person and he left her after 3 months of marriage when pregnancy symptoms were exposed. After that the respondent-petitioner gave birth to a child. It was observed by the legal person. Then the High Court Division observed that identify the fatherhood of the child was so easy by the DNA test method. This should be normalized in the Bangladeshi court.

#### **4.2.3. Identification of Dead Bodies**

Identification of dead bodies held in the cases where it needed. In both the civil and criminal cases, it is necessary to identify the dead bodies of the case if it is required for the proceedings. In the case of *'State vs. Md. Foyzal Bin Nayem'*<sup>60</sup> it was held as criminal offence. The police officer found blood-stained dagger from the crime scene and blood sample was matched with the

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<sup>57</sup> Ibid.

<sup>58</sup> Inserted by The Evidence Act 1872 (I of 1872) s 112.

<sup>59</sup> *Md. Mostafa vs. Bedena Khatun and another*, 2012, 41 CLC (HCD)

<sup>60</sup> *State vs. Md. Foyzal Bin Nayem*, 2017 (2) LNJ 239

dead bodies sample which provided that the allegation against the perpetrators is true. There are some case which identify the dead bodies for the purpose of acknowledged the medical cause of death. So that they can claim insurance as well as compensation for death in work place. There are well known cases, Rana Plaza case and Tazrin Fashion case. By the DNA test, the dead bodies were identified, and court was held to be compensated from the Tazrin fashion.<sup>61</sup> So, this process of identification of dead bodies should be used in the court of Bangladesh.

#### **4.2.4. Investigation of Rape Case**

DNA test must be held in all the rape or sexual assault cases. In a rape case, DNA test provides the easy identification of the offender with the reliability and accuracy. It will produce before the court as the conclusive proof. In the rape cases, DNA samples are collected from the blood or sperm on the clothes of the victim or accused, or from the blood/semen in vagina of the victim. Then all the samples sent to the lab by following all the procedure because DNA test is important medical evidence in rape cases.<sup>62</sup> In a writ petition, '*Naripokkho and others vs. Bangladesh and others*', where the High Court Division directed that DNA tests must be conducted in all rape or sexual assault cases and the DNA sample or other sample should be sent to the lab within 48 hours.<sup>63</sup>

In the case of Sohagi Jahan Tonu, who was raped and murder by unidentified miscreants and first autopsy found no evidence about rape and murder. Then the High Court Division ordered a second autopsy as the report created controversy. In the second autopsy, the Criminal Investigation Department (CID) found the evidence of being raped. Then it was concluded that Tonu was raped and killed. DNA evidence make it easy to find out the incident before murder. Though, the police did not find the offender yet.<sup>64</sup> If DNA database build properly and DNA sample collected within 48 hours for testing then there are possibilities to find the offenders. So, DNA evidence should be made more effective in our country. These are the areas where DNA evidence may apply for the better justice.

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<sup>61</sup> Ali Md Ayub (n.2) 23 accessed 18th April, 2022.

<sup>62</sup> Ibid.

<sup>63</sup> Writ petition no. 5541/2015

<sup>64</sup> Rafiul Islam, (N.55) accessed 24<sup>th</sup> April, 2022.

### **4.3 Challenges of Using DNA Evidence**

There are many questions and challenges has been risen while using or applied DNA evidence. This chapter will discuss about the questions and challenges while apply DNA evidence.

#### **4.3.1. DNA Evidence and Human Rights**

Every person has their right to privacy and protect their own things. The Constitution has also given the right as fundamental rights about the privacy. But when it comes for giving DNA sample, can the person deny for not giving it? No, they cannot deny it but they are also not entitled to giving it to anybody without the order of the court. All the person has to give the DNA sample with the order of the court. The article – 27 (1) of the Universal Declaration of Human Rights says that ‘everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.’<sup>65</sup> So, it is challenging to follow the procedure and maintain all the individual.

#### **4.3.2. Insufficient Forensic Lab, Insufficient Training and Knowledge of the Judges and Lawyers**

The development of DNA evidence is only established the DNA Act, 2014. This Act provides to collect DNA sample from every citizen of the country and build a national DNA database. This will help to maintain DNA data, identify dead bodies or identify criminals. Unluckily, DNA database is not established yet and DNA laboratories has not properly developed with skilled people and high qualified machineries. It has become challenging in Bangladesh, to produce proper machineries such as DNA test kits, for example of rape kits examining that includes sexual assault kits, sexual assault forensic evidence kits, sexual assault evidence collection kits, sexual offence evidence collection kit and a physical evidence recovery kit for examining a rape victim. In the ‘Banani Raintree Hotel Rape Case’, it remains unsolved because of the absence of rape kits and the experts was unable to procure physical evidence. If the examining procedure and sufficient labs or knowledge is not established yet then how a rape victim would ensure justice for herself. Where insufficient knowledge made the criminals free, then it should follow the procedure. In the Tonu murder case, they found the evidence of rape and killed after second

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<sup>65</sup> The Universal Declaration of Human Rights (UDHR), (adopted 10th December 1948, entered into force 9th June 1947) 27 (1)

autopsy, where they found three different kinds of semen in her body, it was easier to find the criminals by using the DNA database. But the execution of DNA Act is not proper. So, it is challenging to expect the justice by using DNA evidence. And the lawyers and judges also do not talk about the establishment of DNA evidence. Their knowledge and training will make the DNA evidence more effective. As they are significant stakeholder to deliver justice, they should be specially trained to deal with the forensic evidence. To avoid false and fraud about the DNA examinations, all the procedure may be made in front of the Judicial Magistrate. So, the importance of sufficient lab, training and knowledge about DNA analysis is needed to overcome the challenges and the Judges and Lawyers should be determined or admitted the DNA evidence as admissible one.<sup>66</sup>

#### **4.3.3 Absence of National DNA Database**

In other countries, they have made a DNA database nationally meaning that every citizen has given the sample of DNA for rapid solution of the country matters. But we do not have the National DNA Database. In Bangladesh, it has not been yet constructed for the purpose of rapid action. We just formed a DNA Act 2014 only in the legislation but we not maintain the instructions that has given in the Act. So, we need to establish a DNA database by collecting DNA samples from every citizen of the country. As per section 24 of Deoxyribonucleic Acid (DNA) Act 2014, the government is required to establish a National DNA database with crime scene index, convict criminals' index and unknown person's index.<sup>67</sup> So that the DNA evidence may use in any cases that need and with the order by the court. But it is challenging now to establish a DNA database from every citizen. However, government should collect it and preserve it for the improvement of justice system and should be handled with the greatest respect and precautions in order to protect human privacy.

#### **4.4 Conclusion**

DNA evidence is a conclusive proof in all the cases. It should be used more effectively in all the cases where it is needed. For applying the evidence, DNA act should be established in a well manner and there should be sufficient laboratories, sufficient test kits, sufficient machineries, sufficient knowledge and training and established database. All the procedure should be done

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<sup>66</sup> Sakhawat Sajjat Sejan (N.4) accessed 28<sup>th</sup> April, 2022.

<sup>67</sup> Inserted by the Deoxyribonucleic Acid (DNA) Act 2014 (X of 2014) s 24

under the procedure given by the legislation and with the order of the court. When establishing the Act, it may face some challenges but also may overcome by the legislations.

## Chapter 5

### DNA Evidence and International Standard

#### 5.1 Introduction

DNA evidence is used worldwide from the very long period. They found it reliable, easy and rapid actions against a crime that can be solved by the DNA test. They admit that DNA evidence is a conclusive prove and applied it in the cases where it is needed. It was first applied in the courts of England for forensic investigations. It is a progressive legislation in the other countries as well as USA, India. This chapter will provide the international application of DNA evidence by the courts.

#### 5.2 Application of DNA Evidence in USA

DNA evidence was first applied in USA. There are many cases solved by the DNA evidence where that was necessary to use and the courts may proceed it to give proper justice. Some of the cases will be discussed in this chapter. The cases are; the first case where forensic DNA analysis was used in the case of '*Pennsylvania v. Pestinikas*' in 1986.<sup>68</sup> After that the use of DNA evidence has taken place broadly in USA. In USA, the first DNA based conviction has taken place in the year of 1987 and in the case of '*Andrews v. State*'. In this case, Tommy Lee Andrews was convicted for rape after examining the DNA samples and semen that traces from the victim. It was the first case, where the perpetrator has been convicted by using DNA evidence.<sup>69</sup> '*United State v. Yee*', where held that the pre-trial hearing must be included in the admissibility of DNA evidence.<sup>70</sup> In '*Frey v. US case*', where the US Supreme Court ruled that, to be admissible, DNA evidence must be sufficiently established to have gained general acceptance in the particular field in which it belongs. Where held that DNA contained the code of a person's heredity propensities, parentage and racial origins and more genetic information of biological relatives. So, DNA evidence can certainly assist the court to come up with a conclusive decision on the cases concerning genetic relationship.<sup>71</sup> In another case, '*Daubert v.*

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<sup>68</sup> Pennsylvania v. Pestinikas, PCR Case (PCR Case, US)  
<[https://www.academia.edu/21415913/Deoxyribonucleic\\_Acid\\_DNA\\_Act\\_2014\\_A\\_New\\_Era\\_in\\_Criminal\\_Justice\\_System\\_of\\_Bangladesh](https://www.academia.edu/21415913/Deoxyribonucleic_Acid_DNA_Act_2014_A_New_Era_in_Criminal_Justice_System_of_Bangladesh)>

<sup>69</sup> Andrews v. State, 533 So. 2d 841 (Fla. Dist. Ct. App. 1988)

<sup>70</sup> United State v. Yee, 134 F.R.D. 161, 208 (N.D. Ohio 1991)

<sup>71</sup> Frey v. US, 293 F. 1013 (D.C. Cir. 1923)



*Merrell Dow Pharmaceuticals*', where the US Supreme Court went beyond the Frey standard to require that evidence must have sufficient scientific validity and reliability to be admitted as relevant "scientific knowledge" that would assist the "Trier of fact."<sup>72</sup>

### **5.3 Application of DNA Evidence in India**

In India, many courts are able to deliver the rapid and concrete judgments in the cases of sexual offences and murder because of the application of DNA evidence. Now-a-days, India is using DNA evidence in every possible case for giving proper justice and punish the perpetrators. There is a recent case of '*Gudiya rape and murder case*', where the student of class 10 was going home from school and the criminal was abducted her, raped and killed her on 4<sup>th</sup> July, 2017. Police found her body from the forest after two days. Then all the documents such as; oral, scientific were against Anil Kumar and the court found him guilty. The DNA evidence was applied for solving the case. Then all the legal practitioners commented that this case should be used as a role model of DNA evidence.<sup>73</sup>In '*Unnao Rape Case*', in this case, the girl was raped by the former BJP member Kuldeep Singh Sengar who raped her in Unnao, Uttar Pradesh on 4<sup>th</sup> June 2017. He was convicted on 16<sup>th</sup> December, 2019 and sentenced to life in prison on 20<sup>th</sup> December, 2019. While he was in the custody, he was also found guilty of the victim's father's date.<sup>74</sup>

### **5.4 UDHR, ICCPR and ICESCR**

There are International rules and standards by which DNA evidence may properly established in Bangladesh. These are covenant which suggested that DNA evidence should be used by the people for the improvement of the legal system and properly established medical document.

#### **(i) The Universal Declaration of Human Rights (UDHR)**

Article 27 (1) of the Universal Declaration of Human Rights (UDHR) provides that 'Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to

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<sup>72</sup> Daubert v. Merrel Dow Pharmaceuticals, 113 2786 (S. Ct, 1993)

<sup>73</sup> Gudiya Rape and Murder Case, 4<sup>th</sup> July, 2017 <<https://www.india.com/news/india/gudiya-rape-and-murder-case-accused-sentenced-to-life-imprisonment-by-local-court-in-shimla-4750691/>>

<sup>74</sup> Unnao Rape Case, 4<sup>th</sup> June, 2017 <<https://kiddaan.com/10-horrific-indian-rape-cases-of-the-decade-that-shook-the-whole-country/>>

share in scientific advancement and its benefit.’<sup>75</sup> This article talks about the enjoyment of cultural rights, benefit of modern science and involvement in cultural life. This is declared as internationally that everyone can enjoy the modern science such as DNA test.

### **(ii) International Covenant on Civil and Political Rights (ICCPR)**

According to article 7 of the International Covenant on Civil and Political Rights (ICCPR), ‘No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment. In particular, no one shall be subjected without his free consent to medical or scientific experimentation.’<sup>76</sup> This article provides that everyone has the right to give free consent about medical and scientific experiment.

### **(iii) International Covenant on Economic, Social and Cultural Right (ICESCR)**

According to article 15 (1) (b) of the International Covenant on Economic, Social and Cultural Right (ICESCR), ‘The States Parties to the present Covenant recognize the right of everyone to enjoy the benefits of scientific progress and its applications.’<sup>77</sup> All the international covenant produces the right of entertaining scientific experiment.

## **5.5 Conclusion**

There are many cases regarding DNA evidence and it was applied for finding the culprit. In the international justice system, they suggested that modern science should be applied and all the people should have the right to exercise scientific experiment as evidence. In this chapter, all the relevant cases are solved by the DNA evidence. International covenant should be followed by all other countries for avoiding cruelty, discrimination and inhuman treatment.

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<sup>75</sup> The Universal Declaration of Human Rights (UDHR), (adopted 10<sup>th</sup> December 1948, entered into force 9<sup>th</sup> June 1947)

<sup>76</sup> International Covenant on Civil and Political Rights (ICCPR), (adopted 16<sup>th</sup> December 1966, entered into force 23<sup>rd</sup> March 1976),

<sup>77</sup> International Covenant on Economic, Social and Cultural Right (ICESCR), (adopted 16<sup>th</sup>December 1966, entered into force 3<sup>rd</sup> January 1976)

## Chapter 6

### Conclusion

In this chapter, I will discuss about the finding of the study based on the articles and other sources. Then it will recommend some solution for the outcome of the study with a concluding remark.

#### 6.1 Findings of the Study

The main purpose of this study is the admissibility of DNA evidence. By using DNA evidence, there will be proper and rapid trial because there are many cases that can only be solved by the forensic and scientific method. So that, DNA evidence should be admissible by the Court for ensuring fair legal proceedings and also in the modern science sector.<sup>78</sup>

- i. There is Act named Deoxyribonucleic Acid (DNA) Act 2014, enacted for using the modern science and forensic method to investigate the cases. But there is no effective use of this Act.
- ii. Deoxyribonucleic Acid (DNA) Act 2014 provides that what are the DNA sample, the procedure of collection DNA samples, storage of DNA sample and examination of DNA samples. But many of the times, it has not been used for examining the DNA samples.
- iii. It is used for determining legitimacy of children, identifying dead bodies and examining the DNA samples to find out the culprit regarding sexual assault or rape. But it is not used in every case as it is not considered as admissible.
- iv. There are some International Covenant such as; The Universal Declaration of Human Rights, International Covenant on Civil and Political Rights (ICCPR), International Covenant on Economic, Social and Cultural Right (ICESCR) that supported DNA evidence and they declared the right of the people for exercising scientific method and the right to enjoy the advancement of science and benefits. But it is not properly followed in our country.

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<sup>78</sup> Al-Hamadi Jehan (N.34) accessed 15<sup>th</sup> May, 2022

- v. Hence the Act regarding DNA has been enacted but still there are insufficient forensic lab, insufficient training and knowledge of the judges and lawyers, and inadequate forensic kits to examining the DNA samples. There is no established National DNA Database in Bangladesh. It has not yet constructed but the Act has been enacted of DNA.
- vi. If the existing legislation is not followed then it should be amended for using it effectively. The Deoxyribonucleic Acid (DNA) Act 2014 is not applied effectively.
- vii. To apply scientific and forensic evidence, the main problem is the procedural that the forensic expert did not examine specially as they are medical person, they are also examined as like normal witnesses.
- viii. As the investigation has been done by the police officer, they should expert regarding the injury of dead bodies even they have to decide that whether the dead body should be referred to the civil surgeon for medical examination. But most of the police did not know the actual procedure.

## **6.2 Recommendations for Further Studies**

All the above discussion is found that all the citizen is not enjoy the scientific advancement and benefits in Bangladesh. So that, there are some proposal and recommendation that found from this study for the use of rights given by the legislation.<sup>79</sup> These are;

- i. The Government may establish a new rule or law or pass a gazette for the effective use of Deoxyribonucleic Acid (DNA) Act 2014. All process has been given in the Act for examining or storage DNA evidence that should also be followed.
- ii. Government may also direct the judges and lawyers for the application of DNA evidence and admissibility of DNA evidence.
- iii. The police officer should be also be trained for the coroner system or medical examination system. So that they can understand the crime scene properly.
- iv. All the international covenant should be exercised by the instructions of the government.
- v. There should be actual training regarding the DNA evidence that the Judges and Lawyers may understand the benefits of using DNA evidence.
- vi. The use of DNA evidence should be existed in all the needed cases and also in sexual assault or rape case for giving actual judgment.

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<sup>79</sup> Md. Ayub Ali (N.2) accessed 15<sup>th</sup> May, 2022

- vii. There should be established more sufficient forensic lab, store more examining kits and improve the knowledge of using the DNA samples.
- viii. The National DNA Database also be established for the rapid use of DNA evidence in the required cases.
- ix. The medical expert should be examined specially as the report will considered as the conclusive proof and also it helps to avoid the fraud or false evidence.

So, all the above recommendation may be useful for increasing fair and speedy justice.

### **6.3 Concluding Remarks**

The Deoxyribonucleic Acid (DNA) Act 2014 has been established to identify the suspects. The DNA sample is collected from the crime scene as the offender leaves any of the DNA sample in the crime scene. It has been declared as a conclusive proof in law. The value of the DNA evidence should understand by the judges so that the use of DNA evidence increased. It is very useful for saving the time, fast investigation and accurate judgement. For avoiding false or fraud or not reliable evidence, they should be developed a proper mechanism of using DNA evidence. There will be more forensic lab, examining kits and expert of medical science to give the evidence accuracy and the judges may also be delivered the judgment as reliable one. Therefore, this should be effectively use for making the administrative and justice system more reliable and the judicial mechanism will prove that the modern science can improve the legal proceeding and people can again belief in the justice system of Bangladesh.

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