FORENSIC DNA BANKING LEGISLATION IN DEVELOPING COUNTRIES: PRIVACY AND CONFIDENTIALITY CONCERNS REGARDING A DRAFT FROM TURKISH LEGISLATION

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Abstract
This paper presents and analyses, in terms of privacy and confidentiality, the Turkish Draft Law on National DNA Database prepared in 2004, and concerning the use of DNA analysis for forensic objectives and identity verification in Turkey. After a short introduction including related concepts, we evaluate the draft law and provide articles about confidentiality. The evaluation reminded us of some important topics at international level for the developing countries. As a result, the need for sophisticated legislations about DNA databases, for solutions to issues related to the education of employees, and the technological dependency to other countries emerged as main challenges in terms of confidentiality for the developing countries. As seen in the Turkish Draft Law on National DNA Database, the protection of the fundamental rights and freedoms requires more care during the legislative efforts.

Keywords: Databases, DNA, Turkey, Privacy, Confidentiality.

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**Introduction**

A successful DNA database must fulfil the following necessary requirements: legislation, collection of samples, sample analysis, database and communication means for the labs participating in this process. Many countries and states of the United States lack of a unitary legislation about DNA databases [1]. Every country enacts legislations consistent to their characteristics and requirements. The aim of this article is to evaluate the “Draft Law on National DNA Database”, that emerged as a result of similar efforts in Turkey.

In 1984, the English geneticist Alec Jeffreys reported the “restriction fragment length polymorphisms” (RFLP) method. This finding enables us to identify human beings from each other. This method and its consequent “polymerase chain reaction” (PCR) developed in 1986, began to be used for individualization in forensic cases. After many years of debates, an article written by Eric S. Lander and Bruce Budowle was published in the Nature magazine in 1994 and then DNA typing started to be widely accepted in the scientific world. This technique was added to the methods of fighting against crime by the security services who had already accepted the validity of this technique. DNA data banks are one of the most effective systems established in order to use the DNA typing technique. In 1990, the FBI established the first DNA data bank in the United States was as a pilot project to assist the laboratories that belonged to the local security services in fourteen states. Afterwards, the enforcement of DNA Identification Act (Public Law 103-322) in 1994 made the way for the constitution of the “Combined DNA Index System” (CODIS). CODIS became fully operational after 1998. The table below presents the list of DNA data banks in the European countries by 2004 [2].

**Table 1. National DNA Data Banks in European Countries [3].**

<table>
<thead>
<tr>
<th>Establishment Year</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>England</td>
</tr>
<tr>
<td>1996</td>
<td>Northern Ireland, Scotland</td>
</tr>
<tr>
<td>1997</td>
<td>The Netherlands, Austria</td>
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<tr>
<td>1998</td>
<td>Germany, Slovenia</td>
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<tr>
<td>1999</td>
<td>Finland, Norway</td>
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<tr>
<td>2000</td>
<td>Denmark, Switzerland, Sweden, Croatia, Bulgaria</td>
</tr>
<tr>
<td>2001</td>
<td>France, The Czech Republic</td>
</tr>
<tr>
<td>2002</td>
<td>Belgium, Estonia, Lithuania, Slovakia</td>
</tr>
<tr>
<td>2003</td>
<td>Hungary, Latvia</td>
</tr>
<tr>
<td>In Preparation</td>
<td>Poland, Portugal, Spain, Greece, Ireland</td>
</tr>
</tbody>
</table>

The “privacy” concept in the medical ethics field is based on respect for autonomy and respect for human dignity. The definitions focus on the control of the individuals over their physical and informational access. “Privacy” does not only mean access to information, but it is understood as the interference to secrecy; to parts of the body and objects intrinsically connected to the individual; to personal relations as the physician – patient relationship [4,5]. In fact there is nothing intrinsically private. Therefore the violation of privacy is not only related to the degree and type of the access but also
to the identity of the accessed person and the accessing person [4,6].

In some cases, we give permission to other people to access our personal information, by sacrificing a part of our privacy. But in fact, we don’t give up our control to a certain extent over the information accessed. In these cases the existence of a “confidential relationship” can be mentioned. The “confidentiality” concept means that the information acquired within the framework of a confidential relationship can’t be shared with another person without the consent of the person associated with the information.

The violation of a person’s privacy differs from breaching the confidentiality and means unauthorized access and acquisition of information from that person directly. In violation of privacy, a confidential relationship doesn’t exist [4,5].

During DNA typing procedure there is a production of information similar to medical practices. In this situation, the information belongs to someone who is not given a direct verbal or written message.

A prerequisite for this kind of procedure is to fulfil the informed consent process comprising of the terms of use and share the information. “Produced information” imposes all moral and legal responsibilities admissible for confidential relationships to the producers and receivers of the information [4,5].

DNA Data and The Privacy and Confidentiality Concerns Regarding the Turkish Draft Law on National DNA Database

In this study we analysed the Turkish Draft Law on the National DNA Database produced by the Turkish Grand National Assembly and presented to The Prime Ministry on 04/05/2007. The above mentioned draft was revised on 03/12/2007, and referred back to the Turkish Grand National Assembly by the Prime Ministry on 14/04/2008 for feedback and further discussion [7].

The chapters and main headings of the draft are given below:

FIRST CHAPTER – Aim, Comprehension and Definitions
SECOND CHAPTER – Fundamental Principles
THIRD CHAPTER – Rights, Authorizations, Responsibilities and Sharing of DNA Data
FOURTH CHAPTER – DNA Database
FIFTH CHAPTER – Establishment and Duties
SEVENTH CHAPTER – Penal and Practice Provisions
EIGHTH CHAPTER – Miscellaneous and Last Provisions [8]

In the first chapter the aim of this law was given as “The aim of this law is; to regulate the bases and practices concerning the collection of DNA samples, analysis of the samples, identity verification, data storage, utilization of the data and the establishment and duties of the Turkish National DNA Data Bank” [8].

Some expressions in the first section of the bill, including definitions are noteworthy in terms of ethics.

DNA Analysis: Scientific tests applied on DNA samples in order to gain DNA profile [8].

The clear definition of the scientific tests to be used for analysis hasn’t been given. All new techniques
which will become available in the future as a result of scientific progress can be put into application. Therefore, it may be considered that there is no binding for judicial authorities about the type and amount of the information that can be gained from DNA analysis with new advances in the future. Within the framework of confidential relationship, the volunteers should be informed during the consent process about the content and use of the information produced. Regarding the situations where the collection of DNA samples is compulsory, the legislation of this bill can be deemed as a social evaluation and consent process in terms of democracy. Therefore, more clear statements are needed about the information that will be produced from DNA analysis and subsequently used. The exact names of the DNA analysis techniques and standard Short Tandem Repeat (STR) markers that will be examined should be indicated clearly.

**DNA Profile: All of the DNA characteristics that distinguish a human being from another [8].**

The DNA profile hasn’t been restricted with the STR markers that could only be used for identity verification. This definition should determine the details about the information that will be produced from DNA samples and stored in a data bank. The restrictions referring to the non-protein coding, biologic functions unknown and high-polymorphic gene zones used for identity verification should be indicated clearly. Only in this case the definition of the DNA profile will be consistent with the objectives of the bill.

The expression “Collection for the licit aims mentioned in the law and no utilization and transfer contradictory to these objectives” in the draft law, the fourth article concerning the fundamental principles, can be evaluated as a protection of privacy and confidentiality.

**ARTICLE 5**

1) DNA Analysis,

a) *From the body, according to the bases and procedures expressed in the Criminal Procedure Law number 5271 and dated 04/12/2004.*

b) *From the crime scene because of a crime.*

c) *From decedents, from body parts, from individuals whose identity can’t be identified because of judicial and factual circumstances for identification of identities.*

d) *From individuals from life-threatening professions.*

e) *From volunteers. Can be applied on collected biological samples [8].*

Collecting DNA samples from individuals from life threatening professions was regulated in the draft but there was no statement about voluntarism for these people. In the reasoning of the draft these professions were specified as soldiers, policemen, firemen etc. As we review the purposes of this identification, except criminal situations, reasons like funeral ceremony, commemoration of the decedent, ownership, insurances, inheritance, lineage, regulation of legal rights and responsibilities can be expressed. Among these reasons, no indispensable social benefit like fighting against crime or harm to the third parties was mentioned. In this case there is not enough reason to validate the violation of the privacy of people working in life-threatening professions [9,10].

The ninth article regulates the basis concerning voluntarism and
enlightening responsibility.

_Basis Concerning Voluntarism and Enlightening Responsibility_

**ARTICLE 9**

1) The volunteer should be enlightened about the procedures that will be applied on the samples, where and how the samples will be stored and used, to whom these samples could be transferred and also about his rights before the collection of the samples and all this procedure should be established with a report.

2) If the volunteer will not be able to perceive the legal aspects and consequences of the process, approval can be obtained from legal representatives of the volunteer. In case of absence of legal representatives or the legal representatives can’t be ascertained, the decision of a judge should be consulted.

3) The volunteer may request the deletion of his own profile and also can waive off anytime the use and storage of the samples collected from him.

4) After the volunteer noticed his demand to the bank for the deletion of his profiles, the profiles should be deleted within fifteen days and a notification should be made to the volunteer about it.

5) The profiles which were gained from volunteers cannot be transferred somewhere else or used for objectives other than the ones expressed.

6) The basis and procedures for the implementation of this article shall be regulated [8].

A confidential relationship should be established between the volunteers and the DNA data bank which is an institutional structure. The expressed object of collecting DNA samples from volunteers is the verification of identity. There are also mentioned the situations when these identity verifications will be used. The statement of identity verification of the ones deceased provides examples of verification purposes like death during natural disasters (earthquakes, floods) and personal reasons. The fifth paragraph of the ninth article of the draft law presents preventive limitations about the use in other occasions than the ones expressed in the draft. This is also an ethical responsibility in terms of honesty and autonomy.

Within the framework of the confidential relationship established with the volunteers, the DNA data bank institution and the employees who are receiving the information bear ethical responsibilities for the protection of information. This ethical responsibility of the employees requires a daily practice of many important attitudes and behaviours. The draft should specify an ethical educational program designed for the employees of DNA data banks in order to achieve and maintain the required attitudes and conduct. It should also be mentioned the certification awarded for participating in such educational program as well as the qualifications acquired by the employees of DNA data banks. The ethical education should be implemented within a continuous vocational training program, and included among the tasks of the “Educational Services Department”.

In addition to the ethical responsibilities undertaken by the DNA data bank institution and employees within the framework of confidentiality, the draft also stipulated some legal measures. According to the
third paragraph of the fifth article and the thirty second article:

**ARTICLE 5**

3) The owner of the samples sent to the laboratory for analysis purposes, kept the confidentiality through an encoding system [8].

**ARTICLE 32**

1) The president of the DNA data bank, the executive members, all kinds of employees can not disclose to someone the information they gain during all kinds of work and supervision they carry out or utilize these information for personal intentions. This obligation continues even after they resign from their position [8].

The samples on which analysis will be performed, are regulated in the first paragraph of the fifth article of the draft. The disposal procedure applied for these aforementioned samples is regulated in the tenth article of the draft. It can be claimed that the sensitivity about the disposal of the samples as soon as possible after gaining the information necessary to reach the objectives, was protected by this draft. This will alleviate the responsibility of the institution for the prevention from violations of privacy that may occur when using such samples. The tenth article includes no details about the disposal of samples taken from “Individuals from life-threatening professions”. The disposal of the samples taken from “Individuals from life-threatening professions” after obtaining the necessary information for identity verification, as well as the deletion of this information at the end of the verification procedure should also be considered.

The ethical responsibilities of the institutions in terms of confidentiality about the data storage in the data bank is expressed in the first paragraph of the twelfth article:

**ARTICLE 12**

1) In accordance with the provisions of this act, the DNA profiles obtained through laboratory analysis of the samples, will be stored in coded form in the system established within the DNA data bank institution [8].

According to this draft, the “Presidency of Data Processing Department” bears the ethical responsibilities for the assurances given by the institution to the volunteers about the confidentiality of the information obtained and stored. If we assume the existence of ideal legal regulations, and that of employees with high education level and ethical awareness, the fulfilment of these ethical responsibilities will mostly depend on the technological capacity of the country. This point should be carefully considered especially in the developing countries.

Moreover, during the transfer of the samples to the laboratory, the protection of the information about the owner that was sent together with the samples should be stipulated in further legislations [1].

According to the Turkish draft law on the National DNA Data Bank, such bank should consist of two separate sections: the forensic data bank, and the data bank for other purposes [8]. In terms of confidentiality and privacy the information about the individuals and the DNA profiles should be stored in two separate sections. If a match will be determined during the comparison of the DNA profiles, then the DNA profile can be associated
with the related individual information [1].

Confidentiality and privacy concern about the processes using the data stored according to the objectives that have been expressed in the draft and have been declared to the volunteers, as stipulated in thirteenth article of the draft:

**ARTICLE 13**

1) According to the provisions of this act, the system established within the bank, all processes related to obtaining of the DNA profiles, comparison and matching of the stored DNA profiles are confidential [8].

According to the draft, the volunteers can decide anytime upon the deletion of the information that has been shared for specific objectives and in the frame work of the confidential relationship. During the informed consent procedure, the volunteer would be informed about her/his rights and these would be written in the consent document. The deletion of the information obtained from volunteers, according to their decisions is regulated in the third and fourth paragraph of the ninth article of the draft.

Finally, the penal provisions concerning the aforementioned responsibilities related to privacy and confidentiality are given in the thirty sixth article of the draft law.

In terms of privacy and confidentiality, the DNA data banks require sophisticated legislations and solutions to the issues related to the education of employees, and the technological dependency to other countries. Only after overcoming these obstacles, the DNA data banks can become an additional instrument for fighting against crimes. During legislative efforts, we should always keep in mind that crime is a social phenomenon that can be observed in every society. Therefore, we should pay more attention to the protection of the fundamental rights and freedoms as a priority in legislative process for the fight against crime.

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