

A study of Spanish attitudes regarding the custody and use of forensic DNA databases

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Abstract

One of the issues that has resulted in much disagreement in many countries at different levels concerns the kind of institution that should be given the responsibility of exercising custody over biological samples and the DNA profiles obtained from these samples.

In the field of forensic genetics, there is no doubt that the existence of DNA criminal databases benefits the control and investigation of crime. However, certain criticism, supported to a great extent by the particular vision of genetic exceptionalism has been aimed at the ethical and social consequences resulting from the inappropriate use of such databases.

In this sense, it was stated that the support of the population was required for those regulations that propose the extension of police powers in the collection and storage of biological samples, as well as their corresponding DNA analyses.

Without such backing, such measures may cause society to distrust the nature of the protection afforded by the legal system and be interpreted as interference in the civil liberties and human rights of the individual.

We believe that the opinion poll which has been carried out among the Spanish population may serve to reveal the public attitudes/criteria which society has with regard to those institutions responsible for the custody of DNA profile databases. Finally, it must be pointed out that when the interviewees were asked about what institution or institutions should protect and maintain data confidentiality 59.7% considered that custody should remain in the hands of the National Agency for DNA Profiles (a judicially backed, autonomous public institution).

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1. Introduction

We cannot ignore the usefulness that genetic information has provided and that it continues to provide when concerned with identifying purposes. In this sense, mention must be made of the relevance that the analysis of the polymorphisms of decoded DNA has gained in Justice Departments. This could concern either criminal trials, where there may be biological traces of the perpetrator of the criminal offence, the place or the instrument used in the crime. However, the development of this

type of test has been significantly influenced by the differences that exist between the established legal systems [1].

In their efforts to create DNA profile data banks that would help solve cases that remained unsolved by the justice administration, many countries did not pay much attention to questions concerning quality control in laboratories, security measures and the right to privacy, freedom, equality and non-discrimination as well as to the institutions that must safeguard such rights [2,3].

It is important that the above-mentioned circumstances are taken into account in reforms in legislation that certain authors consider necessary, or that they are included in new legislation pending promulgation.

In the field of Forensic Genetics, there is no doubt that the existence of DNA criminal databases benefits the control and investigation of crime. However, certain criticism, supported

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to a great extent by the particular vision of genetic exceptionalism [4–6] has been aimed at the ethical and social consequences resulting from the inappropriate use of such databases.

In this sense, due to the possibility of extending the inclusion criteria of DNA profiles kept in databases of a criminal nature, some authors have even stated that such tendency might be understood by the population in general as a mechanism of biovigilance or excessive state control over the population [6–8]. Likewise, it is argued that, the possibility of the Police extending its powers with regard to the collection, analysis and preservation of biological samples taken from citizens and the corresponding analyses might be considered disproportionate [6,8].

On the other hand, in relation to the topic in hand, certain fear has been expressed when faced with the uncertainty of the agencies and institutions responsible for the custody of the genetic data obtained from the criminal databases not being subjected to strict confidentiality criteria for the transmission of such data. Likewise, concern is expressed owing to the lack of reliability and validity criteria of the DNA tests presented in judicial proceedings [6,8–11].

Finally, the need to have the population backup has also been made apparent, mainly for those regulations which propose extending the inclusion criteria of DNA profiles or enlarging the responsibilities of the Police with regard to the collection and storage of biological samples and its corresponding DNA analysis. The reason for it is that such measures could make the population express their distrust in respect of the protection that the judicial system must exercise over the citizen or it could also be interpreted as an interference or undermining of human rights and civil liberties of the individual [6,8,12,13].

Without such backing, such measures may cause society to distrust the nature of the protection afforded by the legal system and be interpreted as interference in the civil liberties and human rights of the individual [6,12,17]. With regard to this question, some authors consider it of great interest to take into account the opinions of different social groups before adopting legal decisions related to biotechnology given that, in order to reach consensus, information should flow in two directions, Society-Science [14].

This study centres on the analysis of the opinion of a representative sample of the Spanish population with regard to the institutions that should exercise custody and protection over the DNA profiles included in criminal databases.

Likewise, some of the problems that arise due to the lack of specific legislation in Spain are analyzed. Finally, the recent approval of the “Draft Bill for DNA Identifier Databases managed by the Police”, the differences and similarities between the obtained results and the proposals contained in the text as well as those put forward by other authors are taken into account.

The opinion of this population concerning certain other questions related to DNA profiles and DNA profile databases is also taken into account.

2. Who should be responsible for the custody of a National DNA database?

One question that does not seem to have the attention it deserves, and which must be given as much consideration in forensic genetics as the nature or type of profiles that are to be included in DNA databases, is that of the institutions that are responsible for the custody of the electronic files of forensic information as they will be entrusted with the protection of the fundamental rights enjoyed by citizens in a democratic state. Consequently they will determine the adequate use of these protected genetic data.

It is clear to see the right to protect personal data or the right to control the flow or use of personal information suffers certain restrictions when the investigation and prosecution of crime are involved. In such cases, as stipulated in Recommendation R (87) 15 of the Council of Europe [15], aimed at regulating the use of personal data, priority is given to the need to reconcile the interests of the individual and the right to respect for private life with society’s interest in crime prevention and the maintenance of public order.

Data protection standards across the European Union (EU) have been significantly harmonized in relation to the processing, storage and use of personal information and each Member State is now required to implement measures outlined in Directive 95/46/EC. This Directive is designed to ensure that personal data is obtained from individuals in a manner compatible to their right to privacy outlined in article 8(I) of the European Convention on Human Rights. The Directive deals with the storage of personal information on databases and recognizes their significant threat to privacy. A further, and comprehensive, piece of EU data protection legislation, regulation (EC) 45/2001, seeks to ensure data protection standards within EU institutions. The regulation established a European Data Protection Supervisor to oversee the implementation and conformity to a strict set of data processing rules and established a number of citizen rights in relation to access to such data. However, article 20 allows for Community institutions and bodies to restrict application of the regulation where such restriction constitutes a necessary measure in ‘the prevention, investigation, detection and prosecution of criminal offences’.

Special mention must be made to the European Agreement for the Protection of Human Rights and Fundamental Liberties (Rome, 4 November 1950), regarding the right of all individuals to personal privacy. There should be no interference by the public authorities in an individual’s privacy, unless required by law and it is considered to be a necessary measure for the prevention of crime and to safeguard the national or public security of a democratic society (article 8).

It must not be forgotten that article 20 of the International Declaration of Human Genetic Data [16], as well as Recommendation (87) 15 [15], considers the possibility of creating systems of supervision and management expressly designed for the protection of human genetic data in each country. This supervision and management system is dealt with in Chapter V (National Agency for DNA Profiles) of the Draft

Bill for the regulation of DNA Databases in Spain, elaborated in 1999 [17]. It currently includes, within a larger field of influence, the Organic Law of Personal Data Protection [18], known in Spain as the Data Protection Agency.

With regard to those responsible for the custody and use of forensic DNA databases, there currently exist some models for the entrusting of forensic genetic data to institutions.

One of these models defends the thesis that the safekeeping and management of the said files must be exercised by State Security Agencies (police laboratories), given the technical and human resources at their disposal and the efficiency shown up to now (Czech Republic, France, Greece, Latvia and Scotland) [6,8,1,19].

A second model places special emphasis on the fact that the control, custody and treatment of the samples, as well as the corresponding DNA profiles, should be under the responsibility of an independent laboratory on a national level, dependent on the state's authority, where all the analysis were performed (Belgium, England and Wales, Netherlands, Slovakia and Sweden) [1,6,8,19].

Finally, the third model is based on the creation of an independent organization entrusted with the centralising of all results and their computerized storage. Only authorized personnel are able to consult and compare any information on specified occasions. This organization is not a laboratory but exclusively the coordinator and manager of the DNA database [5,15–20].

In Spain, at least for the time being, there is no regulation holding the status of law on databases containing DNA profiles of a forensic nature kept by the State Security Forces (Police and Civil Guard Directorate). However, there are in fact several Ministerial Orders issued by the Spanish Department of the Interior which attempt to regulate the said databases (order of 26 July 1994; order 1651/2002 of 20 June 2002; order of 18 March 1988 and order of 6th March 2000) [13].

From the reading of the Ministerial Orders that regulate the storage and use of DNA profile files and their corresponding samples by the aforementioned State Security Forces it may be concluded that any expectations with regard to such norms being raised to the rank of law have not been satisfied. Neither the principle of judicial security nor the proportionality (Constitutional Court Sentence 206/1996, 16 December) that the regulation of such matters should inspire has been preserved. Furthermore, the principles included in article 8 of Recommendation R (92) 1 of the European Council concerning the employment of DNA analyses as well as their storage in databases, or those included in the European Agreement for the Protection of Human Rights and Fundamental Liberties (Rome, 4 November 1950), among others, have not been complied with [16,19].

On the other hand, special emphasis should be placed on the passing of the recent Organic Law 15/2003 [21] (modifying Organic Law 10/1995 of 23 November of the Criminal Code), which introduces several amendments to the Criminal Procedure Rules, related to DNA analysis in criminal investigations. However, according to some authors [19,20], it does not look like the amendments made to the said Criminal

Procedure Rules should be regarded as a serious and thorough attempt which would enable us to regulate the different stages to be followed for the study of DNA profiles within criminal legislation. Such amendments are rather considered a means to respond to the sentence of the Spanish Constitutional Court (207/1996) which prohibited the extraction of biological samples directly from an individual's body.

Finally, directly related to the mentioned need in Spain of a regulatory framework with the rank of law for criminal DNA databases is the recent approval of the "Draft Bill for DNA identifier databases managed by the police" pending a report by the General Council of the Judiciary as well as the National Data Protection Agency whose fundamental objective, according to the reasons given for the Draft Bill, is no other than to rectify the deficiencies observed in the Criminal Procedure Rules (modified by Law 15/2003) [20]. Rectification is to be carried out by creating a database, managed by the State Security Forces, containing DNA analysis identification data obtained during criminal identification, during the procedures of corpse identification or the search for missing persons.

In relation to the main question being dealt with in this paper (which institution or organization should have the custody of the DNA profile databases), article no. 2 of the Draft Bill stipulates that the following data shall be included in the police databases: "The Police Database of identifiers obtained from DNA shall be managed by the Ministry of the Interior through the State Security Secretariat, whose Head is to be responsible for the said databases".

Another question that may give rise to other conflicts is that referred to in Article 11 of the Personal Data Protection Act [18]. It concerns the impossibility of accessing data of a personal nature, except in the case consent is obtained from the party concerned. However, this same article (section 2d) lists a series of exceptions and limitations regarding the rights of citizens and indicates that consent will not be required for access to data should it be solicited by the Ombudsman, the public prosecutor, judges or law courts in the exercise of the functions vested in them.

Article 6.3 of the Draft Bill for DNA Identifier Databases managed by the Police, recently approved by the Council of Ministers (September, 2006) states: "In order to protect individuals and property and to maintain public safety, the data contained in the database may be handed over to the Judicial Authorities, Prosecutors or the Police of other countries as well as those Spanish Regional Police Forces with statutory authority".

Likewise, article 13 of the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (agreement of 28 January 1981, ratified on the 26 January 1984; Official State Gazette no. 264, of 15 November 1985), indicates that the member states may adopt legal measures to limit ... the rights anticipated in article 12 (access rights) ... when such limits constitute a necessary measure to safeguard: state security, public security, as well as the prevention, detection and investigation of penal offences.

Some authors consider that, although they benefit the public interest, these exceptions should be specified and described much more clearly in order to reduce such an ample margin of

interpretation that may lead to arbitrariness in their application [22].

3. Materials and methods

Once the general aims of the work had been specified and the tasks to be performed had been planned, the development of the task was begun in the following order: production of an opinion questionnaire and the selection of a homogeneous group of interviewees; the selection of the sample following random criteria and the cross-section nature of the sample; the purification of non-random errors that do not concern the survey; the analysis of the data obtained, using statistical methods for their summarized description. As a means of collecting the data, the questionnaire form was chosen; as well as being comfortable for the interviewees, it is a capable means of coding, purifying and easily obtaining an important amount of data. Three questions were analyzed in this study.

The first of the questions that was put to the surveyed Spanish population (Who should run DNA databases at a national level?) attempted to satisfy the principal objective of this work: to determine the criteria the said population has regarding the institutions that should maintain and protect such databases. A secondary question complements the first one: which institutions should have access to the forensic DNA data of an individual? The third question tried to show up whether the Spanish population surveyed knew that thanks to the methodology used in laboratories, particularly thanks to the DNA study, a person can be identified by means of the so-called genetic fingerprinting or the study of DNA polymorphisms.

These questions were of standard comprehension and interviewees were chosen if they had a suitable level of studies so as to form a homogeneous group. The choice of the sample was performed by using random criteria and by trying to find a cross-section nature in the different sexes and age groups. A stratified survey of the Spanish population was carried out and 1656 questionnaires were completed. Among those interviewed (809 women and 845 men) different age groups were represented (from 15 years of age upwards). In order to analyze any variations in the results of this study due to the varying viewpoints of the different professions represented by the surveyed population, the latter was classified into four groups: professionals working in the fields of law, health, security and a last group representing all other professions.

The data collected was stored on the computer and was statistically analyzed with the help of the Statgraphics Plus, 5.1 Version (Manugistics Inc., Rockville, MD, USA) programme. The statistical methods which were used were basically of a descriptive kind, firstly endeavouring to classify and tabulate the data obtained in absolute and relative frequency tables, with both simple and double input. The graphical representations of the data allows the reader to have a global perspective on the information gathered, as well as being a useful instrument for the comparison of the groups of subjects interviewed. The statistical analysis of the data was completed with the calculation of the parameters of centralization, location, dispersion and asymmetry which allowed us to summarize the information contained in the surveys. The Chi-square test was performed to analyze the responses by sex, age and professional group [23–25].

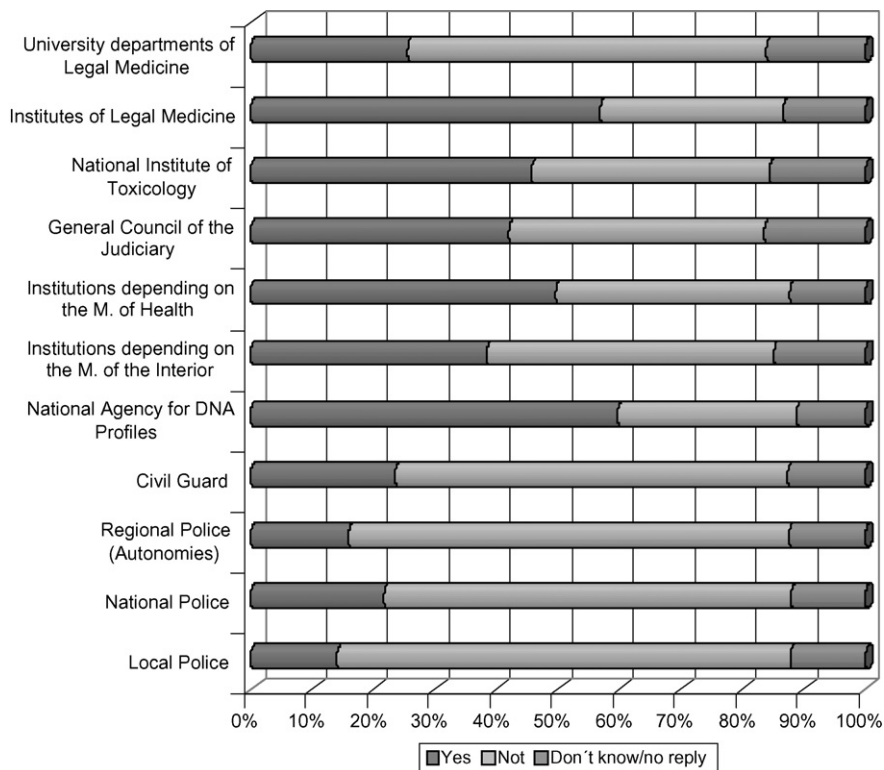


Fig. 1. What institution/s should maintain these databases and protect the confidentiality of the personal information they contain?

4. Results

When the interviewees were asked about what institution or institutions should protect and maintain confidentiality of the data mentioned in the previous paragraph (Fig. 1), 59.7% considered that custody should remain in the hands of the National Agency for DNA Profiles, an autonomous state Institution with the judicial backing of the latter. 56.8% answered that the Institute of Legal Medicine, dependent on the Ministry of Justice, should be responsible for this, 49.6% considered that a Ministry of Health Institution should be responsible and 45.7% considered that the National Institute of Toxicology -dependent on the Ministry of Justice- should be in charge.

When this question was analyzed taking into account the different age groups that were surveyed (Fig. 2) it was observed that the age groups of 35–44 and 45–54 (particularly the former group) were less favourable towards the idea that genetic profiles should remain in the custody of any of the institutions

suggested in the survey. However, it was also observed that the same institutions backing of age groups of 15–24, and above all the 55–65 and >65 age groups.

With regard to the analysis carried out taking into account the level of education of the surveyed population (Fig. 3), it must be pointed out that support for Local and State Security Agencies as custodians of the databases decreased as the level of education of the individuals surveyed increased.

On the other hand, homogeneity was observed for the different educational levels with regard to who should be the custodian of such databases, except for the discrepancies found among the answers provided by the interviewees selected from different educational levels (Fig. 3), when they answered that the custody and safeguard of the confidentiality of databases storing DNA profiles on a national level should be carried out by the local and state Security Forces (Local Police, $p = 0.0079$; National Police, $p = 0.0039$; Police Forces of Autonomous Regions $p = 0.0338$; Civil Guard, $p = 0.0000$).

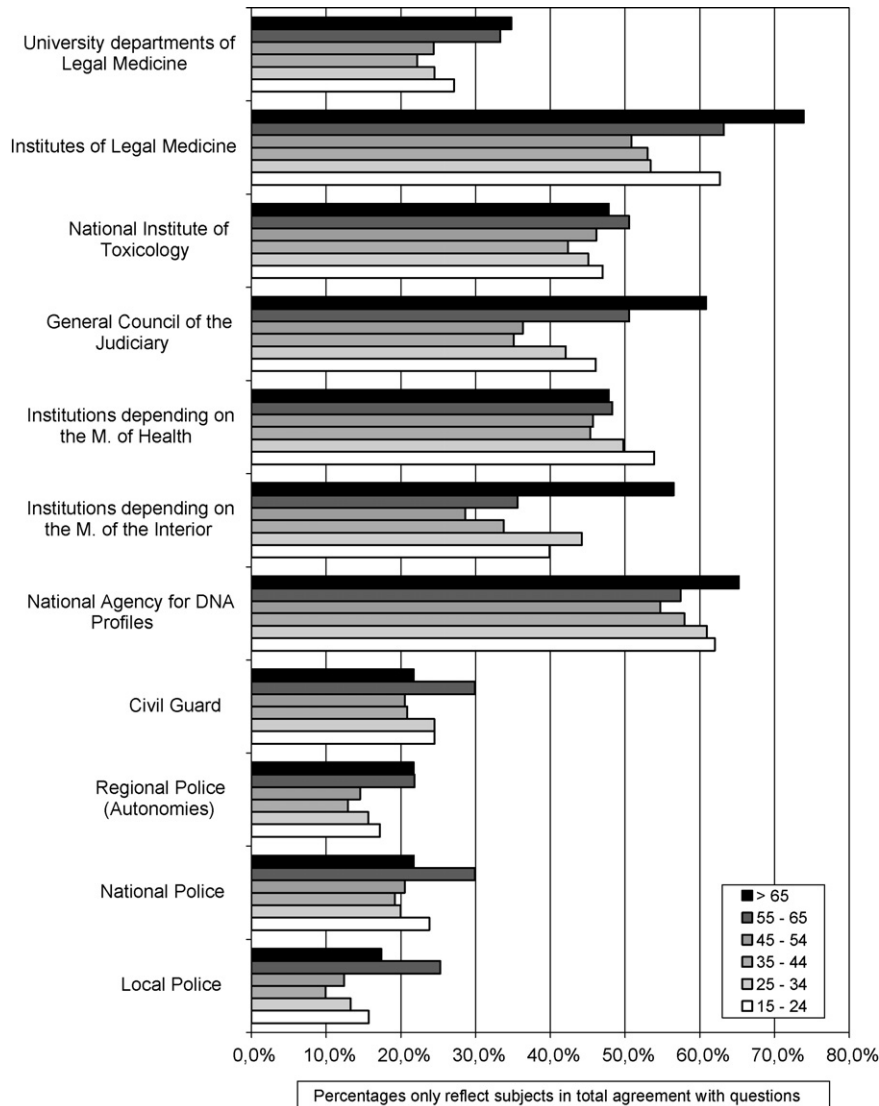


Fig. 2. What institution/s should maintain these databases and protect the confidentiality of the personal information they contain?

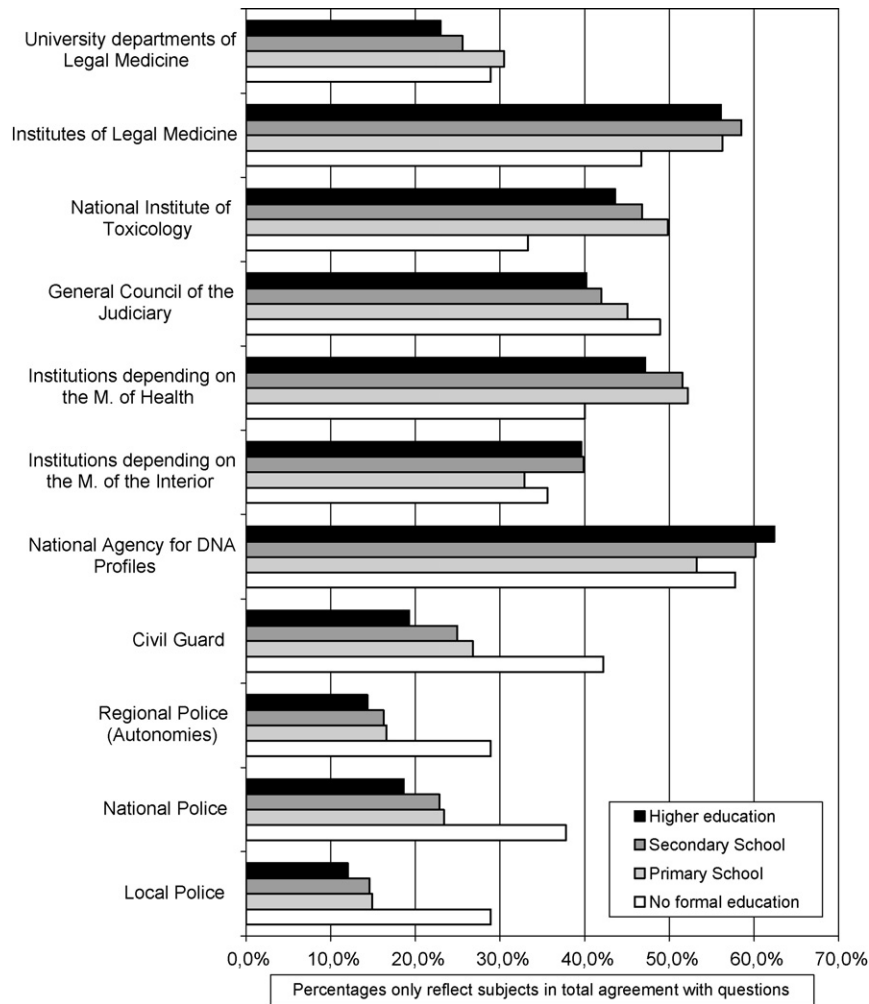


Fig. 3. What institution/s should maintain these databases and protect the confidentiality of the personal information they contain?

When related to the groups of professions that were studied (Fig. 4), it was seen that the legal professions yielded the smallest values, compared with the other professions, when it came to choosing an institution suitable for the custody of a database of forensic nature.

When the interviewees were asked who or which institutions should have access to the forensic DNA data of an individual (in the case said genetic data is under the tutelage of an independent institution) 73.6% considered that the data may be handed over to judges and law courts, 54.1% to examining magistrates or those authorized by the latter and 53.1% to a public prosecutor, next came the Police with 50.8%. When the same question was analyzed in terms of different age groups (Fig. 5), great discrepancies were observed between the age groups and the hypotheses included in the survey, with the exception of the homogeneity obtained for the different age groups when the chosen option, among those given in the survey, were: defence lawyers ($p = 0.4341$), judges ($p = 0.2649$), Prosecuting Lawyers ($p = 0.2096$) and Civil Guard ($p = 0.1009$).

It is noteworthy that those groups of an older (>65) or younger age (between 15 and 24) are those that agreed the most with the idea of transferring the data contained in the DNA profile databases to the Local and State Security Agencies.

Again, the homogeneity observed between the surveyed population of different educational levels (Fig. 6) about the persons or institutions who may have access to data of individuals that is stored in a database is noteworthy, with the exception of the discrepancies that emerged when the interviewees assessed the possibility of handing over the said data to the members of those professions involved in local and state security (Local Police, $p = 0.0002$; National Police, $p = 0.0052$; Police Forces of Autonomous Regions $p = 0.0002$; Civil Guard, $p = 0.0004$). Important differences were observed between those individuals with primary, secondary or higher educational levels and those who claimed they had had no formal education at all. The latter group overwhelmingly supported conceding custody of DNA profile databases to Local and State Security Agencies.

When this question was related to the groups of analyzed professions (Fig. 7) the discrepancies shown by the different groups with regard to the different hypotheses included in the survey were noteworthy, with the exception of the circumstances in which Judges and Law Courts ($p = 0.5151$) or Prosecuting Lawyers ($p = 0.1971$) are permitted access to personal forensic data.

Likewise, it is interesting to note the support shown by the group of individuals belonging to Local and State Security

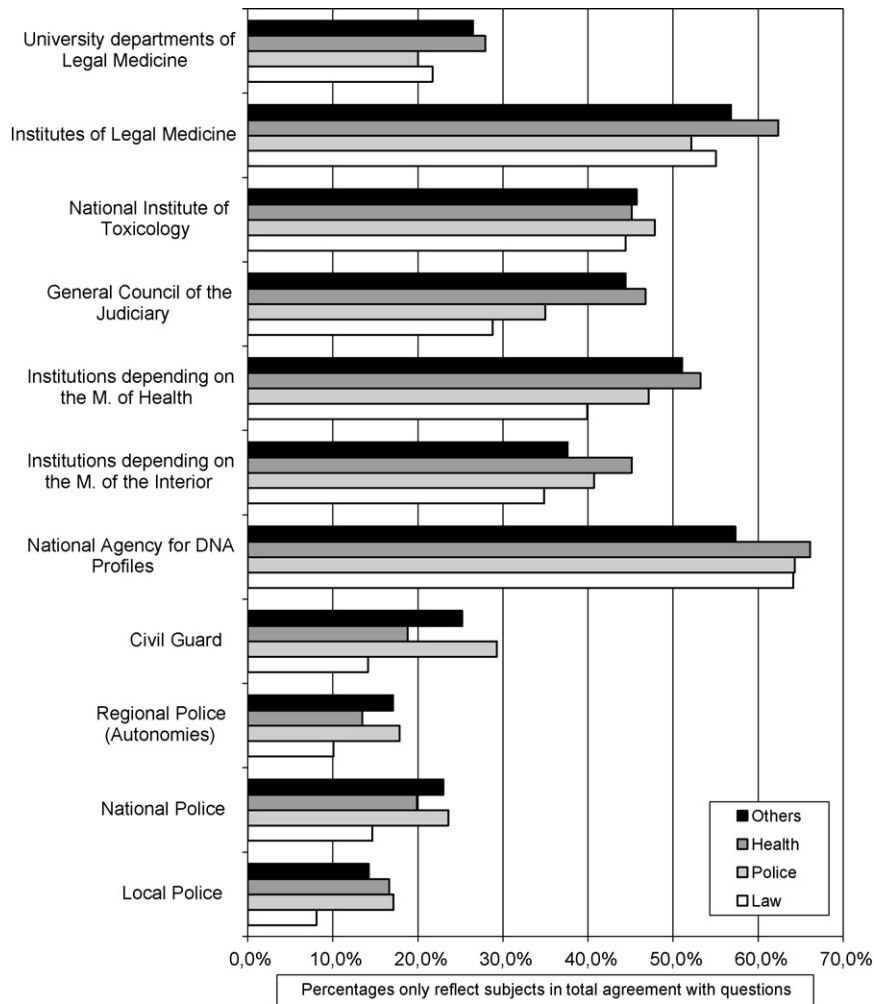


Fig. 4. What institution/s should maintain these databases and protect the confidentiality of the personal information they contain?

Agencies for transferring data from DNA profile databases to all the options proposed except two: private prosecution and defence lawyers. 78.6% of this group considered that such data should be transferred to judges and courts whilst 62.9% considered that data should be ceded to public prosecutors. These percentages are higher than the representing members of this group who believe that their own institutions (Local and State Security Agencies) should be responsible for the data.

The aim of the last question posed to the population sample which was the object of our study was to obtain information on whether the population surveyed knew, at least broadly speaking, of the existence and usefulness of the subject they were asked about: genetic fingerprinting. More specifically, the objective was to find out whether they knew about the methodology used in forensic genetic laboratories, specifically about human DNA study, which enabled forensic surgeons to effectively identify a person by means of the so-called genetic fingerprint. 86.9% declared that they were aware of the efficiency of this type of technology, the percentages for men and women being practically the same (87.7 and 86.0%, respectively). When the same question was analyzed in terms of the age groups of the surveyed population, great differences between the >65 age group and the 34–44 age group were not

observed. 82.6% of the >65 and 91.4% of the 34–44 group are aware of these techniques. However, great differences were observed when this question was analyzed in terms of educational level: 66.7% of those with no formal education, 81.7% with primary school education, 87.2% with secondary school education and 90.3% with higher education are aware of the use of genetic fingerprinting in the identification of persons. When the analysis was carried out in terms of professional groups, the percentages obtained were the following: Health related professions: 94.1%; Law related professions: 88.9%; members of Local and State Security Agencies: 85.7%; other professions: 85.5%.

5. Discussion

With regard to which institutions or organizations should watch over the confidentiality of the stored DNA genetic profiles, the surveyed population's support (59.7%) for the National Agency for DNA Profiles (a judicially backed, autonomous and public institution dependent on the Ministry of Justice) [19] must be emphasized. Second came the Institute of Legal Medicine (56.8%), dependent on the Ministry of Justice. The aforementioned institutions were regarded as being the

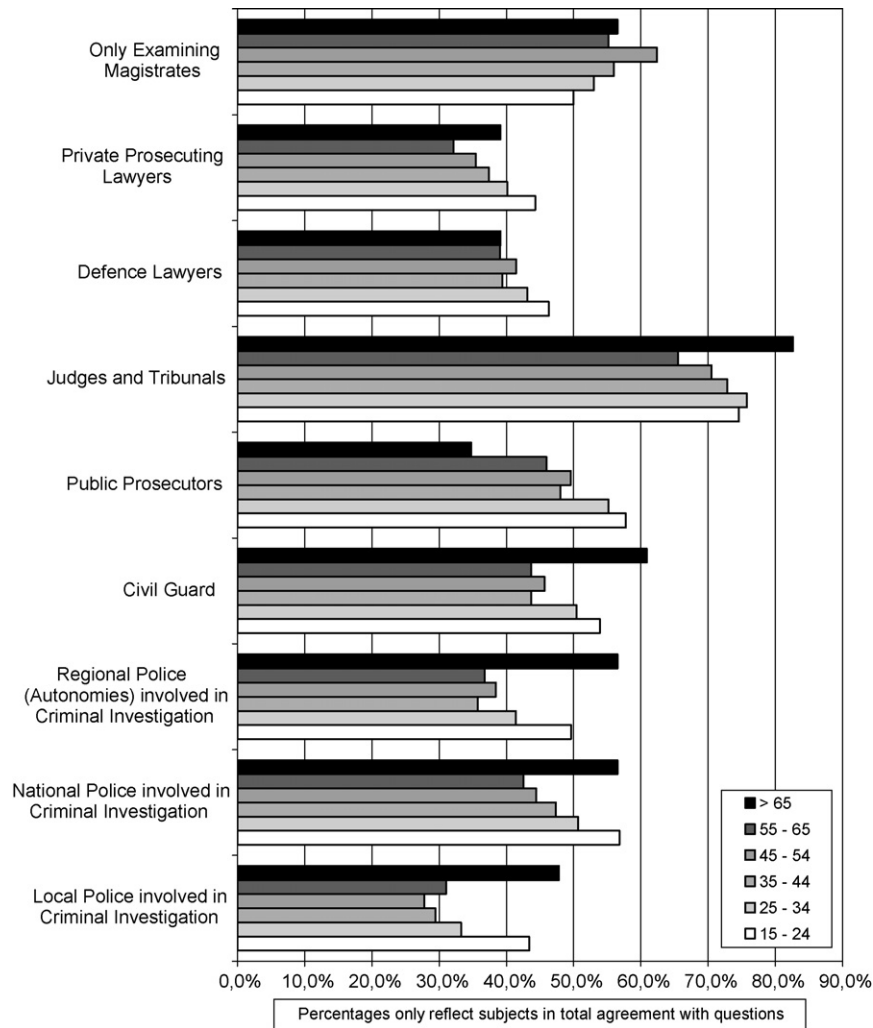


Fig. 5. To whom may personal information stored in these databases be transferred to?

most appropriate for the safeguarding of citizens' rights and the use of protected genetic data (Fig. 1). These data contrast with the lack of support shown by the surveyed population for such custody to be given to Local and State Police Forces (the National Police, the Police Forces of the Spanish Autonomous Regions, the Civil Guard, and the Local Police (Fig. 1). Thus, there is a clear difference from the theses supported by European countries, such as the Czech Republic, France, Greece, Latvia and Scotland [1,6,8,19] where it is precisely the State Security Agencies (police laboratories) which are in charge of protecting and keeping the genetic data we are referring to (Fig. 1). There is no doubt that the answers given by the surveyed population are closer to the third model, mentioned in a previous paragraph of this study. According to this latter model, the protection and custody of DNA profile databases should be entrusted to an independent public organization, under the supervision of the Judicial Authorities, which would be responsible for the coordination and computer treatment of data. Previous proceedings (extraction of human samples and DNA analyses) were conducted in a similar way, the main aim being to protect the fundamental rights of citizens and consequently determine the appropriate use of protected genetic data.

Nevertheless, we must not forget to stress in this section the high support (56.8%) which the Legal Medicine Institutes received among the population surveyed, as being the bodies in charge of custodying the DNA profile databases. The said institutes are generally governed by the different governments of the autonomous regions and police officers do not form part of their staff. However, in relation to that type of institutes existing in Spain nowadays it must be pointed out that, except for very specific cases, they would need to develop considerably in order for them to be capable of custodying the above-mentioned databases. Consequently, without willing to cast doubts on their possible future improvement, it would be difficult for these institutes to currently carry out the duties of independent laboratories managed by the Government, which is in charge of custodying the samples and the corresponding analyses, as well as comparing the DNA profiles (as it is the case of Belgium, England and Wales, The Netherlands and Sweden) [6,8].

The need to regulate future relations and competences between the Legal Medicine Institutes and the National Toxicology Institute could be regarded as an interesting issue in relation to the matter in hand: the custody of DNA profile

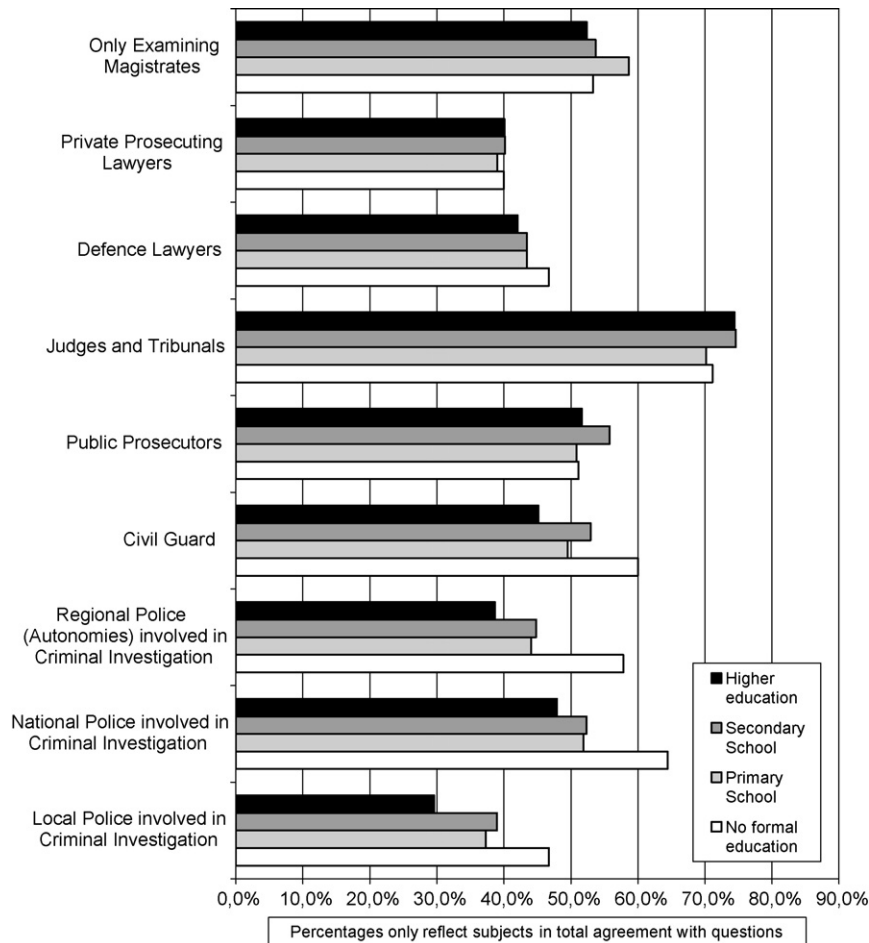


Fig. 6. To whom may personal information stored in these databases be transferred to?

databases, as the Organic Law of the Judiciary (sections 504 and 505) and several Royal Decrees (no. 862/1998 of 8 May and no. 386/1996 of 1 March) suggested, given the infrastructure of the National Toxicology Institute.

In defence of the model backed by the majority of the surveyed population (Fig. 1) in which the responsibility of protecting DNA profiles is given to autonomous state Institutions and where the Judicial Authorities have an important role, authors like Etxebarria [3] pose the following question: what is the criteria followed in those countries where judicial intervention was guaranteed before the development of DNA databases but where genetic information is now registered in a database with full responsibility for database management given to Police Institutions (judicial control and intervention becoming less stringent as a result)? The aforementioned author [3] points out that that these circumstances do not tally with the chief role of Judicial Institutions during the phase of investigation of any process.

From Recommendation (87) 15 [15], on the use of personal data by the Police, it may be deduced that there is a need for an organization of these characteristics that would be independent from State Security Agencies. In principle 1.1 it points out that each member state must have at its disposal an independent control authority that is separate from the police and entrusted with ensuring that the principles stated in the

Recommendation are followed. In this sense, it must not be forgotten that article 20 of the International Declaration on Human Genetic Data [16] includes the possibility of creating, within the institutional framework of each country, management and supervision systems designed to protect human genetic data.

Such systems are not referred to in the recent Draft Bill on Police DNA based Identifier Databases approved by the Council of Ministers (September 2006); they are, however, referred to in Chapter V (DNA Profile National Agency) in the Draft Bill regulating DNA databases in Spain, 1999 [17].

At present it includes, within a much greater scope, the Law of Personal Data Protection [18] which is enforced by the Data Protection Agency. Although the latter Agency is responsible for database control and information manipulation, as well as complying with and respecting the principles being discussed in this paper, its independence, responsibilities and competences have not been clearly assigned. As a result of this lack of definition, the Agency can hardly be considered to be an Institution which serves to effectively defend the right to privacy of the individual [22].

With regard to the institution that should be the custodian of DNA profile databases, it is worthwhile pointing out the responsibilities attributed to the National DNA Profile Agency (described in the Draft Bill of the law on DNA databases [17])

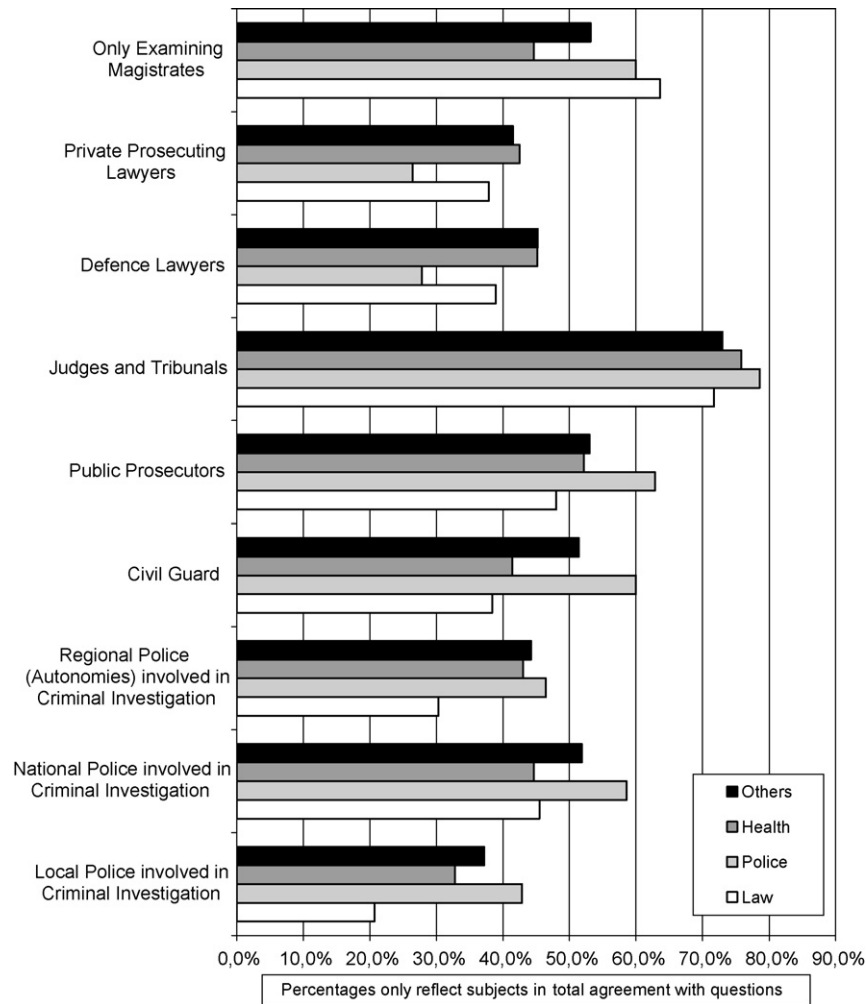


Fig. 7. To whom may personal information stored in these databases be transferred to?

given the similarities they seem to have with the criteria expressed by the surveyed population.

Among the functions assigned to the abovementioned National DNA Profile Agency [17] are: the responsibility for the files that are created in order to comply with the law, the incorporation of data on the orders of the Judicial Authorities, as well as the disciplinary measures that are taken against those laboratories that do not comply with the law.

On the other hand, sharing the data from different laboratories as described in the third model mentioned (an independent and public organization entrusted with the centralization and computerized storage of DNA profiles) would undoubtedly increase the efficiency of the system, taking the mobility of offenders and serial criminals into account.

At present there exist in Spain a great number of laboratories dependent on different public institutions (Ministry of Health, Ministry of Education, Ministry of Justice, and Regional Ministries, etc.) that comply with the minimum requirements, or are in the process of obtaining accreditation from ENAC (the national accreditation organization). The requirements are included in article no. 5, paragraph 2 of the Draft Bill of the Law on police data for identifiers obtained from DNA, approved by the Council of Ministers in September 2006 and

backed by the surveyed population (Fig. 1). These laboratories are operative in the field of Forensic Genetics and it would be a mistake to ignore their experience and quality with regard to forensic skills. However, given the quality and high scientific level of the laboratories managed by the State Security Agencies in Spain, it would be a mistake if they did not have straightforward access to the DNA profiles stored in the databases of other laboratories. Agreements stipulating criteria and conditions that would enable State Security laboratories to efficiently incorporate DNA data from other laboratories (in accordance with the third additional resolution of the Draft Bill of the Law on police data for identifiers obtained from DNA) have yet to be reached.

An independent public organization as described in the third model (the model is based on the creation of an independent organization entrusted with the centralising of all results and their computerized storage), and as expressed by the opinion of the surveyed population, would permit the participation of all the aforementioned laboratories [19].

This organization would be responsible for the management and control of the results of the analyses of people and traces, as well as carrying out the comparisons which are only permitted when ordered by a judicial body. Likewise, the profiles will be

sent to the laboratory once judicial authorization has been obtained. The laboratories will be obliged to inform the person responsible for this database of the reference under which traces and samples are filed and confirmed, dissociating any personal data which is stored in this centralized file [5,8,19,20,26]. Bearing in mind the information gathered on this third model with regard to the custody of databases for DNA profiles, it seems obvious that there are clear differences between this model and that accepted in countries like Belgium, England and Wales, Netherlands, Slovakia and Sweden [1,5,8,19]. In those countries the control, custody and automated treatment of DNA profiles is under the responsibility of an independent laboratory on a national level, dependent on the state's authority, where all the analyses are performed.

Regarding this third model, it is of interest to note that the members of Local and State Security Agencies are in favour of conceding custody of DNA profile databases to institutions unconnected to the said Security Agencies (Fig. 4).

The question of independent management by an authority other than the police has become pivotal in debates. There are two central points that are often made in relation to this. First, it has been asserted that independent management of DNA databases is essential to ensure the legality of databasing and, secondly, that independent custody of databases should be subject to external scrutiny from a regulatory body or watchdog. Both of these elements are argued to be essential to protecting due process values by ensuring that sensitive data held about citizens is used within the parameters of the law.

There is also recognition in some states that transparency and accountability of DNA databases is essential in relation to maintaining public confidence in them. In The Netherlands, for example, the custodian of the database makes detailed statistics about the size of the database, the match reports issued, and a range of other information available via their website (<http://www.dnasparen.nl>). Two annual reports on DNA databases on a national level have also been published in the United Kingdom [8]. Undoubtedly, these resources are designed to ensure awareness of police uses of DNA and prove its effective use in investigation. Likewise, they are also designed to calm the fears and uncertainties that may exist with regard to the collection and storage of genetic samples and the corresponding profiles.

In relation to the protection and custody of DNA profile databases the Portuguese National Council of Ethics for Life Sciences [27] considers that the guardianship of the forensic database should be in charge of an independent, multi-disciplinary body which is not a party concerned in the investigation. In this regard the French National Consultative Ethics Committee for Health and Life Sciences [28], finds it necessary to create independent structures to protect the freedom of citizens “which are designed to fight the possibility of technocratic, economic, police and political abuse in connection with the use of biometric data”. Likewise, the Portuguese National Council of Ethics for Life Sciences considers that the French Data Protection Agency, which is an example of a body meeting such criteria, should have its status and resources enhanced in order to improve its effectiveness

and independence. Apart from making a considerable number of recommendations to improve the control of DNA profile databases in the United Kingdom the Nuffield Council on Bioethics [29] also insists on the need to create a statutory basis for the regulation of forensic databases and retained biological samples. A regulatory framework should be established with a clear statement of purpose and specific powers of oversight delegated to an appropriate independent body or official.

With regard to the first model, taking into account the current situation in European countries, such as the Czech Republic, France, Greece, Latvia and Scotland [1,6,8,19], the custody of DNA profile databases by the State Security Agencies is a viable option from the economic and functional point of view when considering the model that is to be chosen in Spain [19,20,26]. This is due to the efficiency shown up to now as well as the infrastructure and the technical and human resources at their disposal.

Article 2 of the Draft Bill for DNA identifier databases managed by the police, recently approved by the Council of Ministers (September 2006), follows the same line of argument. However, little backing was shown by the surveyed population in general for the police as custodians of national DNA profile databases, regardless of criteria concerning the necessary infrastructure, technical and economic resources. Furthermore, members of the same Security Agencies also generally disagreed that the police should be responsible for the custody of these databases, favouring other options (Fig. 4).

On the other hand, most of the surveyed population agrees that such data should be made available to judges and law courts (73.6%). This criterion is backed by all the professional, educational and age groups that were analyzed (Figs. 5–7). Neither is there much opposition to data being made available to State Security Agencies during criminal investigations.

The criterion of the surveyed population is generally in line with article 7 “Use and access of data obtained from criminal databases” contained in the “Draft Bill for DNA identifier databases managed by the police”, recently approved by the Council of Ministers (September 2006).

Finally, after having consulted the population surveyed on their knowledge of the methodology used nowadays in Forensic Genetics laboratories, more specifically about the study of human DNA which enabled forensic surgeons to identify a person by means of the so-called genetic fingerprinting, we could conclude that a high percentage (86.9%) of subjects from the population surveyed expressed that they knew of the existence and usefulness of genetic fingerprinting when identifying individuals. However, when the same question was put to the different professional groups it was observed that 85.7% of the members of Local and State Security Agencies were aware of the utility of genetic fingerprinting; yet this figure is one of the lowest when compared to other professional groups (professions related to health 94.1%; professions related to Law 88.9%; other professions 85.5%). As a result, it appears that more extensive information needs to be supplied to Local and State Security Agency members, regardless of rank or position.

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