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**SUICIDES IN THE CENTRE OF PORTUGAL: SEVEN YEARS
ANALYSIS**

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Abstract

As one of the more specific and distinctive problems of human beings, suicide has been investigated with increasing attention all over the world. Several risk factors have been described as well as limitations arising from their study. The World Health Organization estimates that this scourge affects one million people annually, which corresponds to one death every 40 seconds worldwide. According to recent studies, Portugal, despite the good rates (10 suicide deaths per 100,000 inhabitants), had shown an increasing trend among younger people.

This work aims to characterize the evolution of the suicidal profile autopsied at the Forensic Pathology Department of the Centre Branch of the National Institute of Legal Medicine and Forensic Sciences of Portugal, analyzing several variables: age, gender, marital status, employment status, suicidal methodology, toxicological analysis and some conditions/behaviors regarding personal history (alcoholism, suicidal ideation, suicide attempts, physical illness, psychiatric disorder). All the autopsies from the 1st January 2003 to December the 31st 2009 were analysed.

The suicide profile achieved corresponded to a man (77%), aged between 65 and 74 years old (20,4%), married (54,5%), employed, who committed suicide by hanging, in September, May or February. Clinical records include an organic health problem or psychiatric one, in addition to risk behaviors such as alcoholism, suicidal thoughts or suicide attempts.

The number of suicides autopsied at the Centre Branch has increased, resembling the profile to the result of many other authors. However, new medical and social developments place hanging as the favorite suicide method in our study. Many barriers remain to overthrow but several prevention programs begin to be designed and implemented. Future evaluations and interventions at the social and medical level,

including the death certification process, will be fundamental to a better realistic understanding of this phenomenon.

Key-words: Suicide; Risk factors; 2003 – 2009; death registration process; Centre of Portugal

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1. Introduction

Suicide is one of the largest and most complex social problems that has accompanied man since antiquity. This deliberate act of ending one's own life has always been far from an unanimous acceptance and currently is a target of increasing concern throughout the scientific community, asserting itself as an increasingly serious public health problem [1,2]. According to the World Health Organization, this specifically human problem makes nearly one million deaths annually worldwide, of which about 58,000 occur in the European Union and 200,000 amongst teenagers or young adults [3], which is equivalent to a death every 40 seconds, placing suicide among the 10 most frequent causes of death in all age groups and the 2nd in young people aged between 15-29 [4].

Analysing the suicide rates is not easy due to the large proportion of deaths from undetermined cause in our country [4, 8, 9]. In the last years, it has been estimated that the Portuguese suicide rates estabilized around 10,0 per 100 000 inhabitants, representing 14,753 years of potential life lost in 2009 [5, 6]. Adolescents and young adults represent only a small percentage of all suicides in Portugal, an expected trend of the developed countries [5, 7].

Although the number of attempts is higher in females, all studies point to a higher prevalence of suicide among males [2, 4, 5, 6, 7, 8, 10]. In addition to socio-cultural factors, the explanation is based on the first choice for more lethal manners between males. This difference becomes more pronounced in upper age groups [2, 4, 8, 10, 11]. However, the hanging suicide emerges as the most used method by both sexes. Poisoning, firearms use (especially in men), precipitation and drowning are the next more common causes.

As an universal phenomenon, diverse knowledge branches have studied suicide. Schneidman described a suicide scenario: psychological pain, loss of self-esteem,

constriction of the mind, isolation, despair and escape, and Durkheim considered suicide to be a reflection of the whole social fabric of a community [2, 7, 11, 13]. These and many other studies have offered an approach on the typical profile of an increased suicide risk, in order to ensure the proper and targeted prevention strategies that have been outlined by the European Commission (suicide is one of five primal areas of the European Pact for Mental Health and Welfare, 2008) [14]. Family problems; economic, religious and cultural issues; social loss of cohesion; medical troubles, with a great influence of psychiatric history (alcohol, drugs, mood disorders...), difficulties at work, school or court; isolation; and even the newly titled Werther-Cobain effect, represent slices of the complex role of extreme motivations [3, 8, 9, 11, 15].

This work aims to analyze the suicides autopsied at the Centre Branch of the National Institute of Legal Medicine and Forensic Sciences between 2003 and 2009, according to various variables. With these results, we intend to characterize the suicidal profile in this region of Portugal.

2. Material studied

This study has been carried out by the National Institute of Legal Medicine and Forensic Sciences of Portugal (INMLCF), being all the samples collected by forensic pathologists from the Forensic Pathology Department (FPD) of the Centre Branch of the INMLCF (from January 2003 to December 2009).

As data material of the present study, 2458 autopsies were checked out for suicides at the FPD, corresponding to the autopsies performed at the Centre Branch of Portugal.

Assessment of the examination protocols was conducted by means of a tabular database according to the following criteria: year, month, season (respecting the real timetable), sex, age (according to the division made by WHO), marital status, occupation,

suicide method, toxicological analysis and results, personal history (Alcoholism and Drug addiction; Suicide attempts and suicidal ideation; Physical illness and Psychiatric disorders; Isolation/Loneliness). All these variables were studied and all the pertinent data was registered, separated and statistically treated with the SPSS program (Statistical Package for Social Sciences).

3. Results

3.1. Number of cases

At the Forensic Pathology Department of the Centre Branch, a total of 2458 autopsies were performed between January 2003 and December 2009, 304 on suicide victims (representing 12.4% of all the analysed autopsies). No specific suicide number variation was found throughout the studied period.

3.2. Year and month distribution

The year 2007 had the highest number of suicide victims, with 53 cases (15.6%) and the lowest percentage was achieved in 2006, with 29 cases, corresponding to 8.7% of the total suicide cases in this specific year (Fig. 1).

February, May and September had the highest number of cases, with 31, 32 and 34 cases, corresponding to 10.2%, 10.5% and 11.2%, respectively, being December the month with the less number of suicides (5.9%) (Fig. 1).

The seasons with the highest number were Spring and Winter, with 81 and 80 suicides, respectively (representing 26.6% and 26.3%).

3.3. Sex and age distribution

The highest number of suicides occurred in males in all the studied age intervals. From the 304 analysed suicides, 77.0% occurred in males. This prevalence increases over the age until 74 years-old, with the highest percentage (20.4%) achieved between 65-74 years-old (Fig.2).

Adolescents and young adults males represented 13.1% of all the studied suicides

3.4. Marital status distribution

Five cases had no information regarding the marital status of the victims. Most of the suicides (163 cases, corresponding to 54.5%) occurred in married individuals, followed by single (23.7%), with adolescents and young adults representing 52.1% of all the single ones. Single individuals belonging to this age group represented 12.4% of all the suicides with marital status information (Fig.3).

3.5. Occupation distribution

It was only possible to have information in 225 of the cases. One hundred and five victims (46.7%) were employed when they committed suicide, and 37.8% were already retired.

Most of the individuals between 15-34 years-old were employed or were students (61.6% and 30.8%, respectively). In this age interval, people with a job represented 10.7% of all the analyzed suicides with occupation information.

3.6. Suicide method

When determining the chosen methods to commit suicide, we concluded that hanging and poisoning were the favorite ones, with 119 and 97 cases, respectively,

representing 39.1% and 31.9% of all the reviewed cases. As we can also see in the table 1, the third highest percentage corresponded to suicides with firearms (11.2%), followed by drowning (7.2%), precipitation (5.9%) and trucidation (3.6%).

3.7. Toxicology requests

The toxicological analysis involved one or more of the substances mentioned in table 2. Other substances, such as carboxyhemoglobin, strychnine and cyanide, were additionally searched in 5 cases with specific suicide contexts (e.g. suffocation and intoxication).

3.7.1. Ethanol requests/ results

From all the analysed suicide cases, 85.2% included an ethanol request (259 cases), with 52 positive results, corresponding to 20.1% of the total analysed cases. Ethanol was detected in, mainly, men (92,3%) aged between 55 and 64 years-old (25.0%), and adolescents and young adults represented 15.4% of all the ethanol positive cases. Hanging was the suicide method with the highest number of positive ethanol results (42.3%).

The major percentage of the positive cases corresponded to a Blood Alcohol Concentration (BAC) ≥ 1.2 g/L, with 44.2% (23 cases), followed by a BAC ≤ 0.5 g /L, with 34.6% and between 0.8 and 1.2 g/L (17.3%). The lowest percentage corresponded to $0.5 < \text{BAC} < 0.8$ g/L (3.8%). Ninety one percent of males had BAC ≥ 1.2 g / L.

3.7.2 Illicit Drugs requests/ results

Among all the analysed suicides, 28.9% included illicit drugs request (88 cases). Analysing by gender, it was possible to see that illicit drugs were required in 29.9% of the males and in 25.7% of the females that committed suicide. Adolescents and young adults were the most important age interval with drugs analysis requests (37.5% of the total illicit

drugs analysis). It's important to note that individuals under 55 years-old represented 84.1% of this toxicological determination.

Only 7 cases (8.0%) were positive for illicit drugs. Some of them with more than one substance.

All the positive cases presented *opiates*, and *cannabinoids* were the second most used drugs, with 5 positive cases. Three of the cases were positive for *cocaine and metabolites*. There were no cases associated to *amphetamines* or *metamphetamines*. Once again, males were the greatest users, with just one positive result for *opiates* and another for *cocaine and metabolites* in females, and adolescents and young adults were responsible for 73.3 % of all the positive results for illicit substances.

Crossing the toxicological results and suicide methods, it was possible to concluded that most of the illicit drugs consumption was associated to hanging.

3.7.3 Prescription Drugs requests/results

Prescription drugs were searched in 57.2% (174 cases) of all the studied suicides, mainly in men (127 cases).

Youngest suicidal individuals represented 14.3% of the requests and the highest number was reached in individuals aged over 54 years-old (60%). Prescription drugs included *benzodiazepines*, *antipsychotics* and *antidepressants*, and were presented in 36,2% of the analysed cases (63 cases), 37 in men. Twelve of the cases had toxic concentrations.

Once again, more than one substance was found in some of the cases.

Benzodiazepines (BDZ) and antidepressants (ATD) represented the most used prescription drugs, with 36 and 31 positive results (non toxic concentrations), respectively. Antipsychotics were found only in 10 cases.

Females had the main percentage of all the 12 positive toxic results (83.3%).

3.7.4 Pesticides requests/results

Pesticide analyses were required in 48.4% (147 cases), mainly in men over 54 years-old.

They were only positive for *paraquat* and *organophosphates (OP)*, 24.5% and 23.1% of all pesticide requests, respectively (corresponding to 36 and 34 cases).

Males were involved in more cases than females, with 85.3% of the OP positive results and 75% of paraquat ingestion cases.

Most of the positive results reached ages over 54 years old. This was even more evident for OP, where these age groups reached 64.7% of the OP positive cases. For paraquat there was a more homogeneous distribution, except in ages between 15 and 24 years old, where there were no reported cases with this herbicide.

3.8 Personal history

3.8.1 Alcoholism and Drug addiction

Thirty nine individuals (12.8%) had a history of alcoholism. Males were the greatest users, corresponding to 92.3% (36 cases). The alcoholic behaviour is more prevalent between 65 and 74 years old (28.2%).

Drug addiction represented only 3.6% (11 cases) of personal history of suicidal individuals. However, only 2004 had no reported cases with a history of addiction to drugs. Only 3 females (27.3%) were addicted to drugs in moment of suicidal act.

3.8.2 Suicide attempts and suicidal ideation

Thirty six cases (11,8%) attempted suicide more than one time.

Once again, females represented only 16.7% (6 cases) of the previous attempts.

Attempts were most frequent in individuals between 55 and 64 years-old (25%) but the two youngest age groups (15-24 and 25-34 years old) together represented 27.8% (10 cases).

Suicidal ideation was reported in 15.5% of all the studied suicides. Those ideas were also more frequent in males, corresponding to 74.5% (35 cases).

It was possible to observe that 33 (70.2%) of all the suicidal ideation cases happened in those older than 44 years-old.

3.8.3 Physical illness and Psychiatric disorders

Suicidal individuals who had a physical illness when they committed suicide corresponded to 27.3% (83 cases) of all the analysed suicides. Once again, there was a supremacy of males, with 79.5% (66 cases). The highest number of sick suicidal people was observed between 55 and 64 years-old (24.1%)

Psychiatric disorders have the highest number of cases within the variables chosen to evaluate the personal history. Females (21.7%) are also supplanted by males (78.3%). The ages between 55 and 74 years old contained 48.9% of these sick people and the youngest ones (15-34 years old) represented 21.7%.

3.8.4 Isolation/Loneliness

This condition was found in 16 cases (5.3%). Despite the difference between sexes be the smallest, males still represent 68.8% (11 cases). We found a homogeneous distribution by age groups.

4. Discussion and conclusion

There are few national publications that studied some particular characteristics of the suicidal phenomenon [1, 2, 11-13], but none of these focused the years now studied as well as all the different evaluated variables. Some major risk factors have been approached in order to achieve more effective prevention plans. However, most of them only focused global rates, merely obtained from respective national statistics and, therefore, some comparisons with the results now achieved were possible but not for all the variables. Then, the results will also be discussed taking into account the mentioned published data, our present medico-legal system and its reality.

Throughout the years, we observed a slight variation in suicide rates, from 29 cases (8.7%) in 2006 to a maximum of 15.6% (53 cases), in 2007. A study performed in the same Branch of the INMLCF and published in 2003, concluded that 6.8% of all the autopsies between 1986 and 2001 corresponded to suicidal cases [12]. This increasing can be explained by a possible early suicide underestimation [4,8,9,15,16] and, thus, a lack knowledge to perform suicide diagnosis. Therefore, in the last years, European efforts have being developed in order to improve suicide diagnosis, mainly represented by extensive death registration process researches [16]. It is important to remember that, in Portugal, according to our national Institute internal legislation concerning forensic autopsies (Law No. 45/2004, 19th August), when there is a suspicion of undetermined or injury/violent death (suicide, homicide and accident), the legal authorities should demand an autopsy but we aren't able to state if they do it in all the cases since the final decision belongs to courts [16]. Moreover, autopsies conclusions do not always clarify the type of injury death (etiology). Many studies have also stated the great number of undetermined deaths in our country [4,8,9,18] and the related limitations in data validity. Thus, we can assume that this increasing in suicide autopsies in the FPD of the Centre Branch of the INMLCF might

reflect both the increasing concern to a more realistic registration of suicide cases and a real raise up in suicide rates.

We believe that some of the variation achieved on the targeted population until 2005, corresponded to the opening of several medico-legal offices. In fact, the Centre Branch of the INMLCF was responsible to perform the autopsies of all the violent deaths occurred (and with previous court demand) in the centre of Portugal and in the two Portuguese archipelagos (Azores and Madeira) until 2000. Since this year, according to the internal institute law, several medico-legal/forensic offices were opened and started function and some of the autopsies that used to be performed at the central branch were done at these medico-legal offices (distributed around the country according to the population). Thus, it was expectable that, during the analyzed period, the target population would decrease since the deaths were no longer counted at the branch but at the corresponding offices.

February, May and September were the most troubling months where there were a higher number of suicides, results also achieved by others [8,11,12]. The first two months corresponded to the most affected seasons: Winter and Spring. Despite September is not stated in any study as one of the most prevalent month to commit suicide, it seems possible to associate this month with the end of Portuguese holidays and the consequent return to work and quotidian life stress, but also with changing of the weather conditions, with darkness increasing in this time of the year (affecting the month of February, too). In fact, we can observe that the obtained seasonal variation in the suicide mortality rate is likely a result of a joint influence of several factors that exhibit seasonal variations themselves (the vacations period, duration of darkness, stressful life events and inclement weather) [11,18].

As also surveyed by other authors [2,3,8-11] we concluded that suicide were more frequent in men than in women, in all age groups. Additionally, we achieved a 3,3

men/women ratio, reflecting the supremacy of men all over the world [8,17], with the exception of China. Despite a higher number of women with active social life, in fact, we found a major number of male suicides because of intrinsic mentality differences between both sexes. According to many others studies, women present the highest number of suicide attempts, but males tend to choose more violent means [4,8,10], that will assure the expected tragic end. Moreover, when crossing sex with the different suicide methods used, hanging and firearm shooting presented the highest differences between sexes. Distribution through age groups also showed an increasing prevalence among age. A slight upward trend within adolescents stated by some authors [8,9,17] is also visible in the youngest suicidal people (15-34 years old), from 12.5%, in 2003, to 20.9%, in 2009, with some fluctuations. Easy access to information and lack of control legislation of all media might play an important role in this result.

Controversial data about marital status and occupation have been published by many other investigators. Married and employed individuals describe our suicidal profile. However there are some studies where suicide seems to have a positive relationship, not only with the unemployment rates, but also with the marriage decreasing [11-13]. A possible explanation for our results can be the accumulation of quotidian factors (joint with problems at work) and consequent marriage misunderstandings. This hypothesis may also be supported by the diseases (organic and mental) percentages found in our study (27.3% and 30.3%, respectively). Unfortunately, a health problem can frequently disturb the harmony within many couples. On the other hand, unspecialized workers often receive insufficient salary to support family costs, most of them belonging to local or small companies with no competitive market strength.

Our study demonstrates that there has been a change in the suicide method, as it has been recently observed in other international study [4]. In fact, until 2001, the Centre

Region of Portugal presented self-poisoning as the most used method, a common/usual finding in the rural countries where the economy is essentially based on the agriculture exploration [8,19]. According to those reasons we had already written, women's favorite suicide mean was self-poisoning (34.4% of suicidal females). However, this present study showed that in 39.1% of the autopsied suicides, hanging was the main choice for individuals to commit suicide. Thus, self-poisoning has definitely been placed to the second place, with 31.9% of the cases. A similar pattern had been observed in several other European countries (analyzing until the year 2002) [4,10,17]. A simple explanation can be the easier availability of hanging methods and to the improvement on health care assistance, especially the great advances on toxicological knowledge (e.g., new psychological medical drugs with less toxic effects, mainly antidepressants) [4,10,17]. On the other hand, the limitations in toxic substances' production, sales and use had been imposed in several countries, including Portugal and thus, some products are only available to authorized people.

Besides the lack of national legislation, as a violent death, suicide often obliges the forensic pathologist to request toxicological analysis as a complementary exam, in addition to the autopsy findings, to better approach of suicidal act context. These requests aim to specify if a toxic compound was directly used for self-poisoning suicide or if its presence justifies the suicidal behavior (impairment state).

According to the increasing ethanol consumption, especially in males [9], it would be expectable that ethanol was the most searched substance (around 85%, both genders). Quantitative results showed that concentrations over 0,5g/l (66.4%) led to higher suicide risks. Thus, we can assume that individuals often look for courage and disinhibition when committing suicide [12].

Prescription drugs (medical substances) were analyzed in 174 cases, 12 cases with toxic concentrations and 51 cases (29.3% of all the prescription drugs requests) with therapeutic concentrations. In fact, the three most important medical drugs classes studied (antidepressants, benzodiazepines and antipsychotics) play a very important role in therapy for psychological/mental disturbs, representing 30.3% of the evaluated cases. Additional reasons are, obviously, related to a significant underestimation of these pathologies and an higher prescription of those drugs, already reported in another studies [8].

According to Portuguese Suicidology Society, Prevention of Suicide belongs to the National Plan for Mental Health, elaborated by “Direção Geral de Saúde” since 2007. This plan also stated the increasing need to fight against depression, in order to decrease the suicide rates. Thus, our study stated an increasing number of therapeutic dosages throughout the years, mainly since that year.

Both results, ethanol and prescription drugs, confirmed the higher suicidal risk in modified psycho and cognitive skills.

At this point we have to emphasize the fact that we had few information to analyze and interpret the other variables studied in the present work. In fact, no studies have evaluated so many variables as we tried here. Therefore, the data now achieved has few comparable studies.

Pesticides were the most used toxic products in intoxication suicides, with 69 cases (71.1%) and paraquat was the most frequently encountered one (36 cases). Among the European Alliance Against Depression (EAAD) countries, Portugal still represents the most pesticide user in voluntary deaths [4]. In a three years analysis of pesticide intoxications in the centre of Portugal, suicide suspicion represented the highest proportion of pesticide requests [19]. In the agricultural areas, mainly in the neglected inward villages, these composts still represent an easy way to improve the quantity and quality of crops and,

thereby, an easy access when contemplating suicide [8]. Additionally, the storage and use facilities to individuals that work with these products constitute the main reasons that sustain the data found.

However, some policies have been implemented (e.g., a closer control to pesticides sale, storage and use and one pill package of the most risky prescription drugs) that are playing a significant role on the pattern changing, from accidental deaths to suicidal deaths.

Illicit drugs were only determined in 28.9% of the cases (88 suicides). The illicit substances increasing consumption all over the world (WHO estimates that 155 to 250 million people with 15-64 years old had used non-prescribed psychoactive drugs in 2008) [7] leads to a growing concern and, so, among the years, we could report a relevant increase in this class determination, from 8 requests in 2003 to 18, in 2009. However, as expected, only 1 illicit drug intoxication (overdose) suicide was reported. Indeed, deaths related to the consumption of these substances are usually accidental, and suicides can eventually occur in those addicted individuals suffering from a depressive disorder. Although there were very few positive cases for illicit drugs, we may suppose that suicidal individuals seek, once again, for some disinhibition and bravery at the moment to commit suicide. The lack of requests (especially in the first years) may underestimate the positive cases.

Opiates, cannabinoids and cocaine were the only illicit substances found, according to WHO that previously stated the highest consumption of those within the drugs users.

The last variables that we decided to study may give a more specific behavioral characterization to the suicidal specific profile. In fact, in spite of strong limitations in the evaluation of these variables, we could conclude a significant relationship between suicide and some of the analyzed variables, namely, health disturbs (psychiatric or physical ones).

Like the suicide itself, these risk factors may probably be underreported. However, a strong association between suicide mortality and a disease condition (mental or physical) and suicidal behaviors (attempts and ideas) had already been described by several researchers [8,14,20]. One European study, published in 2009, stated that 90% of all suicides occurred in a psychiatric disorder context and that the strongest predictor for completed suicide was the history of non-fatal suicidal acts [14]. In most studies, self-harm and suicide attempts were present in, at least 40%, of the suicide cases [8]. In 2007, the European Study on the Epidemiology of Mental Disorders concluded that the major depressive disorder and alcohol related problems were the most important conditions to progress from suicidal ideas to attempting suicide [15]. Isolation, alcohol and drugs addiction had also been considered as major risk factors in other studies [8,13,20].

Many studies had reported the highest number of suicide attempts in females [2,7,15]. However, our results stated an opposite conclusion. An easy explanation relies on the fact that this study had only analysed the personal history of completed suicides.

A probable relationship between variables but also between suicide risk and the number of variables, in addition to the existence of many individuals with any of those personal history characteristics led us to conclude that when an individual presents more than one of these personal history characteristics, a potential suicide risk maybe present.

Psychological autopsies are, actually, beginning to assume the importance they deserve all over the world [8,21]. In fact, in order to a better suicide diagnosis, “necropsy” is not always enough and psychological autopsy can be a very helpful implement in a violent death of an undetermined cause, preferably with a mental physician cooperation. Moreover, it can constitute a therapeutic act to all people affected by a friend or a familiar suicide [21].

We can conclude that the typical suicide profile remains almost the same, with the exception of the suicide method that had changed to hanging; a slight increasing rate within the suicidal individuals was verified; within the institutional field, providing specific recommendations to improve the quality of suicide registration may assure the best approach to the suicide reality (e. g. psychological autopsies) and, thus, to the most effectiveness prevention plans (improvements and interventions to a better detection and treatment of psychiatric disorders, high-risk groups, a detailed legislation to restrict the access to lethal means, implementation of some guidelines in Media).

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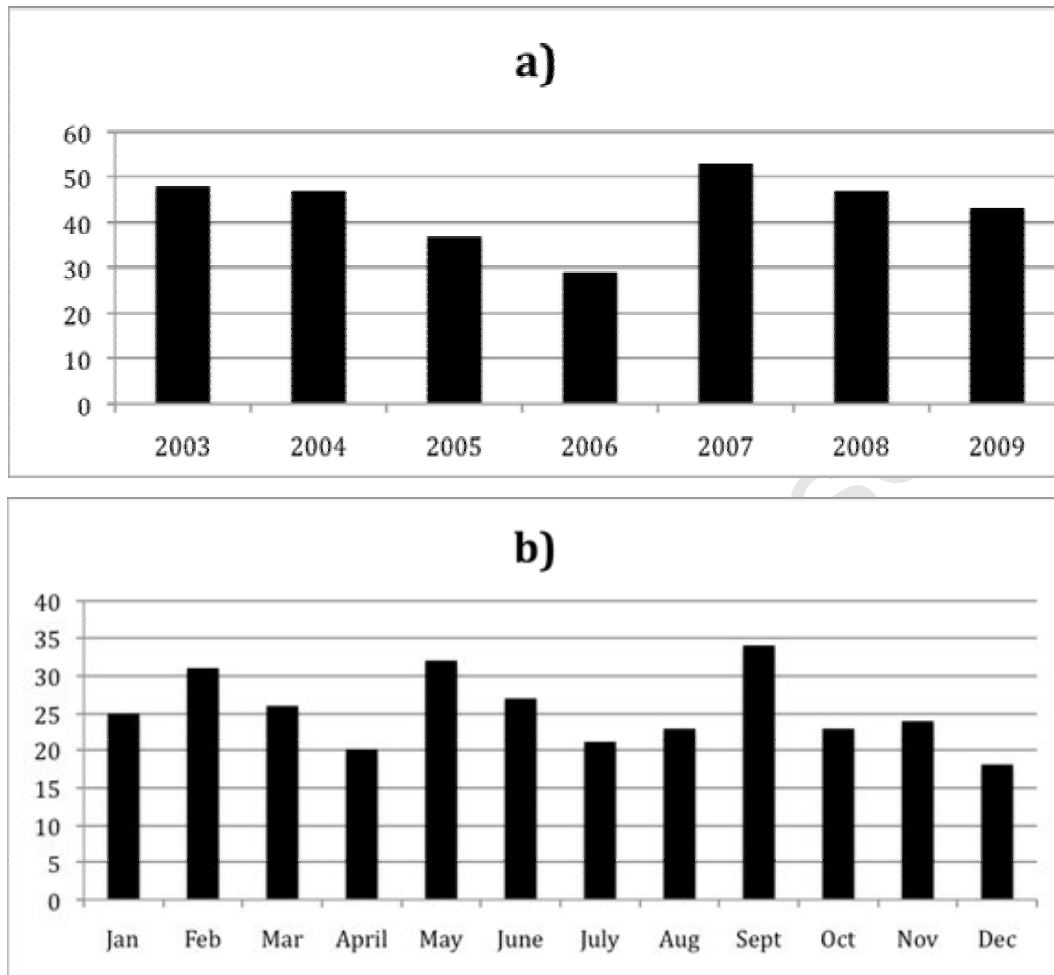


Fig.1. Suicide distribution: by year (a) and by month (b).

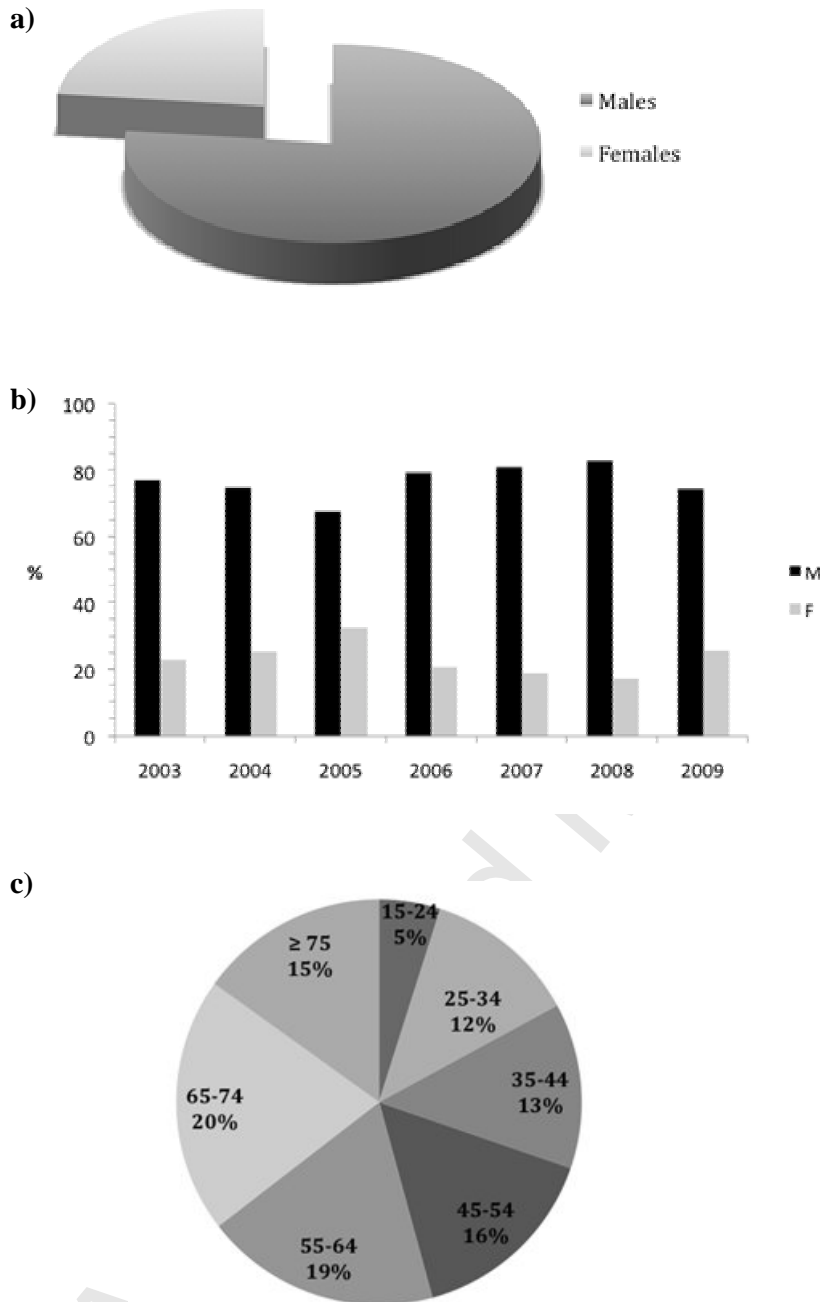


Fig.2. Suicide distribution by: gender (a), gender and year (b) and age group (c).

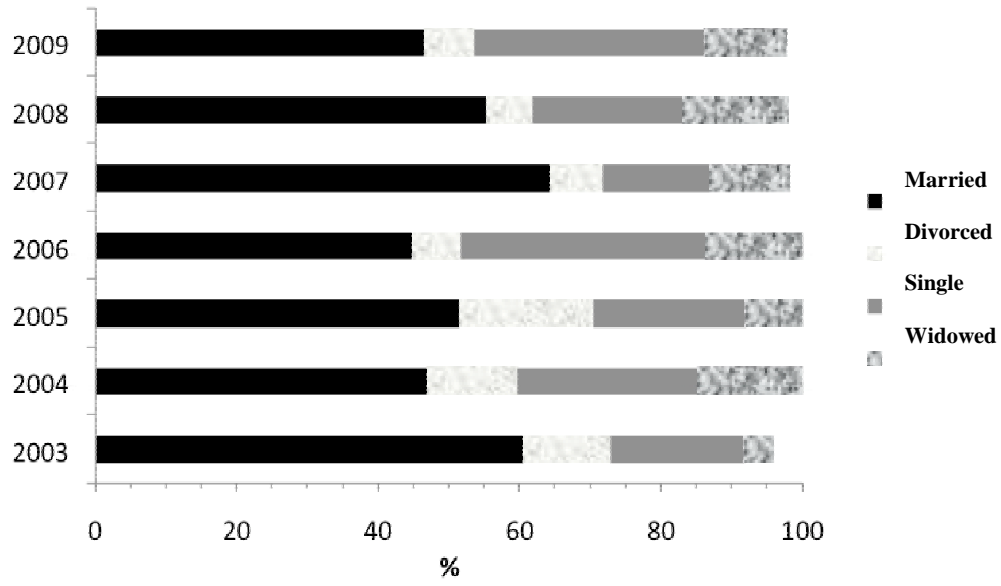


Fig.3. Marital status distribution by year.

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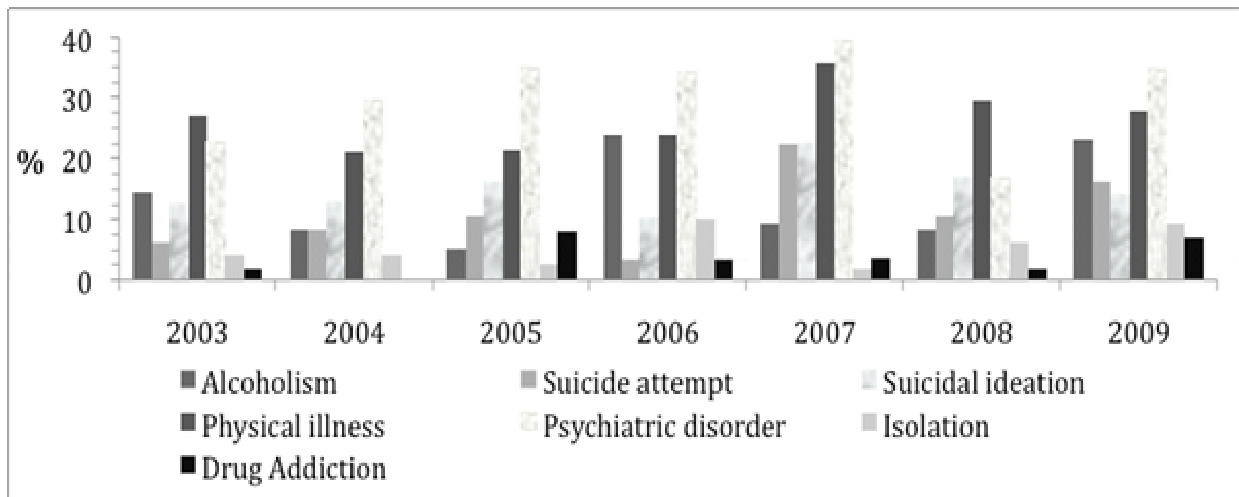


Fig.4. Personal characteristics distribution by year.

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Suicide method	Percentage (%)
Hanging	39.1
Intoxication	31.9
Drowning	7.2
Firearm	11.2
Precipitation	5.9
Trucidation	3.6
Others	3.1

Table 1. Suicide method distribution.

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Table 2. Toxicology requests and positive results distribution by substance type.

SUBSTANCE	REQUESTS	POSITIVE RESULTS	
Ethanol	259	BAC \leq 0.5	18
		0.5 < BAC < 0.8	2
		0.8 < BAC < 1.2	9
		BAC \geq 1.2	23
		Total	52
Prescription drugs	174	Antidepressants	31
		Benzodiazepines	36
		Antipsychotics	10
		Total	77
Illicit drugs	88	Cannabionoids	5
		Opiates	7
		Cocaine and metabolites	3
		Amphetamines	0
		Metamphetamines	0
		Total	15
Pesticides	147	Organofosfates	36
		Paraquat	34
		Organoclorades	0
		Total	70
Others	5	5	