

Suicide in the Province of Eskişehir, Turkey: The Approach of Forensic Medicine*

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Abstract: In the present study, a retrospective evaluation of suicides in the province of Eskişehir in 1997-1999 is made. Investigation reports of the Central Prosecutor's Office were obtained and the demographic data of the victims as well as the judicial criteria for the classification as "suicide" were evaluated.

There were 94 cases of suicide and 65 of them (69.1%) involved males. Age distribution showed a predominance in the age group of 15-34 years. Suicide in males over 55 years of age occurred more frequently than in females ($p < 0.05$). Causes of death in suicides included hanging in 68.0% of cases, firearm wounding in 16.0%, jumping from heights in 7.4%, drug intake in 5.3%, railway suicides in 2.2% and butane inhalation in 1.1%; 79.8% of suicides

occurred in residences. In 93.6% of the cases, scene investigation reports and drawings were obtainable, while photographs of the scene or of the victim were present in 53.2% of cases. A forensic medicine specialist's inquest had been performed in all cases whilst a medico-legal autopsy had been carried out in only 29.8% of cases. Death certificates were issued following an inquest and scene investigation in 66 cases. Medico-legal autopsies were performed in 73.3% of the cases of firearm wounding, 25.0% of the cases of hanging and 6.7% of suicides committed by other means. In conclusion, we emphasize the importance of a medico-legal autopsy in all suicide cases.

Key Words: Forensic pathology, Suicide, Demographic data, Post-mortem examination

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Introduction

In many societies, cases of suicide show an increasing tendency, leading to controversial discussions. Suicide is a phenomenon greatly influenced by a variety of psychological, sociological, economic and cultural factors. Demographic features like age group, sex, and marital status as well as the time, place and method of suicide may exhibit variations between societies and between different regions of the same country, and even in the same region, depending on various variables (1). Statistical data may help in a scientific evaluation of this theme.

In 1997, the total rate of suicides in Turkey was 3.18/100.000. Most of the victims were represented in the age group of 15-34 years; females committed suicide at a younger age than males. More than half of the male victims were younger than 35 years of age, and more

than half of the females were younger than 25 years of age. The majority of cases were hangings. Methods such as gunshot wounding and intake of chemicals occupied the second and third rank, respectively (2).

From the medico-legal point of view, it is important to substantiate suicidal death. Thus, scene investigation deserves special attention.

Materials and Methods

Criminal investigation reports of suicide in the central judicial district of the region of Eskişehir, comprising the period 1997-99, were investigated retrospectively. Subsequently, demographic data, scene investigation reports and drawings, photographs of the victim, and present autopsy reports were transferred into a basic data sheet and evaluated statistically (χ^2 analysis).

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Results

In the region of Eskişehir, between 1997 and 1999 94 persons committed suicide ((1997: 43 (45.8%), 1998: 21 (22.3%), 1999: 30 (31.9%)). The population of Turkey was 62,510,000 in 1997 and the population of Eskişehir was 658,991. The rate of population increase in Turkey between 1990 and 1997 was 15.08/1000 (3). Therefore, the estimated population of Eskişehir was calculated to be 668,929 for 1998 and 679,016 for 1999. The crude suicide rate in Eskişehir was 6.52/100,000 for 1997, 3.14/100,000 for 1998, and 4.42/100,000 for 1999. Sixty five of the victims (69.1%) were males and 29 (30.9%) females. Table 1 shows the age and sex distribution of the victims. The youngest victim was 10 and the oldest 93 years of age. In addition 3.2% of the deceased were younger than 15 years of age, 42.6% were in the age group 15-34 years, and 28.7% were in the age group 55 years plus.

Hanging accounted for 68.0% of all suicide victims, gunshot wounds 16.0%, jumping from heights 7.4%, oral drug intake 5.3%, death on railways 2.2% and inhalation of LPG (butane) 1.1%. The methods of suicide are listed in the tables as “hanging”, “gunshot wounds”

Table 1. Age and sex distribution of the victims.

Age	Male		Female		Total	
	N	%	N	%	N	%
10-24	15	23.1	10	34.5	25	26.6
25-54	28	43.1	17	58.6	45	47.9
55 >	22	33.8	2	6.9	24	25.5
Total	65	100.0	29	100.0	94	100.0

χ^2 : 7.70; p < 0.05

Table 2. Methods of suicide with regard to sex.

Method	Male		Female		Total	
	N	%	N	%	N	%
Hanging	40	61.5	24	82.8	64	68.0
Gunshot wounds	13	20.0	2	6.9	15	16.0
Other	12	18.5	3	10.3	15	16.0
Total	65	100.0	29	100.0	94	100.0

and “other”. No significant association was found between age groups and the method applied. The distribution of the method with regard to sex is shown in Table 2. Hanging occurred in 82.8% of the female and in 61.5% of the male victims. Females applied methods other than hanging less frequently than males (χ^2 : 4.15; p < 0.05). A total of 79.8% of the cases, namely 73.8% of males and 93.1% of females, committed suicide in domestic locations.

The distribution of the cases based on criminal investigation documents is shown in Table 3, the distribution of the cases based on method of suicide and presence/absence of autopsy is shown in Table 4 and the distribution of the cases with/without autopsy with regard to the investigating physician is shown in Table 5. Scene investigation reports and scene drawings based on criminal investigation records were present for 93.6% of the cases, while photographs of the victim or the scene of death were available in 53.2% of the cases. Post-mortem examination, i.e. external examination of the corpse after removal of clothes, was carried out in all cases; only 29.8%, however, underwent systematic medico-legal autopsy. In 66 cases, a death certificate was issued following post-mortem examination and scene investigation. Medico-legal autopsy was performed in 73.3% cases of suicide by gunshot wounds, in 25.0% of suicidal hanging and in 6.7% of suicides by “other” methods.

In 49 of the cases (52.1%), the evaluation by a forensic medicine specialist was performed. No significant association between the specialisation of the physician (forensic medicine specialist) and performance/non-performance of medico-legal autopsy could be detected (p > 0.05). In 32 (34.0%) of the cases, the physician attended the scene of suicide, so that post-mortem

Table 3. Distribution of cases based on the documents of the criminal investigation.

	Present		Not present	
	N	%	N	%
Post-mortem investigation report	94	100.0	0	0
Scene investigation report	88	93.6	6	6.4
Scene drawings	88	93.6	6	6.4
Photos of deceased/scene of death	50	53.2	44	46.8
Autopsy report	28	29.8	66	70.2

	Hanging		Gunshot		Other		Total	
	N	%	N	%	N	%	N	%
Autopsy performed	16	25.0	11	73.3	1	6.7	28	29.8
Autopsy not performed	48	75.0	4	26.7	14	93.3	66	70.2
Total	64	100.0	15	100.0	15	100.0	94	100.0

Table 4. Distribution of cases based on method of suicide and presence/absence of autopsy.

Table 5. Distribution of cases with/without autopsy with regard to the investigating physician.

	Forensic Medicine Specialist	Other Physicians	Total
Autopsy performed	18	10	28
Autopsy not performed	31	35	66
Total	49	45	94

χ^2 : 2.36; $p > 0.05$

examination took place at the scene of death. In the remaining 62 cases (66.0%) the first post-mortem examination was performed in various hospitals of the district. Among these hospitals, the State Hospital (64.5%) occupied the first, the Hospital of the Medical Faculty (17.7%) the second, and the Hospital of the Social Insurance Agency (16.1%) the third rank, respectively. Additional investigations such as ballistic examinations and vaginal smear were performed in only 16 cases (17.0%).

In 64 cases of suicidal hanging, the cause of death was determined to be asphyxia. In 15 suicide cases of gunshot wounds, the causes of death were as follows: brain tissue destruction and cerebral bleeding in 11 cases and visceral bleeding in 4 cases. In these 4 cases, long barrel weapons were used. In 2 cases, the firearm entry wound was located above the left umbilical region and in a further 2 cases in the chest (left). In 11 cases with a projectile wound from a short barrel gun, the entry hole was located in the frontal region in 1 victim and in the right temporo-parietal region in 10 victims. In 5 cases with oral intake of drugs or other chemical substances death was due to intoxication with cologne water in 1 case, with an antidepressant drug in 1, with an antihypertensive compound (isoptin) in 1, with an organophosphorous insecticide in 1 and with an anticonvulsant drug (rivotril) in a further case.

Discussion

In the Eskişehir region, where the population was 658,991 in 1997, 668,929 in 1998 and 679,016 in 1999, there were a total of 94 suicides in 1997-1999 (65 males- 69.1% and 29 females- 30.9%). In 1997, the total suicide incidence in Turkey was 3.18/100,000; this figure was 6.52 for the region of Eskişehir. Thus, in Eskişehir, constituting 1.05% of the general population of Turkey, 2.16% of all suicides in Turkey in 1997 occurred. The respective figures for the region are 3.14/100,000 for 1998 and 4.42/100,000 for 1999 (2,3). The ratio of male to female is 2.24 with more than the half of the victims younger than 40 years of age. Compared with the general incidence of suicide in Turkey, in 1997 there was a decrease in the frequency of female suicides in Eskişehir ($p < 0.05$). Victims above the age of 55 were overrepresented ($p < 0.005$) as was hanging as the method of suicide, compared with the general figures for Turkey. The predominance of male suicide victims and an overrepresentation in the youngest age group are consistent with similar studies in Turkey and elsewhere (4-11). In contrast, Ji et al. found higher suicide rates among women than among men in China; this is different from the patterns characteristic of Western societies. Suicide among the elderly is also a major problem in China (12).

Suicide by hanging is the most common method in general in Turkey as well. Reportedly, intoxications, however, predominate in another region of Turkey (13), indicating regional differences in the method chosen. In Lithuania (14) and Tunisia (15) suicide by hanging is the most common method, whereas in countries with massive firearm use, suicides by gunshot wounds are more frequent (16,17). On the other hand, carbon monoxide poisoning by burning charcoal has become one of the most common ways of committing suicide in Hong Kong since 1998 (18).

In all presumptive cases of suicide, criminal and scene investigation as well as autopsy findings are integral parts of the inquiry. In the cases studied, scene investigation reports and drawings were present in 93.6%, and photographs of the scene or the deceased in 53.2% of the cases. A medico-legal autopsy was performed in 29.8%; death certificates were issued on the basis of a post-mortem examination and scene investigation in 66 cases. A medico-legal autopsy was performed most frequently in fatal cases due to firearm wounds (73.3%). In suicide cases by hanging and other means, scene investigation and post-mortem examination sufficed for death certification in a greater number of cases.

An autopsy was performed by a forensic medicine specialist in 49 cases (52.1%). In 32 cases (34.0%) the physician attended the scene of death with the preliminary post-mortem examination. In the remaining 62 cases (66.0%) a post-mortem examination took place in the mortuary section of various district hospitals. That physicians performed the preliminary post-mortem examinations in hospitals without prior scene investigation must be considered a deficiency. Moreover, as a further point of interest, only around half of the cases were examined by a forensic medicine specialist. We attribute this to the insufficient number of forensic medicine specialists in the district of Eskişehir, where at the time of our research only two were present.

As is true in some cases of suicide, there may be a short letter left by the victim at the scene of death. Information about the social and psychological status of

the deceased can be obtained from the relatives. Beyond these more general considerations, there are, depending on each case, special points deserving enhanced attention: e.g. point of the fixation of the loop in hanging, stairs or chairs to attach the ligature material, possible traumatic findings caused by others, range of fire in firearm wounding, discrepancy between range and arm length of the victim, number and location of wounds, and the weapon at the scene of death. Residual chemicals and packages in cases of intoxication may also be important clues (15,19,20).

The decision to open a criminal case is the responsibility of the judiciary. In 70.2% of the present cases determined to be suicide by a judge without autopsy, a decision was made possible on the information given above, such as scene investigations and drawings, photographs of the scene or the deceased, and postmortem examination. However, due to the vast possibilities to be taken into consideration in suicide cases, autopsies should always be carried out by a forensic medicine specialist familiar with the matter, as is emphasized in our study; however, this does not always occur.

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