

Use of Occupational Knowledge to Commit Suicide

Marzena Labecka^{1*}, Lorkiewicz-Muszynska D¹, Julia Sobol¹ and Agnieszka Przystanska^{1,2}

¹Department of Forensic Medicine, Poznan University of Medical Sciences, Collegium Maius, Fredry 10, 61-701 Poznań, Poland

²Department of Anatomy, Poznan University of Medical Sciences, Collegium Maius, Fredry 10, 61-701 Poznań, Poland

Abstract

Objectives: According to WHO, suicide is the act of deliberately killing oneself. The number of suicide autopsies is comparable year by year; there are differences however in the sex and age, and the method chosen. The aim of the study was to analyze the cases of people who used their occupation-related knowledge to commit suicide.

Material and Methods: A retrospective study of the Department of Forensic Medicine autopsy protocols from 2010 to 2014 was carried out. Of the 1,908 protocols searched, 292 suicide cases were selected and the reason and circumstances of death were studied.

Results: The number of suicides increased from 49 cases in 2010 to 65 cases in the years 2013 and 2014. The most common ways were by hanging and intoxication. In 7 (2.8%) of the cases, professional knowledge was used. Amongst them were three cases where death was the result of having knowledge of and access to firearms. Three other suicides were committed by physicians with use of pharmaceuticals. The case of a taxi driver who gassed himself with exhaust fumes causing death by carbon monoxide intoxication was found and the case of an electrical engineer who connected himself to a power source using a timer was also recorded.

Conclusions: Although suicides planned and committed with use of professional knowledge are rare, they always succeed. The need for restricting access to means to prevent suicides is underlined.

Keywords: Suicide; Victims of suicide; Suicide method

Introduction

The World Health Organization (WHO) estimates that each year approximately one million people die from suicide, which represents a global mortality rate of 16 people per 100,000 [1]. Contrary to the overall tendency of suicide rate reduction in both Eastern and Western Europe, the Polish suicide rate in previous years trended strongly upwards [2]. In the last five years, the number of suicides in Poland has increased by more than 50% (from 4,087 in 2010 to 6,165 in 2014) [3].

Durkheim [4] considered the author of the definition of suicide, stated in his work "Le suicide" that, "suicide is applied to all cases of death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce this result".

Suicide is not limited by age, sex or education. Experience tells us that people who decide to end their lives pursue the aim in spite of any external interventions. Suicide can be classified thus, completed (finished with death) and attempted suicides (a victim survives) [5,6].

Treatment for those whose attempts are unsuccessful is somatic (i.e. detoxification, surgical treatment of cut blood vessels) in the first instance, and psychiatric in the main. While somatic treatment usually gives positive effects, psychiatric treatment is not always successful and can lead to further attempts to end life [7]. Suicide is a harrowing phenomenon, the result of a dramatic human decision immersed in pain and desperation. Most people who commit suicide are deeply conflicted about death. They wish there was an alternative to committing suicide, but they just can't see one. Despite the popular concept that suicide is most often an impulsive act, recent research demonstrates that most suicides are not attempted impulsively and in fact involve a plan [8], which can take time to evolve and require lengthy preparations.

Obviously, the method by which one attempts suicide has a great deal to do with whether one lives or dies. Suicide can be divided according to the methods used, into mechanical injuries (with sharp or blunt tools, gunshot wounds); intoxications (with volatile, or liquid, or

solid substances); strangulation (by foreign body aspiration, drowning); and others (overheating, hypothermia, electrocution) [9,10]. The choice of suicide method is crucial if it is to have the intended effect. Besides the method being lethal, it must also be also accessible [11-17]. Professional knowledge is sometimes used to choose the suicide method [6,18].

The victims of suicide are not only the people who take their own lives. It has an extensive social impact involving not only the family, but friends, colleagues and therapists. As the effects spread among the population, the "public-health" approach focusing on identifying patterns of suicide and suicidal behaviors arises [19]. Suicide is preventable [1]. To protect an individual against this irreversible step, the thorough knowledge of risk factors is required. While an individual's risk depends on accessibility to means of suicide [11-17], reducing it is one way to reduce deaths [20-23].

The aim of this paper was to evaluate the incidence of suicides committed with the use of professional knowledge and to evaluate their lethal effect. The paper also presents four cases of individuals who used their professional knowledge to commit suicide. As a way to prevent suicide in risk prone professions, restricted access to means is discussed.

***Corresponding author:** Marzena Labecka, Department of Forensic Medicine, Poznan University of Medical Sciences, Collegium Maius, Fredry 10, 61-701 Poznań, Poland, Tel: +48602261766; E-mail: jareccy3@o2.pl

Received August 16, 2016; **Accepted** October 26, 2016; **Published** October 28, 2016

Citation: Labecka M, Lorkiewicz-Muszynska D, Sobol J, Przystanska A (2016) Use of Occupational Knowledge to Commit Suicide. J Forensic Res 7: 348. doi: [10.4172/2157-7145.1000348](https://doi.org/10.4172/2157-7145.1000348)

Copyright: © 2016 Labecka M, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Material and Methods

A retrospective analysis of the autopsies performed in the Department of Forensic Medicine from 2010 to 2014 was carried out. All suicide cases were selected from the protocols. Information on the methods of suicide was extracted. Suicides committed with the use of professional knowledge or methods were analyzed. The research material was complemented by archive photographs taken at the scene of death during the medico legal inspection of the bodies.

It has to be emphasized that the presented figures do not reflect the actual number of suicide deaths in the region. They reflect only those cases that were the subject of an autopsy. The decision to carry out an autopsy rests solely with the prosecutor, however if the circumstances of death allow for an exclusion of third party contributions (definite suicide) then an autopsy does not have to be carried out. Non-autopsied cases are included in the statistics, and because of this we decided to present one more case. One which the prosecutor did not refer for autopsy. Nonetheless it was a case of the use of professional knowledge to commit suicide.

Results

A total of 1,908 autopsy protocols were evaluated, and 282 suicide cases (14.8%) were selected. The number of suicides increased from 49 cases in 2010 to 65 cases (+34%) in the years 2013 and 2014 (Table 1). The most common ways to commit suicide are hanging and intoxication by pharmaceuticals, chemicals or natural poisons. Among the investigated suicides, 7 (2.6%) were committed using occupational knowledge or occupation-related means. Amongst them there were three cases where death was the result of having knowledge of and access to firearms (police officer, soldier, security officer); three cases of medical doctors who killed themselves by injection of insulin (a couple) or were intoxicated by anesthetic medication, and one taxi-driver who gassed himself with exhaust fumes causing death by carbon monoxide intoxication. Table 2 presents the distribution of these suicides between 2010 and 2014.

Example case 1

A policeman found in the vicinity of his patrol car with a gunshot in his head. His service weapon was found. The cause of death was traumatic brain injury.

Year	Number of autopsies	Number of suicides (%)
2010	384	49 (12.8%)
2011	372	53 (14.2%)
2012	366	50 (13.7%)
2013	400	65 (16.2%)
2014	386	65 (16.8%)
Total	1,908	282 (14.8%)

Table 1: Number of suicides among all autopsies.

Year	Shots	Pharmaceuticals	Carbon monoxide intoxication	Total
2010	1 (security officer)	-	-	1
2011	-	-	-	0
2012	-	3 (physicians)	-	3
2013	-	-	1 (taxi driver)	1
2014	2 (police officer)	-	-	2
Total	3	3	1	7

Table 2: Number of suicides with use of occupational knowledge.

Example case 2

A couple of older, retired physicians who died because of an injection of a lethal dose of Insulin maxi rapid. Both individuals were seriously ill, the husband was diagnosed with urinary bladder cancer and his wife was tetraplegia. The injection sites (two in each individual) were found. In both, hypoglycemia was recorded as the reason of death (Figures 1-6).

Example case 3

A taxi driver found in a forest who gassed himself with exhaust fumes causing death by carbon monoxide intoxication.

Example case 4 (not autopsied)

An electrical engineer who connected himself to a power source using a timer. An examination revealed the presence of two copper plates, one of which was the front left side of the chest, the second



Figure 1: Death scene.



Figure 2: A sideboard with suicide "equipment".



Figure 3: Injection marks on the skin of abdomen (illustrative photo).



Figure 5: Injection marks on the skin of the thigh (illustrative photo).

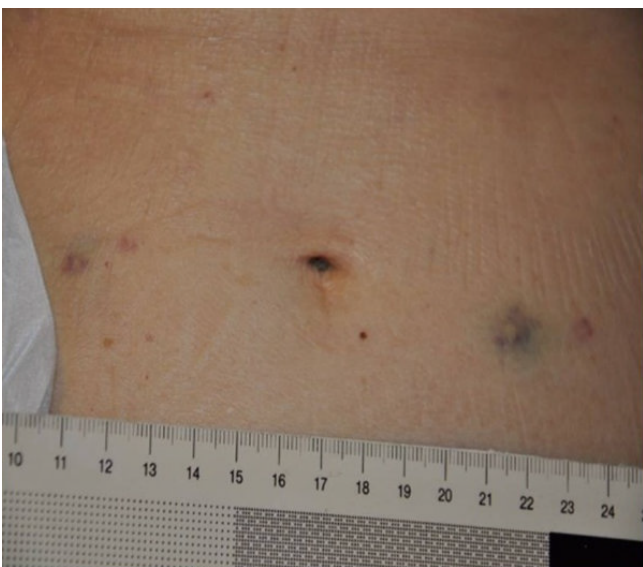


Figure 4: Injection marks on the skin of abdomen.



Figure 6: Injection marks on the skin of the thigh.



Figure 7: Death scene.

almost symmetrically was on his back. The copper plates were attached by elastic straps fastened with Velcro. Metal plates were attached to the wires connected to an electrical timer. In places the welded pipes were cleaned of corrosion to ensure good conductivity. The cause of death indicated an electric shock (Figures 7-9).

Discussion

Previous studies in Poland show an increasing trend in suicide rates [2]. Our study of the following years shows the tendency continuing upward. When discussing the results of the study, the questions that arose were "could the suicides have been prevented and if so, how?" A consistent relationship between occupation and suicide has been reported, with farmers, medical professionals, police officers and military personnel identified as the most "at risk" occupations [24,25].

One of the principal reasons for the high rates in these professions is easy access to proven methods (pharmaceuticals, guns) [11-17]. Several common characteristic features related to the respective occupational backgrounds can be noticed: availability of and easy access to the tools used, and the application of specialist knowledge or skills provided by the suicidal individual's occupational background [16].

Suicide has often been considered to be a "superseding intervening



Figure 8: Position of the body.

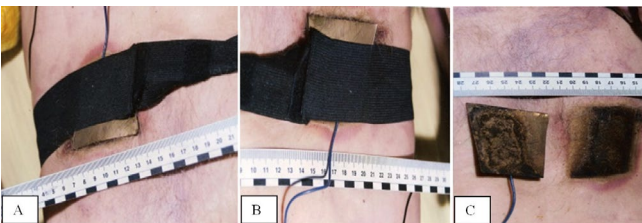


Figure 9: Position of copper plates (A, B) and a mark after removal of a plate (C).

cause that breaks the causative chain of events leading to death, thereby making it impossible to establish that any party other than the decedent could be liable for a suicide” [8]. Suicide attempts that involve a greater degree of prior planning also tend to be more medically serious. This implies that people who make medically serious attempts, including fatal attempts, had likely planned to do so ahead of time [8]. Although statistically the number of suicides committed with the use of professional knowledge is not high, their effect is always lethal.

The suicides using professional knowledge are dominated by physicians and professionals with access to firearms. Physicians because of their thorough knowledge of the drugs composition and properties, mechanisms, interactions, dosage and toxicology. And most of all easy access either to the pharmaceuticals or to prescriptions. All the above mentioned factors make doctors at higher risk of suicide than any other occupational group [26]. Medical professionals are more likely to use poisoning [17]. Professionals with the access to firearms like police

officers, soldiers, security officers, commit suicide twice as often as others [17].

It has been proven that occupation influences suicide method [14]. Availability and access to means appeared to have influenced the method chosen [12,17]. One of the ways in which occupation might confer risk could be providing access to and familiarity with a particular method of suicide [17]. Access to potentially lethal means has a strong influence on the suicide rate [27].

Suicide occurs as a consequence not only of psychiatric disorders but also of impulsive moments of crisis [22]. For those who have access to firearms the action can be impulsive, whereas suicides by intoxication appear to be a rather long-planned. In professions where access to lethal means is inevitable, moderating the opportunity to commit suicide is crucially important [14]. The more sophisticated the method developed with the use of professional knowledge, the longer planning it required (case 4). Interfering with planning would seem to be a more effective way of preventing suicide than restricting access to means.

This study was limited by two particular aspects. Firstly, that only the autopsied suicide cases were analyzed, thus the presented figures do not reflect the actual number of suicide deaths. Our research shows that most of the suicides that were not referred for autopsy were hangings, which admittedly increased the total number of suicides in the region, but was unlikely to influence the number of suicides committed using professional means. Nonetheless, an increase of the total suicide numbers will decrease the general percentage of suicides using professional knowledge. Secondly, medical histories provided limited information regarding previous suicide attempts. This information would have been useful to us in determining whether the method chosen was a first or subsequent attempt. If a different method was chosen for previous attempts it could be suggested that the use of professional knowledge the next time aimed to increase the chance of a lethal effect.

The increasing number of suicides makes it an important public health problem. Thus, suicide prevention has been recognized as “a global imperative” [1]. The high increase in the Polish suicide rate requires a national prevention initiative [2]. National suicide prevention programs might include prevention of psychiatric disorders and restricting the access to means [22]. However, means restriction policies needs an understanding of the method preferences of different professional groups [1].

Restricting access to the means of suicide has important life-saving potential and is a key element of suicide prevention [1,21]. It may serve to block acquired capability, thus reducing rates of suicide [28]. This is particularly significant when suicide happens impulsively. An effective strategy for preventing suicides and suicide attempts is to restrict access to the most common means [1]. The restriction of access should be implemented in conjunction with other suicide prevention strategies [23].

Conclusions

Although suicides planned and committed with use of professional knowledge are rare, they always succeed. Suicidal individuals who chose professional methods make lengthy preparations in order to ensure that the effect is lethal. Other studies, like ours, underline the possibilities of preventing suicides by restricting access to means. It should be borne in mind that limitation of accessibility to suicide means can save human lives.

Acknowledgments

The authors would like to thank Mrs. Ruth Hounam for her language support and help in manuscript preparation.

References

1. World Health Organization (2014) Preventing suicide: A global imperative.
2. Hofer P, Rockett IR, Varnik P, Etzersdorfer E, Kapusta ND (2012) Forty years of increasing suicide mortality in Poland: undercounting amidst a hanging epidemic? *BMC Public Health* 12: 644.
3. Number of suicides. Police statistics, Poland.
4. Durkheim E (1960) *Suicide*. Presses University of France, Paris, France.
5. Hołyst B (2002) *Suicidology*. LexisNexis Legal Publishing, Warszawa, Poland.
6. Hołyst B (1983) *Suicide- a chance or necessity*. Wydawnictwo Naukowe PWN, Warszawa, Poland.
7. Jarosz H (1980) *Self-destruction: Suicide, Alcoholism, Drug addiction*. The Ossolineum, Wrocław, Poland.
8. Smith AR, Witte TK, Teale NE, King SL, Bender TW, et al. (2008) Revisiting Impulsivity in Suicide. Implications for Civil Liability of Third Parties. *Behav Sci Law* 26: 779-797.
9. Hołyst B (2000) *Victimology*. PWN, Warszawa, Poland.
10. Ringel E (1992) *Suicide a cry for help*. Polish Society of Zootechnical, Warszawa, Poland.
11. Hawton K, Agerbo E, Simkin S, Platt B, Mellanby RJ (2011) Risk of suicide in medical and related occupational groups: A national study based on Danish case population-based registers. *J Affect Disord* 134: 320-326.
12. Hawton K, Clements A, Simkin S, Malmberg A (2000) Doctors who kill themselves: a study of the methods used for suicide. *QJM* 93: 351-357.
13. Large MM, Nielssen OB (2010) Suicide in Australia: meta-analysis of rates and methods of suicide between 1988 and 2007. *Med J Aust* 192: 432-437.
14. Mahon MJ, Tobin JP, Cusack DA, Kelleher C, Malone KM (2005) Suicide among regular-duty military personnel: a retrospective case-control study of occupation-specific risk factors for workplace suicide. *Am J Psychiatry* 162: 1688-1696.
15. Milner A, Spittal MJ, Pirkis J, LaMontagne AD (2013) Suicide by occupation: systematic review and meta-analysis. *Br J Psychiatry* 203: 409-416.
16. Schmidt P, Padosch SA, Madea B (2005) Occupation-related suicides. *Forensic Pathol Rev* 2: 145-165.
17. Skegg K, Firth H, Gray A, Cox B (2010) Suicide by occupation: does access to means increase the risk? *Aust N Z J Psychiatry* 44: 429-434.
18. Suchańska A, Krysinska K (2004) *Suicide-psychological perspective*. PWSZ, Konin, Poland.
19. Yip PSF (2011) Towards evidence-based suicide prevention programs. *Crisis* 32: 117-120.
20. Bryan CJ, Stone SL, Rudd MD (2011) A practical, evidence-based approach for means-restriction counselling with suicidal patients. *Prof Psychol Res Pr* 42: 339-346.
21. Barber CW, Miller MJ (2014) Reducing a Suicidal Person's Access to Lethal Means of Suicide: a research agenda. *Am J Prev Med* 47: S264-S272.
22. Gunnell D, Lewis G (2005) Studying suicide from the life course perspective: implications for prevention. *Br J Psych* 187: 206-208.
23. Sarchiapone M, Mandelli L, Iosue M, Andrisano C, Roy A (2011) Controlling Access to Suicide Means. *Int J Environ Res Public Health* 8: 4550-4562.
24. Agerbo E, Gunnell D, Bonde JP, Mortensen PB, Nordentoft M (2007) Suicide and occupation: the impact of socio-economic, demographic and psychiatric differences. *Psychol Med* 37: 1131-1140.
25. Roberts SE, Jaremin B, Lloyd K (2013) High-risk occupations for suicide. *Psych Med* 43: 1231-1240.
26. Hawton K, Malmberg A, Simkin S (2004) Suicide in doctors. A psychological autopsy study. *J Psychosomatic Res* 57: 1-4.
27. Stack S (2000) Suicide: A 15 year review of the sociological literature. Part 1: cultural and economic factors. *Suicide Life Threat Behav* 30: 145-162.
28. Van Orden KA, Witte TK, Cukrowicz KC, Braithwaite S, Selby EA, et al. (2010) The Interpersonal Theory of Suicide. *Psych Rev* 117: 575-600.