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Characteristics of Patients who Visited the Emergency Department due to self-poisoning Suicide Attempt: A Retrospective Study.

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Abstract

Background: The aim of this study is to evaluate the sociodemographic characteristics, clinical conditions, and results of patients who were admitted to the emergency department (ED) due to suicide attempts by self-poisoning intentionally.

Material and Methods: This retrospective study was conducted between January 1 and December 31, 2017, in the ED of Istanbul Lutfi Kırdar City Hospital, University of Health Sciences. Patients of only attempted suicide through taking overdose drugs with the intent of self-poisoning and over 12 ages were included in the study, which included 391 cases. Patients who attempted suicide in any different ways than self-poisoning were excluded.

Results: Our study is consisted 69.8% (n=273) of female and 30.2% (n=18) of male patients. The mean age of the total cases was 31.01±12.064, which the youngest case being 14 years old and the oldest being 73 years old. The marital status of the cases is as follows: 140 (35.8%) married, 205 (52.4%) unmarried, 42 (10.7%) divorced, and 4 (1%) widow/widower. Istanbul is covering a major population of patients (93.1%) as a living place. The study has resulted in 58.3% ED discharge, 27.1% hospital leaving, and 10.5% Psychiatry unit admission.

Conclusions: Suicidal behavior is a very comprehensive topic when considering its etiology and risk factors, there are many variables as well. Since it is one of the serious public health issues and causes of death, the risk factors must be identified and preventions to be taken should be determined. In addition, when elderly people attempt suicide, more medical care should be taken during ED, since they are more focused to die and fall into the category of severe cases.

Keywords: Suicide, sociodemographic characteristics, self-poisoning, psychotropic drugs.

Introduction

An action that a person willingly takes to end his own life, but does not result in death, is called a "suicide attempt". The situation where this action causes death is called "suicide". Suicide and suicide attempt are serious causes of mortality and morbidity, especially in psychiatric cases [1].

There is more than one definition of suicide, and in another source, it is defined as "a person's choice between life and death through all moral values and religious knowledge, and to choosing self-harm" [2].

According to data from the World Health Organization (WHO), nearly 800,000 people has been dying each year due to suicide. It is the second leading cause of death among 15-29-year-olds worldwide. In the guide "Prevention of Suicide" published by the World Health Organization (WHO) in 2014, it has been stated suicide rate was 1.4% of total deaths in 2012, and reported suicide was the 15th most important death. As a severe public health issue, suicide, besides its social and medical harms, can cause not only attempters' own life but also serious problems for their surroundings and families [1].

The major impact of suicide on the family and society is undeniable as well as for the attempters. While an individual suicide affects an average of six people from the immediate environment, an act of suicide that occurs in a social area

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such as a school or workplace has an impact on hundreds of people [3].

According to the data of the Turkey Statistical Institute (TUIK), 50378 people committed suicide in the 2002-2018 period. In this 17-year, an average of 20963 people has been committed suicide per year, 246 people per month, and 8 people per day. When the cases have been examined for the causes of the suicide as follows: 50318 domestic problems, 40481 financial difficulties, 10887 illness, 1004 commercial failure, 2412 love-related issues, 3896 other reasons, and 210256 unknown reasons. Throughout 2018, while the population of people who committed suicide due to commercial failures has decreased, there was no significant decrease in the population of cases of financial difficulties.

According to the latest data for 2018 published by TUIK, the rough suicide rate, which represents the number of suicides per hundred thousand population, has been stated as 3.88. Thus, four out of every hundred thousand people have committed suicide in 2018 [4]. According to WHO data, India has the highest number of suicides with a number of 215 thousand. Other countries with high suicide rates are China with 136 thousand, Russia with 45 thousand, and Japan with 23 thousand [1].

The report highlights that the male suicide rate is higher than females worldwide, 13.5 out of every 100 thousand men and 7.7 out of every 100 thousand women have been committing suicide. In Turkey, while the suicide rate for men is 11.3 per 100 thousand people, it is 3.2 for women [3].

Suicide is an important health issue and a social problem worldwide and in our country. Therefore, the cases should be followed up after the first medical intervention in the EDs they were admitted. During this follow-up period, ED physicians should obtain psychiatric advice in addition to medical treatment. After the medical treatment is completed, a decision should be made by the psychiatry consultant on outpatient or hospitalization, for the follow-up period. In the follow-up period, deepening the anamnesis and determining their sociodemographic characteristics will help the psychiatric examination.

Psychiatric follow-up is important in terms of preventive medicine when considering preventing future attempts. The aim of our study is to investigate the sociodemographic characteristics of the suicide attempter's who admitted to the ED by taking drugs intentionally, the factors causing the attempt, and the measures to be taken to prevent the re-suicidal ideation.

Material and methods

The study includes 391 total patients who were admitted to the ED of Istanbul Kartal Dr. Lütfi Kırdar City Hospital, between January 01 and December 31, 2017, which attempted suicide by self-poisoning. Ethical approval has been realized from the Hospital Research Evaluation Committee for the study. Patients over 12 years of age were included in the study, and those who attempted suicide by a mechanism other than self-poisoning were not included in the study.

The study has been conducted as retrospective and non-randomized. Data were recorded by scanning in the automation system. The data of 391 patients included in the study were recorded in a computer-generated Microsoft Excel form. In this study, the percentages and number of observations of the relevant variables are presented. Kolmogorov-Smirnov Test and Shapiro-Wilk Test were applied to test the normality of the continuous variable.

In cases where normality could not be achieved, Mann-Whitney Tests were applied, which are independent with two-group and non-parametric, to investigate the relationship between categorical variables and continuous variables. The non-parametric Kruskal-Wallis test has been applied to compare the mean of three independent groups. To investigate the relationships between two categorical variables Chi-square independence test and Fisher's Exact Tests (and its special case that is performed in 2x2 cross tables) were applied.

Results

The medical history of the cases has been examined, and it was found that organic pathology in 5.6% (n=22) and psychiatric history in 27.1% (n=106) (Table 1).

		No. of cases	% of cases
Organic pathology	No	369	94,4
	Yes	22	5,6
Psychiatric history	No	285	72,9
	Yes	106	27,1

Table 1- The medical history of the cases

After examination, It resulted that 58.3% of the cases were discharged from the ED, 27.1% were discharged against medical advice, and 10.5% were admitted to the psychiatry service (Table 2).

		No. of cases	% of cases
ED discharge	No	163	41,7
	Yes	228	58,3
Psychiatric unit admission	No	350	89,5
	Yes	41	10,5
ICU admission	No	368	94,1
	Yes	23	5,9
Discharge against medical advice	No	285	72,9
	Yes	106	27,1
Deceased	No	390	99,7
	Yes	1	0,3

Table 2- The clinical results of the cases

The drug classes that had been taken intentionally by attempters as follows: 32% (n=125) Psychotropic, 12% (n=47) Antimicrobial, 0.5% (n=80) NSAID, 19.7% (n=77) Paracetamol. We evaluated the paracetamol drug class separately from the NSAID drug class since antidote treatment can be applied early in the ED and is easily accessible (Table 3).

		No. of cases	% of cases
Psychotropics	No	266	68,0
	Yes	125	32,0
Antimicrobial	No	344	88,0
	Yes	47	12,0
NSAID	No	311	79,5
	Yes	80	20,5
Pesticide	No	391	100,0
	Yes	0	0,0
Paracetamole	No	314	80,3
	Yes	77	19,7
Multi Drugs	No	188	48,1
	Yes	203	51,9

Table 3- The drug classes taken for the suicide attempting

It has been determined that most of the cases' suicide attempts have occurred during the day (n=211; 54%). The time intervals were found to be 00:00-8:30 (n=100; 25.6%) and 20:01-00:00 (n=80; 20.5%), respectively (Table 4).

Time intervals of suicide attempts	*No. of cases*	*% of cases*
Between 00:00 and 08:30	100	25,6
Between 08:31 and 20:00	211	54,0
Between 20:01 and 23:59	80	20,5
Total	391	100,0

Table 4- The time intervals of the suicide attempts

When the re-suicidal ideation status of the cases has examined, it was found that 71.4% (n=279) of the cases had not had re-suicidal ideation, and 28.6% (n=112) had re-suicidal ideation (Table 5).

Re-suicidal ideations	*No. of cases*	*% of cases*
No	279	71,4
Yes	112	28,6
Total	391	100,0

Table 5- Re-suicidal ideations

Anger (n=146; 37.3%) has been determined as the primary reason for attempting suicide. This was followed by secondary gain (n=131; 33.5%) and death (n=114; 29.2%) (Table 6).

		No. of cases	% of cases
ANGER	No	245	62,7
	Yes	146	37,3
DEATH	No	277	70,8
	Yes	114	29,2
SEKONDARYGAIN	No	260	66,5
	Yes	131	33,5

Table 6- The Main reasons of the patients to attempting suicide

Discussion

As we have emphasized earlier, suicide is one of the most important public health issues, and a leading cause of death worldwide. Since it has been determined that almost all the cases who attempted suicide are initially admitted to the ED, it is very significant to examine cautiously during the ED treatment. The cases are admitted to the EDs by themselves or their relatives after a suicide attempt or after increased suicidal ideation, in general. It is noticed that most attempters have self-poisoned themselves, intentionally. In this state, the patient's anamnesis should be examined in detail, the information received by the cases should be accepted and these cases should be seen as clinically high suspicion [5].

In our study, the reason why we analyze especially the suicide that is happened by self-poisonings is that this is the most common form type of suicide. The sociodemographic characteristics of the patients, as well as their suicidal intentions, the drug class they took, their clinical course in the ED follow-ups, re-suicidal ideation, and their medical history, were investigated. As in other studies, when considering sociodemographic characteristics, the suicide rate was found to be high, especially among young females, and it is important in terms of suicide risk in society.

It has been found that the majority of the cases included in the study were female. According to the data of our study, we found the female-male ratio to be 2.31. *Dilbaz et al* in their study, found the female/male ratio to be 2.17. The female/male ratio in the literature is between 1.7 and 4.0, in general. As in multiple studies, the female/male ratio is met with the literature. We found the mean age to be 31.01±12,064. When the marital status of the cases was examined, the rate of singles was found to be higher than that of married ones.

According to WHO, the suicide rate was found to be higher in divorced people. Our study data are not meet with the WHO data, nonetheless, meet with the prior studies conducted in Turkey [6-10]. The high rate of suicide attempts by women proves society's perspective on women, moreover, it can be stated that women cannot explain their problems and choose to attempt suicide as a way to explain. The higher suicide rate in single people is due to the negative effect of loneliness, as mentioned in the studies, and the lack of family support is effective on this.

When analyzing the history of the patients, we grouped them as psychiatric history and organic pathology. When the cases of re-suicidal ideation were examined, it was found that most of the cases did not have re-suicidal ideation. The relationship between suicidal ideation and age is examined, and it was found that younger people have fewer re-suicidal ideation. It has been conducted that the relationship between re-suicidal ideation and medical history is significant to identify. We observed that those with a history of organic or psychiatric pathology had more re-suicidal ideation. In the study of *Bozkurt et al.,* the idea of re-suicidal ideation was found to be significant in those with a history of psychiatric illness. Depressive disorders and psychotic disorders were observed most frequently in the histories of these patients [11]. We have conducted that these patients' suicide attempts are caused by their psychiatric illness and they could not notice reality clearly.

In the study conducted by *Sayıl et al.,* it was reported that women's attempts rate is high between 17:00-23:59. This was thought to be related to the mechanism of asking for help since the family members are at home mostly at this time [12]. *Kekec et al.* emphasized that men attempted suicide more frequently between 00:00-07:59, and this has been related to men's serious death intentions [9]. In the series of 1281 cases published by *Güloğlu et al.,* it was reported that most of the suicide attempts occurred between 18:00-24:00 [13]. In our study, we did not find a significant difference between suicide time and age groups, just as we did not find any significant difference between suicide time and gender.

We found that the drug classes in order of their usage are as follows: psychotropic, NSAID, paracetamol, and antimicrobial, respectively. We evaluated the paracetamol class separately from the NSAID class. Since this drug class is accessible easily, and early antidote treatment can be started during ED time, we examined it in detail. In the study conducted by *Toklucu et al*., NSAIDs and psychotropic drugs took the first place. Data compatible with the literature were obtained in terms of drug classes taken during self-poisoning [14].

We analyzed the clinical outcomes of patients taking paracetamol and found that they were mostly discharged from the ED, which can be attributed to the early initiation of antidote therapy. It was found that the patients who self-poisoned themselves due to anger had taken more psychotropic or multiple drugs, while the suicide attempters due to death had taken multiple drugs and psychotropic drugs. We realized the easy access of the patients to the psychotropic drugs and that some of these patients had taken these drugs for treatment purposes. The reason for this can be the frequent use of paracetamol and NSAIDs and the fact that they can be obtained without a prescription, and are prescribed frequently.

It has been compared that the age groups with the main purpose of attempts and found that the elderly people had focused on death priory. It has been determined that the younger age group is classified on secondary gain. In a study conducted in Turkey, it was determined that although the willingness to die was high, the rate of re-suicidal ideation and suicide attempt was low. The low suicide rate has been attributed to family ties, religious values, and cultural factors [15]. In another study, it was stated that elderly people's attempts increased from 1990 up to 2017 [16]. In another study, the most important risk factors for suicide attempts in elderly people have been determined as male, gender, physical discomfort that causes pain and loss of function, loneliness, a previous suicide attempt, alcohol and drug, and depression [17].

The data of our study is meet with the literature, and it can be concluded that the elderly population focuses to die more in suicide attempts. This may be due to the fact that chronic diseases are common in the elderly group and may cause them to pose a risk for depression. We can conclude that elderly people may aim for death due to the loss of their relatives, being alone, hopelessness, and lack of expectations in their life.

Since this study is conducted retrospectively, the data were obtained by scanning the hospital automation system. A limitation of this study is that the accuracy and reliability of the data depend on the organizers. The comprehensiveness of the aetiology and risk factors of suicide attempts can be shown as another limitation of this study.

Conclusion

Since elderly people are more determined to die and will be categorized as critically ill patients, it has been realized that is significant to examine carefully elderly people's attempts in EDs when compared to other suicide attempt groups.

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