

# Retrospective assessment of patients over 15 years of age presenting to emergency department with a suicide attempt

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**Abstract:** Aims: In this study we aimed to assess sociodemographic characteristics of cases over 15 years of age who admitted to emergency department (ED) after a suicide attempt and determine the risk factors for suicide. Methods: This study was conducted retrospectively between 01.01.2013 – 31.12.2013 at the Emergency Department of Keçiören Training and Research Hospital. Age, sex, marital status, educational status, suicide cause and method, interventions applied in emergency department, history of suicide attempts, history of psychiatric diseases, time of suicide attempt, and admission time to emergency department were examined. Categorical variables were analysed using Chi-Square test. A p value less than 0.05 was considered statistically significant. Results: This study included data of 561 patients. The patients were most commonly 15 to 24 years old (46.3%) and 419 (74.7%) of them were female. Three hundred (53.5%) patients were single, 271 (48.3%) were primary school graduate, and 111 (19.8%) were active workers. The most common suicide cause was familial problems (49.9%). The most common suicide method was consuming medications in large amount (92.5%) and the most common intervention applied in emergency department was gastric lavage (26.6%). Twenty-seven (4.8%) patients had a history of suicide attempts, 371 (66.1%) patients had a previously diagnosed psychiatric illness. The highest number of attempts occurred in July (11.1%) and majority of them occurred between 18:00 and 24:00. The mean time from suicide attempt to ED admission was 2.5 hours. Conclusion: Although it is probably not possible to completely eliminate all suicide attempts, it is well possible to decrease the number of suicide attempts by reducing the number of possible risk factors for suicide.

**Keywords:** Emergency, Suicide, Poisoning

## 1. Introduction

Suicide is defined as an intentional act of self-harm with a purpose of killing oneself <sup>1</sup>. In a survey conducted by European Center for Disease Control and Prevention, suicide is one of the most common causes of death between the ages of 10 to 64 years. In Turkey the crude suicide rate is about 4.3 per 100000 <sup>2</sup>. It has been reported that many factors including age, sex, religious beliefs, and educational, socioeconomic, marital, cultural, and occupational status play a role in the rate of suicide attempts <sup>3-5</sup>.

People sometimes enter a vicious cycle that results in a suicide attempt after fluctuation in their mood following some unpleasant events in their life. In this study we aimed to assess sociodemographic characteristics of cases over 15 years of age who presented to our emergency department (ED) with a suicide attempt and to determine the risk factors for suicide.

## 2. Methods

Age, sex, marital status, educational status, cause of the suicide attempt, suicide method, the interventions

performed in ED, past history of suicide attempts, past history of psychiatric diseases, time of suicide attempt, and time of admission to ED were examined.

The study data were analysed with SPSS Windows version 18 software package. Frequency and percentage were used for given of descriptive statistics. The distribution of study data was analysed with Kolmogorov Smirnov test. Categorical variables were analysed using Chi-Square test. A p value less than 0.05 was considered statistically significant.

### 3. Results

This study included data of 561 patients. The patients were most commonly 15-24 years of age (46.3%) and 419 (74.7%) of them were female ( $p<0.05$ ). Three hundred (53.5%) patients were single ( $p<0.05$ ), 271 (48.3%) were primary school graduate, 153 (27.3%) were high school graduate ( $p<0.05$ ). One hundred and eleven (19.8%) patients were active workers and 450 (81.2%) were unemployed ( $p<0.05$ ). The demographic characteristics of the patients are shown on Table 1.

Regarding the cause of suicide attempt, the most common cause was familial factors ( $n=280$ , 49.9%) ( $p<0.05$ ) (Table 1). Majority of patients ( $n=519$ , 92.5%) attempted suicide by consuming medications in large amount ( $p<0.05$ ) (Table 2).

As for emergency department interventions, the most common interventions performed were gastric lavage (26.6%) and suturation (2.9%) ( $p<0.05$ ). Twenty-seven patients (4.8%) had a history of suicide attempts and 11 (2%) had at least one relative who had attempted to commit suicide. Evaluation of psychiatric history of the patients revealed that 371 (66.1%) patients had a previously diagnosed psychiatric illness and 29 (5.2%) patients had family history of psychiatric illness ( $p<0.05$ ) (Table 2).

**Table 1.** Demographic Characteristics of patients.

		n	%
Age group	15-24	260	46.3
	25-34	191	34.0
	35-49	96	17.1
	50-64	14	2.5
Sex	Male	142	25.3
	Female	419	74.7
	Single	300	53.5
Marital Status	Married	249	44.4
	Widow/divorced	12	2.1
	Illiterate	21	3.7
Educational Status	Literate	42	7.5
	Primary School	271	48.3
	High School	153	27.3
	College	74	13.2
Occupational Status	Unemployed	450	80.2
	Employed	111	19.8

**Table 2.** Interventions Applied in Emergency Department, and Causes of the Suicide Attempt in patients presenting with suicide attempt.

Cause of Suicide Attempt	Familial/domestic violence-related/issues with children/marital issues	280	49.9
	Psychiatric Illness	54	9.6
	Unemployment	43	7.7
	Affairs with the opposite sex	31	5.5
	Alcohol	23	4.1
	Living Alone	20	3.6
	Non-curable disease	19	3.4
	Financial difficulties	18	3.2
	Problems with communication with others	15	2.7
	School Problems	23	4.1
	Other	9	1.6
	None Disclosed	26	4.6
	Consuming medications in large amount	519	92.5
Suicide Method	Cutting/stabbing Oneself with a Sharp Object	39	7.0
	Other	3	.6
	None	379	67.6
	Gastric lavage	149	26.6
Interventions Applied in Emergency Department	Suture	16	2.9
	Antidote	15	2.7
	Oxygen	2	.4
	Self	27	4.8
History of Suicide	Family	11	2.0
	Self	371	66.1
History of Psychiatric Disease	Self	371	66.1
	Family	29	5.2

The suicide attempts mostly occurred between 18:00 and 24:00. Regarding the time of emergency department admissions, it was observed that the admissions sharply increased at 20:00. The mean time from suicide attempt to

emergency department admission was 2.5 hours (Figure 1).

The highest number of attempts occurred in July (11.1%) (Figure 2). There was a significant difference according to monthly distribution of suicide attempts ( $p < 0.05$ ).

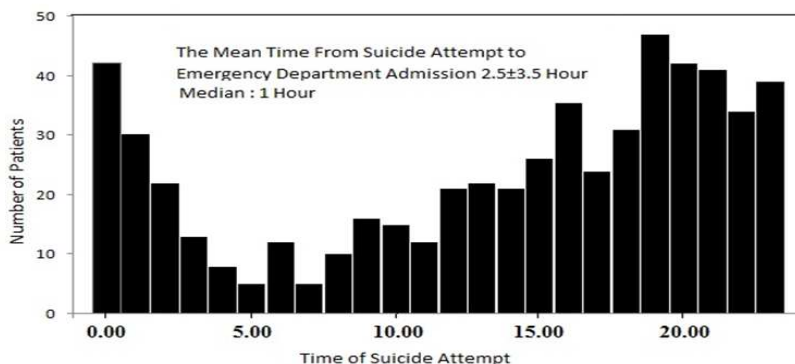


Figure 1. Time of suicide attempt.

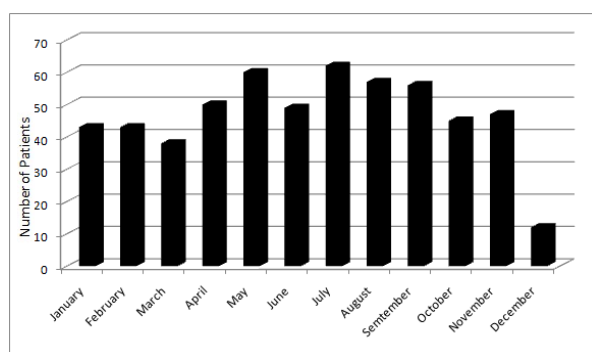


Figure 2. Monthly Distribution of Suicide Attempts.

Examination of suicide method and age range revealed that the most common method was consuming medications in large amount, and cutting/stabbing oneself with a sharp objects dramatically increased between 25 to 34 years of age ( $p < 0.05$ ). Analysis of the relationship between the suicide method and patient sex showed that consuming medications in large amounts was the most common type of suicide method followed by cutting/stabbing oneself with a sharp object. The relationship between sex and suicide method was not significant ( $p > 0.05$ ) (Table 3).

## 4. Discussion

In emergency department admissions following a suicide attempt it is essential after completion of management of physiopathological process to find solutions for psychological problems of patients to prevent repeat suicide attempts<sup>6</sup>. It should be remembered that each suicide attempt is probably a precursor of subsequent attempts<sup>7</sup>. Autopsy reports have demonstrated that 18-50% of all suicide victims had a history of previous attempts<sup>8</sup>. Emergency departments and psychiatry clinics are places where risk of repeat suicide attempts may be reduced<sup>6</sup>. Kose et al<sup>6</sup> studied patients over 15 years of age who

attempted suicide and found that 71% of the patients were in the age group of 15-24 years. Kavalci et al<sup>9</sup> reported that most suicide attempts occurred in the 16-25 years age group. Koylu et al<sup>10</sup>, in a study with a patient population older than 15 years, reported a mean age of 28. Anthony et al<sup>11</sup> also reported a mean age of 28 years. According to 2012 data of a 2013 study of Turkish Statistical Institute (TSI) conducted in the Izmir province, 45% of suicide attempts were by patients of 15-24 years age group<sup>2</sup>. Similar to the literature, 46.3% of our patients were of 15-24 age group. We are of the opinion that suicide attempts increase in this age group owing to peaking psychological issues related to adolescence, school problems, postgraduate concerns for future, and problems related to relations with the opposite sex. Literature data suggest that suicide rates are higher among women than men<sup>2, 6, 10-12</sup>. In agreement with literature data, 75% of our patients were female. We believe that it results from the pressure of authority on girls or women's overly emotional behaviors to attract attention. Studies have shown that being married is associated with a reduced rate of suicide attempts<sup>13-17</sup>. These data are consistent with our study where 54% of cases were single. Married persons are generally older than a certain age and thus they are already free of certain problems related to adolescence, opposite sex, and education. Their concern for future is also lower. Therefore, they may have fewer tendencies for a suicide attempt.

It has been reported that patients with attempted suicide are mainly primary school graduates<sup>2, 7, 18, 19</sup>. Majority of our patients were also primary school graduate. The reasons for this trend, to our opinion, include difficulty finding jobs, working in low-salary jobs, and having poor living standards among primary school graduates.

Studies reported from Turkey have pointed that unemployment and low socioeconomic level are both associated with increased suicide rates<sup>2, 19, 20</sup>. In our study, 20% of the patients were active workers, and this rate was similar to that reported in the literature. We think that social

pressure of being unemployed or economically dependent possibly boosts suicide attempts.

Many domestic studies have reported that family-related issues have a profound impact on suicide attempts<sup>2,6,7,21</sup>, and our results are in agreement with these reports. We believe that inconsistent attitudes of family members toward suicide victim, family pressure particularly on girls, and psychiatric disorders in other family members substantially boost suicide rates. Consuming medications in large amount is the most common suicide method reported in Turkey<sup>6,7,9,19,22-24</sup> and our results were similar. The main reason of selecting it as the suicide method by the victims may be the painless and swift death it brings. According to our results, the most common intervention applied in ED was gastric lavage. We suggest that a high rate of medicine use and a short time from consuming medications to ED admission resulted in a high gastric lavage rate. Furthermore, restriction of active charcoal in our country may have led to this shift in practice.

It has been reported that suicide attempts in adolescents tend to recur more than any other age group<sup>7,25</sup>. However, Yalaki et al<sup>21</sup> reported that 4% of patients with attempted suicide had a previous suicide history. Despite similar to that reported by Yalaki et al, the rate of repeated suicide both in the patients and their families were lower in our study than that reported in the literature. The main reason of a lower past suicide rate may possibly be due to reluctance of patients to reveal details about their past. Previous psychological autopsy studies have revealed that 0% to 60% of victims had a psychiatric disease history<sup>26-29</sup>. We showed that 66% of the patients had a psychiatric disorder. Familial history of psychiatric diseases was around 5%. We suggest that the high psychiatric disease rate in our study was mainly due to the possibilities that individuals may have a temporary psychiatric impairment for a certain period but subsequently discontinued prescribed medicines because of a misleading idea of being cured.

A foreign multinational study reported that most admissions to ED occurred between 14:00-20:00<sup>30</sup>. A Turkish study reported that most ED admissions took place between 18:00 and 24:00<sup>19</sup>. Committing suicide during evening hours when other family members are at home may actually suggest that suicide attempts are done to attract others' attention. Previous studies have demonstrated that suicide attempts mostly happened between April and August<sup>19,23,31</sup>. Our study similarly revealed that suicide attempts most commonly occurred during summer months. People spend more time outdoors during that period, leading to conflicts in conservative families containing a high number of females. This in turn causes a high level of stress with resulting suicide attempts. Supporting our hypothesis, Kavalci et al reported that most suicide attempts were observed in clear or sunny days<sup>24</sup>. Our literature search did not reveal any studies that directly investigate the relationship between patient's age and suicide method. However, rates of consuming medications

in large amount in the study by Gokcen et al<sup>7</sup> performed in patients under 18 years of age, and in the study by Güloğlu et al<sup>23</sup> conducted in patients above 15 years of age, may suggest that younger individuals, as in our study, attempt suicide more by medicine. The main reason of this trend may be the thought of young individuals, who commit suicide for attracting attention, that the medicines would be less hazardous and painful.

In conclusion, suicide is a reaction resulting from interaction of multiple factors. Although it is probably not possible to completely eliminate suicide attempts, it is well possible to decrease the number of suicide attempts by reducing the number of possible risk factors. Providing psychiatric support in EDs where possible or consulting patients with psychiatry department whenever ED has no resources for a psychiatric support may prove beneficial in reducing the number of suicide attempts.

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