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Characterization of Suicide, Suicidal Ideation, and Self-harm Attempts: A Pre-hospital Descriptive Study

Gülbin Aydoğdu Umaç

Department of Emergency Medical Services, Manisa Provincial Ambulance Service Chief Physician, Emergency Physician, Manisa, Turkey

Abstract

Objective: This study aimed to characterize demographic and socioeconomic data, on-scene medical conditions, methods used, and emergency medical systems (EMS) response times and distances for patients and individuals seeking help from EMS due to suicidal ideation, self-harm, and suicide attempts.

Methods: This retrospective, cross-sectional, and descriptive study. The study includes patients and individuals in Manisa who were attended by EMS providers following calls to the 112 emergency call center for suicidal ideation, self-harm, and suicide attempts over two years (2022-2023).

Results: The study included 875 cases in 2022 (51.2%) and 835 in 2023. It was observed that the incidents were more common among young individuals (average age 29), males (55%), the unemployed (82.9%), those living in urban areas (77.7%), on Mondays (15.8%), and between 17:00 and 00:00 (41.8%). Most patients were transported to the hospital by EMS providers (88%). High rates of alcohol consumption (29.3%) and aggressive behaviors (17.9%) were noted. The most common method of suicide attempt was drug overdose (53.7%), particularly with antipsychotics (36.8%) and paracetamol (31.4%). Suicide attempts using the patient's own medication were frequent (34.7%). For those who self-harmed with sharp objects, the most commonly injured areas were the hand and wrist (41.1%) and forearm (35%). The average response times for the EMS to reach the scene were 391.5 s in urban areas and 875 s in rural areas.

Conclusion: Young males, unemployed individuals, and those living in urban areas were the most common patients and individuals attended by EMS providers. The most common method of suicide attempt was high-dose drug ingestion, particularly antipsychotics and paracetamol. The highest on-scene fatality rates were observed with hanging and firearm use, whereas sharp object injuries were frequent but had lower on-scene fatality rates. Additionally, response times and distances were longer in rural areas.

Keywords: Emergency medical systems, suicide, suicidal ideation, self-harm

INTRODUCTION

Suicidal ideation encompasses a wide range of thoughts, wishes, and preoccupations related to death and suicide. Non-fatal self-injury without suicidal intent is categorized as deliberate self-harm, whereas self-injury with the intent to die, resulting in non-fatal injury, is defined as a suicide attempt. Self-harm that results in death is also classified as suicide (1,2). Although definitions are often confused, they signify important differences in outcomes. Every suicide is a tragedy with far-reaching impacts on families, communities, and nations, leaving lasting effects on those left behind.

The World Health Organization (WHO) data on suicide epidemiology revealed that over 700,000 people die by suicide annually; in 1998, suicide accounted for 1.8% of the global disease burden, which is projected to rise to 2.4% by 2020. In 2019, suicide was ranked as the fourth leading cause of death among 15-29-year-olds worldwide, with 77% of suicides occurring in low- and middle-income countries (3,4). Approximately 20%

Address for Correspondence: Gülbin Aydoğdu Umaç, Department of Emergency Medical Services, Manisa Provincial Ambulance Service Chief Physician, Emergency Physician, Manisa, Turkey
Phone: +90 507 443 18 70 **E-mail:** dr.gulbinaydogdu@gmail.com **ORCID ID:** orcid.org/0000-0002-9874-0343

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of global suicides are due to pesticide self-poisoning in rural agricultural regions of low- and middle-income countries, with the use of hanging and firearms as common methods (5).

Addressing suicide requires multifaceted strategies at both national and international levels (6). A key strategy involves the organized activation of healthcare systems following incidents of self-harm or suicide attempts. Effective management of the injured or patients is critical to prevent suicidal thoughts and attempts to result in death and to avert acute and chronic health conditions. It is crucial to protect individuals who have attempted suicide and to protect society from the potential risks associated with such individuals. First responders, including law enforcement officers, firefighters, emergency medical systems (EMS) clinicians, and public safety telecommunication officers, play a vital role in ensuring public safety and health. EMS providers, who are often the first callers during suicide attempts, have a strategic position in suicide prevention (7).

Nonetheless, there is limited guidance for EMS providers regarding managing suicidal patients, ensuring scene safety, and protecting the community (8). Given the methods used in suicide attempts (e.g., poisoning, hanging, drowning, firearms, explosives, and jumping from heights), if these attempts do not result in death, early and rational intervention can prevent fatalities. EMS providers are pivotal in managing acute-phase complications (8). To enable effective intervention, it is essential to accurately identify this patient group at the national level and to define recent suicide attempts and suicides, thereby guiding national and international strategies.

In Turkey, research focusing on the pre-hospital management and the profiling of this patient group is limited (9). This study aimed to characterize patients and victims who contacted the emergency call center (112) due to suicidal thoughts, self-harm, or suicide attempts and were attended by EMS providers.

METHODS

Study Design and Setting

This retrospective, descriptive, and cross-sectional study was conducted in Manisa, Turkey. This category includes patients and individuals who were attended by EMS providers following calls to the 112 emergency call center for suicidal ideation, self-harm, and suicide attempts over a two-year period (2022-2023). Preliminary research permission was obtained from the Provincial Health Directorate of Manisa Governorate of the Republic of Turkey (permission was obtained on March 11, 2024, decision number: E79593712-238808379). The study protocol was reviewed and approved by the İzmir Provincial Directorate of Health University of Health Sciences Turkey, İzmir Tepecik Training and Research Hospital (İzmir/Turkey) Non-Interventional Clinical Research Ethics Committee (decision number: 2024/03-26, date: 03.04.2024). Patient consent was not obtained due to the retrospective nature of the study.

Participants

The study population comprised patients and individuals in Manisa, Turkey, who received EMS intervention following calls to the 112 emergency call center for suicidal ideation, self-harm, and suicide attempts in 2022 and 2023. In 2023, EMS providers responded to 1,163 calls, and in 2022, they responded to 1,132 calls for these reasons. False alarms were excluded from the study. Data on these cases were entered electronically into the Manisa 112 chief physician's office patient and injury identification system by EMS providers and verified by 112 team leaders.

Data Collection

The study utilized international classification of diseases-10 codes ranging from X60 to X849, which were electronically entered by EMS providers into the Manisa 112 chief physician's office patient and injury identification system. The methods were categorized into seven groups: pesticide or unspecified poisoning (X68-X699), other poisoning drugs (X60-X679), hanging (X70-X709), drowning (X71-X719), firearms and explosives (X72-X759), jumping from height (X80-X809), and other methods including corrosive substances (10). The research data were verified and completed by cross-referencing the electronic records with the paper documents provided by the EMS providers. Patients and individuals with incomplete electronic and paper records were excluded from the study. Data entry was performed by a paramedic and a secretary, and it was subsequently verified by a general practitioner working in EMS.

Alcohol consumption was recorded based on EMS provider reports as either present or absent; no invasive tests were conducted. The status of the patients' consciousness, pupils, respiration, skin, and pulse were recorded in the electronic system using descriptive terms rather than numerical values, which were then evaluated. Vital signs measured and recorded in the scene were included in the study via an electronic system. However, the vital signs of patients declared dead at the scene were not included in the analysis.

Patients who self-injured with sharp objects were classified according to anatomical regions: hand-wrist, forearm, humerus, head-face, neck, thorax, abdomen, pelvis, lower extremity, genital area, and multiple regions. Patients with a history of sharp object consumption were classified under abdominal injuries.

Response time, station response, transport time, intervention time, hospital arrival time, and time spent were measured by the system based on ambulance responses. Special circumstances (e.g., ambulance breakdowns, accidents) were excluded from the study. Additionally, the distance to the incident and the distance between the incident and hospital were recorded from the electronic system containing the ambulance data.

Statistical Analysis

The statistical analysis was conducted using SPSS software (version 29, IBM Corp., Armonk, NY). Descriptive statistics summarize the data, with counts and percentages for categorical variables, and mean ± standard deviation or median [interquartile range (IQR) 25^{th}-75^{th}] for continuous variables. The assumption of normal distribution for the groups was evaluated by visually inspecting histograms and performing the Shapiro-Wilk test.

RESULTS

A total of 1,710 patients were included in the study. In 2022, there were 875 cases (51.2%) and 835 cases in 2023. Table 1 presents the demographic characteristics of the patients. The median age of the patients was 29 years (IQR 21-40), and 45% of the patients were female (n=770). The vast majority of the patients were Turkish citizens (98.5%, n=1,684), and 4.4% of the patients had no health insurance (n=76). Additionally, 3.8% of the patients were incarcerated (n=65), and 82.9% were unemployed (n=1,418). Only 3.2% of patients were retired (n=55), and 22.3% were from rural areas (n=381). The most frequent day for cases was Monday (15.8%, n=270), while Friday had the fewest cases (13.6%, n=232). Most calls were made between 17:00 and 00:00 (41.8%, n=715).

Table 1. Distribution of cases by demographic characteristics and time

Categories	Variables	Total (n=1,710)
Demographic data	Age (in years)	29 (21-40)
	Sex (female)	45% (770)
	Nationality (Turkish)	98.5% (1,684)
Socioeconomic data	Uninsured	4.4% (76)
	Incarceration	3.8% (65)
	Unemployed	82.9% (1,418)
	Retired	3.2% (55)
	Rural	22.3% (381)
Days of the week	Monday	15.8% (270)
	Tuesday	13.9% (238)
	Wednesday	13.9% (238)
	Thursday	14.2% (242)
	Friday	13.6% (232)
	Saturday	14.4% (247)
	Sunday	14.2% (243)
Time of day	08:00-17:00	31.5% (538)
	17:00-00:00	41.8% (715)
	00:00-08:00	26.7% (457)

Information about the patients' medical conditions at the scene is provided in Table 2. The mean systolic blood pressure was 120.4±26.6 mmHg, and the mean diastolic blood pressure was 73.9±16.4 mmHg. The median peripheral oxygen saturation was 98% (IQR 98-99), and the mean pulse rate was 92.3±24.8. Alcohol intoxication was present in 29.3% of the patients (n=501). Aggressive behavior was observed in 17.9% of the patients (n=306). Black triage was assigned to 4.9% of the patients (n=83), while green triage was assigned to only 5.3% (n=90). Most patients were alert (81.4%, n=1,392), while 12.6% (n=216) were unresponsive. History of psychiatric diagnosis was present in 18.3% of the patients (n=313). Most cases were transported to the hospital (88%, n=1,505); 7% (n=120) were declared dead in the scene.

The most common method of suicide attempt was drug ingestion (53.7%, n=918) (see Table 3 for mortality rates), with 0.7% (n=12)

Table 2. Medical characteristics recorded by EMS at the scene

Categories	Variables	Total (n=1,710)
Vitals	Systolic BP (mmHg)	120.4±26.6
	Diastolic BP (mmHg)	73.9±16.4
	SpO_2	98 (98-99)
	Pulse rate (/minutes)	92.3±24.8
Level of consciousness	Alert	81.4% (1,392)
	Verbal	4% (69)
	Pain	1.9% (33)
	Unresponsive	12.6% (216)
Triage	Green	5.3% (90)
	Yellow	48.3% (826)
	Red	41.5% (711)
	Black	4.9% (83)
Additional parameters	History of psychiatric diagnosis	18.3% (313)
	Under alcohol	29.3% (501)
	Aggressive behavior	17.9% (306)
Outcome	Refusal of care	5% (85)
	DOA	7% (120)
	Transfer	88% (1,505)

BP: Blood pressure, SpO_2: Saturation of peripheral oxygen, DOA: Deceased on arrival, EMS: Emergency medical systems

attempting multiple methods. Among those who attempted suicide by drug ingestion (n=918), psychotropic drugs were the most common (36.8%, n=338), followed by paracetamol (31.4%, n=288) (Table 4). Multiple drug ingestion was observed in 19.1% of the patients (n=175), and 34.7% used their own medication for the suicide attempt. Self-harm with sharp objects was observed in 23% of the patients (n=394). The most frequently injured anatomical region was the hand-wrist area (41.1%, n=162) (Table 4). Multiple regions were injured in 15.2% of the patients (n=60).

Figure 1 presents ambulance data based on rural and urban conditions. The median command response time was 55 s (IQR 35-82), and the median station response time was 41 s (IQR 22-60). The median time to reach the scene after the call was 391.5 seconds (IQR 295-583). The median time for ambulance crews to provide on-scene care was 577 s (IQR 368.75-881), and the median time to transport the patient to the hospital after intervention was 600 s (IQR 420-776.5). The median time ambulances were occupied by these interventions and hospital transport was 2091.5 s (IQR 1620-2934.5). The median distance the ambulances traveled to reach the scene was 2 km (IQR 1-4), and the median distance from the scene to the hospital was 3 km (IQR 2-5).

DISCUSSION

To prevent successful suicide attempts, developing regional intervention activation plans tailored to the specific conditions of each region and preparing readiness plans based on these data (6,11). Timely access to information on local epidemiological trends is crucial for community-specific suicide prevention efforts (12). Therefore, this study compared regional epidemiological and demographic data with national and international figures. The mean age of individuals receiving EMS services for suicidal ideation and attempts was 29 years. According to United States Centers for Disease Control and Prevention (CDC) data, adults aged 35-64 account for 46.8% of all suicides in the United States, where suicide is the 8th leading cause of death for this age group (13). A 2019 WHO report highlighted suicide as a global phenomenon and the fourth leading cause of death among those aged 15-29 worldwide (5). Our findings align more closely with the WHO data than CDC figures, suggesting that the WHO's global data may be more consistent with our regional epidemiological data.

Gender is another important demographic factor (14). Although studies often report higher rates of suicidal behavior among females, our research found a higher incidence among males, consistent with other studies (15,16). This discrepancy is particularly notable in studies including both rural and urban populations, in which a higher incidence of suicide attempts among males has been observed (17). Socioeconomic factors such as urbanization, employment status, and health insurance are linked to suicide patterns (18). Our study also evaluated factors such as nationality, lack of health insurance, imprisonment, unemployment, retirement status, and rural living. While unemployment and lack of health insurance were consistent with the literature, a notable finding was the higher incidence of EMS calls for suicidal ideation and self-harm in urban areas than in rural areas.

CDC data suggest significant geographic variations in suicide rates, with higher rates observed in rural areas with lower

Table 3. Methods of suicide attempts and associated mortality rates

Method	Total (n=1,710)	Mortality
Pesticide	3.6% (62)	1.6% (1)
Drug	53.7% (918)	0.3% (3)
Hanging	7.3% (124)	58.1% (72)
Drowning	0.2% (4)	25% (1)
Firearm injury	3.3% (57)	57.9% (33)
Jumping from a height	6% (103)	5.8% (6)
Sharp object injuries	23% (394)	1% (4)
Corrosive substances	3.2% (54)	0% (0)
Multiple methods	0.7% (12)	0% (0)

Table 4. Distribution of drug overdoses and self-harm with sharp objects by region

Drug types	Total (n=918)	Regions of sharp object injuries	Total (n=394)
Paracetamol	31.4% (288)	Hand-wrist	41.1% (162)
Anticoagulant/ antiplatelet	3.4% (31)	Forearm	35% (138)
Anticonvulsant	6.3% (58)	Humerus	14.2% (56)
Antipsychotics	36.8% (338)	Head-face	6.9% (27)
NSAID	18.7% (172)	Neck	8.4% (33)
Herbal	5.6% (51)	Thorax	3% (12)
Methanol	2.6% (24)	Abdomen	3.6% (14)
Antihypertensive	3.4% (31)	Pelvis	1% (4)
Antidiabetic	1.5% (14)	Lower extremity	4.1% (16)
Psychotropics	12.7% (117)	Genital	0.8% (3)
Multiple drug groups	19.1% (175)	Multiple regions	15.2% (60)
Suicide using own medication	34.7% (319)		

NSAID: Non-steroidal anti-inflammatory drug

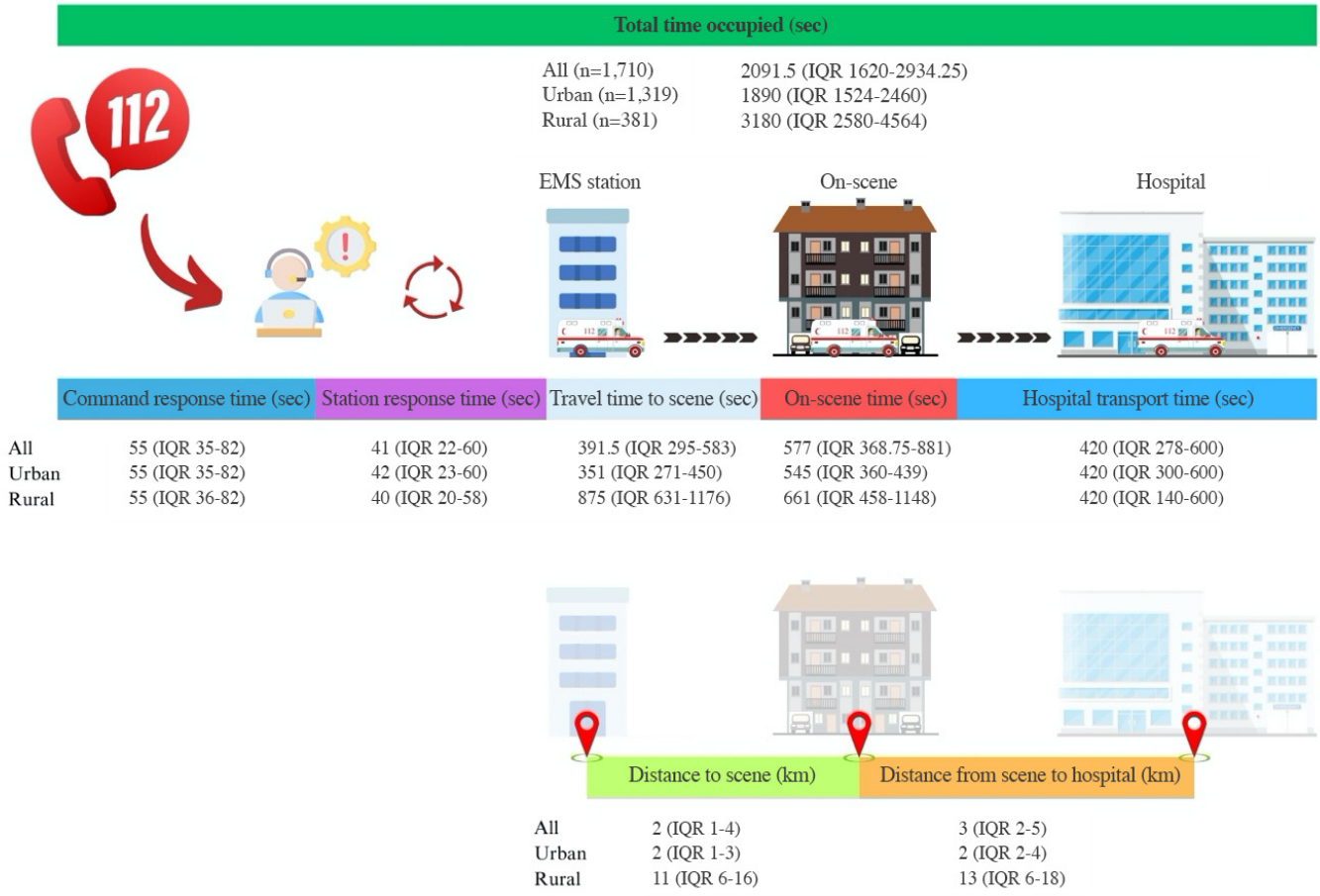

Figure 1. Ambulance response and transport metrics
IQR: Interquartile range, EMS: Emergency medical systems, sec: Seconds, km: Kilometers

population densities (13,17). However, our study found a higher frequency of urban EMS calls, which is noteworthy.

Individual-level interventions are critical for preventing suicide attempts when suicidal thoughts emerge (19). This study identified the most frequent times for suicidal ideation, attempts, and completed suicides, which occurred most commonly on Mondays and between 17:00 and 00:00. This time frame is significant because it falls outside regular working hours. Although EMS systems and emergency services operate 24/7 in Turkey and many other countries, the availability of necessary units for treating and intervening during these hours is limited. Regional plans for areas with frequent suicidal ideation, attempts, and suicides should emphasize readiness during these time slots.

Three critical conditions were observed in the EMS evaluation in the scene. First, 18.3% of patients had a psychiatric diagnosis. Patients with psychiatric diagnoses have a higher likelihood of attempting suicide (20). These patients are a crucial target group for prevention efforts given their previous diagnosis. Furthermore, the specialization of EMS services for such interventions, based on the regional psychiatric disease burden, could be a strategic choice.

Second, 29.3% of patients had consumed alcohol. The WHO reports a causal relationship between harmful alcohol use and a range of mental and behavioral disorders, other non-communicable conditions, and injuries (21). Similarly, our study found a high incidence of alcohol use among patients. Combating alcohol use is an essential element of suicide prevention plans.

Third, 17.9% of patients exhibited aggressive behavior. Managing patients with suicidal ideation, attempts, and completed suicides by EMS is challenging because of the need for early intervention in unique conditions where safety is not yet ensured (22). Therefore, the high potential for aggression among patients highlights the need for law enforcement involvement, scene safety protocols, and specialized training for EMS personnel.

In our study, the most common method of suicide attempt was drug ingestion, followed by sharp object injuries, hanging, and jumping from a height, while the least common were drowning, corrosive substance use, firearm use, and pesticide use. The highest success rate of on-scene deaths was observed with hanging and firearms. These findings align with the literature regarding the mortality rates of hanging and firearm use, and the lower incidence of drowning can be attributed to the non-coastal nature of the study area (23).

Preventive measures against individual firearm ownership could further reduce the use of firearms in such acts. Among patients who used drugs for suicide attempts, antipsychotic drugs and paracetamol were the most common, with 34.7% of the patients using their own medication. These data align with the finding that suicide risk is highest within the first year after initial hospitalization for first-episode psychosis and shortly after discharge for general psychiatric inpatients (24). Patients in treatment and likely to possess antipsychotic medications at home represent a significant risk group. This underscores the importance of protecting and monitoring these patients, with roles for both family members and healthcare providers in identifying the agents used in suicide attempts. Due to its widespread use as an analgesic and antipyretic, paracetamol frequently appears in overdose-related suicide attempts globally (25). Similarly, in our study, paracetamol was one of the most commonly used drugs for self-harm and suicide attempts.

Self-harm with sharp objects was prevalent although the success rate of on-scene deaths was lower. Consistent with the literature, upper extremity cuts were the most frequent (26). EMS providers play a crucial role in managing these patients, as the key factor determining their survival is the management of hypovolemic shock at the scene and during pre-hospital care (27). Early intervention and rational treatment approaches are expected to yield positive outcomes. However, the high rates of aggression observed in our study highlight the significant risk posed to EMS providers, especially when patients who have self-harmed with sharp objects still possess their instruments. This concern also applies to patients who use firearms for suicide attempts or management. Given these data, the potential harm these patients pose to EMS providers must be considered, and interventions should be multidisciplinary, involving regional law enforcement to ensure scene safety.

Lastly, descriptive data in this study include the reaction times and distances covered by EMS providers after receiving 112 calls. The study found a higher frequency of calls from urban areas than rural areas. Additionally, although command and station response times were similar in rural and urban areas, the travel time to the scene, on-scene intervention time, hospital transport time, total time occupied by EMS personnel, and distances covered from the scene to the hospital were longer in rural areas (28). This finding emphasizes the need for equitable distribution of healthcare resources. Early access and intervention projects for suicide attempt and ideation in rural areas are essential across all communities.

In conclusion, suicidal ideation, self-harm, and suicide form a cycle. Preventing patients from entering this cycle is as crucial as intervening after an attempt. The first medical contact for these patients is often with EMS providers. Successful outcomes are more likely when regional initiatives utilize these experiences to prevent and plan for future attempts.

CONCLUSION

In Manisa, among patients and individuals with suicidal ideation, self-harm, and on-scene suicides attended by EMS, providers, demographic, social, and economic data revealed a higher prevalence of young males, unemployment, and urban living. The most common method of suicide attempt was drug overdose, particularly involving antipsychotics and paracetamol. The highest on-scene fatality rates were observed with hanging and firearms, whereas sharp object injuries were frequent but had lower on-scene fatality rates compared with those with hanging and firearms. Additionally, transportation distances and times were longer in rural areas.

Ethics

Ethics Committee Approval: The study protocol was reviewed and approved by the İzmir Provincial Directorate of Health University of Health Sciences Turkey, İzmir Tepecik Training and Research Hospital (İzmir/Turkey) Non-Interventional Clinical Research Ethics Committee (decision number: 2024/03-26, date: 03.04.2024).

Informed Consent: Patient consent was not obtained due to the retrospective nature of the study.

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REFERENCES

1. Overview | Self-harm: assessment, management and preventing recurrence | Guidance | NICE [Internet]. NICE; 2022 [a.yer 08 Mayıs 2024]. Erişim adresi: https://www.nice.org.uk/guidance/ng225
2. Harmer B, Lee S, Rizvi A, Saadabadi A. Suicidal Ideation. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 [a.yer 12 Mayıs 2024]. Erişim adresi: http://www.ncbi.nlm.nih.gov/books/NBK565877/

3. Klonsky ED, May AM, Saffer BY. Suicide, Suicide Attempts, and Suicidal Ideation. Annu Rev Clin Psychol. 2016;12:307-30.

4. Bertolote JM, Fleischmann A. Suicide and psychiatric diagnosis: a worldwide perspective. World Psychiatry. 2002;1:181-5.

5. Suicide [Internet]. [a.yer 08 Mayıs 2024]. Erişim adresi: https://www.who.int/health-topics/suicide

6. Prevention Strategies | Suicide Prevention | CDC [Internet]. 2023 [a.yer 09 Mayıs 2024]. Erişim adresi: https://www.cdc.gov/suicide/prevention/index.html

7. Shirzad F, Gholamzad S, Shafiee M, Shariat SV. Development of a pre-hospital emergencies protocol for the management of suicidal patients in Iran. BMC Emerg Med. 2021;21:47.

8. Australian Institute of Health and Welfare [Internet]. 2023 [a.yer 09 Mayıs 2024]. Injury in Australia: Intentional self-harm and suicide. Erişim adresi: https://www.aihw.gov.au/reports/injury/intentional-self-harm-and-suicide

9. Şan İ, Uzunhasanoğlu G, Özkan B. Pre-Hospital Workers' Approach To Individuals Utulizing Ambulance Service Wıth The Diagnosis Of Suicide Attempt. Journal Of Pre-Hospital. 2021;6:213-27.

10. Ajdacic-Gross V, Weiss MG, Ring M, Hepp U, Bopp M, Gutzwiller F, et al. Methods of suicide: international suicide patterns derived from the WHO mortality database. Bull World Health Organ. 2024;86:726-32.

11. Jagodic HK, Agius M, Pregelj P. Inter-regional variations in suicide rates. Psychiatr Danub. 2012;24(Suppl 1):82-5.

12. Patel D, Sumner SA, Bowen D, Zwald M, Yard E, Wang J, et al. Predicting state level suicide fatalities in the united states with realtime data and machine learning. Npj Ment Health Res. 2024;3:3.

13. Disparities in Suicide | Suicide Prevention | CDC [Internet]. 2023 [a.yer 13 Mayıs 2024]. Erişim adresi: https://www.cdc.gov/suicide/facts/disparities-in-suicide.html

14. Özel M, Çetinkaya R, Tatlıparmak AC, Yılmaz S, Ak R. Adolescent patients presenting to the emergency department due to falls from heights: a comparative analysis of suicidal and non-suicidal cases. Anatolian Curr Med J. 2024;6:55-8.

15. Listabarth S, Vyssoki B, Glahn A, Gmeiner A, Pruckner N, Vyssoki S, et al. The effect of sex on suicide risk during and after psychiatric inpatient care in 12 countries-An ecological study. Eur Psychiatry. 2020;63:e85.

16. Cassidy RM, Yang F, Kapczinski F, Passos IC. Risk Factors for Suicidality in Patients With Schizophrenia: A Systematic Review, Meta-analysis, and Meta-regression of 96 Studies. Schizophr Bull. 2018;44:787-97.

17. Casant J, Helbich M. Inequalities of Suicide Mortality across Urban and Rural Areas: A Literature Review. Int J Environ Res Public Health. 2022;19:2669.

18. Varol ZC, Karagöz K. Affective Socioeconomic Factors on Suicide in Turkey: An Econometric Analysis. Manisa Celal Bayar University Journal of Social Sciences. 2020;18(Suppl):260-80.

19. Kattimani S, Sarkar S, Menon V, Muthuramalingam A, Nancy P. Duration of suicide process among suicide attempters and characteristics of those providing window of opportunity for intervention. J Neurosci Rural Pract. 2016;7:566-70.

20. Pooja F, Chhabria P, Kumar P, Kalpana F, Kumar P, Iqbal A, et al. Frequency of Psychiatric Disorders in Suicide Attempters: A Cross-Sectional Study from Low-Income Country. Cureus. 2021;13:e14669.

21. Alcohol [Internet]. [a.yer 13 Mayıs 2024]. Erişim adresi: https://www.who.int/news-room/fact-sheets/detail/alcohol

22. Yilmaz S, Çoban GS, Colak FU, Karcioglu O. Coping with difficulties faced in pre-hospital healthcare amid pandemics. Signa Vitae. 2022;18:47-55.

23. Cai Z, Junus A, Chang Q, Yip PSF. The lethality of suicide methods: A systematic review and meta-analysis. J Affect Disord. 2022;300:121-9.

24. Nordentoft M, Madsen T, Fedyszyn I. Suicidal behavior and mortality in first-episode psychosis. J Nerv Ment Dis. 2015;203:387-92.

25. Casey D, Geulayov G, Bale E, Brand F, Clements C, Kapur N, et al. Paracetamol self-poisoning: Epidemiological study of trends and patient characteristics from the multicentre study of self-harm in England. J Affect Disord. 2020;276:699-706.

26. Somanathan A, Lee A, Harrison CJ, Rodrigues JN. Management of Incisional Self-Harm of the Upper Limb: A Systematic Review. JPRAS Open Somanathan A, Lee A, Harrison CJ, Rodrigues JN. Management of Incisional Self-Harm of the Upper Limb: A Systematic Review. JPRAS Open. 2023;36:76-84.

27. Romeu D, Guthrie E, Mason S. Understanding Pre-Hospital Care for Self-Harm: Views and Experiences of Yorkshire Ambulance Service Clinicians. BJPsych Open. 2023;9(Suppl 1):69.

28. Yilmaz S, Ak R, Hokenek NM, Yilmaz E, Tataroglu O. Comparison of trauma scores and total prehospital time in the prediction of clinical course in a plane crash: Does timing matter? Am J Emerg Med. 2021;50.301-8.