

Retrospective Evaluation of Adolescent Patients Presenting to the Emergency Department with Suicidal Attempt

Özkıyım Girişimi ile Acil Servise Başvuran Adolesan Hastaların Retrospektif Değerlendirilmesi

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ABSTRACT

Aim: Suicide attempts among adolescents are a major public health problem. It is important to understand the prevalence of suicide attempts in the adolescent population and the risk factors underlying the attempts so that the necessary precautions can be taken by health authorities. We therefore aimed to retrospectively evaluate the demographic and clinical characteristics of adolescent patients presented to the emergency department due to suicide attempts.

Material and Methods: This retrospective observational study included adolescent patients aged 10-19 years who presented to the emergency department for suicide attempt between August 01, 2018 and July 31, 2023. Ethics committee approval was obtained and data were collected from the hospital automation system through ICD codes. Demographic data, clinical characteristics, intervention methods, treatment processes and outcomes of the patients were analysed in detail.

Results: Of the 126 patients included in the study, 80.2% were female, 19.8% were male, and the mean age was 184 months. 97.6% of the patients attempted suicide by ingestion of drugs or substances, and the rest of the patients preferred methods such as jumping from a height, firearm and sharp instrument use. Depression was the most common comorbid psychiatric disorder and was identified in 73.7% of the adolescents in the study. 42.1% of the patients presented to the emergency department with complaints such as nausea/vomiting and tendency to sleep with suicide attempt. Treatments such as gastric lavage and activated charcoal were administered in the majority of admissions.

Conclusion: This study reveals that suicide attempts are an important public health problem in the adolescent population and psychiatric disorders, especially depression, play a role in these attempts. It was observed that suicide attempts were more common among adolescent females. The findings emphasize the importance of early screening and interventions for psychiatric disorders for the prevention and management of suicide attempts in adolescents. The findings of the study shed light on efforts to review and improve current management strategies and demonstrate the need for large-scale community-based studies.

Keywords: Suicide, adolescents, emergency department, mental disorders, poisoning

ÖZ

Amaç: Ergenler arasında intihar girişimleri önemli bir halk sağlığı sorunudur. Sağlık otoriteleri tarafından gerekli önlemlerin alınabilmesi için ergen popülasyonda intihar girişimlerinin yaygınlığını ve girişimlerin altında yatan risk faktörlerini anlamak önemlidir. Bu nedenle, acil servise intihar girişimi nedeniyle başvuran ergen hastaların demografik ve klinik özelliklerini retrospektif olarak değerlendirmeyi amaçladık.

Gereç ve Yöntemler: Bu retrospektif gözlemsel çalışma, 01.08.2018 ile 31.07.2023 tarihleri arasında acil servise özkıyım girişimi nedeniyle başvuran 10-19 yaş arası adolesan hastaları kapsamaktadır. Etik kurul onayı alınarak hastane otomasyon sisteminden ICD kodları aracılığıyla veri toplanmıştır. Hastaların demografik verileri, klinik özellikleri, girişim yöntemleri, tedavi süreçleri ve sonuçları detaylı bir şekilde incelenmiştir.

Bulgular: Çalışmaya dahil edilen 126 hastanın %80,2'si kadın, %19,8'i erkek olup, yaş ortalaması 184 aydı. Hastaların %97,6'sı ilaç veya madde alımı yoluyla özkıyım girişiminde bulunmuş, geri kalanlar ise yüksekten atlama, ateşli silah ve kesici alet kullanma gibi yöntemleri tercih etmiştir. Depresyon, en yaygın eşlik eden psikiyatrik bozukluk olarak bulunmuş ve çalışmadaki adolesanların %73,7'sinde tanımlanmıştır. Hastaların %42,1' i özkıyım girişimle birlikte bulantı/kusma ve uykuya eğilim gibi şikayetlerle acil servise başvurmuştur. Başvuruların büyük çoğunluğunda mide lavajı ve aktif kömür gibi tedaviler uygulanmıştır.

Sonuç: Bu çalışma, özkıyım girişimlerinin adolesan popülasyonda önemli bir halk sağlığı sorunu olduğunu ve özellikle depresyon gibi psikiyatrik bozuklukların bu girişimlerde rol oynadığını ortaya koymaktadır. Adolesan kadınlar arasında özkıyım girişimlerinin daha yaygın olduğu gözlemlenmiştir. Bulgular, adolesanlarda özkıyım girişimlerinin önlenmesi ve yönetimi için erken tarama ve psikiyatrik bozukluklar açısından müdahalelerin önemini vurgulamaktadır. Çalışmanın bulguları, mevcut yönetim stratejilerini gözden geçirme ve iyileştirme çabalarına ışık tutmakta olup, geniş çaplı toplum temelli çalışmalara duyulan ihtiyacı göstermektedir.

Anahtar Kelimeler: Suisid, adolesan, acil servis, psikiyatrik bozukluklar, zehirlenme

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Introduction

Adolescence is defined as a period in which the person gains independence and social productivity, starting with biological and physical development, sexual and psychosocial maturation (1). According to the definition of the World Health Organisation, adolescence covers the period between the ages of 10-19 (2).

Suicidal attempt in adolescence is an increasingly important public health problem in the world. Suicidal behaviour is actions, thoughts and attempts with the intention of killing oneself. The most common suicidal behaviour in adolescents is drug and substance abuse (3). Approximately 800 thousand people die annually in the world as a result of suicide. The number of suicidal attempts in a year is estimated to be 10-20 times this number. In the pediatric population, mortality rates due to suicide attempts are lower than in adults. Nevertheless, suicide is the first leading cause of death in female adolescents aged 15-19 years and the third leading cause of death in male adolescents of the same age group (4). Suicide-related mortality rates are increasing every year (5).

Studies investigating suicidal risk factors in adolescence emphasise several factors such as previous attempts, illness, domestic violence, distressing life events and substance abuse. Factors such as divorce, unemployment or migration may disrupt social ties and pave the way for suicide (6,7). Depression has been shown to be associated with suicidal behaviour in adolescents as well as in adults (8). In our study, we planned to retrospectively analyse the cases admitted to the emergency department due to suicidal attempts in adolescence. Thus, through the current study, we attempted to better understand the current status of case management and to identify areas for possible research and improvement.

Material and Methods

Approval for our retrospective observational study was obtained from Bolu Abant İzzet Baysal University Clinical Research Ethics Committee (Decision no: 2023/278). In our study, adolescent patients (aged 10-19 years) admitted to the emergency department of Bolu İzzet Baysal Training and Research Hospital between August 01, 2018 and July 31, 2023 due to suicide attempt were retrospectively analyzed. Our hospital is a tertiary hospital and the annual emergency department admissions are approximately 85,000 (pediatric and adult). Patients aged 0-17 years are admitted by a pediatric specialist and patients aged 18 years and older are admitted by an emergency medicine specialist.

Demographic data (age, gender, comorbidities), laboratory data, treatment methods, suicide methods, number of days of hospitalisation, and treatment responses and outcomes were obtained retrospectively from the hospital information management system with International Classification of Diseases (ICD) codes. Patients with missing data were not included in the study

Statistical analysis

All statistical analyses were carried out using SPSS for Windows (Version 22.0, IBM Corp., Armonk, NY, USA). The normal distribution of the data was evaluated by Kolmogorov-Smirnov test; the numerical variables that exhibited normal distribution were presented as mean \pm standard deviation, and those that did not exhibit normal

distribution were presented as median and interquartile range (IQR). Categorical variables were presented as number and percentage. Pearson Chi-Square test was used to compare categorical data. A value of $p < 0.05$ was considered statistically significant.

Results

Of the 126 patients included in the study, 101 were female (80.2%) and 25 were male (19.8%) and there was a significant difference between the groups (Pearson Chi-square, $p < 0.001$). The mean age of the patients was 184 months (± 17.4). The median length of hospitalisation was 2 days (IQR: 1-2).

Nineteen (15%) of the patients had a history of suicidal attempt or non-suicidal self-harm behaviour. While 38 (30.2%) of the patients were being followed up in the Child-Adolescent Mental Health and Diseases clinic with any diagnosis, 88 (69.8%) did not have any mental diagnosis until this presentation. Of the 38 patients with a previous diagnosis, 28 (73.7%) had depression, 6 (15.8%) attention-deficit / hyperactivity disorder (ADHD), 2 (5.3%) anorexia, 1 (2.6%) bulimia nervosa and 1 (2.6%) bipolar disorder (Table 1).

Of the 126 patients included in the study, 123 (97.6%) attempted suicide through drug or substance intake, 1 patient (0.8%) attempted suicide through jumping from a height, 1 patient (0.8%) attempted suicide through firearm and 1 patient (0.8%) attempted suicide through self-cutting with a sharp object. In 123 patients who attempted suicide by taking medication, 37 of them had taken at least one type of selective serotonin reuptake inhibitor or serotonin and norepinephrine reuptake inhibitor, 30 of them had taken at least one type of antipsychotic, 4 of them had taken at least one type of psychostimulant, 54 of them had taken at least one type of non-steroid anti-inflammatory drug or paracetamol, 16 of them had taken at least one type of antibiotic.

Of all patients, 53 (42.1%) had another main complaint at the time of presentation to the emergency department in addition to the suicide attempt. The most common complaints were nausea or vomiting and sleepiness (Table 2).

When the interventions performed to the patients after admission were analysed, 92 (74.8%) of the patients who attempted suicide through drug ingestion underwent gastric lavage, 84 (68.3%) were given activated charcoal.

Mental Diagnosis n=38	n, (%)
Depression	28 (73.7)
ADHD	6 (15.8)
Anorexia	2 (5.3)
Bulimia Nervosa	1 (2.6)
Bipolar Disorder	1 (2.6)

Table 1. Mental diagnoses of patients.
ADHD: Attention deficit and hyperactivity disorder.

Type of complaint n=53	n, (%)
Nausea or vomiting	24 (45.3)
Tendency to sleep	14 (26.4)
Tachycardia	3 (5.7)
Syncope	2 (3.8)
Haemorrhage	2 (3.8)
Bradycardia	2 (3.8)
Oedema in the tongue	1 (1.9)
Abdominal pain	1 (1.9)
Oral ulcer	1 (1.9)
Headache	1 (1.9)
Dizziness	1 (1.9)
Numbness in the face	1 (1.9)

Table 2. Main complaints of the patients at the time of admission.

Regarding the outcomes of the patients, 118 (93.7%) were hospitalised in the pediatric service and discharged after the observation period, 4 (3.2%) refused treatment and left the hospital, 3 (2.4%) were transferred to the child and adolescent mental health service after the observation period in the pediatric service and 1 (0.8%) died. The cause of death was NSAID poisoning.

Discussion

In this study, we retrospectively evaluated the demographic and clinical characteristics of adolescent patients admitted to the emergency department for suicide attempts. The results showed that suicide attempts were more common among adolescent girls (80.2%) and depression was the most common comorbid mental disorder (72.2%). The majority of patients (97.6%) attempted suicide by ingesting drugs or substances and 42.1% presented to the emergency department with additional complaints.

One method of identifying and preventing adolescents at risk for suicide is to screen for suicidal thoughts and behaviors in schools and primary care settings. More than half of adolescents receive primary care at least once a year, and these doctor visits would provide an opportunity for screening (9). In a study conducted in adults, it was determined that half of the cases who died as a result of suicidal attempt had been examined by a physician for different medical reasons in the last month (10). A study by Rhodes et al. showed that adolescents who died as a result of suicide presented to the emergency department mostly with somatic complaints in the 3 months before death (11). This data indicates that the mental health of each patient examined should also be assessed during a physical examination.

Suicide attempts are more common in female adolescents, but suicidal deaths are more common in male adolescents because male adolescents often use more lethal methods

(12). In our study, 101 of 126 patients were female (80.2%) and 25 were male (19.8%). The only patient who died was a female who made a suicidal attempt with drug intake.

Suicide attempts are more often seen in adolescents who have preexisting mental health disorders (13). The most common accompanying mental health disorder is depression. In our patient group, 26 (72.2%) of 38 patients with a previous mental health disorder had a diagnosis of depression. Patients with bipolar and psychotic disorders, personality and behavioural problems, anxiety, substance abuse and trauma-related disorders are also at increased risk for suicidal attempts. Individuals with neurodevelopmental disorders, including ADHD, learning disabilities and autism spectrum disorder, are at higher risk for suicide attempts (14). In our patients, 6 (16.7%) had ADHD, 2 (5.6%) anorexia, 1 (2.8%) bulimia nervosa and 1 (2.8%) bipolar disorder. Past suicide attempts, non-suicidal self-harm and family history of suicide are risk factors for suicide attempts (15). Nineteen of our patients (15%) had a history of suicidal attempt or non-suicidal self-harming behaviour and therefore were planned to be followed up in the Department of Child Mental Health, but 16 of the patients stated that they did not continue these follow-ups regularly.

In 2021, the American Academy of Paediatrics, in collaboration with subject matter experts from the American Foundation for Suicide Prevention and the National Institute of Mental Health, asked multi-disciplinary collaborators (health care provider groups) to share insights, experiences and strategies related to this public health concern. The Youth Suicide Prevention Plan was developed by convening a 'Youth Suicide Prevention Virtual Summit' comprised of public health organisations, parent organisations, federal agencies, mental health organisations, families, adolescents and young adults with lived experience. The plan has 3 stages: (1) a brief screening with a validated measure, (2) a brief suicide risk assessment for all who test positive, and (3) plans determined by the brief suicide risk assessment (16). According to the Protocol for Infant Child Adolescent Follow-up in Primary Care implemented by the Republic of Türkiye Ministry of Health in our country, HEADSSS [Home, Education/Employment, Eating, Activities (activity with peers), Drugs, Sexuality, Suicide/depression and Safety] follow-up is recommended 3 times in total between the ages of 10-14, 15-18 and 19-21 (17). It is very important to identify adolescents at risk of suicide early through screening programmes and to develop supportive treatment approaches.

Limitations

This study has some limitations. Firstly, since the study was conducted retrospectively, there may be some deficiencies and inaccuracies in data quality. Also, since only patients presented to a specific hospital were evaluated, caution should be exercised in generalising the results.

Conclusion

Suicide is a major public health problem and one of the leading causes of death for adolescents. Faced with an already high prevalence and increasing rates over the last decade, emergency medicine specialists and paediatricians should always be prepared to manage a suicidal patient.

This retrospective study evaluated adolescent patients admitted to the emergency department for suicidal attempts. It found that suicidal attempts were more common in females (80.2%), with depression being the most common comorbidity (72.2%). Most attempts involved drug or substance ingestion (97.6%), and 42.1% of patients had additional complaints. The majority (93.7%) were discharged, 3.2% refused treatment, 2.4% were hospitalized, and 0.8% died. The current study emphasizes the importance of mental health screening and early interventions for the prevention and management of suicidal attempts in adolescents. Although the limitations of the study affect the generalisability of the results, the findings provide valuable information to understand the current situation in the management of suicidal attempts in emergency departments and to identify areas for improvement.

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