



Evaluation of Children and Adolescents Admitted to Emergency Service with Suicide Attempt

Acil Servise İntihar Girişimi Nedeniyle Başvuran Çocuk ve Ergenlerin Değerlendirilmesi

Özge Gizli Çoban, Mehmet Emre Gül, Arif Önder

Akdeniz University Faculty of Medicine, Department of Child and Adolescent Psychiatry, Antalya, Turkey

Abstract

Introduction: Although the number of studies conducted on suicide attempt with adult patients is very high, it is very few in adolescents. In this study, it was aimed to evaluate the characteristics of children and adolescents who admitted to the pediatric emergency unit due to suicide attempt.

Methods: This study was carried out by analyzing the files of cases retrospectively who applied to the pediatric emergency unit between 01/01/2018 and 31/12/2020 due to suicide attempt and consulted to child and adolescent psychiatry unit.

Results: Of the 60 subjects, 48 (80%) were female and 12 (20%) were male. The average age was 15.01 ± 1.73 years. The most common method was overdose drug intake (63.3%) and followed by incision (18.3%). Conflict with the family was found the most common reason for suicide attempt (36.7%). The most common psychiatric diagnosis was major depressive disorder (30%) and followed by anxiety disorders and conduct disorders (both 16%). Multiple suicide attempts were also significantly associated with substance use and staying in child welfare institution. Although it was not statistically significant, the rate of multiple suicide attempts (40.5% vs. 16.7%) was higher in those with comorbid psychiatric disorders than those without a psychiatric disorder. Only 55% (n=33) of the cases applied to the child psychiatry outpatient clinic appointment, which was recommended when they were discharged from the emergency service.

Conclusion: Due to the low rate of those presenting to the child psychiatry outpatient clinic after the emergency service, strategies to increase the awareness of families about suicide should be developed.

Keywords: Suicide attempt, adolescent, psychiatry

Öz

Giriş: Erişkin hastalarda özkıym girişimi konusunda yapılan çalışma sayısı çok yüksek olmasına rağmen çocuk ve ergenlerde çok azdır. Bu çalışmada çocuk acil servisine özkıym girişimi nedeniyle başvuran çocuk ve ergenlerin özelliklerinin değerlendirilmesi amaçlanmıştır.

Yöntemler: Bu çalışma 01/01/2018-31/12/2020 tarihleri arasında çocuk acil servisine özkıym girişimi nedeniyle başvuran ve çocuk ve ergen psikiyatri birimine konsülte edilen olguların dosyaları geriye dönük olarak incelenerek gerçekleştirildi.

Bulgular: Altmış olgunun 48'i (%80) kız ve 12'si (%20) erkekti. Ortalama yaş 15.01 ± 1.73 'tü. En yaygın yöntem aşırı doz ilaç alımı (%63,3) ve ardından kesi (%18,3) idi. Özkıym girişimi için en yaygın neden aile ile çatışma olarak bulundu (%36,7). En yaygın psikiyatrik tanı majör depresif bozukluktu (%30) ve bunu anksiyete bozuklukları ve davranış bozuklukları (her ikisi de %16) izlemekteydi. Madde kullanımı ve çocuk esirgeme kurumunda kalma, çoğul özkıym girişimi ile anlamlı olarak ilişkiliydi. İstatistiksel olarak anlamlı olmamakla birlikte çoğul özkıym girişimi oranı (%40,5 vs. %16,7) ek psikiyatrik bozukluğu olanlarda psikiyatrik bozukluğu olmayanlara göre daha yüksekti. Acil servisten taburcu edilirken önerilmiş olan çocuk psikiyatri polikliniği randevusuna olguların sadece %55'inin (n=33) başvurduğu öğrenildi.

Sonuç: Acil servis sonrasında önerilen çocuk psikiyatrisi polikliniğine başvuru oranlarının düşük olması nedeniyle ailelerin özkıym konusundaki farkındalığını artırmaya yönelik stratejiler geliştirilmelidir.

Anahtar Kelimeler: Özkıym girişimi, ergen, psikiyatri

Address for Correspondence/Yazışma Adresi: Özge Gizli Çoban, Akdeniz University Faculty of Medicine, Department of Child and Adolescent Psychiatry, Antalya, Turkey

E-mail: ozgegizli87@gmail.com **ORCID ID:** orcid.org/0000-0003-4533-105X

Received/Geliş Tarihi: 10.02.2021 **Accepted/Kabul Tarihi:** 21.05.2021

©Copyright 2022 by Society of Pediatric Emergency and Intensive Care Medicine
Journal of Pediatric Emergency and Pediatric Intensive Care published by Galenos Yayınevi.

Introduction

Suicide is an important public health problem. Suicide attempt is defined as potentially harmful behavior that is executed with the intention of dying but has a non-fatal outcome. Completed suicide refers to actions that result in death.¹ Suicide is currently the second leading cause of death among individuals aged 10-24 (17.4% of all deaths).² Suicidal ideation is rare in children, but it increases gradually between the ages of 10 and 12 and faster during adolescence.^{3,4} The prevalence rates for suicidal ideation among young people range from 19.8% to 24% and for suicidal attempts between 3.1% and 8.8%.⁵ Suicide is accounted for 14% of deaths in adolescents aged 15 to 19 years, and 8% of deaths in children aged 10 to 14 years.⁶

Suicidal thoughts and behaviors are the most common mental health emergencies among adolescents.⁷ Investigation of risk factors for suicide attempts is of great importance, especially in issues related to prevention.³ The characteristics of suicidality in children and adolescents are different from those occurring in adults and there is a need for tools to identify the youth at higher risk.⁸ Numerous factors can contribute to suicide, and every suicide is caused by an extremely unique, complex and dynamic interaction of social, psychological, genetic, and biological factors.⁹ Various risk factors have been identified for adolescent suicide, including individual, familial, social, school, and peer-related factors.^{1,10} Mental disorders, previous suicide attempts, specific personality characteristics, impulse control (e.g., aggression, substance abuse), family history of mood disorder and/or suicidal behavior and triggering psychosocial stressors are key risk factors in youth suicide.^{9,11}

Investigating which adolescents are most likely to reattempt suicide will help to formulate prevention and intervention strategies for suicidal tendencies in children and adolescents. In this study, it is aimed to draw attention to youth suicides and the precautions that can be taken in our country by presenting the characteristics of children and adolescents who applied to the pediatric emergency unit due to suicide attempt.

Materials and Methods

This study was carried out by analyzing the retrospective files of the cases who applied to the pediatric emergency department between 01/01/2018 and 31/12/2020 due to suicide attempt and consulted to child and adolescent psychiatry unit. In total, 60 of the 348 subjects consulted during this period were related to the suicide attempt. Obtaining from the files of the patients, the data regarding the age, gender, reasons and type of suicide attempt (drug consumption, pesticide, incision with cutting tools, jumping from high places, etc.) was noted.

Data usage permission from the Akdeniz University Hospital and Ethics Committee Approval were obtained for the study (date: 23/12/2020- protocol number: 953).

Statistical Analysis

IBM SPSS 23.0 program was used for statistical analysis. Descriptive statistics including number, percentage, mean and standard deviation values were used in the analysis of the data. Chi-square test was used to compare categorical data.

Results

In this study, sixty patients who were referred to the emergency department due to suicide attempt were included. Of the total 60 suicide attempts, 15 (25.0%) were in 2018, 23 (38.3%) in 2019, and 22 (36.7%) in 2020. Of the 60 cases, 48 (80%) were female and 12 (20%) were male (Table 1). The average age was 15.01±1.73 years. Most of the cases (96.6%) were between 13 and 17 years old, one case was a 7-year-old male and one case was an 11-year-old male.

Fifty (83.3%) of the 60 cases were living with their families, and 10 (16.7%) were staying in the child welfare institution. Of the 60 cases, 24 were brought by ambulance, 32 were

Table 1. Demographic data of cases with suicide attempt

	Number	Percentage (%)
Sex		
Girls	48	80
Boys	12	20
Living place		
With family	50	83.3
Child welfare institution	10	16.7
Way of suicide		
Taking drug overdose	38	63.3
Incision	11	18.3
Jumping from high places	5	8.3
Hanging	2	3.3
Pesticide	1	1.7
Missed data	3	5.0
Numbers of suicide attempt		
Single	40	66.7
Multiple	20	33.3
Reasons of suicide attempt		
Conflict with family	22	36.7
Individual reasons	21	35.0
Problems with partner	8	13.3
Problems with friends	3	5.0
Academic difficulties	5	8.3
After evaluation in the emergency unit		
Discharge	48	80.0
Hospitalization	10	16.7
Intensive care unit	2	3.3
Child psychiatry outpatient control after discharge		
Applied	33	55
Non-applied	27	45

by family, 1 was by friends. Regarding the distribution of suicide attempts by month of the attempt, it was found that it was most common in April (16.7%) and at least in May (1.7%). Considering the course of the cases after their evaluation and treatment in the emergency room, 48 (80.0%) were discharged from the emergency service, 10 (16.7%) were hospitalized in the pediatric service, and 2 (3.3%) were transferred to the intensive care unit.

When suicide attempt methods were evaluated, the most common method of suicide attempt was by taking drugs overdose (63.3%). This was followed by cutting oneself (18.3%) and jumping from high places (8.3%). It was found that 20 (33.3%) of the cases had attempted suicide before. It was showed that 52 (86.7%) of the suicide attempts were in an impulsive manner, and 8 (13.3%) of them were previously planned. Among those who attempted suicide by taking drugs, 17 (28.3%) attempted suicide by taking one type of drug, and 21 (71.7%) by taking more than one type of drug. The most frequently preferred drug group for suicide were non-steroidal anti-inflammatory drugs (n=23, 40.4%), antidepressants (n=6, 10.5%), and antibiotics (n=5, 8.8%), respectively.

When the reasons for a suicide attempt were evaluated, it was found that conflict with the family (36.7%) was the most common, followed by individual reasons (such as loneliness, unhappiness) (35.0%) and problems with romantic-partner (13.3%). According to the information obtained from the files of the cases, the most common psychiatric diagnosis was major depressive disorder (30.0%), followed by anxiety disorder (16.0%) and conduct disorder (16.0%) (Table 2). Concomitant substance use was present in 5 (8.3%) patients. 55% (n=33) of the cases applied to the child psychiatry outpatient clinic appointment, which was recommended when they were discharged from the emergency service.

Although it was not statistically significant, the rate of multiple suicide attempts was higher in those with comorbid psychiatric diseases than those without a psychiatric disorder (40.5% vs 16.7%) ($p=0.65$). When the suicide attempt was evaluated in terms of whether it was multiple or single, no significant difference was found between genders (Table 3).

However, the rate of multiple suicide attempts was significantly higher in those living in child welfare institutions than in those living with their family ($p=0.012$). In addition, the rate of multiple suicide attempts was found significantly higher in those with substance use compared to those who did not ($p=0.038$).

Discussion

This study is one of the rare studies evaluating child and adolescent suicides in our country. In the present study,

adolescents who applied to a university hospital with suicide attempt were evaluated and the majority of the cases were girls. Studies conducted in our country have found that girls attempted suicide more than boys.¹²⁻¹⁵ This may be because suicide attempts in women are more easily tolerated in our society and can be interpreted as a call to the environment. Moreover, depressive disorders are a risk factor for suicidal ideation and attempt, and depressive disorders are more common in girls than boys in adolescence and post-adolescence.¹⁶ On the other hand, comorbid alcohol use and aggression are more common in men, and men prefer more lethal methods that lead to completed suicides.^{1,17} It was also stated that men would not be exposed to humiliation from the environment as a result of such an incomplete suicide attempt.³

When suicide attempt methods were evaluated in the present study, the most common method of suicide attempt was by taking drugs overdose (63.3%). In studies conducted in our country and other countries, the most common method of suicide attempt was also the same.^{14,15,18} The most commonly preferred drug group for suicide was non-steroidal anti-inflammatory drugs, and this finding is consistent with the

Table 2. Psychiatric disorders of the subjects

Diagnoses	Number	Percentage (%)
Major depressive disorder	18	30.0
Anxiety disorder	10	16.0
Conduct disorder	10	16.0
Bipolar disorder	3	5.0
Attention deficit hyperactivity disorder	5	8.3
Dissociative disorder	2	3.3
Psychosis	1	1.7
Obsessive-compulsive disorder	1	1.7
Adjustment disorder	1	1.7

Table 3. Comparison of multiple suicide attempts vs single suicide attempts

	Multiple suicide attempts	Single suicide attempt	p*
Gender			
Girls n, (%)	15 (31.2)	33 (68.8)	0.511
Boys n, (%)	5 (41.7)	7 (58.3)	
Living place			
Living with family	13 (26)	37 (74)	0.012
Child welfare institution	7 (70)	3 (30)	
Substance use			
Yes	4 (80.0)	1 (20.0)	0.038
No	16 (29.1)	39 (70.9)	
Psychiatric disorder			
Yes	17 (40.5)	25 (59.5)	0.073
No	3 (16.7)	15 (83.3)	

*Chi-square test. Significant values are bolded in font

studies conducted in adolescents.^{13,18,19} Therefore, it was thought that drugs such as analgesics and anti-inflammatories, which are available in many homes and are easily accessible, pose a risk for suicide attempts, as they don't need to come with a prescription. On the other hand, a suicidal attempt with low lethality does not indicate low suicidal intention, especially in young children whose cognitive maturity is inadequate to formulate and execute a suicide plan. For an impulsive person if a lethal agent such as paracetamol or a firearm is present and accessible, an attempt even with relatively low intention may result in a medically serious or even fatal consequences. Therefore, it seems necessary to take any attempt seriously, even if it is not accompanied by a desire to die.

Conflict with the family was the most common reason for suicide attempts in this study. In studies conducted in our country on suicide attempts in adolescents, the most common cause was also conflict with the family.¹²⁻¹⁵ It was also reported that family conflict was associated with between 30% and 75% increased risk of suicidality.²⁰

According to the information obtained from the file notes of the cases, the most common psychiatric diagnosis was major depressive disorder, followed by anxiety disorder and conduct disorder. This finding is consistent with studies on adolescent suicide conducted in our country.^{12,13,18} Empirical studies have shown that the factor most associated with suicide in girls was major depression (increases risk up to 20 times), followed by previous suicide attempts. In men, it was stated that previous suicide attempts were the most associated factor with suicide risk, followed by depression, alcohol and substance use, and destructive behaviors.²¹⁻²³ In our study, although it was not significant, the rate of multiple suicide attempts was higher in patients with comorbid psychiatric diseases than those without a diagnosis of psychiatric disease. However, previous studies reported that the single most important risk factor for completed suicide was a previous suicide attempt, even after controlling the psychiatric disorder.¹ On the other hand, considering that the chronicity, severity and complexity of psychiatric disorder (for example, comorbidity) are also related to suicide risk,²² it seems likely that early diagnosis and early symptomatic relief are important components of the prevention and treatment of adolescent suicidal behavior. In the present study, multiple suicide attempts were also significantly associated with substance use and staying in child welfare institution. Clinicians should pay more attention to children with these risk factors in terms of multiple suicide attempts.

In this study, it was found that 45% of the cases did not apply to our child and adolescent psychiatry outpatient clinic that recommended during discharge from the emergency service.

In a study conducted in our country, this rate was 71%.¹³ In another study, it was stated that 70.4% of the cases did not apply to outpatient clinic control that was recommended.¹⁸ Considering that previous suicide attempts are an important risk factor for subsequent suicides, the low rate of referral to child psychiatry outpatient clinic control is a major problem.

Study Limitations

Since the data of this study were obtained retrospectively from patient files, data such as examination findings could not be included due to inadequate records. In addition, since the records of the patients in this study were only in a university hospital and contained data for a short period of three years, it is not possible to generalize the results of the study to all emergency psychiatric patients.

Conclusion

Although it is not possible to completely prevent suicide attempts, repetitive suicide attempts and attempts resulting in death can be reduced by evaluating the risk factors of suicide attempts and conducting studies on this subject. In the present study, although it was not significant, the rate of multiple suicide attempts was higher in patients with comorbid psychiatric diseases than those without a diagnosis of psychiatric disease. Multiple suicide attempts were also associated with substance use and staying in child welfare institutions. In addition, only 55% of the cases applied to the child psychiatry outpatient clinic, which was recommended during discharge. Therefore, parent education programs should be organized for the parents of adolescents to increase awareness about suicide, and also strategies related to health measures should be developed in adolescents who attempt suicide.

Ethics

Ethics Committee Approval: The study was approved by the Institutional Ethics Committee of Akdeniz University Faculty of Medicine (date: 23.12.2020, number: 953).

Informed Consent: As this is a retrospective study, the information is received from the medical records of the hospital. Therefore, there is no informed consent received from the cases individual.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: Ö.G.Ç., Design: Ö.G.Ç., A.Ö., Data Collection or Processing: M.E.G., A.Ö., Analysis or Interpretation: M.E.G., A.Ö., Ö.G.Ç., Literature Search and Writing: Ö.G.Ç., M.E.G., A.Ö.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Bridge JA, Goldstein TR, Brent DA. Adolescent suicide and suicidal behavior. *J Child Psychol Psychiatry*. 2006;47:372-94.
2. Heron M, Smith B. Deaths: leading causes for 2009. National vital statistics reports. Hyattsville, MD: Division of Vital Statistics National Center For Health Statistics. 2012.
3. Wunderlich U, Bronisch T, Wittchen HU, Carter R. Gender differences in adolescents and young adults with suicidal behaviour. *Acta Psychiatr Scand*. 2001;104:332-9.
4. Nock MK, Green JG, Hwang I, McLaughlin KA, Sampson NA, et al. Prevalence, correlates, and treatment of lifetime suicidal behavior among adolescents: results from the National Comorbidity Survey Replication Adolescent Supplement. *JAMA Psychiatry*. 2013;70:300-10.
5. Nock MK, Borges G, Bromet EJ, Cha CB, Kessler RC, et al. Suicide and suicidal behavior. *Epidemiologic Reviews*. 2008;30:133-54.
6. Kennebeck S, Bonin L, Brent D, Solomon D. Suicidal behavior in children and adolescents: Epidemiology and risk factors. *UptoDate* [online database]. Last updated. 2017;21.
7. Miller AB, Prinstein MJ. Adolescent suicide as a failure of acute stress-response systems. *Annu Rev Clin Psychol*. 2019;15:425-50.
8. Carballo J, Llorente C, Kehrmann L, Flamarique I, Zuddas A, et al. Psychosocial risk factors for suicidality in children and adolescents. *Eur Child Adolesc Psychiatry*. 2020;29:759-76.
9. Bilsen J. Suicide and Youth: Risk Factors. *Front Psychiatry*. 2018;9:540.
10. King KA, Vidourek RA, Yockey RA, Merianos AL. Impact of parenting behaviors on adolescent suicide based on age of adolescent. *Journal of Child and Family Studies*. 2018;27:4083-90.
11. King CA, Grupp-Phelan J, Brent D, Dean JM, Webb M, et al. Predicting 3-month risk for adolescent suicide attempts among pediatric emergency department patients. *J Child Psychol Psychiatry*. 2019;60:1055-64.
12. Aktepe E, Kandil S, Göker Z, Sarp K, Topbaş M, et al. Sociodemographic Features of Child and Adolescents Admitted to Karadeniz Technical University Medical Faculty Child Outpatient Clinic with Suicide Attempt. *TAF Preventive Medicine Bulletin*. 2006;5:44-54.
13. Bilginer C, Cop E, Goker Z, Hekim O, Sekmen E, et al. Overview of young people attempting suicide by drug overdose and prevention and protection services. *Dusunen Adam The Journal of Psychiatry and Neurological Sciences*. 2017;30:243-50.
14. Gokcen C, Koşlu R. Evaluation of Cases Under 18 Years Admitted for Attempted Suicide to the Emergency Service and Transferred to the Psychosocial Support Unit. *Eurasian J Emerg Med*. 2011;10:18.
15. Sayar MK, Öztürk M, Acar B. Psychological Factors in Adolescent Drug Overdosers. *Klinik Psikofarmakol Bülteni*. 2000;10:133-8.
16. Allison S, Allison S, Roeger L, Martin G, Keeves J. Gender differences in the relationship between depression and suicidal ideation in young adolescents. *Aust N Z J Psychiatry*. 2001;35:498-503.
17. Brent DA, Baugher M, Bridge J, Chen T, Chiapetta L. Age- and sex-related risk factors for adolescent suicide. *J Am Acad Child Psychiatry*. 1999;38:1497-505.
18. Ünlü G, Aksoy Z, Ersan EE. Evaluation of child and adolescents with attempted suicide. *Pamukkale Tıp Dergisi*. 2014;176-83.
19. Doğan M, Öztürk S, Feyza E, Demirci E, Öztürk MA. Evaluation of Child and Adolescents who Attempted Suicide. *Bozok Tıp Dergisi*. 2018;8:30-4.
20. O'Connor RC, Robb KA. Identifying suicide risk factors in children is essential for developing effective prevention interventions. *Lancet Psychiatry*. 2020;7:292-3.
21. Hallfors DD, Waller MW, Ford CA, Halpern CT, Brodish PH, et al. Adolescent depression and suicide risk: association with sex and drug behavior. *Am J Prev Med*. 2004;27:224-31.
22. Lewinsohn PM, Rohde P, Seeley JR. Adolescent suicidal ideation and attempts: Prevalence, risk factors, and clinical implications. *Clin Psychol*. 1996;3:25-46.
23. Shaffer D, Gould MS, Fisher P, Trautman P, Moreau D, et al. Psychiatric diagnosis in child and adolescent suicide. *Arch Gen Psychiatry*. 1996;53:339-48.