

## Presentation of Suicide Attempts to the Emergency Department: Clinical Features of Early and Late Adolescents

Özkiyım Girişimi Nedeni ile Acil Servise Başvuru: Erken ve Geç Ergenlerin Klinik Özellikleri

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### Abstract

**Objective:** The purpose of this study was to compare the demographic and clinical features of early and late adolescents attempted suicide.

**Material and Methods:** A cross-sectional study was conducted to examine the clinical characteristics of adolescents who attempted suicide and presented to our Emergency Department (ED) from January 2009 to December 2011. Patients were divided into two groups; Group 1 consisted of early adolescents (10-14 years) and Group 2 consisted of late adolescents (15-18 years).

**Results:** A total of 22 (34%) patients were early adolescents and 42 (66%) were late adolescents. Thirty-one (48%) of the 64 patients were male, and 33 (52%) were female ( $p=0.730$ ). We found a statistically significant difference between early and late adolescents in time to ED admission ( $p<0.001$ ), length of stay ( $p=0.040$ ), having parents who were divorced or had a history of multiple marriages ( $p<0.001$ ), prior suicide attempts ( $p<0.001$ ), lower economic status ( $p=0.013$ ), and mortality rate ( $p=0.008$ ). Self cutting and expressed dissatisfaction with their bodies were significantly more common in late adolescents ( $p<0.001$ ,  $p=0.006$ , respectively).

**Conclusion:** Some families may be inadequate for the normal development of children. Psychological and social support units must be installed by governments. (*JAEM 2013; 12: 185-8*)

**Key words:** Suicide, early adolescent, late adolescent, emergency department

### Özet

**Amacı:** Bu çalışmanın amacı özkiyım girişiminde bulunan erken ve geç ergenlerin demografik ve klinik özelliklerini karşılaştırmak idi.

**Gereç ve Yöntemler:** Bu kesitsel çalışma Ocak 2009'dan Aralık 2011 tarihine kadar Acil Servisimize (AS) özkiyım girişimi ile başvuran ergenlerin klinik özelliklerini belirlemek için yürütüldü. Hastalar iki gruba ayrıldı; Grup 1 erken ergenlerden (10-14 yaş) ve grup 2 geç ergenlerden (15-18 yaş) oluşmaktaydı.

**Bulgular:** Hastaların 22'si (%34) erken, 42'si (%66) geç ergenler idi. Altmış dört hastanın 31'i (%48) erkek, 33'ü (%52) kadın idi ( $p=0.730$ ). Acil servise başvuru zamanı ( $p<0,001$ ), hastanede yatış süresi ( $p=0,040$ ), ayrılmış veya boşanmış ebeveynleri olması ( $p<0,001$ ), daha önceden özkiyım girişimi olması ( $p<0,001$ ), düşük ekonomik durum ( $p=0,013$ ) ve ölüm oranları ( $p<0,008$ ) erken ve geç ergenler arasında anlamlı derecede farklı idi. Kendini yaralama ve fiziksel görünümünden memnuniyetsizlik belirgin olarak geç ergenlerde yaygındı (sırası ile;  $p<0,001$ ,  $p=0,006$ ).

**Sonuç:** Bazı aileler, çocukların normal gelişimi için yetersiz kalabilir. Hükümetler tarafından sosyal ve psikolojik destek birimleri kurulmalıdır.

(*JAEM 2013; 12: 185-8*)

**Anahtar kelimeler:** Özkiyım, erken ergen, geç ergen, acil servis

### Introduction

The suicide rate among children and adolescents has increased worldwide over the past few decades (1). More than half of adolescents 13 to 19 years of age have suicidal thoughts, nearly 250,000 adolescents attempt suicide each year, and up to 10% of children attempt suicide sometime during their lives (2-4). The World Health

Organization (WHO) has estimated that by the year 2020, neuropsychiatric disorders will become one of the five most common causes of morbidity, mortality, and disability in children (5). Using WHO data, one source writes that among five-to-14-year olds, the mean annual suicide rates per 100,000 are 0.5 for girls and 0.9 for boys; among 15-to-24-year olds, these rates rise to 12 for girls and 14.2 for boys. Despite high prevalence and known risk factors, most suicidal

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adolescents do not access mental health care services. Suicidal adolescents may be less likely to seek help for mental illness and few suicide attempters receive appropriate assessment and follow-up care (6-8). Whereas many children and adolescents are at risk for suicide, few psychosocial treatment methods have been empirically validated as effective for its prevention (9). Herein, we aimed to compare the demographical and clinical characteristics of suicide attempts in early and late adolescents.

## Material and Methods

### Setting and patients

A retrospective and descriptive study was carried out considering socioeconomic, cultural and biological issues related to suicide attempts by self-cutting and intentional ingestion of drugs in the adolescent population at the Harran University Faculty of Medicine, Emergency Department (ED). For the retrospective chart review study, we collected data from our hospital's digital patient database over a 36-month period (January 2009 through December 2011). The study enrolled pediatric patients who presented to the ED of a tertiary care academic university hospital. The ED patient diagnosis registry was revised in relation to suicide attempt since the first contact and immediate management occur in this department. The parameters evaluated in the study were age, gender, hospital arrival time, length of stay in hospital, having parents with a history of divorce or multiple marriages, prior suicide attempts, lower economic status, mortality rates and attempted suicide with drugs or self-cutting. The search was performed by our authors. Early adolescence patients between 12-14 years old were classified into group 1, and late adolescence between 15-18 years old into Group 2. The study protocol was approved by the Ethical Committee of Harran University, Faculty of Medicine.

### Inclusions and exclusions criterions

A predetermined search strategy was planned before entering the archive to determine inclusion and exclusion criterion by our study authors. Patients younger than 18 years and diagnosed with self-cutting and using drugs, inclusive, were recruited within an urban, tertiary-care, academic ED with an annual patient volume exceeding 72.000 in 2011. Exclusion criteria in our study were as follows: 1) Patients who had incomplete data (data for some patients were incomplete because the ED stay of children is approximately 8-12 hours. This makes it difficult to follow-up on cases to obtain data); 2) Patients over 18 years old; 3) Adolescents who were injured in accidents and causes of accidental poisoning; 4) Patients who were transported to another hospital.

### Patient's management

The patients were treated in the ED and, if required, an evaluation was performed by medical staff, in services such as psychology, psychiatry, intensive care unit, along with a social work evaluation. After 8 to 12 hours of close monitoring and treatment in the ED, patients who had indications for hospitalization were transferred to the psychiatry or intensive care (poisoning due to using drugs) unit to continue their treatment. Management for patients with suicide attempts included psychotherapy, hospitalization, and psychopharmacologic intervention for selective underlying psychiatric disorders. Psychological support was given by psychiatrists, psychologists

and psychiatric nurses in the department of psychiatry of a tertiary care academic hospital.

### Statistical analysis

The Statistical Package for Social Sciences (SPSS) software version 11.5 was used for data analysis. The analyses were conducted using a 0.05 confidence level. Percentages, means, standard deviations, and medians were used in the descriptive statistics. For statistical analysis, Pearson Chi-Square test was used for categorical variables and the Mann-Whitney U-test for continuous variables. The Kolmogorov-Smirnov test was used for determining the difference of our small sample size. Age, hospital arrival time and length of stay did not show proportional distribution. For this reason, nonparametric tests were used. Mean values were calculated as the median±IQR.

## Results

As shown in Table 1, 22 (34 %) of 64 patients were early adolescents (12-14 years old, Group 1), and 42 (66%) were late adolescents (15-18 years old, Group 2). The median age of Group 1 age was 14.00±1.00 years and that of Group 2 was 16:00±1.25. Of the 64 patients, 33 (52%) were girls and 31 (48%) were boys, and the groups did not significantly differ in terms of sex ( $p=0.730$ ).

Time to emergency department (ED) admission in Group 1 was 5.00±2.75 hours, and that in Group 2 was 2.00±2.25 hours (Table 1;  $p<0.001$ ). The length of hospital stay of Group 1 was 11.50±2.00 days, and that of Group 2 was 4.00±4.25 days (Table 1;  $p=0.04$ ). Having parents with a history of divorce or multiple marriages was significantly more common among those in early adolescence (Table 1;  $p<0.001$ ). Prior suicide attempts, lower economic status, and mortality rates were also significantly different in early, as compared with late adolescents (Table 1;  $p<0.001$ ,  $p=0.013$ ,  $p=0.008$ , respectively). Of the 39 individuals who attempted suicide with drugs, 22 (56%) were early adolescents (Table 1). In contrast, self-cutting was significantly more common in late adolescents ( $p<0.001$ ). Nine participants, all of whom were late adolescents, expressed a sense of dissatisfaction with their body (e.g., lack of parental support, negative affect, restrictive diet, eating pathology, lack of peer support) (Table 1). We found a statistically significant difference between the two groups with respect to expressed dissatisfaction with their bodies ( $p=0.006$ ).

## Discussion

One World Health Organization source reports that the mean annual suicide rates per 100,000 are 0.5 for girls and 0.9 for boys among 5-to-14-year-olds (10). According to the American Academy of Child and Adolescent Psychiatry (AACAP), more girls than boys attempt suicide, but more boys complete the act (11-14). In the present study, 52% of the participants were female, and the age of our patients was similar to that of the samples used in other studies. Moreover, in the present study, females were more prevalent in the early- than the late-adolescent group. This result is probably associated with general risk factors, including onset of puberty, developmental stage, experiences with teasing, negative family and peer relationships, sociocultural norms, gender roles, and media influence.

Salient risk factors for adolescent suicide include a history of previous attempts, current suicidal ideation and depression, female sex, early pubertal development, alcohol abuse, low self-esteem, and

**Table 1.** Demographic and clinical characteristic of the Group 1 and Group 2 subjects

Characteristic	Group 1 (n=22)	Group 2 (n=42)	Statistical significance <sup>a,b</sup>
Age (years; median±IQR) <sup>a</sup>	14.00±1.00	16.00±1.25	p<0.001
<b>Admission time to ED</b>			
(Hours; median±IQR) <sup>a</sup>	5.00±2.75	2.00±2.25	p<0.001
<b>Length of stay in the hospital</b>			
(Days; median±IQR) <sup>a</sup>	11.50±2.00	4.00±4.25	p=0.04
Sex (Male/Female) <sup>b</sup>	10/12	21/21	p=0.730
<b>Having parents who weredivorced or had a history of multiple marriages</b>			
(Yes/No) <sup>b</sup>	17/5	6/36	p<0.001
<b>Having history of suicide</b>			
Attempts in family (Yes/No) <sup>b</sup>	9/13	12/30	p=0.318
Prior suicide attempts (Yes/No) <sup>b</sup>	15/7	1/41	p<0.001
Lower economic status (Yes/No) <sup>b</sup>	15/7	15/27	p=0.013
Hospitalization (Yes/No) <sup>b</sup>	17/5	26/16	p=0.214
<b>Type of suicide</b>			
(Drug Poisoning/Cutting) <sup>b</sup>	22/0	17/25	p<0.001
<b>Having expressed dissatisfaction</b>			
With their bodies (Yes/No) <sup>b</sup>	0/22	9/33	p=0.006
Mortality (Nonsurvivor/Survivor) <sup>b</sup>	5/17	1/41	p=0.008
For statistical analysis Mann-Whitney U Test <sup>a</sup> and Pearson Chi-Square tests <sup>b</sup> were used. ED: Emergency department			

single parents (14, 15). In our study, 23% of the cases had parents who had been divorced or married several times. We believe that the lower economic status leads to conflict within couples, and this situation affects children. Moreover, a significant number of patients who presented to the ED were in early adolescence. Early adolescents were affected by low economic status, which in turn was a predictor of suicidal attempts.

In a survey of over 13,000 adolescents in high school (ages 13 to 18) by the Centers for Disease Control and Prevention (CDC), it was noted that one suicide attempt leads to a 15 times increase in another attempt; 30% had 2 or 3 suicide attempts a year and 17% had 4 or more attempts in a year (14). Nearly 40% of individuals who complete suicide have visited an ED in the prior year (16). In this study, 31 (48%) participants had prior psychiatric problems (depression, etc.); 23 (74%) of them were early-adolescents and these children had attempted suicide previously, and/or had been treated with psychiatric medication.

It has also been previously reported that suicide is the second highest cause of death in adolescents 10-14 years old; 21.9% of the deaths in this age group are attributable to suicide (17). In our study, five of the six children who died were younger than 15. These results are similar to those of previous studies. Moreover, early adolescents usually did not call for help after attempting suicide and therefore waited significantly longer before arriving at a hospital.

Deliberate self-harm (DSH), an act in which an individual purposefully inflicts physical harm on his or her own body, may or may not reflect actual suicidal intent (18-20). Late adolescents are more aware than early adolescents are of the danger of DSH. Indeed, late adolescents used less lethal methods of DSH and were likely to call for help. This led to significantly shorter intervals between time of

attempt and time of hospital arrival in this group. Probably due to these factors, the mortality rate of late adolescents was lower.

The risk factors among adolescents for body dissatisfaction overlap with many of the risk factors for self-harm and suicide. Risk factors for body dissatisfaction include lack of parental support, negative affect, restrictive diets, eating pathology, and lack of peer support (21). Specific predictors of body dissatisfaction include elevated adiposity (body fat), perceived pressure to be thin, thin-ideal internalization, and social-support deficits (22). Nine late adolescents in the present study suffered from expressed dissatisfaction with their bodies. This age period constitutes the beginning of a developmental stage characterized by affective intensity in their incomplete self-control. This juxtaposition may render suicide attempts more likely.

#### Study Limitations

This study had several limitations. First; in the present study data were collected using a convenience sample of patients recruited from a single ED. Second; Responses, therefore, may not generalize to other patient populations or settings. It should be noted that this particular ED provided evaluations for psychiatric patients up to age 18 years only. Third; this study was designed as a retrospective study.

#### Conclusion

Having parents who are divorced or have a history of multiple marriages, prior suicide attempts, and lower economic status are predictors of suicide attempts in early adolescents. Additionally, the mortality rate from suicide is higher in early adolescents. On the other hand, self-harm and expressed dissatisfaction with their bodies are more common in late adolescents. The young generation is the

future of the community. Thus, it is important to identify the factors that lead members of this group to commit suicide. Greater understanding of this issue will help to enhance the mental health of the future generation.

#### Conflict of Interest

No conflict of interest was declared by the authors.

**Peer-review:** Externally peer-reviewed.

**Ethics Committee Approval:** Ethics committee approval was received for this study from the ethics committee of Harran University School of Medicine.

**Informed Consent:** Written informed consent was obtained from patients who participated in this study.

#### Author Contributions

Concept - M.T.G., H.K.; Design - M.T.G., M.Ö.E.; Supervision - H.K., Ö.S.; Data Collection and/or Processing - M.Z.T., H.B., L.S.; Analysis and/or Interpretation - M.T.G., H.K.; Literature Review - M.Ö.E., M.Z.T.; Writer - M.T.G., H.K.; Critical Review - M.T.G., Ö.S.

#### Çıkar Çatışması

Yazarlar herhangi bir çıkar çatışması bildirmemişlerdir.

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#### Yazar Katkıları

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