

Profile of Suicide Attempts in Adolescents; Demographic Features, Reasons and Risk Factors

Adölesanlardaki İntihar Girişimlerinin Profili; Demografik Özellikler, Nedenler ve Risk Faktörleri

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ABSTRACT

Objective: Suicide has dramatically increased in recent years and has become the second leading cause of death in adolescents. Poisoning due to consumption of drugs and toxic materials is the second leading route of suicide attempts among adolescents.

Material and Methods: We evaluated the demographic features, risk factors and reasons of suicide in 322 adolescents who attempt suicide by using drugs and poisonous materials.

Results: The mean \pm SD age of the patients was 15.37 ± 1.61 . The rate of suicide attempt was more common in females than males (83.5% vs. 16.5%). Personal factors were the major causes underlying adolescent suicide (in 72.1% of females and 79.2% of males $p = 0.284$). The most common personal factor was adolescent development problems in both sexes (28.57%). Multiple factors were found in 45.4% of female and 35.8% of male adolescents ($p = 0.202$).

Conclusion: Clarifying risk factors and identifying adolescents at high risk in our population will help in developing effective strategies for the prevention of adolescent suicide.

Key Words: Adolescents, Attempts, Behavior, Children, Risk factors, Suicide

ÖZET

Amaç: Son yıllarda intihar girişimi dramatik olarak artmaktadır ve adölesan ölümlerinin ikinci en sık nedeni haline gelmiştir. İlaç ve toksik madde kullanımına bağlı zehirlenme adölesanlardaki intihar girişimlerinin ikinci en sık aracıdır.

Gereç ve Yöntemler: İlaç ve zehirli madde kullanarak intihar girişiminde bulunan 322 adölesanın demografik özellikleri, intihar nedenleri ve intihar için risk faktörleri incelendi.

Bulgular: Hastaların ortalama \pm SD yaşı 15.37 ± 1.61 'di. İntihar girişimi oranı kızlarda erkeklere göre daha fazlaydı (%83.5 vs %16.5). Adölesan intiharlarının çoğunluğunda altta yatan neden kişisel faktörlerdi (kızlarda %72.1 ve erkeklerde %79.2 oranında, $p = 0.284$). Her iki cinsiyetteki en sık kişisel faktör adölesan gelişim problemleriydi (28.57%). Çoklu faktörler kızların %45.4, erkeklerin ise %35.8'inde bulunmaktaydı ($p = 0.202$).

Sonuç: Risk faktörlerinin aydınlatılması ve toplumdaki yüksek riskli adölesanların belirlenmesi, adölesan intiharlarının önlenmesi için efektif stratejilerin geliştirilmesine yardımcı olacaktır.

Anahtar Sözcükler: Adölesan, Girişim, Davranış, Çocuk, Risk faktörleri, İntihar

INTRODUCTION

Adolescent suicide is still an important public health problem all over the world. It is defined as the tragic action of killing oneself intentionally and voluntarily. Suicidal ideation refers to thoughts

of harming or killing oneself. Attempted suicide is a non-fatal, self-destructive action with intention to die. If this action is completed and proceeds to death, it is defined as suicide behavior. Suicidality refers to all suicide-related behaviors and thoughts including completing or attempting suicide (1,2).

Suicidal thoughts and suicidal behaviours start developing at the early adolescence stage and increase dramatically to reach their peak at late adolescence and early adulthood (3). Transition from ideation to plan and attempt occurs in 60% of cases within the first year after ideation onset (4).

The World Health Organisation (WHO) has reported that suicide is among the three leading causes of death for all ages. In recent years, the number of adolescent deaths due to suicide has been increased dramatically and become the second-leading cause of death in the 10-24 years age group (1,5-7).

Many factors affect adolescent suicide. Personal risk factors include male gender, mood disorders, psychosis, suicidal thoughts, problems with alcohol or other drug abuse, sexual orientation, posttraumatic stress disorder, panic attacks and difficulties in school. Family risk factors include family history of suicide or suicide attempts, parental mental health problems, impaired parent-child relationship and arguments with parents (7,8,11). Social and environmental risk factors include the presence of drugs or chemicals and easy access to firearms at home (7,10-11). They also include factors related to social isolation especially in homeless children, presence of emotional difficulties, and stressful life events that affect the mood of the adolescent (8-11). Frequently, suicidal behaviours in adolescents appear to be the result of adverse life sequences in which multiple risk factors from these domains combine to increase risk of suicidal attempt. When multiple risk factors are present, the risk of suicide increases further (8). These risk factors should be investigated at both acute care and routine care visits. Knowledge of risk factors and usage of appropriate techniques may assist in identifying potential suicidal adolescents (12).

Firearms, hanging, and poisoning are the most frequent methods of attempting suicide among adolescents (5,13).

Suicidal thoughts are reported to be more common in adolescent girls than in adolescent boys (5,13). In Western societies, more girls attempt suicide than boys. However, boys are 3-4 times more successful than girls in completing their attempt (5,14).

Suicidal behavior tends to be recurrent (17). Girls are at higher risk of repetition than boys. More girls attempt, but more boys complete suicide (14,16). Recurrent suicide attempts are associated with higher rates of psychiatric problems like major depression, hopelessness and emotional problems (15,16).

The main target of effective prevention of adolescent suicide is to reduce the risk factors. Effective treatment of underlying psychiatric disorders that lead to suicidal feeling and behavior is essential in preventing child and adolescent suicides (5).

The aim of our present study was to identify the profile of adolescent suicide and clarify the features, risk factors and reasons of underlying attempts.

MATERIALS and METHODS

This cross-sectional retrospective study was conducted at the emergency service of Ankara Pediatric Hematology and Oncology Research and Training Hospital between March 2012 and December 2013. Our data were collected from hospital records and were evaluated by medical doctors. Three hundred and twenty two adolescents who ingested drugs or toxic materials for a suicide attempt were included in our study. Suicide attempts due to firearms, hanging and jumping off high places were excluded from our study.

Hospital record forms included gender, age, marital status, profession and educational status of service users. They also included the types and reasons of suicide, history of previous suicide attempt, family history of suicide, history of psychological diagnosis or treatment in the past 6 months and psychiatric consultations before discharge.

We grouped risk factors as follows: - Family problems, violence, conflicts and death of a relative were grouped as family factors. 2- Economic problems, chronic disease, alcohol and drug abuse, sexual problems, sexual abuse, test anxiety, psychological problems, adolescent development problems and emotional difficulties were grouped as personal factors. 3- Social isolation, homelessness, rape, unwanted marriage, communication problems, problems at work and school problems were grouped as social and environmental factors. Those who had more than one factor were grouped as multifactorial.

The study was approved by the Medical Ethics Committee of Ankara Pediatric Hematology and Oncology Research and Training Hospital.

The SPSS (Statistical Package for Social Sciences) for Windows 18.0 programme was used for statistical analysis. All data were entered by social workers into a database and were verified by a second independent person. The variables were investigated using visual (histograms, probability plots) and analytical methods to determine whether or not they were normally distributed. Data were presented as mean±S.D. for normally distributed variables and as median, (maximum-minimum) for skew distributed continuous variables. Categorical variables were shown as frequencies. Pearson's χ^2 method was performed for categorical variables for univariate analysis. Independent Samples t test was used for normally distributed variables and the Mann-Whitney U test for not normally distributed variables. Two-sided values of $p < 0.05$ were considered as statistically significant.

RESULTS

A total of 322 patients consisting of 269 females (83.5%) and 53 males (16.5%) were included in this study. The mean±SD age was 15.3±1.61 in females and 15.6±1.58 in males.

Demographic properties of the patients are presented in Table I.

Distribution of factors according to gender is presented in Table II. The major factors underlying adolescent suicide were personal factors in 72.1% of the females and 79.2% of the males ($p=0.284$). Family-related factors were more common in females than males (59.9% vs. 43.4%, $p=0.027$) and arguments between parents and family conflicts were the prominent family factors. A multifactorial etiology was found in 45.4% of female and 35.8% of male adolescents ($p=0.202$). Personal factors were accompanied by family-related factors in 49% of females and 35.7% of males and environmental factors in 12.9% of females and 11.9% of males. Personal and family-related psychopathological factors are shown in Table III.

DISCUSSION

Adolescent suicide is still a global public health problem. In our present study, we evaluated the demographic features, predisposing risk factors and reasons underlying adolescent suicide attempts.

Consistent with past population-based studies of adolescent suicide, we found that the rate of suicide attempt was higher in female than in male adolescents (83.5% vs. 16.5%) (14-16,19,20). Strandheim et al. (21) administered a questionnaire about suicidal thoughts and found that out of 2399 students, 408 students (17%) reported having had suicidal thoughts; the prevalence was 19.5% in girls and 14.2% in boys. However, Lewinsohn et al. (15), in a previous study on adolescents with major depressive disorders, found that by the age of 19 years the suicide attempt hazard rate for female adolescents dropped to a level comparable with that of male adolescents. They also deduced that the gender differences may be related to different underlying causes and the fact that depressive states and anxiety are less frequent among boys than girls (15).

A higher proportion of our patients were young (mean age±SD 15.31±1.61 years), females ($n=269$; 83.5% and unmarried ($n=312$; 96.9%). These findings are consistent with Nock et al.'s study that was conducted in 17 countries and found that the majority of suicide attempts were among unmarried, young females (4). They also found that across all countries, less educated adolescents and those complaining of mental disorders were more prone to suicide attempts than others. Unlike that study, the majority of our adolescents were high school students ($n=181$; 56.2%), and had no history of previous psychological diagnosis, and mental or mood disorders ($n=297$; 92.2%)

We also found that family-related factors were more common in females (59.9% vs. 43.4%, $p=0.027$). Arguments with parents and family conflicts were the prominent family-related risk factors in our present study. Spirito et al. (9) found a significant

degree of individual and family dysfunction among adolescents attempting suicide and a strong evidence for the specificity of this dysfunction to suicide attempts was found in those complaining of family conflicts. Breton et al. (22) reported that fight with parents and the end of a relationship were the most common triggers for suicidality among adolescents.

Gould et al reported that more than 90% of youth have had at least one major psychiatric disorder before their suicide attempt (6). In the same field, Beautrais et al. (13) Brent et al. (11) and Groholt et al. (24) reported that an average of 60% of

Table I: Demographic properties of adolescents.

Properties of adolescents		Number (%)
Sex	Female	269 (83.5)
	Male	53 (16.5)
Age groups (years)	10-12	17 (5.3)
	13-15	137 (42.5)
	15-18	168 (52.2)
Educational status	No education	2 (0.6)
	Elementary school	139 (43.2)
	High school	181 (56.2)
Marital status	Married	10 (3.1)
	Unmarried	312 (96.9)
Employment	Employed	28 (8.7)
	Unemployed	294 (91.3)
Level of personal or family income	Low	132 (41.0)
	Middle	178 (55.3)
	High	12 (3.7)

Table II: Distribution of factors according to gender.

Factors	Female	Male	P value
Family-related factors	59.9%	43.4%	0.027
Personal factors	72.1%	79.2%	0.284
Environmental factors	15.6%	17.0%	0.803
Multifactorial	45.4%	35.8%	0.202

Table III: Psychopathological properties of adolescents.

Properties of adolescents		Number (%)
History of previous suicidal attempt	Yes	56 (17.4)
	No	266 (82.6)
History of previous psychological diagnosis	Yes	25 (7.8)
	No	297 (92.2)
Psychotherapy in past 6 months	Yes	63 (19.6)
	No	259 (80.4)
Family history of suicide	Yes	24 (7.5)
	No	298 (92.5)

young adolescent suicide victims had psychopathology (8,23). Depressive disorders were found in 49% to 64% of victims (8,25). In our present study, we found that the major factors underlying adolescent suicide were personal factors in 72.1% of females and 79.2% of males ($p=0.284$) and adolescent development problems were the major factors in both sexes (28.57%). Unlike the previous studies, the history of previous psychological diagnosis and psychotherapy in past 6 months were found only in 7.8% and 19.6% respectively.

Miranda et al. (17) reported that suicidal behaviour in youth tends to repeat itself, and up to 42% of adolescents who attempted suicide will make another attempt over the subsequent 2 years. The same author deduced from another study that recurrent suicide attempts were associated with higher rates of psychiatric problems like major depression, hopelessness and emotional problems (18). Boeninger et al. (16) found that girls are at higher risk of suicide repetition than boys (17). We found that only 17.4% adolescent had a history of previous suicidal attempts, and girls (87.5% vs. 12.5% $p = 0.379$) predominate boys. 78.6% of those adolescents had personal factors underlying their recurrent attempts, but unlike the previous studies only 25% of recurrent attempts had a history of previous psychological diagnosis, and about 53.6% of cases had a history of psychotherapy in the past 6 months.

Multiple factors were found in 45.4% of female and 35.8% of male adolescents ($p=0.202$). Personal factors were accompanied by family factors in 49% of females and 35.7% of males and environmental factors in 12.9% of females and 11.9% of males. Evidence from past research supported that multiple factors rather than any single condition are strongly associated with suicide attempts and when multiple risk factors are present, the risk of suicide increased further (8).

In our present study, we included suicide attempts due to consumption of drugs and toxic materials and excluded those due to hanging, firearms and jumping off high places. This was due to the fact that traumatic patients are directly referred to trauma emergency services at other hospitals in Ankara. Nevertheless, data about psychiatric consultations provided to patients before discharge are limited and the hospital records were incomplete. Therefore, the information that we have found was not suitable for any statistical analysis. The investigation of these limitations and other factors will provide important direction and guidance for future research.

In our study, we found that suicidal attempts were more frequent among adolescent girls than boys and most strongly associated with personal factors in both sexes. Family-related factors were more prominent in girls than boys. Multiple factors rather than a single factor were strongly associated with increased suicide attempts in more than one third of our patients. Clarifying risk factors, identifying the potential suicidal adolescents, and improving access to health services and psychological support units are promising strategies for the prevention of adolescent suicide.

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