

**VIOLENCE, SUICIDE BEHAVIOR AND RELATED FACTORS IN ADOLESCENTS IN  
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**ABSTRACT**

**Objective:** In this study, it was aimed to evaluate violence, suicide behaviour and related factors in adolescents in Mersin University. **Method:** The data of the cross-sectional study was taken from Risky Behaviours Project in Adolescents in Mersin University between September 2015 and May 2016. The population was 21230 students, the minimum sample size was calculated as 1017 people, it was decided to participate 1100 people. 1059 people have been reached. Permissions has been obtained from Mersin University Clinical Research Ethics Committee and Mersin University Rectorate. A questionnaire including sociodemographic characteristics and risky behaviours was applied. Chi-square and binary logistic regression analysis tests were used. **Results and Discussion:** The mean age was  $18.9 \pm 0.1$  years. The results revealed that violence behaviour in the boys was 2.1 times higher than in girls; in students with bad family relations was 2.0 times higher than those who were good; in students who have tried tobacco product, alcohol and addictive substance, was 1.9, 2.2 and 2.4 times higher than those who not tried, respectively. 25 students (2.5%) reported suicide. Suicide attempt in students with bad family relations was 3.2 times higher than those who were good and in students who have tried alcohol was 5.3 times higher than who not tried. **Conclusion:** Increase the level of the education of the father and prevention of trying addictive products by adolescents is important in terms of protecting adolescents from violent behaviour and suicide attempts.

**KEYWORDS:** Adolescent, violence behaviour, suicide attempt.**1. INTRODUCTION**

Violence is defined by the World Health Organization as “the intentional use of physical force or power threatened or actual, against oneself, another person or against a group or community which either results in or has a high likelihood or resulting in injury, death, psychological harm, maldevelopment or deprivation”.<sup>[1]</sup>

The World Health Organization (WHO) defines adolescents as those people between 10 and 19 years of age.<sup>[2]</sup> The world is home to 1.2 billion adolescents between the ages of 10 and 19.<sup>[3]</sup> Adolescence is expressed as the transition period from childhood to adult life, where the last rapid physical growth, sexual development and psychosocial maturation takes place.<sup>[4]</sup>

Adolescents are often thought of as a healthy group. However, it has been reported that many adolescents die prematurely because of other preventable or treatable diseases such as accident, suicide, violence.<sup>[2]</sup> Unprotected and early sexual intercourse, alcohol and cigarette smoking, aggressive behavior and frequent fighting, carrying gun or wounded tool, driving car and

trying to lose weight is reported as risky behaviors that lead to adolescent health problems.<sup>[4]</sup>

Violence among adolescent males is one of the leading cause of death. According to WHO, interpersonal violence causes 43% of all adolescent male deaths.<sup>[5]</sup> Violence does not only emerge as physical violence, but 1 out of 10 girls under 20 years of age reported that they have been exposed to sexual violence.<sup>[2]</sup>

Self-harm is often seen in late adolescence. Deaths related to suicide and accidental self-harm have been reported as the third cause of adolescent deaths and the second cause of girl adolescent deaths, in 2015. It is thought that 67,000 adolescents died in the world for this reason. Deaths related to suicide and accidental self-harm are stated as the first cause of adolescent deaths in Europe and second cause of adolescent deaths in Southeast Asia.<sup>[6]</sup> The highest suicide rate in 2015, according to the Turkey Statistical Institute data have been reported in adolescents 15-19 years old.<sup>[7]</sup>

The five important factors determining the frequency of violence in young people's lives are exposure to violence in the media, carrying weapons, bullying behaviors, joining gangs, and substance abuse.<sup>[8]</sup>

In this study it was aimed to evaluate violence, suicide behaviour and related factors in adolescents in Mersin University.

## 2. MATERIALS AND METHODS

The cross-sectional study was conducted in Mersin University between September 2015 and May 2016. The data of the study was taken from Risky Behaviors Project in Adolescents in Mersin University. Permissions has been obtained from Mersin University Clinical Research Ethics Committee and Rectorate of Mersin University.

The population of the research was 21230 students studying at 32 different faculties, colleges and vocational schools (13 Faculties, 8 Colleges, 11 Vocational schools) in Mersin University. With 50% Prevalence,  $\pm 3$  Standard error and 95% confidence interval, the minimum sample size was calculated as 1017 people by using epi-info program. It was decided to include 1100 people in the study. 1059 people have been reached.

Inclusion criterias were being registered to Mersin University, being a citizen of the Republic of Turkey, not being a language problem and being in the 16-19 age range. As we aimed to reach the adolescent age group who were studying at the university, we decided to include preparatory and first year students from departments that have preparatory class, first and second grade students from departments that don't have preparatory class in the study.

Schools were stratified according to the number of students, including faculties, colleges and vocational schools. 726 students (66%) from vocational schools, 319 students (29%) from faculties and 55 students (5%) from colleges were decided to include.

The departments of Vocational Schools, Faculties and Colleges were ranked within themselves. The main and spare departments to be included in the study were selected using random numbers table.

**Vocational schools:** In order to represent the whole province, 7 of 11 vocational schools were selected, 3 of them were centers and 4 of peripherals. The distribution of the 726 students, which were planned to be taken, was weighted according to the existing schools.

**Faculties:** In total, 6 out of 11 faculties that have students enough from 13 faculties were determined using a random number table. The distribution of the 319 students planned to be taken was weighted according to the existing schools.

**Colleges:** One of eight colleges was chosen using a random number table. 55 students (5%) were decided to take. For the probability that the number of students could not be provided, one replacement school was determined using the random numbers table.

A questionnaire including sociodemographic characteristics of the families and students, and risky behaviours of students was applied to the students. The pilot study was performed in a group of 20 people who were not included in the study. The necessary corrections were made after the pilot study.

Verbal consent was obtained from the students before the questionnaires were distributed. It was provided to fill out the forms themselves by distributing the questionnaire forms to the students who are in compliance with the inclusion criteria and who are volunteers. To ensure the privacy of the students, the questionnaires were filled by students in files with covers and the forms were taken with closed envelopes.

The dependent variables of the study were violent behaviors in adolescents. The independent variables of the study were gender, department, the grade, place of residence, family type, education of parents, social security, perception of income, relationship with family.

Students or groups unpleasant behavior or words to other students in the study (mockery, intimidation, deliberate exclusion, profanity etc.) grouped as "verbal discussion". In the last 12 months, at least once a physical fight and bringing a knife or stick-like tool to the school were grouped as "violent behavior". In the last 12 months, attempted suicide at least once was evaluated as "suicide attempt". Smoking and hookah trial behavior was grouped as "tobacco trial". Colleges and vocational schools grouped as "vocational school".

Data was entered into the computer. Quality control was done. Mean and standard deviation values were given as descriptive statistics in data analysis. Chi-square and binary logistic regression analysis were performed for categorical variables.  $p < 0.05$  was considered significant.

## 3. RESULTS

A total of 1059 students with a mean age of  $18.9 \pm 0.1$  years (min=17.0, max=19.0) were included in our study.

563 (53.3%) of students were girl and 515 (48.8%) of them were living with their family. 771 (72.8%) of the students were studying at the vocational school and 500 (47.2%) of them were in first grade. Of the participants, 816 (79.4%) had a nuclear family and 594 (56.6%) have good family relationship. 551 (53.1%) of the students stated that the income was insufficient. 456 of the mothers (43.2%) and 382 of the fathers were primary school graduates. 974 (93%) of students had social security. (Table 1).

546 students (51.9%) spent most of their childhood in the city center, 346 students (32.9%) in the district center and 161 students (15.3%) in the village. Of the mothers, 29 (2.8%) were retired, 132 (12.8) were working and 873 (84.4%) were housewives / unemployed. Of the fathers,

64 (6.4%) were not working, 198 (19.9) were retired and 731 (73.6%) were working. While 258 (24.5%) of the students answered yes to the question of whether there are girls / boyfriends, 794 (75.5%) of them answered no.

**Table 1: Some sociodemographic characteristics of the students.**

Variables	Number	%
<b>Gender (n=1057)</b>		
Girl	562	53.2
Boy	495	46.8
<b>Department (n=1059)</b>		
Faculty	288	27.2
Vocational School	771	72.8
<b>Grade (n=1059)</b>		
Preparatory	74	7.0
First grade	500	47.2
Second grade	485	45.8
<b>Place of residence (n=1056)</b>		
Alone or with home mate	190	18.0
With family	515	48.8
Student residence	351	33.2
<b>Family type (n=1028)</b>		
Nuclear family	816	79.4
Extended family	212	20.6
<b>Education of mother (n=1055)</b>		
Illiterate	101	9.6
Literate	65	6.2
Primary school	456	43.2
Secondary school	196	18.6
High school	186	17.6
University	51	4.8
<b>Education of father (n=1051)</b>		
Illiterate	29	2.8
Literate	31	2.9
Primary school	382	36.3
Secondary school	251	23.9
High school	245	23.3
University	113	10.8
<b>Social security (n=1047)</b>		
Yes	974	93
No	73	7.0
<b>Perception of income(n=1038)</b>		
Sufficient	487	46.9
Insufficient	551	53.1
<b>Family relationship (n=1049)</b>		
Good	594	56.6
Moderate	363	34.6
Bad	92	8.8

While 520 of the students (49.3%) did not have any verbal discussion, 226 (21.4%) said that they lived at least once a month. 94 (8.9%) of the students stated that they brought a damaging tool to the school in the last 12 months. This rate was 61.7% for boys and 38.3% for girls. These tools are indicated as knives, knives, pepper gas, stick, butterfly, rambo knife, gun, rotary knife, electroshock. In the last 12 months, 147 of students

(13.9%) stated that they had been involved in physical fight at least once while 909 (86.1%) stated that they had never been involved in a physical fight. 44 students (5%) reported physical violence by their girlfriend or boyfriend. 25 (56.8%) of them were girls and 19 (43.2%) were boys. 25 students (2.5%) reported suicide attempt. (Table 2).

**Table 2: The frequency of the risk of violent behavior and suicide attempts of students.**

Variables	Boy		Girl		Total	
	Number	%*	Number	%*	Number	%**
<b>Verbal discussion (n=1054)</b>						
Never	223	42.9	297	57.1	520	49.3
Less than a month	154	50.0	154	50.0	308	29.2
At least a month	116	51.3	110	48.7	226	21.4
Total	493	46.8	561	53.2	1054	100.0
<b>Bringing a damaging tool to school (n=1053)</b>						
<b>Bringing</b>	58	61.7	36	38.3	94	8.9
Not bringing	436	45.5	523	54.5	959	91.1
Total	494	46.9	559	53.0	1053	100.0
<b>Physical fight (n=1056)</b>						
Yes	102	69.4	45	30.6	147	13.9
No	393	43.2	516	56.8	909	86.1
Total	495	46.9	561	53.1	1056	100.0
<b>Physical violence from the girlfriend/boyfriend (n=1008)</b>						
Yes	19	43.2	25	56.8	44	5.0
No	393	46.7	449	53.3	842	95.0
Total	412	47.0	474	53.0	886	100.0
<b>Suicide attempt (n=1008)</b>						
Yes	11	44.0	14	56.0	25	2.5
No	463	47.1	520	52.9	983	97.5
Total	474	47.0	534	53.0	1008	100.0

\* line percentage

\*\* column percentage

We found that violent behavior in boys was 2.1 times higher than in girls and in those living in extended family was 1.6 times higher than in nuclear family. Violent behavior in students with bad family relations was 2

times higher than those who were good. It was found that the students who tried tobacco, alcohol and addictive substance, showed 1.9, 2.2 and 2.4 times greater violence behavior than those who did not try. (Table 3).

**Table 3: Factors related to violence behavior.**

Variables	B	OR	%95 CI	p
<b>Gender</b>				
Girl		1.0		
Boy	<b>0.75</b>	<b>2.1</b>	<b>1.38-3.29</b>	<b>0.01</b>
<b>Family type</b>				
Nuclear family		1.0		
Extended family	<b>0.48</b>	<b>1.6</b>	<b>1.06-2.46</b>	<b>0.02</b>
<b>Family relationship</b>				
Good		1.0		
Moderate	0.31	1.4	0.92-2.04	0.12
Bad	<b>0.69</b>	<b>2.0</b>	<b>1.11-3.59</b>	<b>0.02</b>
<b>Tobacco trial</b>				
Not trying		1.0		
Trying	<b>0.62</b>	<b>1.9</b>	<b>1.11-3.11</b>	<b>0.02</b>
<b>Alcohol trying</b>				
Not trying		1.0		
Trying	<b>0.79</b>	<b>2.2</b>	<b>1.43-3.41</b>	<b>&lt; 0.01</b>
<b>Addictive substance trial</b>				
Not trying		1.0		
Trying	<b>0.89</b>	<b>2.4</b>	<b>1.13-5.31</b>	<b>0.02</b>
<b>Constant: -0.827</b>				

The logistic regression was used to determine the significant parameters in chi-square analysis of suicide

attempt. Suicide attempt in students with bad family relations was 3.2 times higher than those who were good.

In students who tried alcohol, the suicide attempt was 5.3 times higher than those not tried. The fact that the father

was educated in primary school and higher was found to be protective from suicide attempts. (Table 4)

**Table 4: Factors related to suicidal behavior.**

Değişkenler	B	OR	%95 GA	p
<b>Family relationship</b>				
Good		1.0		
Moderate	0.23	1.3	0.48-3.29	0.64
<b>Bad</b>	<b>1.17</b>	<b>3.2</b>	<b>1.07-9.69</b>	<b>0.03</b>
<b>Alcohol trial</b>				
Not trying		1.0		
Trying	<b>1.68</b>	<b>5.3</b>	<b>1.41-20.25</b>	<b>0.01</b>
<b>Education of father</b>				
Illiterate		1.0		
Literate	-0.52	0.6	0.95-3.71	0.58
Primary school	-2.78	0.1	0.01-0.33	<0.01
Secondary school	-1.86	0.2	0.03-0.74	0.02
High school	-2.82	0.1	0.01-0.36	<0.01
University	-1.72	0.2	0.03-0.99	0.05
<b>Constant: -3.643</b>				

#### 4. DISCUSSION

Our study was carried out in the university adolescents aged 16-19 years. Similar studies with the same group could not be reached in the literature, and the findings were discussed with studies from the closest age group, in high school adolescents and university students.

Violence behaviors have high rates in adolescents. It is thought that these behaviors will pose a risk for the development of adolescents and will have negative consequences for both adolescence and adulthood.<sup>[9]</sup>

When the frequency of verbal discussion of adolescents was evaluated, this rate was reported as 44.7% in high school adolescents in a study conducted in Iran.<sup>[10]</sup> In a study at high school adolescents in Mersin, the frequency of verbal discussion was reported to be 63.2%.<sup>[11]</sup> In our study, this rate was 50.6%.

When the frequency of bringing damaging tools to the school is examined; it was reported that, in a study in the US, 3.8% of the students and in a study conducted by Camur et al in university students, 10% of the students were bringing damaging tools to the school.<sup>[12, 13]</sup> In our study, we found this rate 8.9%.

According to a study conducted with data from 27 countries, the prevalence of getting involved physical fights in adolescents has been reported between 15.9% and 57.7%.<sup>[14]</sup> This rate was reported as 10.1% in a study in university students, 26.4% in high school adolescents in Edirne, 29.6% in high school students in Mersin, 31.0% in high school adolescents in Cankiri and 50% in Kocaeli.<sup>[13,15,11,16,17]</sup> Consistent with these results, we found that the 13.9% of students had a physical fight in our study.

In the Youth Risk Behavior Surveillance study conducted by CDC (Center for Disease Control and Prevention), it was reported that 8% of young people stated that they were exposed to physical violence from their girlfriend/boyfriend.<sup>[12]</sup> In the studies in Turkey, this rate reported as 4.7% in high school adolescents in Edirne and 13.4% in university students.<sup>[15,18]</sup> In our study 4.2% of participants reported that they were exposed to physical violence from their girlfriend/boyfriend.

The rate of suicide attempts in last 12 months was reported as 1.9% in a study conducted at a university in the United States, 7.4% in the "Youth Risk Behavior Surveillance" conducted by CDC and 7.7% in a study in Iran.<sup>[12,19,20]</sup> It was reported that the rates of suicide attempts in the last 12 month between 3.2% and 9.2% in the high school adolescent in Turkey.<sup>[15,16,17,24]</sup> In studies conducted in university students, this rate was reported as 1.3% and 4.4%.<sup>[21,23]</sup> Consistent with the Literature, we found the rate of suicide attempt 2.5%.

When violence behavior in girls and boys adolescents examined, violence behavior in the boys was 2.4 times higher than the girls, in a study of high school adolescents in USA.<sup>[25]</sup> In studies in Turkey, it was reported that violent behavior significantly higher in boys than girls.<sup>[23, 26]</sup> We found that the violent behaviour was 2.1 times higher in the boys than the girls. Our findings were consistent with other studies.

The good communication between the family members and the presence of parents who follow, support and guide the adolescent in accordance with their level of development are protective against violence.<sup>[8]</sup> In a study by Connolly an O'moore, it was reported that violent behavior was more common in people with bad family relations.<sup>[27]</sup> In studies in Turkey, it was reported that

violent behavior is less in people with good family relations and family support.<sup>[28,29]</sup> Consistent with these findings, we found that violent behavior in students with bad family relations was 2 times higher than those with good family relations.

The relationship between violent behavior and tobacco product trying in adolescents was investigated. In a study conducted in Portugal, the violent behavior in girls and boys who tried tobacco product was 2.4 times and 1.9 times higher, than those not tried, respectively.<sup>[30]</sup> A study in university students reported that violent behaviour in students who tried tobacco was significantly higher than those not tried.<sup>[31]</sup> Consistent with these results, we found that violent behaviour in students who tried tobacco was 1.9 times higher than those not tried.

When the relationship between alcohol trying and violent behavior was evaluated, a study conducted in United States reported that violent behavior in the students who tried alcohol was 2.1 times higher than those not tried.<sup>[25]</sup> In a study of University students in Turkey, it was reported no relationship between alcohol trying and violent behavior.<sup>[31]</sup> We found that violent behaviour in students who tried alcohol was 2.2 times higher than those not tried.

Violence behavior in the students who tried addictive substance was 1.9 times higher than those not tried, in a study of high school adolescents in USA in a study conducted by Bachman et al.<sup>[25]</sup> In a study in Turkey, it was reported that violent behaviour in students who tried addictive substance was higher than those not tried.<sup>[32]</sup> Consistent with these findings, we found that violent behaviour in students who tried addictive substance was 2.4 times higher than those not tried.

While completed suicides are more common in boys, it is reported that girls attempt more suicide than boys.<sup>[33]</sup> Studies in the USA reported that suicide attempts were higher in the girls than boys.<sup>[19,34]</sup> In a study in Edirne, it was reported that the suicide attempt in the girls was 1.7 times higher than boys.<sup>[15]</sup> In studies conducted in Edirne and Bursa, there was no relationship reported between sex and suicide attempt.<sup>[23, 35]</sup> In our study, 56% of the suicide attempters were girls and 44% were boys. However, this difference was not statistically significant.

Problems in family relations and family structure are important in the etiology of suicidal behaviour.<sup>[36]</sup> In a study in Germany, suicide attempt was found to be higher in the people with poor family relations, and high levels of perceived parental love were found to be protective from suicide.<sup>[37]</sup> In some studies conducted in people with attempted suicide, the most common cause of suicide was reported as problems with the family.<sup>[38,39]</sup> Consistent with these results, we found that suicide attempt in adolescents with bad family relations was 3.2 times higher than those with good family relations.

Suicide attempt in the students who tried alcohol was 1.5 times higher than those not tried in USA and 1.8 times higher in Korean adolescents.<sup>[34,40]</sup> In the study conducted by Soyulu et al, no significant relationship was found between alcohol trial and suicide attempt.<sup>[41]</sup> We found that the suicide attempt in the students who tried alcohol was 5.3 times higher than those not tried.

The low education level of the father was reported as a risk factor for suicide attempt in a study in Denmark.<sup>[42]</sup> In a study conducted by Soyulu et al in Turkey, in children of fathers with low education levels, it was reported to be significantly higher in suicidal behavior.<sup>[41]</sup> In our study, the fact that the father was educated in primary school and higher was found to be protective from suicide attempts.

## CONCLUSIONS

As a result; for protect adolescents from violent behaviour and suicide attempts; it is important to strengthen relationships with parents, to increase the level of father education, and to work on the prevention of substance use such as tobacco, alcohol and addictive products in adolescents.

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