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Socio-demographic Characteristics and Sleeping Habits of Children with Suicide Attempt Abstract

Özkıyım Girişiminde Bulunan Çocukların Sosyo-demografik Özellikleri ve Uyku Alışkanlıkları

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Abstract

Introduction: To compare the sleeping habits of children who attempt suicide with healthy children, to detect disorders, to identify children with risk factors and to take measures to prevent suicide attempts.

Methods: Patients who applied to the Pediatric Emergency Service of University of Health Sciences Turkey, Ankara Training and Research Hospital between April 2019 and April 2020 with suicide attempt were included in the study group, and healthy children who had never attempted suicide before were included in the control group. It has been done prospectively and cross-sectionally. The data were analyzed using SPSS 18.0 package program and Microsoft Office Excel 2003 program.

Results: The total number of patients participating in our study was 248, 138 (55.6%) of whom had attempted suicide, 110 (44.4%) were from the control group who did not attempt suicide for any other reason. Of the patients in the group who attempted suicide, 102 (73.9%) were female, 36 (26.1%) were male, 67 (60.9%) of the patients in the control group were female, and 43 (39.1%) were male. The median age of the patients in the group who attempted suicide was 16 (minimum: 13, maximum: 18), and the median age of the patients in the control group was 16 (minimum: 12, maximum: 18). Social and physical problems were more common in the group who attempted suicide than in the control group (p=0.001, p=0.004). In the sleep habits questionnaire applied to the patients; the patients in the group who attempted suicide had more problems falling asleep, frequent waking up, and difficulty in waking up compared to the control group (p=0.001, p=0.047 p=0.003). In addition, daytime sleepiness, change in sleep time, listening to music before sleep, and playing with a mobile phone were higher in the group who attempted suicide compared to the control group

Öz

Giriş: Özkıyım girişiminde bulunan çocukların uyku alışkanlıklarını sağlıklı çocuklarla karşılaştırmak, bozuklukları saptamak, risk faktörleri olan çocukları belirleyerek özkıyım girişimlerini önlemek için önlemlerin alınmasını sağlamaktır.

Yöntemler: Sağlık Bilimleri Üniversitesi, Ankara Eğitim ve Araştırma Hastanesi, Çocuk Acil Servisi'ne Nisan 2019 ve Nisan 2020 yılı arasında özkıyım girişimiyle başvuran hastalar ile daha önce özkıyım girişiminde bulunmamış sağlıklı çocuklar çalışmaya alınmıştır. Çalışma kesitsel, olgu-kontrol olarak yapılmıştır. Hastalara demografik veriler ile çalışmacılar tarafından hazırlanmış uyku alışkanlıklarını sorgulayan 15 soruluk anket uygulanmıştır. Veriler SPSS 18.0 paket programı kullanılarak analiz edilmiştir.

Bulgular: Çalışmamıza özkıyım girişimde bulunan 138 (%55,6), özkıyım girişimi olmayan ve herhangi bir nedenle çocuk acil servise başvuran 110 (%44,4), toplam 248 hasta kabul edildi. Özkıyım girişiminde bulunan gruptaki hastalar ile kontrol grubu arasında yaş ve cinsiyet yönünden fark saptanmadı (p>0,05). Hastalara uygulanan uyku alışkanlığı anketinde özkıyım girişiminde bulunan hastaların uykuya dalma sorunu, sık sık uyanma, uyanmakta zorlanma problemleri kontrol grubuna göre daha sık idi (sırası ile, p=0,001; 0,047; 0,003). Ayrıca özkıyım girişiminde bulunan grupta gündüz uyuklama, uyku saatinde değişiklik, uykudan önce müzik dinleme, cep telefonu ile oynama alışkanlığı kontrol grubuna göre fazlaydı (p=0,012, p=0,001, p=0,022, p=0,005). Ayrıca, özkıyım girşiminde bulunan grupta kabus görme, uyurgezerlik, horlama daha sık görülmüştür (p=0,046).

Sonuç: Sonuç olarak özkıyım girişimi ergenlerde giderek artan bir sorun olup, risk faktörlerinin iyi belirlenip ailelerin ve hekimlerin farkındalığının artırılması ve koruyucu önlemlerin alınması

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(p=0.012, p=0.001 p=0.022, p=0.005). In addition, nightmares, sleepwalking, and snoring were more common in the group who attempted suicide (p=0.046).

Conclusion: Suicide attempt is an increasing problem in adolescents, it should be ensured that the risk factors are determined well, the awareness of families and physicians is increased and preventive measures should be taken. It is very important to take sleep problems more seriously in this age group and to convey the importance of this to families.

Keywords: Suicide, pediatric emergency, sleep disorder

sağlanmalıdır. Uyku sorunlarının bu yaş grubunda daha çok ciddiye alınması, ailelere bunun öneminin aktarılması çok önemlidir.

Anahtar Kelimeler: Özkıyım, çocuk acil, uyku bozuklukları

Introduction

Sleep is one of the basic and indispensable activities of daily life, which contributes significantly to cognitive, behavioral and emotional skills and affects the quality of life and health of individuals.[1] Sleep deprivation has been shown to increase daytime sleepiness, fatigue, cognitive dysfunction, psychological deterioration, behavioral problems, as well as inattentive and risky behaviors in children and adolescents.[2] Sleep disorders are associated with anxiety, depression, and suicidal behavior. In addition, sleep abnormalities have been identified as a stand-alone risk factor for suicidal ideation, attempts, and death. Appropriate treatment of sleep disorders is vital, and reduces psychiatric disorders and suicidal tendencies.[3]

Suicide is one of the preventable causes of death and is an important public health problem. The risk is particularly high during adolescence.[4] The lifetime suicide attempt rate is between 3.1% and 8.8%. In addition, deaths due to suicide attempts in adolescence constitute 8.5% of all deaths.[5]

Many studies show that insufficient sleep is associated with increased self-harming thoughts and behaviors (with or without suicidal intent) in adolescents.[6,7] Insomnia and/or nightmares may contribute to suicidal ideation and behavior by intensifying the feelings of hopelessness, loneliness, and distress in relation to the individual's lack of sleep, while being awake at night may result in a reduction in frontal lobe function (i.e. hypoactivation of the frontal lobes due to circadian effects, sleep loss/sleep deprivation). This hypofrontality may lead to decreased problem-solving skills and increased impulsive behaviors, and both can be expected to increase the risk of suicide.[8]

In our study, we aimed to compare the sleep habits of children with suicide attempts with those of healthy children, to determine the risk factors, and to ensure that measures would be taken to prevent suicide attempts by identifying children with these factors.

Materials and Methods

Patients admitted to the Pediatric Emergency Service of University of Health Sciences Turkey, Ankara Training and Research Hospital with a suicide attempt between April 2019 and April 2020 were included in the study group, and healthy children who had never attempted suicide before were included in the control group. The study is a cross-sectional, case-control study. The control group consisted of patients who came to our healthy children outpatient clinic for routine examinations and laboratory tests, did not have a known psychiatric disease, and did not use medication.

The patients and their parents were informed about the study before the study, and a consent form was obtained. A 15-question questionnaire, questioning demographic data such as age, gender, and sleep habits, was applied to the patients who read the voluntary consent form and wanted to be included in the study. In this questionnaire, the participants were asked about having any sleep problem (if yes, what kind of problems), the presence of any change in sleep habits after adolescence, problems concerning sleeping habits, having any habits that would facilitate the transition to sleep before going to sleep (if yes, what they were), liking listening to music or not, listening to music before going to sleep (if yes, what kind of music), electronic devices available at home (computer, game console, playstation, tablet), internet network at home, having a mobile phone, having an internet connection on his/her mobile phone, and how many hours a day he/she spent on his/her mobile phone and computer. Three patients who did not sign the voluntary informed consent form, who refused treatment and who left the hospital without permission were not included in the study.

Statistical Analysis

Statistical analysis of the research was performed using SPSS 18.0 and Microsoft Office Excel 2003. Since the numerical data were not normally distributed, descriptive statistics were given as the median (minimum-maximum). The chi-square and One-Way ANOVA tests were used for categorical comparison of the groups. In cases where there was no normal distribution between the two groups, the Mann-Whitney U test, which is a non-parametric test, was used. A p-value of <0.05 was considered statistically significant.

Results

The total number of patients included in our study was 248, of which 138 (55.6%) were adolescents who attempted suicide and 110 (44.4%) were from the control group (Figure 1). 73.9% (n=102) of the patients in the suicide attempt group were female, 26.1% (n=36) were male. 70% (n=77) of the patients in the control group were female and 30% (n=33) were male (p=0.065). The median age of the patients in the suicide attempt group was 16 (minimum: 13- maximum: 18) years, and the median age of the patients in the control group was 16 (minimum: 12- maximum: 18) years (p=0.072) (Table 1).

School attendance and school success of the patients in the suicide attempt group were lower than in the control group (both, p=0.001). Social and physical problems were more common in the suicide attempt group than in the control

Table 1. Socio-demographic characteristics of the study group

	Total n=248	Patients with suicide attempt =138	Control group n=110	p
Gender (n, %)				
Girl	169 (68.1)	102 (73.9)	77 (70.0)	0.065
Boy	79 (31.9)	36 (26.1)	33 (30.0)	
Age (year) (median, range)	16 (12-18)	16 (13-18)	16 (12-18)	0.72
Going to school (n, %)				
Yes	277 (91.5)	119 (86.2)	108 (98.2)	**0.001**
No	21 (8.5)	19 (13.8)	2 (1.8)	
School success (n, %)				
Good	107 (43.1)	38 (27.5)	69 (62.7)	**0.001**
Bad	105 (42.3)	69 (50.0)	36 (32.7)	
Moderate	36 (14.5)	31 (22.5)	5 (4.5)	
Transcript success (n, %)				
Poor	99 (39.9)	78 (56.5)	21 (19.1)	**0.001**
Certificate of achievement	91 (36.5)	43 (31.2)	48 (43.6)	
Certificate of high achievement	58 (23.4)	17 (12.3)	41 (37.3)	
Working status (n, %)				
Yes	43 (17.3)	17 (12.3)	26 (23.6)	**0.020**
No	205 (82.7)	121 (87.7)	84 (76.4)	
Living with family (n, %)				
Yes	237 (95.6)	133 (96.4)	104 (94.5)	0.488
No	11 (4.4)	5 (3.6)	6 (5.5)	
Habits (n,%)				
Smoking				
Yes	62 (25.0)	50 (36.2)	12 (10.9)	**0.001**
No	186 (75.0)	88 (63.8)	98 (89.1)	
Alcohol				
Yes	11 (4.4)	8 (5.8)	3 (2.7)	0.232
No	237 (95.6)	130 (94.2)	107 (97.3)	
Opiate drug				
Yes	3 (1.2)	3 (2.2)	0 (0.0)	0.060
No	245 (98.8)	135 (97.8)	110 (100.0)	
Chronic disease (n,%)				
Yes	24 (9.7)	15 (10.9)	9 (8.2)	0.474
No	224 (90.3)	123 (89.1)	101 (91.8)	
Social problems (n, %)				
Yes	45 (18.1)	40 (29.0)	5 (4.5)	**0.001**
No	203 (81.9)	98 (71.0)	105 (95.5)	
Physical problems (n, %)				
Yes	35 (14.1)	27 (19.6)	8 (7.3)	**0.004**
No	213 (85.9)	111 (80.4)	102 (92.7)	
Change in appetite in the last one month (n, %)				
Yes	121 (48.8)	78 (56.5)	43 (37.1)	**0.006**
No	127 (85.9)	60 (43.5)	67 (60.9)	
History of a previous psychiatric disorder (n,%)				
Yes	38 (15.3)	28 (20.3)	10 (9.1)	**0.013**
No	210 (84.7)	110 (79.7)	100 (90.9)	

group (p=0.001; 0.004, respectively) (Table 1). Smoking habit and a history of previous psychiatric illness were higher in the suicide attempt group than in the control group (p=0.001; 0.013, respectively).

Considering the mother's education level, it was found that mothers with educational level of high school or above were more common in the control group (p=0.020). Parental separation was more common in patients who attempted suicide than in the control group (p=0.012) (Table 2).

In the sleep habit questionnaire administered to the patients, the problems of falling asleep, waking up frequently, and difficulty in waking up were found to be higher in the patients with suicide attempt compared to the control group (p=0.001; 0.047; 0.003, respectively) (Table 3).

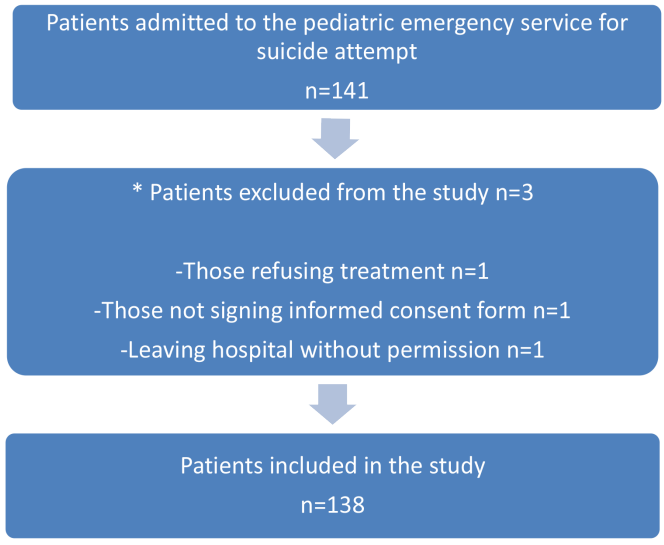

Figure 1. Flow chart of patients

Discussion

Suicide attempts among children and adolescents have reached alarming proportions in recent years. While deaths from other causes have decreased, suicide attempts have

Table 2. Socio-demographic characteristics of the family

	Total n=248	Patients with suicide attempt =138	Control group n=110	p
Age of mother (year) (median, range)	40 (29-58)	40 (29-57)	40 (31-58)	0.289
Age of father (year) (median, range)	43 (31-67)	43 (31-63)	44 (35-67)	0.654
Number of siblings (n, range)	3 (1-7)	3 (1-6)	3 (1-7)	0.92
Mother's working status (n, %) Yes No	 63 (25.4) 185 (74.6)	 38 (27.5) 100 (72.5)	 25 (22.7) 85 (77.3)	0.386
Mother's educational status (n, %) Primary school Secondary school High school and over	 24 (9.7) 164 (66.1) 60 (24.2)	 15 (10.9) 99 (71.7) 24 (17.4)	 9 (8.2) 65 (59.1) 36 (32.7)	**0.020**
Father's educational status (n, %) Primary school Secondary school High school and over	 18 (7.3) 131 (52.8) 99 (39.9)	 8 (5.8) 78 (56.5) 52 (37.7)	 10 (9.1) 53 (48.2) 47 (42.7)	0.349
Parents (n, %) Together Divorced	 207 (83.5) 41 (16.5)	 108 (78.3) 30 (21.7)	 99 (90.0) 11 (10.0)	**0.012**
Do the people you live with have physical-psychological problems? (n, %) Yes No	 25 (10.1) 223 (89.1)	 17 (12.3) 121 (87.7)	 8 (7.3) 102 (92.7)	0.184
Familial income level (n, %) Below minimum wage Minimum wage and above	 107 (43.1) 141 (56.9)	 67 (48.6) 71 (51.4)	 40 (36.4) 70 (63.6)	0.054
The presence of a chronic disease in the family (n,%) Yes No	 47 (19.0) 201 (81.0)	 26 (18.8) 112 (81.2)	 21 (19.1) 89 (80.9)	0.96

Table 3. Sleep habits of the study group

	Total n=248	Patients with suicide attempt =138	Control group n=110	p
Difficulty in falling asleep				
Yes	61 (24.6)	45 (32.6)	16 (14.5)	**0.001**
No	187 (75.4)	93 (67.4)	94 (85.5)	
Waking up frequently				
Yes	28 (11.3)	21 (15.2)	7 (6.4)	**0.047**
No	220 (88.7)	117 (84.8)	103 (93.6)	
Having trouble in waking up				
Yes	53 (21.4)	39 (28.3)	14 (12.7)	**0.003**
No	195 (78.6)	99 (71.7)	96 (87.3)	
Daytime napping				
Yes	40 (16.1)	30 (21.7)	10 (9.1)	**0.012**
No	208 (83.9)	108 (78.3)	100 (90.9)	
Change in sleep time				
Yes	47 (19.0)	38 (27.5)	9 (8.2)	**0.001**
No	201 (81.0)	100 (72.5)	101 (91.8)	
Sleep disorders (sleep-walking, nightmares..)				
Yes	9 (3.6)	8 (5.8)	1 (0.9)	**0.046**
No	239 (96.4)	130 (94.2)	109 (99.1)	
The habit of playing with a mobile phone				
Yes	70 (28.2)	47 (34.1)	23 (20.9)	0.022
No	178 (71.8)	91 (65.9)	87 (79.1)	
Listening to music before sleep				
Yes	192 (77.4)	116 (84.1)	76 (69.1)	**0.005**
No	56 (22.6)	22 (15.9)	34 (30.9)	
Listening to arabesque music				
Yes	45 (18.1)	32 (23.2)	13 (11.8)	**0.032**
No	203 (81.9)	106 (76.8)	97 (88.2)	
Having an internet connection at home				
Yes	168 (67.7)	84 (60.9)	84 (76.4)	**0.010**
No	80 (32.2)	54 (39.1)	26 (23.6)	
Spending time with mobile phone (hour) (median, range)		6 (0-24)	4 (0-24)	**0.017**

remained high.[9] Therefore, studies on this subject have become very important in order to determine the causes of suicide and to take measures for these factors. There are various factors affecting suicide attempts.[10] In our study, adolescents who attempted suicide and those who had never attempted suicide were compared in terms of their socio-cultural, physical, and psychological states and sleep habits. It was determined that the group of patients who attempted suicide had more physical and psychological problems, bad habits and especially sleep problems.

Physical, psychological, socio-cultural and environmental factors can be counted among the reasons that increase the suicide attempt. The most common ones are psychiatric problems, substance/alcohol use, and drug abuse.[11,12] In studies, it has been determined that depressive patients have a high risk for sleep disorders and suicide attempts, and the risk of suicide is significantly increased in other psychiatric diseases such as mood disorder, panic disorder and post-traumatic stress disorder.[13] Alcohol abuse and substance intake trigger suicide attempts by increasing drunkenness and impulsivity, depressive and suicidal thoughts, limiting cognitive functions and reducing barriers to self-harm. Alcohol abuse and substance use increase suicide attempts, especially in people with psychiatric problems. Consistent with the literature,[14] in our study, the rate of patients with pre-existing psychiatric disorders among those with suicide attempts was found to be significantly higher, and alcohol and substance intake was found to be higher than in the control group.

In young people with low school performance, the feeling of failure triggers the idea of suicide and the tendency to self-harm. In our study, in accordance with the literature,[15] the school success of our patient group was significantly low.

Familial factors, socio-cultural structure of the family, and whether the parents live together or not are important for suicide attempts. In particular, the education level of parents is effective in approaching the problems of adolescents and sharing common issues, and it is important to emphasize especially the education of mothers. In addition, suicide attempts are frequently seen in adolescents living in

environments where their parents are separated and communication problems are intense.[16] In our study, in accordance with the literature, the educational level of the mother was significantly lower and the rate of parents living separately was significantly higher in the group with suicide attempts.

There is a positive relationship between suicide attempt and sleep disorders. It has been determined that patients with sleep disorders are more likely to exhibit various suicidal behaviors, including suicidal ideation, attempt, and completed suicide. Many studies have emphasized that 5-hydroxytryptamine (5-HT) activity plays a major role in this relationship. 5-HT promotes sleep initiation and wakefulness by continuously inhibiting REM sleep including slow-wave sleep and rapid eye movements. 5-HT dysfunction also leads to sleep disorders. In addition, it has been determined that 5 hydroxyindoleacetic acid (5-HIAA), the metabolite of 5-HT, triggers depression, creates a tendency to impulsive behavior and poses a risk for suicide attempts. Therefore, serotonin dysfunction is thought to play an important role in the relationship between sleep problems and suicide attempts.[17] Suicide attempts were found to be high, especially in those with insomnia and nightmares.[18] In some studies, a long duration of nightmares was found to be a high risk for a suicide attempt.[19] Again, in another study, a relationship was found between short sleep duration and frequent nightmares and suicide attempts in university students.[6] In another study, it was emphasized that nightmares impaired sleep quality, young people with deteriorated sleep quality were more alone and isolated themselves from social life, and suicide attempts were prominent in this group.[4]

A meta-analysis showed that nightmares posed a risk twice higher than insomnia, but both insomnia and nightmares were significantly associated with a risk for suicide attempt.[17] In our study, sleep-walking and nightmares, difficulty in falling asleep and difficulty in waking up were significantly more common in our patient group.

Study Limitations

The biggest limitation of our study is that it was conducted in a single center. According to our study, we have shown that sleep problems such as nightmares and sleep-walking are closely related to suicide attempts. Especially in adolescents, sleep problems should be followed more carefully, risky groups should be evaluated together with child psychiatry, and families should be made aware of this issue.

Conclusion

Since suicide attempt is an increasing problem in adolescents, risk factors should be well determined, awareness of families and physicians should be increased, and protective measures should be taken.

Ethics

Ethics Committee Approval: This study was approved by the Ethics Committee of University of Health Sciences Turkey, Ankara Training and Research Hospital (date/number: 3.4.2019/786).

Informed Consent: A questionnaire was applied by obtaining consent from the legal guardians of the patients who applied to the Pediatric Emergency Service of University of Health Sciences Turkey, Ankara Training and Research pediatrics with a suicide attempt between April 2019 and April 2020, and of the healthy children who had not attempted suicide before.

Peer-review: Internally and externally peer-reviewed.

Authorship Contributions

Concept: İ.F., M.A.T., R.Ü.S., Design: İ.F., M.A.T., R.Ü.S., Data Collection or Processing: M.A.T., R.Ü.S., Analysis or Interpretation: İ.F., M.A.T., Literature Search: İ.F., Writing: İ.F.

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