

Determination of the Relationship Between Self-Esteem and Social Anxiety in Adolescents with Burns

Yanığı Olan Adölesanlarda Benlik Saygısı ile Sosyal Anksiyete Arasındaki İlişkinin Belirlenmesi

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ABSTRACT

Objective: Burns are complex, traumatic incidents including significant morbidity and impairment of psychological, emotional, and physical well-being. This study aimed to determine the relationship between self-esteem and social anxiety in adolescents with burns.

Material and Methods: A cross-sectional, descriptive research design was used. The research was carried out in the 12-bed Pediatric Burn Center with 86 adolescents. The data collection form, Rosenberg Self-Esteem Scale and the Social Anxiety Scale for Children was used. Comparisons were made at the $p < .05$ significance level for statistical analyses.

Results: Hot liquid (31.4%), chemicals (22.1%), flames (17.4%), electricity (16.3%), and contact with hot objects (12.8%) were burn factors. It was determined that 81.4% of the participants had a scar/mark. The total body surface area of the burn was determined as 1%-10% (61.6%), 10%-25% (32.6%), $\geq 50\%$ (3.5%), and 25%-50% (2.3%). The multiple linear regression model established according to the effects of self-esteem scores and socio-demographic variables on children's social anxiety was statistically significant ($F(20.65)=2.384$, $p < .05$). In the study, 42.6% of the variance in the scores on the social anxiety scale for children was explained by self-esteem scores and socio-demographic variables. Self-esteem scores predicted children's social anxiety scores statistically positively and significantly ($B=4.413$, $t=4.139$, $p < .05$).

Conclusion: The study revealed that there was relation between low self-esteem and high social anxiety in adolescents with burns in line with our study question, while there is no relation between characteristics of children and burn history in children.

Key Words: Adolescent, Burn, Self-esteem, Social anxiety



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ÖZ

Amaç: Yanıklar, önemli morbidite ve psikolojik, duygusal ve fiziksel refahın bozulması dahil olmak üzere karmaşık, travmatik olaylardır. Bu çalışma, yanık olan adölesanlarda benlik saygısı ile sosyal anksiyete arasındaki ilişkiyi belirlemeyi amaçlamıştır.

Gereç ve Yöntemler: Kesitsel, tanımlayıcı bir araştırma tasarımı kullanılmıştır. Araştırma, 86 adölesan ile 12 yataklı Pediatrik Yanık Merkezinde gerçekleştirildi. Veri toplama formu, Rosenberg Benlik Saygısı Ölçeği ve Çocuklar için Sosyal Anksiyete Ölçeği kullanılmıştır. İstatistiksel analizler için karşılaştırmalar $p<0.05$ anlamlılık düzeyinde yapılmıştır.

Bulgular: Sıcak sıvı (%31.4), kimyasallar (%22.1), alevler (%17.4), elektrik (%16.3) ve sıcak cisimlerle temas (%12.8) yanık faktörleriydi. Katılımcıların %81.4'ünde skar/iz olduğu belirlenmiştir. Yanık toplam vücut yüzey alanı sırasıyla, %1-%10 (%61.6), %10-%25 (%32.6), \geq %50 (%3.5), ve %25-%50 (%2.3). Benlik saygısı puanlarının ve sosyo-demografik değişkenlerin çocukların sosyal kaygısı üzerindeki etkilerine göre oluşturulan çoklu doğrusal regresyon modeli istatistiksel olarak anlamlıydı ($F(20.65)=2.384$, $p<.05$). Çalışmada, çocuklar için sosyal anksiyete ölçeğindeki puanlardaki varyansın %42.6'sı benlik saygısı puanları ve sosyo-demografik değişkenler ile açıklanmıştır. Benlik saygısı puanları, çocukların sosyal kaygı puanlarını istatistiksel olarak olumlu ve anlamlı olarak öngörmüştür ($B=4.413$, $t=4.139$, $p<.05$).

Sonuç: Çalışmamız, çalışma sorumuz doğrultusunda yanık olan adölesanlarda düşük benlik saygısı ile yüksek sosyal anksiyete arasında ilişki olduğunu, çocuklarda yanık öyküsü ile çocukların özellikleri arasında ilişki olmadığını ortaya koymuştur.

Anahtar Sözcükler: Adölesan, Yanık, Benlik saygısı, Sosyal anksiyete

INTRODUCTION

Burn injuries occur following direct contact with surfaces, fire, hot liquids, chemicals, gases, electricity, or radiation, which cause tissue damage inside or outside the body (1). While burns can be seen as simple injuries, they can turn into a life-threatening trauma that causes physical, psychological, sociological, and economic problems depending on their degree (2). Although burns lead to a trauma that affects individuals of all age groups, they are more common in children. They are the fifth most common cause of non-fatal childhood trauma (3). Every day, around 300 children aged between 0 and 19 are treated in emergency services due to burn-related injuries (6).

Burn injuries may suddenly disrupt normal life in children. They may threaten the health and body integrity of the child and may require prolonged hospitalization, multiple surgical procedures, intense and long-term physical therapy, and lifelong rehabilitation. Children are likely to have permanent scars and, in some cases, limited functionality (7). Self-esteem, which plays a critical role in the development of adolescents, is how the individual feels in various components of self-concept, such as social identity, personal identity, and body image (8). Self-esteem has a huge impact on health. It has been proven that individuals with low self-esteem cannot cope with difficulties in daily life and that they face negative psychological and physical consequences (9-11).

Social anxiety is one of the main variables that affect the child's social interaction process and is characterized by fear of negative evaluation and discomfort/distress in social environments (12). Social relations are highly important for the child's emotional development. Burn marks in visible areas are associated with social anxiety, isolation, exclusion, and avoidance. Therefore, visible burn scars may hinder the individual's social activities and lead to social isolation (11, 13, 14). Accordingly, this study was planned to determine the relationship between self-esteem and social anxiety in adolescents with burns.

MATERIALS and METHODS

A cross-sectional, descriptive research design was used. In this study, it was aimed to determine the relationship between self-esteem and social anxiety in adolescents with burns.

Research population and sample

The population of the study consisted of patients admitted for burn treatment to Ankara City Hospital, Children's Hospital Pediatric Burn Center. The research was carried out in the 12-bed Pediatric Burn Center of Ankara City Hospital Children's Hospital. The sample of the study consisted of 86 children who met the inclusion criteria and were selected by using the slice sampling method between the dates of the study.

Inclusion criteria for the study were determined as volunteering to participate in the study, admission to the Ankara City Hospital, Children's Hospital Pediatric Burn Center for burn treatment, being between the ages of 12 and 18, and not having any mental or developmental disorders. The exclusion criteria were being a migrant child and not volunteering to participate in the study.

Research questions

Is there a relationship between self-esteem and social anxiety in adolescents with burns?

Is there a relationship between the independent variables of adolescents with burns and their social anxiety?

Data collection tools

A data collection form prepared by the researcher consisted of a total of 25 questions about age, gender, number of siblings, family type, place of residence, income status, age of parents, job, education level, burn characteristics, and the effects of the burn on the adolescent. The Rosenberg Self-Esteem Scale was used to determine the self-esteem levels of the adolescents,

and the Social Anxiety Scale for Children was used to determine their social anxiety levels.

The data collection form

This form includes a total of 25 questions about some socio-demographic characteristics of adolescents with burns, such as age, gender, number of siblings, birth order, the place where the family lives, family type, mother's age, education level, and job, father's age, education level, and job, and school grade; information about the burn, such as age at burn injury, the burn site, degree of the burn, the total body surface area of the burn, having received education-consultancy on burn care at discharge, having a burn-related amputation, and having a visible scar after the burn; information about the effects of the burn on the adolescent, such as the status of having a school break, changes in daily life due to burns/treatment process, changes in the attitudes and behaviors of family/friends during the illness/treatment, and the status of receiving support from a psychologist or psychiatrist.

The Rosenberg Self-Esteem Scale (RSES): This scale was developed by Rosenberg to assess self-esteem, especially in the adolescent age group. It consists of ten negative or positive multiple-choice items with four options, namely 'very true', 'true', 'false', and 'very false'. Total scores are interpreted as follows: 0-1, high self-esteem; 2-4, moderate self-esteem; 5-6, low self-esteem. Çuhadaroğlu performed the validity and reliability study of the scale in our country (15). In the study by Çuhadaroğlu, the validity and reliability coefficients were found as 0.71 and 0.75, respectively. Cronbach's alpha internal consistency coefficient was 0.69 in our study.

Social Anxiety Scales for Children (SASC): This scale was developed by La Greca et al. and its Turkish validity and reliability study was conducted by Demir et al. (12). It is a 5-point Likert-type self-report scale and is one-dimensional. It is evaluated on the basis of total scores. The scores that can be obtained from the scale are between 18 and 90, and the higher the scores are, the higher the level of social anxiety is. In the study by Demir, Cronbach's α was found to be 0.81, and it was found as 0.87 in our study.

Implementation of the research

The Data Collection Form, the Rosenberg Self-Esteem Scale, and the Social Anxiety Scale for Children were applied to the children who met the inclusion criteria and volunteered to participate in the study in Ankara City Hospital, Children's Hospital Pediatric Burn Center after their consent and parents' approval were obtained.

Statistical Analysis

The data were analyzed on the SPSS 24.0 (IBM, Armonk, NY: IBM Corp.) software package. Descriptive statistics were presented using frequency and percentage distribution

values. Multiple linear regression analysis method was used to determine the relationship between the variables. The normality of the data was examined with skewness and kurtosis values. The skewness and kurtosis values of the scale scores were between ± 1.5 , which showed that the data had a normal distribution (16, 17). For multiple linear regression analysis, each of the sociodemographic variables was transformed into two categories (1 and 0), and the reference values of each group were indicated in the linear regression table. Comparisons were made at the $p < .05$ significance level for statistical analyses.

Ethical permissions

The study was approved by Ankara City Hospital, Clinical Research Ethics Committee No. 2 (dated 06/07/2022 and decision number E2-22-2056). Participation in the study was on a voluntary basis. An informed consent forms were obtained from participants and their parents.

RESULTS

A total of 86 adolescents receiving treatment for burns were included in the study. Of the participants, 67.4% were male, and 83.7% had a nuclear family. It was found that 37.2% of the mothers were primary school graduates, 83.7% did not have a job, 33.7% of the fathers were primary school graduates, and 77.9% had a job. Also, 66.3% of the participants had less income than their expenses. According to the findings, 64% of the participants had a school break, 53.5% stated that having a school break had no effect, 64% thought that it had an effect on daily life, and 62.8% thought that there was no change in the attitudes and behaviors of family/friends. The majority of the participants (80.2%) stated that they did not receive psychiatrist/psychologist support. The distribution of the burn factors was found as hot liquid (31.4%), chemicals (22.1%), flames (17.4%), electricity (16.3%), and contact with hot objects (12.8%), respectively. It was determined that 81.4% of the participants had a scar/mark while 18.6% did not. When analyzed by site, 10.5% of the participants had a burn scar on the face/neck, 31.4% on the body/back, 30.2% on the arms, 26.7% on the hands, 30.2% on the legs, 20.3% on the feet, and 5.8% on the genitals. The distribution of the degree of the burn was found as second-degree (66.3%), third-degree (23.3%), and first-degree (10.5%), respectively. The distribution of the total body surface area of the burn was determined as 1%-10% (61.6%), 10%-25% (32.6%), $\geq 50\%$ (3.5%), and 25%-50% (2.3%), respectively. Finally, it was determined that 96.5% of the participants did not have an amputation, while 3.5% of them had been amputated (Table I).

Descriptive statistics for the self-esteem scale and the social anxiety scale for children are given in Table II. The scores on the total RSES ranged from 0 to 6, with the mean score being 1.47

Table I : The descriptive characteristics of the participants and the family (n=86).

Variable	n (%)
Gender	
Female	28 (32.6)
Male	58 (67.4)
Location	
City	36 (41.9)
District	43 (50)
Village	7 (8.1)
Family Type	
Nuclear family	72 (83.7)
Extended family	14 (16.3)
Education state of mother	
Illiterate	8 (10.5)
Primary school	32 (37.2)
Secondary school	22 (25.6)
High school	19 (22.1)
University	4 (4.7)
Working state of mother	
No	72 (83.7)
Yes	14 (16.3)
Education state of father	
Illiterate	5 (5.8)
Primary school	29 (33.7)
Secondary school	22 (25.6)
High school	25 (29.1)
University	5 (5.8)
Working state of father	
No	19 (22.1)
Yes	67 (77.9)
Income status	
Income less than expenses	57 (66.3)
Income equals expense	27 (31.4)
Income higher than expenses	2 (2.3)
Take a break from school	
No	31 (36.1)
Yes	55 (64)
Effect of school break	
No	46 (53.5)
Yes	40 (46.5)
Daily life effects	
No	31 (36)
Yes	55 (64)
Attitude and behavior changes to family/friends	
No	54 (62.8)
Yes	32 (37.2)
Psychiatry/psychologist support	
No	69 (80.2)
Yes	17 (19.8)
Burn factor	
Warm Liquid	27 (31.4)
Fire	15 (17.4)
Electric	14 (16.3)
Chemical	19 (22.1)
Contact with hot objects	11 (12.8)
Condition of scar/mark	
No	16 (18.6)
Yes	70 (81.4)

Variable	n (%)
Face / neck	
No	77 (89.5)
Yes	9 (10.5)
Body / back	
No	59 (68.6)
Yes	27 (31.4)
Arms	
No	60 (69.8)
Yes	26 (30.2)
Hands	
No	63 (73.3)
Yes	23 (26.7)
Legs	
No	60 (69.8)
Yes	26 (30.2)
Feet	
No	66 (76.7)
Yes	20 (23.3)
Genitals	
No	81 (94.2)
Yes	5 (5.8)
Degree of burn	
Linear	9 (10.5)
Second degree	57 (66.3)
Third degree	20 (23.3)
The total surface area of the burn	
1%-10%	53 (61.6)
10%-25%	28 (32.6)
25%-50%	2 (2.3)
50% and above	3 (3.5)
Amputation	
No	83 (96.5)
Yes	3 (3.5)

Table II: The RSES and SASC scores in adolescents with burns

Scale	References (min-max)	min	max	mean	SD	Skewness	Kurtosis
RSES total	0-6	0	6	1.47	1.48	1.236	1.233
SASC total	18-90	18	84	42.47	14.09	0.566	0.096

RSES: Rosenberg Self-Esteem Scale, **SASC:** Social Anxiety Scales for Children, **SD:** Standard Deviation, **min:** minimum, **max:** maximum

(SD=1.48). The total SASC scores ranged between 18 and 84, with the mean score being 42.47 (SD=14.09).

The multiple linear regression model established according to the effects of self-esteem scores and socio-demographic variables on children's social anxiety was statistically significant ($F(20.65)=2.384, p<.05$). The R square value expresses how much of the variance in the predicted variable is explained by independent variables (Pallant, 2007). In the study, 42.6% of the variance in the scores on the social anxiety scale for children was explained by self-esteem scores and socio-demographic variables. Self-esteem scores predicted children's social anxiety scores statistically positively and significantly ($B=4.413, t=4.139, p<.05$). A 1-unit increase in self-esteem scores resulted in a 4.413-unit increase in children's social anxiety scores (Table III).

Table III: Multiple linear regression of variables associated with SASC score

	B	Std. Error	Beta	t	p
Constant	32.273	5,669		5.693	.000
RSES total	4.413	1.066	0.463	4.139	.000
Gender (ref: male)	0.751	4.177	0.025	0.18	0.858
Education state of mother (ref: primary school)	4.11	3.099	0.142	1.326	0.189
Working state of mother (ref: no)	4.834	3.739	0.131	1.293	0.201
Education state of father (ref: primary school)	3.27	3.254	0.11	1.005	0.319
Working state of father (ref: no)	7.61	3.955	0.216	1.924	0.059
Income (ref: income less than expenses)	0.579	3.606	0.02	0.16	0.873
Take a break from school (ref: no)	-3.696	4.154	-0.126	-0.89	0.377
Effect of school break (ref: yes)	2.195	3.753	0.078	0.585	0.561
Daily life effects (ref: yes)	-2.506	3.794	-0.086	-0.66	0.511
Attitude and behavior changes to family/friends (ref: yes)	1.773	3.613	0.061	0.491	0.625
Psychiatry/psychologist support (ref: yes)	-6.635	4.059	-0.189	-1.635	0.107
Burn factor (ref: warm liquid)	-1.96	4.131	-0.065	-0.474	0.637
Condition of scar/mark (ref: yes)	-4.366	4.002	-0.121	-1.091	0.279
Face / Neck (ref: yes)	2.454	4.898	0.054	0.501	0.618
Body / Back (ref: yes)	5.019	3.311	0.166	1.516	0.134
Arms (ref: yes)	1.93	3.997	0.063	0.483	0.631
Degree of burn (ref: third degree)	-1.595	4.484	-0.048	-0.356	0.723
The total surface area of the burn (ref: 10% and above)	-1.158	3.643	-0.04	-0.318	0.752
Amputation (ref: yes)	3.211	8.978	0.042	0.358	0.722

RSES: Rosenberg Self-Esteem Scale, **SASC:** Social Anxiety Scales for Children. $F_{(20,65)}=2.384$, $p=0.004$, $R=0.651$, $R^2=0.426$, **β :** Beta coefficient, **R^2 :** coefficient of determination

In other words, an increase in self-esteem increased children's social anxiety scores. The effect of sociodemographic variables on children's social anxiety scores was not significant ($p>.05$).

DISCUSSION

Burn injuries cause life-changing events for both children and their families (18,19). The European Burns Association recommends that health professionals in burn centers should provide the treatment of all aspects of burns and that burn centers should provide comprehensive and continuous burn care, including both physical and psychosocial care in patients with burns (20). In our study, we evaluated the relationship between self-esteem and social anxiety in adolescents with burns. Accordingly, the outcomes of this study indicated that adolescents with burns suffered from psychosocial problems such as low self-esteem and social anxiety.

Numerous studies have investigated the clinical characteristics of children with burns (20-27). The demographic characteristics and burn history of children with burns were similar to our results. Santos et al. (20) reported that burn injuries were found higher among boys and that most burns were due to hot liquid or objects in Portugal. In studies by Han et al. (21) conducted in Central China and by Nthumba (24) conducted in sub-Saharan Africa, it was shown that boys had higher burn

injuries than girls. A review study indicated that burns were more prevalent among low socioeconomic populations and undeveloped regions (27). A study by Özturun indicated that the majority of patients with burns were male children and that the primary reason for burns was hot liquid (26). Moreover, in our study children with burns had low income families. Smolle et al. (27) emphasized that burn injuries were more common in populations with lower socioeconomic status. These results are important as they show the burn risks of healthy children to health professionals.

When the cases were examined according to the total body burn percentages, the most common type was a burn area of 10%-25%. Similar to the study of Chen, our study showed that the mean percentage of total damaged body surface area was 32.6% (25). The burn center where this study was carried out admitted more complicated children with burns as it is an important burn center of Ankara in Turkey.

Burns are complex, traumatic incidents including significant morbidity and impairment of psychological, emotional, and physical well-being (27). Scars are common in burn cases. They require comprehensive treatment and care. This long-term treatment causes impairment of psychological and emotional well-being (28). Russell et al. (10) reported that poorer self-concept was associated with emotional problems in children with burns. In two studies in which the self-esteem

of children and adolescents who had experienced a burn injury were determined by Russell et al. (10) and Riobueno-Naylor et al. (29), appearance concerns related with self-esteems were associated with lower self-worth. Another impairment of psychological well-being is anxiety which is most commonly reported as psychological problem in children and adolescents following a burn injury. Rimmer et al. (30) indicated that children reported high anxiety levels.

In our study, the adolescents with burn injuries had social anxiety. Moreover, the adolescents who had low self-esteem had social anxiety and 42.6% of the variance in scores obtained from the social anxiety scale for children was explained by self-esteem scores in this study. According to Hall, physical appearance could be associated with social anxiety due to societal stresses on attractiveness (31). In our study, four of five children had burn scars and near half of the children, it was stated seeing changes in family/friend attitudes and behaviors after burn injury. Given these results, health professionals need to be aware of the psychological outcomes of adolescents with burns.

CONCLUSION

In conclusion, we found that there was relation between low self-esteem and high social anxiety in adolescents with burns in line with our study question, while there is not a relation between characteristics of children and burn history in children. Health professionals should be aware of the fact that burn management of adolescents requires a comprehensive approach provided by members of multidisciplinary team including a pediatric surgeon, pediatric nurse, psychiatrist and psychologist. Healthcare professionals should consult to adolescents who low self-esteem and high social anxiety to psychiatrist and psychologist. Thanks to this multidisciplinary team approaches holistic care will be ensured to adolescents in burn unit or centers.

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