

# Factors Affecting the Attitudes of Individuals with Burn Experience to Using Complementary Treatments

Yanık Deneyimi Olan Bireylerin Tamamlayıcı Tedavileri Kullanmaya Yönelik Tutumlarını Etkileyen Faktörler

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## Abstract

**Objectives:** It was aimed to determine the relationship between the use of complementary and alternative therapies in burn treatment and their attitudes towards using complementary therapies.

**Materials and Methods:** Snowball sampling method was used. The study was completed with 500 individuals who experienced burns. Data were collected using an introductory information form and an attitude towards using complementary therapies scale. Descriptive statistics such as number, percentage, mean, standard deviation and student's t-test, one-way analysis of variance, and multiple linear regression analysis were used in the analysis of the data.

**Results:** The mean age was 30.37±12.09, 72.8% of the individuals were between the ages of 18-35 and 75.8% were female. 54.8% of the individuals stated that they had not received training on burns before, and 78.6% reported they used traditional treatment for burns. 57.6% of the individuals reported they used traditional methods to reduce post-burn pain. It was found that the most effective predictor of attitude towards complementary therapy was education and it predicted change at a rate of 15.7% ( $\beta=-0.157$ ,  $p<0.001$ ). The degree of burns accounts for 12.1% of the change in the attitude towards complementary therapy, the use of complementary therapy in burns 11.5%, the age of 10.5%, and the training in burn care 9.4%.

**Conclusion:** It is important to use the practices recommended by health professionals and avoid harmful practices in order to prevent burn wound infections, contribute to the healing process and reduce complications.

**Key Words:** Burn, Wound, Traditional Methods, Complementary Treatments

## Öz

**Amaç:** Yanık deneyimleyen bireylerin yanık tedavisinde tamamlayıcı ve alternatif tedavileri kullanma durumları ile tamamlayıcı tedavileri kullanmaya yönelik tutumları arasındaki ilişkinin belirlenmesi amaçlanmıştır.

**Gerçek ve Yöntem:** Çalışmada kartopu örnekleme yöntemi kullanılmıştır. Çalışmada yanık deneyimleyen 500 birey ile çalışma tamamlanmıştır. Veriler tanıtıcı bilgi formu ve tamamlayıcı tedavileri kullanmaya yönelik tutum ölçeği kullanılarak toplanmıştır. Verilerin analizinde sayı, yüzde, ortalama, standart sapma gibi tanımlayıcı istatistikler, Student's t-testi, tek yönlü varyans analizi, çoklu doğrusal regresyon analizi kullanılmıştır.

**Bulgular:** Bireylerin %72,8'inin 18-35 yaş arasında ve yaş ortalamasının 30,37±12,09 olduğu, %75,8'inin kadın olduğu belirlenmiştir. Bireylerin %54,8'i daha önce yanık ile ilgili eğitim almadığını ve %78,6 yanıkta geleneksel tedavi kullandıklarını belirtmiştir. Bireylerin %57,6'sı yanık sonrası ağrının azaltılması için geleneksel yöntem kullandığını bildirmiştir. Tamamlayıcı tedaviye yönelik tutumun en etkili yordayıcısının eğitim durumu olduğu ve değişimi %15,7 oranında yordadığı bulunmuştur ( $\beta=-0,157$ ,  $p<0,001$ ). Tamamlayıcı tedaviye yönelik tutumdaki değişimin %12,1'ini yanık derecesi, %11,5'ini yanıkta tamamlayıcı tedavi kullanma durumu, %10,5'ini yaş, %9,4'ünü yanık bakımında eğitim alma durumu açıklamaktadır.

**Sonuç:** Yanık yarası enfeksiyonlarının önlenmesi, iyileşme sürecine katkıda bulunulması ve komplikasyonların azaltılması için sağlık profesyonelleri tarafından önerilen uygulamaları kullanmak ve zararlı uygulamalardan kaçınmak önemlidir.

**Anahtar Kelimeler:** Yanık, Yara, Geleneksel Yöntemler, Tamamlayıcı Tedaviler

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## Introduction

Burn injuries are unpleasant trauma that can affect anyone, anytime, anywhere (1). Burns continue to be a serious problem today, causing irreparable damage and side effects for both the patient and their family. It is stated that a burn develops every 30 minutes (2).

Burn injuries result in lifelong physical and psychological scars, cause pain, and affect mental health, quality of life, ability to return to work, and mortality (1). The initial assessment and management of a burn patient begins with prehospital care (3). The overall goal of prehospital burn management is to cool the burn, prevent further burns, and prevent contamination. First aid for burn injuries is to apply cold tap water to the wound for 10-30 minutes. No other substance should be applied directly to the wound until the patient has received appropriate professional care. After cooling, the wound can be loosely wrapped with a clean cloth or sterile gauze to prevent contamination without applying excessive pressure to the wound (4).

Interventions against burns vary depending on the region, education and socio-cultural status, habits, living conditions, and attitudes towards alternative treatment (5). Although complementary and alternative products used in burn wounds seem to have advantages such as low cost, easy to use and accessible, they carry risks in terms of quality, reliability, effectiveness and conscious use (6,7). In addition, for what purpose, at what stage and how the product or method used in the treatment and care protocol is used is one of the important criteria.

In the literature, it has been reported that burnt snail shells and tomato juice were used in Ghana, aloe vera and cassava paste in Nigeria, chalk and sunshine soap in South Africa, and urine, fur, glycerin, milk and tomato in Tanzania (1,8,9). In studies conducted in our country, it has been reported that mothers whose children have burns apply materials such as yoghurt, toothpaste, egg white (10), tomato paste to the wound surface (10,11).

When traditional medicine applications are applied unconsciously to the open wound area, it causes the development of infection, prolongs the wound healing process, and decreases the quality of life (12). It is important for nurses to know the attitudes of individuals towards complementary and alternative treatments, their cultural characteristics and traditional practices in burn patient care, in terms of preventing complications (10).

No study has been found in the literature investigating the use of complementary and alternative therapies in burn treatment and the factors affecting the attitudes of adults who have experienced burns towards using complementary therapies.

Therefore, in this study, it was aimed to determine the use of complementary and alternative therapies in burn treatment of adults who have experienced burns and the factors affecting their attitudes towards using complementary therapies.

## Materials and Methods

### Study Design

The research was carried out in descriptive, cross-sectional and correlational design.

### Setting and Participant

Snowball sampling method was used in the research. The country where the research was conducted consists of seven regions. Therefore, initially seven participants with burns were selected. The first selected participants are known to the researchers. Each of these participants represents different regions of the country. They were each asked to send the web link of the survey to other people who had experienced the burn. The research was conducted in Turkey between April-June 2022 using an online survey. Inclusion criteria of the study as follows: Individuals who were 18 years and older, experienced burns, literate, have a smartphone or computer that can answer the survey and can use them and volunteered to participate in the study. There was no regional difference between the approaches.

The sample adequacy was decided according to the post-hoc power analysis made in the G Power 3.1.9.2 program. In the power analysis based on the scale mean and standard deviation in the study of Gör and Aşiret (13), the effect size was calculated as 0.88, when the type 1 error was 0.05, the sample was 500, the posthoc power was calculated as 99%.

### Data Collection Tools

**Introductory characteristics form:** This form, which was created by scanning the literature (10,13), consists of 15 questions to determine the sociodemographic characteristics of individuals (such as age, gender, marital status, occupation etc.) and to determine whether individuals have experienced burns, the type of the burn, degree of the burn, the state of thinking that traditional practices are effective, and the traditional practices applied in burns. In line with the literature the degree of burn was defined in the questionnaire as an explanation (14). Individuals were asked to mark the degree of burn they experienced in accordance with the definitions stated in the questionnaire.

**Attitude towards using complementary therapies scale:** This scale, which was developed by Bilge et al. (15) in 2018, consists of one dimension and 13 items. The scale, which is a 4-point Likert type (0 strongly disagree, 1 somewhat agree, 2

strongly agree, 3 completely agree), is scored between 0-3 points and the lowest 0 and the highest 39 points are obtained from the scale. The 9<sup>th</sup> item of the scale is reverse scored. An increase in the score obtained from the scale indicates that the attitude towards complementary treatments is positive. The Cronbach' alpha value of the scale was found to be 0.79 (15). In our study, the Cronbach's alpha value of the scale was found to be 0.82.

## Data Analysis

The data were analyzed using the SPSS 25.0 statistical package program. Descriptive statistics (mean, standard deviation, frequency, median, minimum, maximum) were used. Student's t-test was used data with normal distribution in two groups, and one-way analysis of variance was used in more than two groups to determine the distribution of attitude towards using complementary therapies scale (ACTS) mean score according to demographic characteristics, Multiple linear regression analysis was performed to determine the effect of independent variables on ACTS. The data were evaluated at the 95% confidence interval and the significance level of  $p < 0.05$ .

## Ethical Statements

Firstly, the purpose of the research was explained in the research link sent to the participants, and the participants were informed about the research. Participants who wanted to participate in the research were asked to continue the research by selecting the option "I agree to participate in the research". Each participant was allowed to fill out the survey only once. The Declaration of Helsinki was followed throughout the study. Ethics committee approval was obtained for the study by Erciyes University Social and Human Sciences Ethics Committee (Approval no: 164, Date: 26.04.2022).

## Results

It was found 72.8% of the individuals were between the ages of 18-35 and the average age was  $30.37 \pm 12.09$ . 75.8% were female, 62.0% were single, 59.8% had a bachelor's degree or higher, 56.0% were equal to their expenses, 54.6% of them did not work. It was determined that 45.0% of the individuals experienced contact burns such as stoves, flames, barbecues, hair straighteners, and irons, and 50.0% experienced 1<sup>st</sup> degree burns. 54.8% of the individuals stated that they had not received any training about burns before and 78.6% used traditional treatment for burns. 57.6% used traditional methods to reduce post-burn pain and 71.0% kept the burn area under running water as recommended and beneficial (Table 1).

It has been determined that those aged 54 and over, literate, have first degree burns, have not received training on burns

before, and those who use traditional methods in burns have statistically higher mean ACTS scores and have positive attitudes towards complementary therapies (Table 2) ( $p < 0.05$ ).

Multiple linear regression analysis was performed for age, education level, previous burn education status, use of alternative treatment in burns, burn degree and ACTS. The regression model was found to be statistically significant ( $p < 0.001$ ;  $R^2 = 0.086$ ). It was found that the most effective predictor of ACTS was education level and it predicted the change in ACTS at a rate of 15.7%. It was determined that the attitudes towards complementary therapies were positive as the education level decreased ( $\beta = -0.157$ ,  $p < 0.001$ ). In addition, the change in ACTS was explained by 12.1% of burn degree, 11.5% of using complementary therapy in burns, 10.5% of age, 9.4% of being educated in burn care (Table 3).

## Discussion

Acute and severe pain is experienced with tissue damage caused by burns (16). People who experience burn pain in the acute period can try different methods to cope with the pain. In this study, 78.6% of the individuals stated that they used traditional treatment for burns, and 57.6% stated that they used complementary and alternative products to relieve post-burn pain. Similarly, in the study of Oral et al. (17), the second most common purpose of using complementary and alternative products (39.9%) was determined as pain. In the study of Frass et al. (18), the top five medical conditions in which complementary and alternative products are used most frequently in 10 different countries were investigated and pain was the first place. The acuteness of burn pain, the fact that complementary and alternative products are easily accessible in this period, and non-pharmacological methods are frequently used in pain control in our country may cause this situation (19).

The first hour in the time period following the burn is very important and is called the "golden hour". The right applications during this period could speed up the recovery process, reduce the hospital stay and could be life-saving. The aim of burn treatment and care should be to stop the burning process, cool the burn area and relieve pain. Therefore, complementary and alternative products used in burn care should be chosen correctly and applied at the right time. Otherwise, the materials used may increase the probability of wound infection by causing the accumulation of microorganisms on the wounds (20,21). In our study, 71.0% of the individuals immersed the burn wound in running water as recommended and beneficial. Nearly half of them applied cream and ice to the wound, 30% applied herbal agents, 32% applied yogurt. A small number of participants also used toothpaste, egg white, tomato paste etc. products for the wound as not recommended, potentially

<b>Table 1: Socio-demographic characteristics of individuals and their descriptive characteristics of the burn they experienced</b>		
<b>Descriptive characteristics</b>	<b>n</b>	<b>%</b>
<b>Age</b>		
18-35	364	72.8
36-53	100	20.0
≥54	36	7.2
<b>Mean age (Min.-Max.)</b>	30.37±12.09 (18-73)	
<b>Gender</b>		
Women	379	75.8
Men	121	24.2
<b>Marital status</b>		
Married	190	38.0
Single	310	62.0
<b>Education status</b>		
Literate	22	4.4
Primary-secondary school	28	5.6
High school	151	30.2
University and above	299	59.8
<b>Economical status</b>		
Income less than expenses	133	26.6
Income equals expense	280	56.0
Income more than expenses	87	17.4
<b>Living place</b>		
Province	348	69.6
District	102	20.4
Town/Village	50	10
<b>Occupation</b>		
Worker	12	2.4
Officer	175	35.0
Not working	273	54.6
Retired	14	2.8
Private sector	26	5.2
<b>Type of burn*</b>		
Scald burn (such as hot tea, milk, soup, coffee, food, cooking oil)	214	42.8
Contact burn (such as stove, flame, barbecue, hair straightener, iron)	225	45.0
Sunburn	125	25.0
Laser epilation burn	13	2.6
<b>Degree of burn</b>		
1 <sup>st</sup> degree	250	50.0
2 <sup>nd</sup> degree	229	45.8
3 <sup>rd</sup> degree	21	4.2
<b>Receiving previous burn education</b>		
Yes	226	45.2
No	274	54.8
<b>Using alternative treatment for the burn</b>		
Yes	393	78.6
No	107	21.4

**Table 1: Continued**

Descriptive characteristics	n	%
<b>Reason for using traditional method in burn*</b>		
Infection in the acute phase of the burn	134	26.8
Faster healing of the burn in the acute phase	225	45.0
No scar after the burn has healed	214	42.8
Reducing post-burn pain	288	57.6
<b>Recommended applications*</b>		
Holding under running water	355	71.0
Go to the health institution without any application	37	7.4
<b>Not recommended, potentially harmful applications*</b>		
Applying cream	239	47.8
Ice application	245	49.0
Yoghurt riding	161	32.2
Applying toothpaste	52	10.4
Applying egg white	29	5.8
Applying tomato paste	15	3.0
Applying herbal agents such as St. John's Wort oil, olive oil	150	30.0
Other**	8	1.6

\*More than one answer was given.

\*\*Raw meat, apple zest, pressing salt on the burn blister, applying cold flour  
Min.-Max.: Minimum-maximum

harmful applications. Similar to our study, the methods used by mothers in case of burns in their children include running water (42.4%), cream (13.9%), ice (10.5%), yogurt (5.9%), toothpaste (2.9%) and egg white (2.1%) were applied (10). In the study of Fadeyibi et al. (22), it was stated that 29.2% of the patients used water for the burn area, 12.5% used eggs and 48% used other materials. In addition, in the same study, it was stated that patients who were not given first aid with water had a higher complication rate compared to those who received first aid with water. In the study conducted with 500 children who experienced burns in England and the United States; it has been determined that food, oil, toothpaste, shampoo, and ice applications are frequently applied to the burnt area of children (20). There is evidence in the literature that the most appropriate intervention for a burn wound is to keep the wound in running water (21-23). In a study by Harish et al. (21), 4918 patient groups were examined and it was concluded that the best response to the burn was the application of running tap water for 20 minutes for up to 3 hours following the burn injury. The results of our study show parallelism with the literature. The fact that 54.8% of the individuals did not receive any training on burns before in our study group, as well as the Turkish society's tendency to use complementary and alternative products, led to the preference of these products for burn wounds.

In our study, it was determined individuals aged 54 and over, literate education, who did not receive any training on burns before, and who used traditional methods in burns

had statistically higher mean ACTS scores and had positive attitudes towards complementary treatments ( $p<0.05$ ). Similar to our study in the literature, the rate of preference for complementary and alternative products increases with advanced age (18,24). In our study, it is thought that the reasons such as the thought that the natural thing will be harmless, the experience gained with old age against alternative products, having a chronic disease with old age, and managing the symptoms of the disease with alternative products increase the rate of preference for complementary and alternative products in the elderly group.

Educational status of individuals, use of complementary and alternative products, positive perspective and attitude towards products are also effective factors. In our study, it was determined that the literate people had a more positive attitude towards complementary therapy compared to other individuals.

In addition, the most effective predictor of ACTS was education level and the education level was responsible for 15.7% of the change in ACTS, and the status of being educated in burn care for 9.4%. In the study conducted by Gökçe and Gürdoğan (25), it was determined patients with primary education level showed more positive attitudes towards traditional treatment. In different studies, it has been reported the attitudes of patients with low education level to complementary therapies are higher (26). In another study, it was found as health literacy increases, the attitude towards complementary therapy decreases (27). It is thought individuals

**Table 2: Socio-demographic and burn-related characteristics of individuals and their attitudes towards using complementary therapies**

Descriptive characteristics	ACTS Mean±SD
<b>Age</b>	
18-35	16.59±5.65 <sup>a</sup>
36-53	16.54±6.18 <sup>a</sup>
≥54	20.50±7.84 <sup>b</sup>
p†	0.001*
<b>Gender</b>	
Women	16.64±5.88
Men	17.54±6.38
p‡	0.153
<b>Living place</b>	
Province	16.69±5.95
District	16.60±6.04
Town/Village	18.58±6.24
p†	0.104
<b>Education status</b>	
Literate	22.36±6.38 <sup>a</sup>
Primary-secondary school	20.46±8.05 <sup>a</sup>
High school	15.96±5.35 <sup>b</sup>
University and above	16.57±5.79 <sup>b</sup>
p†	0.000*
<b>Degree of burn</b>	
1 <sup>st</sup> degree	17.79±6.04 <sup>a</sup>
2 <sup>nd</sup> degree	15.94±5.79 <sup>b</sup>
3 <sup>rd</sup> degree	15.80±6.61 <sup>ab</sup>
p†	0.002*
<b>Receiving previous burn education</b>	
Yes	16.08±5.44
No	17.50±6.39
p‡	0.009*
<b>Using alternative treatment for the burn</b>	
Yes	17.37±5.83
No	14.99±6.34
p†	0.000*

†One-way analysis of variance was performed.

‡Student's t-test was performed. <sup>a, b</sup>shows the group that made the difference.

\*p<0.05

ACTS: Attitude towards using complementary therapies scale, SD: Standard deviation

with a higher education level have a higher rate of behaviors such as reaching the right information, thinking critically and making decisions, and turning to professional help, reducing compliance with alternative treatment.

In studies conducted in Turkey, it has been reported that the use of alternative products is between 12.6% and 76% (28,29). In our study, it was found that 78.6% of the individuals used alternative treatment for burns and the attitudes of those using alternative treatment were significantly higher.

### Strengths and Limitations

Our study is the first to reveal the alternative treatments used by adults after burns, the reasons for using these treatments, and the factors affecting the attitude towards using complementary treatments. There are some limitations in our study. The cross-sectional conduct of the study may affect the generalizability of the results.

**Table 3: The effect of some independent variable on ACTS total score: Multiple linear regression analysis**

Independent variables	B†	SE†	β†	t	p-values	95% CI†
Age	0.502	0.022	0.105	2.421	0.016	0.010 to 0.094
Education status	-1.198	0.337	-0.157	-3.554	0.000	-1860 to -0.536
Receiving previous burn education	-1.134	0.533	-0.094	-2.128	0.034	-2.180 to -0.087
Using alternative treatment for the burn	1.689	0.705	0.115	2.394	0.017	0.303 to 3.075
Degree of burn	-1.259	0.500	-0.121	-2.517	0.012	-2.242 to -0.276

R<sup>2</sup>=0.086

†: B, unstandardized regression coefficient, SE: Standard error, β: Standardized regression coefficient, CI: Confidence interval

\*p&lt;0.001

ACTS: Attitude towards using complementary therapies scale

## Conclusion

As a result of our study, individuals prefer alternative products that are not suitable for burn treatment, and the attitude towards the use of alternative treatment is related to advanced age, low education level, getting education about burns and using traditional methods in burns. In this context, in order to prevent burn wound infections, contribute to the healing process and reduce complications, it is important to use practices recommended by health professionals and avoid harmful practices. In addition, it is recommended to conduct randomized controlled studies with a high level of evidence in which alternative treatments are used in burn wounds.

## Ethics

**Ethics Committee Approval:** Ethics committee approval was obtained for the study by Erciyes University Social and Human Sciences Ethics Committee (Approval no: 164, Date: 26.04.2022).

**Informed Consent:** Informed consent was obtained.

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

## Authorship Contributions

Surgical and Medical Practices: Y.S., G.A.A., Concept: Y.S., G.A.A., Design: Y.S., Data Collection and Processing: Y.S., G.A.A., Analysis or Interpretation: Y.S., G.A.A., Literature Search: Y.S., G.A.A., Writing: Y.S., G.A.A.

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