

ORIGINAL RESEARCH

Determination of the Use of Complementary and Alternative Treatment Methods in Burn Wounds of Patients Who Apply to The Emergency Department with Burn Complaints

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Abstract

Objective: This study aimed to determine the use of complementary and alternative treatment methods in burn wounds among patients who visited the emergency department with burn complaints.

Material-Method: This descriptive, cross-sectional study was conducted with 100 patients who applied to the emergency department of a training and research hospital with burn complaints. Data were collected using three questionnaires: one on the patients' socio-demographic information, another on the characteristics of the burns, and a third that assessed knowledge and use of complementary treatment methods for burns.

Results: It was determined that 32% of the participants were burned due to scalding, with most cases involving 1st and 2nd-degree burns. The participants reported that they were aware of traditional burn treatment methods, including washing with cold water (43.9%), using St. John's wort oil (17%), and applying yogurt (14.6%). The most commonly used methods in burn treatment were cold water (90.8%) and St. John's wort oil (5.7%).

Conclusion: It was determined that while participants were aware of various complementary and alternative treatment methods for burn injuries, they did not frequently use these methods.

Keywords: Burn, Complementary and Alternative Treatment, Emergency Service, Nursing Care.

INTRODUCTION

Burn is a severe trauma that can affect individuals of all ages from past to present and is the leading cause of injury-related deaths worldwide.¹ According to the estimates of the World Health Organisation, 265,000 people die every year due to burns all over the world.² Hundred burn cases are admitted to the emergency service every day in various ways.³ Correct first aid intervention within the first hour reduces the pain, tissue damage, hospitalization time, and mortality rate of the patient/injured in the burn area⁵ and accelerates wound healing by providing rapid proliferation of epithelial cells in the burn area.^{4,6} However, it is reported in the literature that correct first aid is not provided in hospital interventions, water application is insufficient to relieve pain and suffering in burn wounds, and traditional treatments such as tomato paste, butter, toothpaste, potatoes, and

egg whites are also mentioned.⁷ A study examining the methods used by mothers who treated their children after burns found that 53.3% of the participants treated the burn area with water, 6.7% applied yogurt, and 5.5% applied ice.¹ However, for a plant to be used for medicinal purposes, the suitable species must be collected at the right time. Studies conducted on plants sold by herbalists indicate that the situation threatens public health, while unconscious application by unauthorized people threatens health.⁷⁻¹¹ In addition, social media and television programs cause individuals living in urban and rural areas to apply complementary and alternative treatment methods unconsciously.¹² Complementary treatment methods applied unconsciously may increase the depth of the burn, prolong the hospital stay, and even cause death.

According to the recommendation of the American Association of Surgeons, any pre-existing condition that may complicate the treatment, prolong recovery, or affect mortality-among the criteria for referral to the burn center, the emergency room nurse should detect this situation and share it with the relevant physician. In addition, during the care of a burn patient, the emergency room nurse should provide information about keeping the wound clean, the frequency of dressing, and the medications prescribed under the supervision of a doctor that should be used in the dressing.¹³

In this direction, the study was conducted to determine the use of complementary and alternative treatment methods in burn wounds of patients who applied to the emergency service with burn complaints.

MATERIALS AND METHODS

The ethical dimension of the research

Before starting the study, permission was obtained from Karabük University Non-Interventional Clinical Research Ethics Committee (Date:17.01.2023, decision no: 2023/1235). In addition, institutional permission was obtained from Karabük University Training and Research Hospital (Date:06.02.2023, Number: E-34771223-774.99-208424864). The purpose and importance of the study were explained to the participants, and their consent was obtained in line with the principle of voluntariness. The study was conducted in accordance with the Helsinki Declaration 2008 Principles.

Type of research

The study is descriptive and cross-sectional type.

Population and sample of the study

The study population consisted of patients who applied to the Emergency Service of Karabük Training and Research Hospital with burn complaints between 01.02.2023 and 01.03.2023. The study sample included patients over 18 who applied to the emergency service of Karabük Training and Research Hospital between 01.02.2023 and 01.03.2023 with a complaint of burns and who voluntarily accepted to participate (n=100). During the study, 105 burn patients were admitted to the emergency service. Five patients did not agree to participate in the study. Accordingly, the study was concluded with 100 patients.

Data collection

In the collection of the data, a questionnaire prepared by the researcher based on the literature, including socio-demographic information (age, gender, marital

status, marital status, educational status, employment status, and place of residence), a questionnaire including the characteristics of burn¹⁴ and a questionnaire determining the knowledge and use of complementary treatment methods used in burn were used.^{1,15}

Statistical analysis of data

Data were analyzed using SPSS (Statistical Package for Social Science) 24 package program to analyze the results. Descriptive statistical methods such as number, mean, standard deviation, and percentage were used to evaluate the data. Each item was assessed within itself.

RESULTS

When the socio-demographic characteristics of the patients presenting to the emergency service with burn complaints were analyzed, it was found that the mean age was 32.49±17.06 years. It was determined that 52% (n=52) of the participants were male, 50% were married (n=50), 24% had a bachelor's degree or above, 52% were not working, and 69% lived in the city center (Table 1).

Table 1. Socio-demographic Characteristics of Participants

Socio-demographic Characteristics	Data
Age, mean±SD	32.49±17.06
Gender, n(%)	Woman 48 (48)
	Male 52 (52)
Marital status, n(%)	Married 50 (50)
	Single 50 (50)
Education status, n(%)	Illiterate 13 (13)
	Primary School 10 (10)
	Secondary Education 15 (15)
	High School 38 (38)
Employment status, n(%)	Undergraduate and above 24 (24)
	Employee 48 (48)
Place of settlement, n(%)	Not working 52 (52)
	Village 7 (7)
Total, n(%)	District 24 (24)
	Province 69 (69)
	100 (100)

When the causes of burn of the participants were analyzed, it was determined that 32%(n=32) were scalded, 18% (n=18) were burned by fire, and 12%

(n=12) were due to sunburn. The areas burned were hands 35% (n=35) hand, 21% (n=21) arm, 10% (n=10) face were the most commonly burned areas, 50% (n=50) were 1st-degree burn, and 43% (n=43) were 2nd-degree burn respectively (Table 2).

Table 2. Findings of the participants regarding the characteristics of burns

Cause of burn, n(%)	Fire	18 (18)
	Scalding	32 (32)
	Allergenic substance	3 (3)
	Electricity	7 (7)
	Hot oil	11 (11)
	Hot iron	11 (11)
	Steam	6 (6)
	Sun	12 (12)
	Burning area, n(%)	Face
Head and neck		6 (6)
Hand		35 (35)
Arm		21 (21)
Chest-abdomina		4 (4)
Back		3 (3)
Foot		7 (7)
Leg		9 (9)
Whole body		5 (5)
Burn depth, n(%)	1st Degree	50 (50)
	2nd Degree	46 (46)
	3rd Degree	4 (4)
Total, n(%)		100 (100)

When the status of knowledge, utilizing, and learning complementary and alternative treatment practices used in burn was examined, it was found that 82% of the participants knew/heard of any of the complementary and alternative treatment methods in burn treatment. The most common methods were cold water rinsing 43.9% (n=36), St. John's wort oil 17.0% (n=14), and yogurt 14.6% (n=12) (Table 3). When the complementary and alternative treatment methods used in burn treatment were analyzed, 90.8% (n=79) used cold water, 5.7% (n=5) used St. John's wort oil, 97.7% (n=85) stated that they used this method in their current burn experience, and 96.4% (n=82) indicated that they thought this method was effective. The participants said that they heard about these methods from neighbors/friends 31.7% (n=26), from family/relatives 26.8% (n=22), and from the internet 21.9% (n=18) (Table 3).

Table 3. Participants' knowledge and use of complementary and alternative methods in burn treatment

Complementary and alternative treatment method that you knew/heard is used in burn treatment, n(%)	Yes	82 (82)
	No	18 (18)
Known complementary and alternative treatment methods (n=82), n(%)	Egg white-egg oil	4 (4.8)
	Washing with cold water	36 (43.9)
	St. John's Wort oil	14 (17.0)
	Olive oil	4 (4.8)
	Yogurt	12 (14.6)
	Potato	2 (2.4)
	Ozonated oil	3 (3.6)
	Putty	3 (3.6)
	Tea tree cream	4 (4.8)
		79 (90.8)
Complementary and alternative treatment methods previously used in burn treatment (n=87), n(%)	Cold water	79 (90.8)
	St. John's Wort oil	5 (5.7)
	Olive oil	1 (1.1)
	Putty	1 (1.1)
	Yogurt	1 (1.1)
The situation using this method at the moment, n(%)	I used it	85 (97.7)
	Not used	2 (2.3)
Thinking that the complementary and alternative treatment method used is effective (n=85), n (%)	Yes	82 (96.5)
	Undecided	3 (3.5)
Where they learned complementary and alternative treatment methods (n=82), n (%)	Internet	18 (21.9)
	Newspaper-social media	9 (10.9)
	Doctor	2 (2.4)
	Nurse	5 (6.0)
	Family/relatives	22 (26.8)
	Neighbour/friend	26 (31.7)

Although not shown in the table, no significant relationship existed between the socio-demographic characteristics of the patients who applied to the emergency department and the complementary and alternative treatment methods they knew/heard were used in burn treatment ($p>0.05$).

DISCUSSION

Burn complaints are a form of emergency trauma that can happen to people of all ages and genders.^{12,16} The literature states that thermal burns are the most common burns in individuals presenting to the emergency service with burn complaints, and most of these burns are scalds.^{13,17} In our study, 32% of the

patients presented to the emergency service with scalding burns, in accordance with the literature. It is important to support these patients in functional areas such as hand, face, and extremities as they have difficulty fulfilling their self-care needs and experience psychosocial problems¹⁸. In the study, the most affected body parts of the patients admitted to the emergency service with burn complaints were the hand (35%), arm (21%), and face (10%). In this direction, since patients will be uneasy due to the deterioration of their appearance, emergency nurses should inform the patients that they should not use substances other than the recommended drugs when they first meet the patient and during the treatment. The first intervention in a burn case is to keep the burned area under running water for 20 minutes. Then, the burning area should be covered with a clean dressing and go to the nearest health institution.⁵ In Hafizurrachman et al. study investigating the traditional treatment methods used in burn injuries in the 21st century, it was found that 29% of the first intervention after the burn was washing with water, 46% was complementary and alternative treatment method, and 30% was applied to the emergency service without any intervention.¹⁹ In the study conducted by Gürler H. et al., the rate of water use was 53.3%. In our study, the rate of knowing how to wash with water after burn was 43.9%, and the rate of those who washed with water before applying to the emergency service was 90.8%.¹ Burn wounds are very susceptible to infection, especially in the first hour. Inappropriate drugs used during this period increase the depth of the wound and reduce the healing rate.¹⁷ For example, eggs are an excellent culture medium for microorganisms and a potential cause of allergy or anaphylaxis. In a study, a 13-month-old boy with a burn percentage of 5% was found to have an egg applied to the burn by his parents and needed treatment up to intubation.^{20,21} In the study conducted by Broadis et al., it was found that only 69% of the patients received first aid at home, and the most commonly used methods were water (31%) and eggs (21%). The interviews with the families who used eggs as the first treatment at home stated that this method was preferred because it was readily available and reduced bullae formation.²² In our study, 4.8% of the participants stated that they knew egg white as the first intervention in burn treatment as a complementary and alternative treatment used in burn wounds. However, among the traditional and complementary methods used in treating burns in our study, 17% stated that they knew that St. John's wort oil was used, and 6% indicated

that they used St. John's wort oil. St. John's wort oil, frequently used in treating burns, has been used for centuries in treating burns, wounds, and ulcers, with diuretic, antibiotic, and antiviral effects. However, it has been reported that yellow cantarone is contraindicated after organ transplants in HIV patients on protease-1 inhibitors and severely depressed patients at risk of suicide. It was also emphasized that those who use these solutions should not be exposed to sunlight, as they sensitize the skin to sunlight.^{23,24,25} The study by Altiokka emphasized how misinformation obtained without any filtering or control mechanism in the virtual environment jeopardizes public health by selecting the three most frequently mentioned medicinal plants in social media often used by the public¹¹. In this direction, nurses working in emergency services should question the conditions that may cause complications in patients presenting with burn wounds.

Complementary and supportive treatment methods used in burn wounds are available. Still, there are not enough evidence-based scientific studies on the efficacy, acute and chronic toxic effects, and quality of herbal products, which are safe because they are natural. Solid sources should be used to obtain information.²⁴ The literature says these practices are primarily heard through television, the internet, close friends, and family.^{26,27,28} In this study, patients said they mostly heard about the traditional treatment methods used for burns from their close relatives (31.7%), the internet, and social media (21.9%). Nurses in the emergency service should explain to patients that the information given by unauthorized persons while intervening in burn patients does not have any evidence and, therefore, increases infection, triggers bullae formation, prolongs the treatment process, and may even cause death.

CONCLUSION

In this study conducted with patients admitted to the emergency service with burn injury, it was determined that the participants knew many complementary and alternative treatments for burn injury but did not use these methods. In line with these results, it is recommended that emergency service nurses inform patients and their relatives that complementary and alternative treatment methods whose reliability has not been proven may cause life-threatening burn injuries. This study was conducted in the emergency service of a training and research hospital and cannot be generalized to all patients.

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