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Introduction

The burn lesion constitutes a clinical emergency and precipitates significant physical and psychological impairments for patients, impacting their interactions with family and society. Moreover, permanent scars may result in other physical sequelae, including contractures, physiological alterations, and subsequently, body image deformities, which are directly associated with issues affecting the quality of life of the victims, whose daily routines are altered (Aiquoc et al., 2019).

As one of the leading fifteen causes of illness burden and the fourth most common kind of trauma, burn

Association Between Family Support and Body Image Satisfaction in Patients With Burn Injuries

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ABSTRACT

Objective: This study aims to examine the relationship between family support and body image satisfaction in patients who have sustained burn injuries. Considering the profound psychosocial impact of burns, the role of familial involvement in recovery and emotional adjustment is critically assessed.

Methods and Materials: A descriptive cross-sectional study was conducted from December 29, 2024, to February 5, 2025, at Al-Imam Sadiq Teaching Hospital in Babylon, Iraq. A convenience sample of 145 patients with burn injuries participated in the study. Data were collected using a structured questionnaire comprising four parts: socio-demographic data, clinical history, a 17-item Body Image Satisfaction Scale, and a 16-item Family Support Scale. Internal consistency was confirmed with Cronbach's alpha values of 0.960 and 0.993, respectively. Descriptive and inferential statistics, including Pearson correlation, were employed for data analysis using SPSS.

Findings: Among 130 analyzed patients, 64.6% reported low body image satisfaction, while 67.7% perceived high family support. Pearson correlation analysis revealed a significant positive relationship between family support and body image satisfaction ($r = 0.572$, $p < 0.001$). The coefficient of determination ($R^2 = 0.3268$) indicated that family support explains approximately 33% of the variance in body image satisfaction.

Conclusion: Family support plays a crucial role in enhancing body image satisfaction among patients with burn injuries. These findings underscore the necessity of integrating family-centered interventions in burn rehabilitation programs to promote emotional well-being and positive self-perception.

Keywords: Family Support, Burn patients, Body Image Satisfaction.

wounds are a huge problem all over the world (Korkmaz et al., 2023). They are one of the leading causes of injury in the region of the Eastern Mediterranean, accounting for a significant fraction of trauma-related presentations and emergency department admissions (Al-Shamsi & Othman, 2017).

based on data provided by the World Health Organization, the global incidence of fire-related injuries is approximately 110 per 100,000 people, with over 300,000 people dying each year (Al-Shamsi & Othman, 2017). The World Health Organization (WHO) estimates that approximately Every year, almost eleven million

people suffer burn injuries., with 180,000 of these fatal (Magbool et al., 2021). Every year in Iran, 150,000 people are burned, with 3,000 people dying as a result. Burns account for 5% of total accidents in Iran and 6% of all accident-related deaths (Khajehgoodari et al., 2020).

In 2016, around 6000 Iraqis died from fire-related causes, with 18,000 suffering from disability-related burns. Inpatient burn mortality is approaching 30%, with girls outnumbering males (Al-Shamsi & Othman, 2017). In 2016, Baghdad experienced 1.2% burn injuries per 100,000 people, with flame scalds, electrical burns, and chemical burns being the most common. Second and third degrees are hazardous, leading to human loss and ugliness (Gatea et al., 2019).

Burn patients face high costs, often affecting vulnerable individuals, leading to disability, disfigurement, and psychological issues, and often causing social stigma, particularly among females (Al-Shamsi & Othman, 2017).

Experiencing a severe burn injury can significantly alter an individual's self-image and psychological health. Because most burn victims have scars, contractures, or have lost limbs in the accident, it is not uncommon for them to experience problems with their body image (Tahir et al., 2023).

the intricate web of factors influencing body image has been a focal point of psychological and sociological research for decades, with family relationships emerging as a pivotal element in this complex interplay (Abadi, 2023).

Family support plays a crucial role in the healing process of burn patients, particularly regarding satisfaction with body image. Burn injuries often result in visible scars and disfigurement, which can significantly impact a person's psychological well-being and self-perception. Research has demonstrated that patients with strong family support tend to have better outcomes in terms of body image satisfaction, as family members provide emotional stability, encouragement, and practical help during the recovery process (Tan et al., 2021)].

Methods and Materials

Study Design and Participants

A descriptive cross-sectional study design was implemented for patients 'with burns in Babylon city at

Al-Imam Sadiq Teaching Hospital during the period extending from 29th December 2024 to 5th February 2025. One hundred and forty-five patients of sample for non-probability (convenience sampling) are randomly selected from burn consultation.

The data collection was carried out through the period of (29th December 2024 to 5th February 2025) by using the designed tested questionnaire in Arabic version that collected by (self-report) and used the interview method for the sample that neither read nor write, after acquiring the institution's permission.

The questionnaire was administered personally by the researcher to the patients. The researcher met of the participants inside the burn's consultation, the research objectives were explained to them and how to fill out the questionnaire and the participants were also informed that the data would be treated strictly confidential for research purposes only, then filled by the patients after obtain their agreement to participate in the study to maintain the ethical consideration and respect autonomy of the participants.

During the process of completion of the questionnaire any difficulties understanding in items of the questionnaire was explained to participants to ensure obtaining proper answer, the participants need approximately (15 -20) minutes to complete all items of the questionnaire

Instruments

The questionnaire was constructed from various previous literature reviews and articles related to this topic to achieve the goals of this research, and it consists of four parts and includes the following:

Part (1): Demographical data

The socio demographic data, consist of different items that include general details regarding individuals that are sufferers as:(age, sex, Marital Status, degree of education, profession, residency, Living situation, Income Level).

Part (2): clinical data

The second part is related to the clinical data of the patients which include (Period Since the Burn Injury, Cause of burn injury, Severity of burn ,Area(s) of the body affected by the burn , Type of treatment ,

psychological counseling after burning ,previous burn injury).

Part (3): Body Image Satisfaction Scale

This part consists of a (17) questions, using Likert' scale (agree, neutral, disagree) These items are rated as; agree (1); neutral (2); disagree (3) for the positive items, and vice versa for the negative items.

Part (4): Family Support for the patient with burn

This part consists of a (16) questions, using (always, sometime, never) These items are rated according to Likert' scale as; always (1); sometime (2); never (3) for the positive items, and vice versa for the negative items.

The validity of the questionnaire was obtained by reviewing the questionnaire by (11) experts to estimate the clarity and relevance of the questionnaire. A deep review of the questionnaire and some changes were performed according to their comments and opinions.

Analyze the instrument's internal consistency to determine its reliability; which was calculated using Cronbach's alpha which are statistically acceptable (($r = 0.960$) for Body Image Satisfaction Scale, ($r = 0.993$) for Family Support for the patient with burn) the findings

mean that the questionnaires had adequate level of consistency and measurability.

Data Analysis

The researcher utilized SPSS and Microsoft Excel programs to analyze data from the study sample, establish relationships, and conduct rigorous statistical tests to draw significant conclusions.

Findings and Results

The study sample's socio-demographic distribution is as follows: The age range is predominantly between 20-39 years (70.8%), with an average age of 34.7 years ($SD = 11.43$). Female make up 67.7% of the sample, and 61.5% are married. Most participants have at least a secondary education (64.6%), with 47.7% holding a diploma or higher. The majority are unemployed (51.5%) and live with their families (99.2%). Regarding family income, 43.1% report having "enough" income. A larger proportion of participants reside in rural areas (54.6%) compared to urban areas (45.4%).

Table 1

Study Sample Distribution according to Socio-Demographic variables (SDVs)

SDVs	Classification	No.	%
Age/ years	<20	4	3.1
	20-29	46	35.4
	30-39	46	35.4
	40-49	19	14.6
	50-59	9	6.9
	≥ 60	6	4.6
	$M \pm SD$	34.70 \pm 11.434	
Gender	Male	42	32.3
	Female	88	67.7
Marital status	Single	22	16.9
	Married	80	61.5
	Divorced	22	16.9
	Widowed	6	4.6
Education level	Illiterate	3	2.3
	Read and write	14	10.8
	Elementary	29	22.3
	Secondary	22	16.9
	Diploma and above	62	47.7
Occupation	Employee	41	31.5
	Unemployed	67	51.5
	Student	19	14.6
	Retired	3	2.3
Living Condition	Lives alone	1	.8
	Lives with family	129	99.2
Family income/ monthly	Enough	56	43.1
	Enough limited	40	30.8
	Not enough	34	26.2
Residents	Urban	59	45.4
	Rural	71	54.6

No (Number); %(Percentage); M(Mean); SD (standard deviation)

Table 2 presents an overall evaluation of body image satisfaction among burned patients. Out of 130 patients, 64.6% (n=84) had low body image satisfaction, scoring within the range of 17 to 28.33. A smaller proportion, 9.2% (n=12), demonstrated moderate satisfaction with scores between 28.34 and 39.66. Meanwhile, 26.2%

(n=34) showed high body image satisfaction, with scores ranging from 39.67 to 51. The mean score for body image satisfaction across all patients was 27.84, with a standard deviation of 11.691, indicating a high level of dissatisfaction on average.

Table 2

Overall Evaluation of Body Image Satisfaction among Burned Patients

Variables	Score	No.	%	M ± SD	Eva.
Body Image Satisfaction	Low	84	64.6	27.84±11.691	Low
	Moderate	12	9.2		
	High	34	26.2		
	Total	130	100.0		

M (Mean for total score) SD (Standard Deviation for total score)

Level of Evaluation (Low= 17-28.33; Moderate= 28.34-39.66; High= 39.67-51)

The evaluation of family support for burned patients reveals that the majority of patients (67.7%) perceive high levels of family support, with a mean score of 38.02

± 11.686, falling within the "High" evaluation category. A smaller proportion of patients reported moderate (13.8%) and low (18.5%) levels of support.

Table 3

Overall Evaluation of Family Support for Burned Patients

Variables	Score	No.	%	M ± SD	Eva.
Family Support	Low	24	18.5	38.02±11.686	High
	Moderate	18	13.8		
	High	88	67.7		
	Total	130	100.0		

M (Mean for total score) SD (Standard Deviation for total score)

Level of Evaluation (Low= 16-26.66; Moderate= 26.67-37.33; High= 37.34-48)

according to the Pearson correlation analysis There is a significant positive link between body image satisfaction and family support among burn patients ($r =$

0.572, $p = 0.000$). This suggests that having a strong support from family members is linked with greater body image satisfaction ($R^2 = 0.3268$).

Table 4

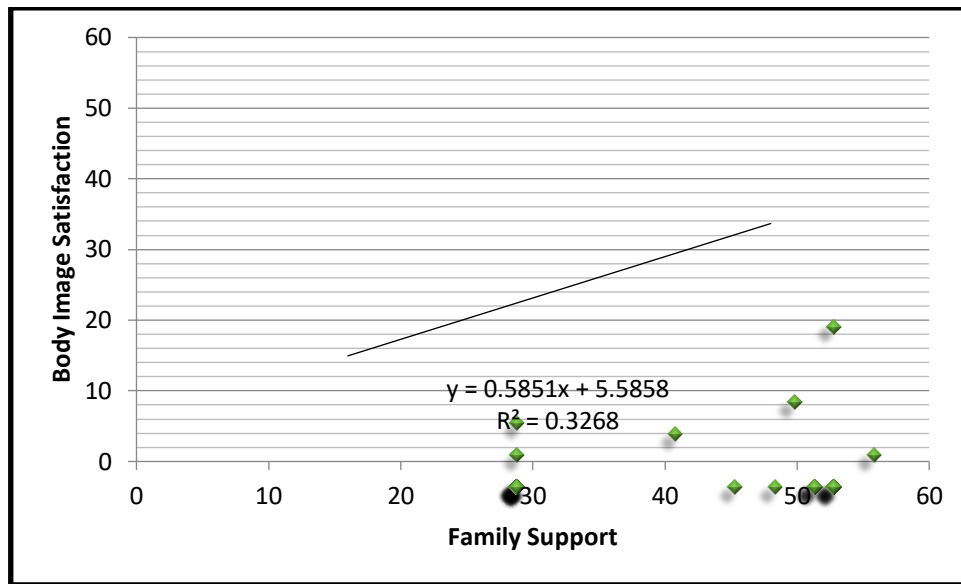
Association between Body Image Satisfaction among Patients with Burns and their Family Support

Correlations		Body Image	Family Support
Body Image	Pearson Correlation	1	.572**
	Sig (2-tailed)		.000
Family Support	Pearson Correlation	.572**	1
	Sig (2-tailed)	.000	

** . Correlation is significant at the (0.01) level (2-tailed).

Figure 1

Association between Body Image Satisfaction among Patients with Burns and their Family Support



Discussion and Conclusion

Based on the study results (table 1) More than two thirds are in the (20-29) and (30-39) years old. This result agrees with the study that done by (Kouchek et al., 2024) who found most of patients within age twenty to thirty-nine years old also support by other study which done by (Choudhary et al., 2019) who found most of patients within age (20 to 39) years old.

The study reveals that individuals aged 20-39 are at higher risk of burn injuries due to their occupational exposure, household activities, and risk-taking behavior. These individuals are often employed in industries like construction, manufacturing, and food service, which expose them to fire, hot surfaces, chemicals, and electrical hazards.

The present study data analysis led to the following conclusions: More than two thirds of study sample are female. This result is consistent with the findings that found by (Mehta et al., 2022) which reveals that women riskier for burn in which female responsible for cooking and managing household tasks involving open flames or hot liquids, increasing their risk of burn injuries. Also disagree with the result that made by (Agbenorku et al., 2017) their found More than half from admitted patients were males also disagree with (Abo El Ata et al., 2021) who found that most of patients were males

Women are more vulnerable to burns due to domestic responsibilities, clothing like veils and long skirts, and

domestic violence, as they are often victims of deliberate burning, such as acid attacks or arson by a partner.

Based on the study results (table 1) More than half of study sample are married. This result is consistent with the findings that found by (Heydarikhat et al., 2018) which reveals that the majority of sample are married, and (Tehranehsat et al., 2020) who mentioned in their study that most of the sample were married. also supported by other study carried out by (Magbool et al., 2021), which indicates that more than two third of burns patients were married.

May be because the married persons need to stress work to meet the basic needs for home so they need to work in different jobs as factories, self-employment without use proper protective equipment's and also the married women work in kitchen to be contact with fire at home too married persons have more responsibilities than the single so more likely to burn (the researcher).

Based on the study results (table1) Less than half of study sample are graduated as Diploma and above. This result disagrees with the result that made by (Abo El Ata et al., 2021), also disagree with study result made by (Bagheri et al., 2023) that show Majority have basic education.

Many burn patients with higher education levels are influenced by socioeconomic, occupational, and demographic factors. Highly educated individuals are often employed in professional or technical roles, which can expose them to burn risks. Higher education also

increases the likelihood of having insurance and reporting burn injuries, leading to more prominent statistics.

More than half of study sample their occupation as free work (Unemployed), This study confirms during the study done by (Abo El Ata et al., 2021) who found most of patients their occupations as free work.

Self-employment in different places, as chefs in restaurants, bakers, cafes, and car maintenance workshops may be exposed to burns more than other professions, because the nature of their work is different, in addition to the difference in their interest and priorities in safety principles among them (the researcher).

Most of the study sample live with their families. Burns often require long-term medical care, rehabilitation, and emotional support from family members. Financial constraints, emotional and psychological support, and physical disabilities can all contribute to the need for family living. Family members assist with daily tasks and physical therapy, reducing feelings of loneliness and ensuring independence.

Two fifth of participants in research have enough income. This result disagrees with the result that made by (Chukamei et al., 2021) who concludes that the people with low socioeconomic condition are more at risk to burn injury.

Because that wealthier individuals are more likely to experience burns due to increased use of risk-prone appliances, frequent cooking or entertaining, and increased exposure to stovetops, hot dishes, and grills, which can pose burn risks if misused.

More than half of participants their residence in rural, this finding similar for result obtained by (Tehraneishat et al., 2020) which they fund also More than half of patients live in rural.

May be because people that live in rural area more use to oil derivatives in lifestyle to become more possible to burn accidental from urban area (The researcher).

Based on the study results (table 2) Less than two thirds of patients had low body image satisfaction, with One quarter showed high body image satisfaction. This result is consistent with the findings that found by (Uyar et al., 2023) that found a significant portion of participants reported low body image satisfaction. Specifically, as the burn surface % rose, and agree with the study done by (Willemse et al., 2023) in which burn

survivors often experience heightened dread of unfavorable assessment and the associated stigma, contributing to diminished body image satisfaction, also agree with the study that made by (Ali et al., 2024) that reported decreased physical function and a lower likelihood of returning to work post-injury led to dissatisfaction with body image.

Burn injuries can cause significant scarring, discoloration, contractures, or amputations, altering one's physical appearance and leading to self-consciousness and disconnection from their pre-burn identity. Cultural norms and media promote smooth skin, causing lower self-esteem and body dissatisfaction. Burn survivors may also experience fear of judgment, social withdrawal, and limited movement, leading to feelings of frustration and dissatisfaction with their bodies.

Based on the study results (table 3) More than two thirds of study sample perceive high levels of family support. This result is consistent with the findings that found by (Niroumand-Zandi et al., 2016) that show patient with burn have higher level of family support, also agree with the study done by (Farzan et al., 2023) that indicates that burn patients often receive substantial family support, but it disagrees with the result of a study conducted in Lahore, Pakistan, that done by (Waqas et al., 2016) demonstrated that individuals suffering from burns reported diminished levels of social support from their families.

High family support is crucial for individuals exposed to burns, as it significantly impacts their physical, emotional, and psychological recovery. It provides reassurance, motivation, emotional comfort, and assistance with daily activities, medication adherence, mobility, and body image issues, fostering self-acceptance and reintegration into society.

according to the Pearson correlation analysis There is a significant positive link between body image satisfaction and family support among burn patients. This indicates that higher levels of family support are associated with greater body image satisfaction, this result is consistent with the findings that found by (Gorbani et al., 2021) that found direct relationship between family support and satisfaction with appearance, also agree with the study done by (Niroumand-Zandi et al., 2016) The results showed that

those who were more satisfied with their body image had higher familial social support.

This is because family support plays a crucial role in helping a person with burns accept their body image, when a burn survivor receives consistent emotional support, encouragement, and understanding from their family, it can significantly improve their self-esteem and mental well-being.

Burn survivors often face anxiety, depression, or feelings of isolation due to changes in their appearance. A supportive family can provide reassurance, love, and validation, helping them cope with these emotional challenges. Also Encouraging words and actions from family members can help the individual focus on their strengths rather than their physical changes, fostering self-acceptance.

According to the study's results, burn patients who have family support report higher levels of body image satisfaction. The Pearson correlation coefficient ($r = 0.572$, $p = 0.000$) indicates that as family support increases, body image satisfaction also improves. Additionally, the coefficient of determination ($R^2 = 0.3268$) suggests that family support accounts for approximately 32.68% of the variance in body image satisfaction. These results highlight the crucial role of family support in enhancing the psychological well-being of burn patients, emphasizing the need for family-centered interventions to promote positive body image perceptions.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contribute to this study.

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