

# A Study of the Relationship Among Burned Patients' Resilience and Self-Efficacy and Their Quality of Life

This article was published in the following Dove Press journal:  
*Patient Preference and Adherence*

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**Introduction:** Among the most common causes of death and disabilities worldwide, burn injuries can affect all aspects of the life quality of the burned patients. Despite the apparent impacts of resilience and self-efficacy on the quality of life, few studies have addressed the relationship among these variables in burned patients. Accordingly, the present study aimed to investigate the relationship among burned patients' resilience and self-efficacy and their quality of life.

**Methods:** The present study was a descriptive, cross-sectional research conducted on 305 burned patients hospitalized in the largest burns hospital in the south-east of Iran. In this regard, the subjects were selected based on total population sampling. Data were collected using a questionnaire consisting of four sections as follows: a demographic survey, Connor-Davidson Resilience Scale (CD-RISC), Lev Self-efficacy Scale, and Burn Specific Health Scale-Brief. The collected data were then analyzed using descriptive tests, Pearson correlation, and linear regression at a significance level of  $P < 0.05$  in SPSS 22.

**Results:** The results show that there were significant positive correlations between the patients' resilience and self-efficacy ( $P < 0.001$ ,  $r = 0.31$ ), resilience and quality of life ( $P < 0.001$ ,  $r = 0.58$ ), and self-efficacy and quality of life ( $P < 0.001$ ,  $r = 0.63$ ).

**Conclusion:** It appears that burned patients' self-confidence and ability in adjusting with their conditions after injury are correlated with their quality of life. Thus, it is recommended that healthcare policymakers adopt some strategies to improve resilience and self-efficacy in burned patients for enabling them to effectively cope with the stressful conditions that they face as a result of their injuries.

**Keywords:** resilience, self-efficacy, quality of life, burn patients

## Introduction

Considering among the most serious issues in healthcare, burns are the fourth most common cause of injuries worldwide following traffic accidents, falls, and interpersonal violence.<sup>1</sup> Moreover, burns are known as the sixth most common cause of death in Iran.<sup>2</sup> According to statistics, in 2015, over 31 million people needed inpatient or outpatient hospital services due to their burn injuries.<sup>3</sup> In Iran, statistics show that 724,000 burn-related incidents occur annually, which result in 2920 death.<sup>4</sup> Most of the burn injuries are reported in low-income countries,<sup>5</sup> where due to a poor access to specialized care, the affected individuals are at higher risks of adverse consequences, disabilities, and death.<sup>6</sup>

The clinical experiences of burn survivors show that burn injuries often lead to trauma and can consequently cause permanent emotional, psychological, and physical

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changes in them. If a burn victim survives, he/she must cope with colossal psychological and physical challenges, which affect all aspects of his/her life.<sup>7</sup> These long-term feelings of being unwell and disabilities have caused burn injuries to remain as a major healthcare issue worldwide, especially in developing countries.<sup>8</sup> The consequences of burn injuries, including severe pain, hallucination and the haunting memory of the incident, witnessing the destructive effects of the injuries on patients' body and the ensuing psychological tension, and deformity and inability in performing daily personal tasks, disrupt the lives of the victims in various ways and eventually reduce their quality of life.<sup>9,10</sup> Research evidence showed that burn injuries can have a significant impact on the quality of life in the affected individuals as well as interfering with their physical, psychological, social, and religious well-being.<sup>11</sup>

WHO defines quality of life as individuals' perception of their status in the culture and value system, in which they live and their goals, expectations, standards, and priorities are related to that context.<sup>12</sup> Quality of life is incorporated with some domains such as physical health, psychological health, social relations, and interaction with the environment.<sup>13</sup> Currently, quality of life is known as one of the main concerns of healthcare experts, which is used as an index to measure health status in health-related studies. In the current century, the main goal of healthcare system is improving quality of life, which is influenced by the individuals' social, physical, and emotional environments as well as their reactions to these factors.<sup>14</sup>

Health characteristics may be biological, behavioral, social, cultural, economic, and ecological.<sup>15</sup> In general, the four basic axes of health characteristics are considered to be nutrition, lifestyle, environment, and genetics, so a support system is needed when one of these health axes weakens. Also, medical care is the fifth characteristic of health. Modern researchers describe health as the ability of individuals in adapting and managing themselves. Moreover, health dimensions are related to a person's well-being. Being in a good situation includes some positive aspects of life such as positive emotions, satisfaction, and resilience. A person's ability in being adapted to the situation, experience, and express emotional feelings are known symptoms of a health condition.<sup>16</sup>

Another important issue in healthcare is resilience, which, as a complex cultural construct, can potentially affect individuals' health, welfare, quality of life, and coping strategies.<sup>17</sup> In this regard, resilience is defined as the ability to deal with stressful situations and adapt to adversities successfully.<sup>18</sup> Simply saying, resilience is a positive

adaptation in response to undesirable conditions. Moreover, it is a useful skill, which helps in surviving the hardships of life. The concept of resilience is related to the theory of sources of stress, the internal ability of an individual in a response making, surviving, and maintaining one's natural state in spite of stress.<sup>19</sup> A person's ability in being adapted with the situation, experience, and express emotional feelings are symptoms of a health condition.<sup>16</sup>

According to many studies, besides resilience, self-efficacy is considered as another psychological quality, which is significantly correlated with quality of life. Accordingly, self-efficacy is amongst the important factors, which determine individuals' behaviors, activities, and human functions in their social lives. It is also correlated with life satisfaction, which is closely connected with quality of life.<sup>20</sup> Because of playing a significant role in adaptation to disease, self-efficacy is regarded as an important variable.<sup>21</sup> Moreover, self-efficacy enables individuals to use their skills during facing barriers to make accomplishments. Also, perceived self-efficacy is an important factor in performing successfully and applying the necessary skills for success.<sup>22</sup>

Quality of life is a dynamic reality, meaning that it changes over time along with internal and external changes.<sup>23</sup> Nowadays, planning to improve health and quality of life is an inseparable part of social and economic developments. However, despite the myriad benefits of measuring quality of life, this area of research has not received enough attention yet. Currently, quality of life has received increasing interest as a significant index of patients' adaptation after suffering from burn injuries.<sup>24</sup> According to several studies, the quality of life in burned patients is affected by changes in their appearance, the severity of their pain, facial burns, and length of recovery.<sup>25,26</sup> In addition, various variables, including resilience, self-efficacy, and optimism are correlated with the psychological well-being and quality of life of burned patients.<sup>27</sup>

The pain caused by traumatic experiences, degradation of performance and beauty, and changes in mental image of oneself and social roles hit the core of one's existence, and especially one's concept. While the victims of burns, despite all the destructive damages, must return to their previous roles and responsibilities. The return of these people to society happens when they carry the hot burden of burns for the rest of their lives.<sup>28</sup> Massive scars and social-mental symptoms are known as major and basic problems for burn survivors after passing the acute phase.<sup>29</sup> However, the results of some studies showed that, in the treatment of burned patients, only their physical and physical care problems are considered, while their existential and emotional needs are ignored. While in

the treatment of burns, the patient's ability to take care of the self, and mental health and psychological aspects should be considered.<sup>30</sup> Because the holistic health of the body includes the mind and soul, by combining physical and mental health promotions,<sup>31</sup> health-related quality of life can be improved due to the fact that low self-efficacy and high psychological burden are associated with the reduced quality of life. Quality of life is considered as one of the important consequences of burn injury and identification of determinants and barriers to desirable and acceptable consequences of burns is also considered as the axis of targeted interventions, planning, and care models.<sup>16</sup> Awareness of health professionals on patient's understanding of skills and abilities in managing their disease as well as the positive adaptation of a person to adverse conditions helps development of the quality of patient care and health,<sup>32</sup> which consequently, improves the patient's quality of life.<sup>33</sup>

An overview of the available texts indicated that, although most of the burn survivors suffer from psychological, emotional, and social problems due to the devastating experience of the burn, the focus of health services is mostly on physical and functional treatment and less on psychological problems. While paying attention to developing the patient's understanding as well as improving their skills and abilities of burned patients would lead to their better protection and adaptation with the post-burn social psychological challenges, which subsequently improves their quality of life. Several variables such as self-efficacy and resilience are associated with patients' mental health and quality of life. Hence, identifying the role of these variables on disease management and adaptation to adverse conditions as well as the quality of life of burned patients provide health service planners with unique information, which help in formulating a more effective and efficient strategy for burned patients.

Given the positive effects of improving the quality of life and self-management of burned patients, the role of resilience in psychological adaptation and physical health, and the effect of self-efficacy on quality of life, the present research aimed to explore the relationship among burned patients' resilience and self-efficacy and their quality of life in a single study.

## Methods

The present study was a descriptive, cross-sectional research that investigated the relationship among burned patients' resilience and self-efficacy and their quality of life in the largest burns hospital of the south-east of Iran. Also, the subjects were selected according to total population sampling. This study was performed from December 2018 to March 2020.

The data collection was done in the following way: the researchers, after visiting the hospital and the disaster and burn clinic, identified the patients with a history of burns in the admission unit and the clinic, and if they had the conditions determined by the study and if patient's consent was obtained, they were included in the research. The way of completing the questionnaires was as self-report, and after explaining the objectives of the research, the questionnaires were completed by the participants.

Sampling was performed in the presence of a trained questioner. Moreover, providing sufficient explanations on the objectives of the study was done in a complete and continuous manner after satisfying the patients' participation in the research. The questionnaire was completed by the patients who were able to complete the questionnaire and in the patients who were not able to complete the questionnaire, it was done by a family member or a companion. The questioner attended the clinic during the days of the plastic surgeons' clinic, and introduced himself to the patients, and obtained their consent to do the research after providing sufficient explanations about the purpose of the research. The sampling was performed from December 2018 to March 2020. Afterward, he assured all the subjects included that the information obtained in the research would remain confidential and would not be used in any other way. The questioner also assured the patients that they were free to participate in the research and could leave the study whenever they wanted.

The research context was Amir Al-Momenin Burns and Restoration Accidents Hospital, which is the most advanced and largest burn hospital in Shiraz, southeast of Iran. This hospital covers all the health services related to burns in the south of the country. All departments of this educational and medical center are active in the fields of burn, restorative, and cosmetic specialties.

The inclusion criteria were as follows: those with age above 18 years old, having a burn percentage of under 60%, willingness to participate in the study, being able to understand the researchers' questions as judged by the researchers, and having at least primary education. The exclusion criteria were also the followings:

Suffering from a known metabolic or mental illness; taking medications that may have affected a person's mind, physical, and mental fatigue as a result of patient care; and unwillingness to complete questionnaires. In this study, data were collected using a demographic survey, Connor-Davidson Resilience Scale (CD-RISC), Lev Self-Efficacy Scale, and Burn Specific Health Scale-Brief.

## Data Collection Instruments

### A. Connor-Davidson Resilience Scale (CD-RISC)

Developed by Connor and Davidson (2003), this scale measures an individual's ability to cope with stressful and threatening situations. Correspondingly, this scale consists of 25 items scored on a 5-point Likert scale ranged from the points 0 to 4 as follows: never, rarely, occasionally, usually, and always, respectively. In addition, the total score range of this scale is between 0 and 100. The internal consistency, test-retest reliability, and convergent and divergent validity of the scale have also been tested and reported.<sup>34</sup> Moreover, the validity of the Farsi version of this resilience scale has been tested and also verified, and the reliability of the scale was reported equal to a Cronbach's alpha of 0.87.<sup>35</sup>

### B. The Self-Efficacy Scale

To measure the self-efficacy of the subjects, the researchers employed the scale of Strategies Used by People to Promote Health (SUPPH) developed in terms of the Bandura's self-efficacy theory. SUPPH consists of 29 items on a 5-point Likert scale, as very little=1, a little=2, average=3, very=4, extremely=5, which address three following areas: positive thinking (16 items), stress reduction (10 items), and decision making (3 items). The score range of the scale is between 29 and 145, with higher scores indicating a greater self-efficacy. The validity of the scale was confirmed by Lev (2004).<sup>36</sup> Also, in a study conducted in Iran, the content validity of the scale was validated by a panel of experts and its total reliability was also found equal to a Cronbach's alpha of 0.91.<sup>37</sup>

### C. Burn Specific Health Scale-Brief (BSHS-B)

This scale consists of 40 items on a 5-point Likert scale scored from 1 to 5. The items address three following domains, as physical, emotional-social, and non-physical /burn specific, as well as 9 subdomains as follows: simple abilities (items 1 to 3), hand function (items 4 to 9), affect (items 10 to 16), body image (items 17 to 20), interpersonal relationships (items 21 to 24), sexuality (items 25 to 27), heat sensitivity (items 28 to 32), treatment regimens (items 33 to 37), and work (items 38 to 40).

Each item is answered on a Likert scale as follows: very much, much, average, a little, and not at all. The score of the scale is ranged between 40 and 200, with higher scores indicating a higher quality of life. Notably, in this scale, the subdomains of simple activities and hand function belong to the physical domain; the subdomains of affect, work, sexuality, interpersonal relationships, and body image belong to the emotional-social domain; and the subdomains of heat

sensitivity and treatment regimens belong to the non-physical/burn specific domain.<sup>38</sup> Pishnamazi et al (2013) calculated the content validity of the scale as 0.95, over 0.80, based on the evaluation of a panel of experts. Also, they reported the reliability of the scale as a Cronbach's alpha of 0.94, above 0.7. Thus, the reliability and validity of BSHS-B have already been verified.<sup>39</sup>

The collected data were analyzed using descriptive (mean and standard deviation) and inferential statistics, Pearson correlation, and linear regression in SPSS 22. The significance level was set at  $P < 0.05$ .

## Ethical Considerations

All participants gave written informed consent to participate in the study. The present study was conducted in accordance with the principles of the revised Declaration of Helsinki, a statement of ethical principles which directs physicians and other participants in medical research involving human subjects. The participants were assured of their anonymity and confidentiality of their information. Moreover, the study was approved by the local Ethics Committee of Fasa University of Medical Sciences, Fasa, Iran (Ethical code: IR.FUMS.REC.1399.017)

## Results

In the present study, 121 (39.7%) participants were men and 183 (60.3%) were women. Table 1 shows the demographics of the participants included. The average age of the participants was  $34.48 \pm 8.4$  years old. The number and frequency percentage of the participants in terms of marital status were as follows: 86 single participants (28.2%), 198 married participants (64.9%), a total of 12 widow and widower subjects (3.9%) and 9 divorced people (3%). From the total of widow and widower, eight (2.8%) were widow and four (1.1%) were widower.

The mean and standard deviation of body burn percentage was  $36.10 \pm 8.19$  (TBSA %). The correlation test results showed that there is a significant negative relationship between body burn percentage and quality of life ( $P < 0.001$ ,  $-r = 0.39$ ), a significant negative relationship between the percentage of body burn level and resilience ( $P < 0.001$ ,  $-r = 0.28$ ), and a significant negative relationship between the percentage of body burn level and self-efficacy ( $P < 0.001$ ,  $-r = 0.31$ ).

The results show the resilience mean score of the participants to be  $94.94 \pm 0.138$ , their self-efficacy mean score to be  $74.17 \pm 2.18$ , and their quality of life mean score as  $182.02 \pm 0.70$ . The followings are the means and

**Table 1** The Demographic Characteristics of the Participants

Variable		N (%)	Variable		N (%)
Sex	Female	183 (60)	Age (years)	20–29	102 (33.4)
	Male	121 (39.7)		30–39	115 (37.7)
				40–49	82 (26.9)
				>50	6 (2)
			Area of burns	Head & face	36 (11.8)
				Arm	168 (55.1)
				More than one area	101 (33.1)
Marital status	Single	86 (28.2)	Household status	Urban	208 (68.2)
	Married	198 (64.9)		Rural	97 (31.8)
	Wife died	12 (3.9)			
	Divorced	9 (3)			
Educational level	Illiterate	2 (0.7)	Income	Low	263 (86.2)
	Primary	4 (1.3)		Moderate	36 (11.8)
	Secondary to diploma	298 (97.7)		Good	6 (2)
	Academic	1 (0.3)			
Job	Employee	43 (14.1)	Degree of burns	1	53 (17.4)
	Self-employed	63 (20.7)		2	177 (58)
	Jobless	35 (11.5)		3	63 (20.7)
	Housewife	163 (53.4)		4	12 (3.9)
The time of damage	6–12 months	253 (79.89)	TBA%	15–30	48 (15.6)
	≥13 months	52 (20.11)		31–45	192 (56)
				46–60	65 (28.4)

standard deviations of the patients' quality of life per each subdomain: simple activities=14.85±2.92, hand function=29.54±0.85, affect=31.48±1.89, body image=15.20±1.49, interpersonal relationships=17.78±3.14, sexuality=14.94±0.41, heat sensitivity=20.17±1.07, treatment regimens=22.29±2.49, and work=13.90±1.44.

The results of the correlation test showed that there were significant positive correlations between the patients' resilience and self-efficacy ( $P<0.001$ ,  $r=0.31$ ), between resilience and quality of life ( $P<0.001$ ,  $r=0.58$ ), and between self-efficacy and quality of life ( $P<0.001$ ,  $r=0.63$ ).

The results of the linear regression analysis showed that, amongst the variables of demographics, resilience, and self-efficacy, self-efficacy is more significantly correlated with the quality of life of the burn patients ( $P<0.001$ ,  $\beta=0.63$ ) (Table 2)

## Discussion

The results of the present study show that self-efficacy is more significantly correlated with the quality of life of burn patients compared to resilience. Also, self-efficacy was found to play a more significant role in determining the

quality of life of this group. Another finding of the study was that there was a statistically significant positive correlation between the burn patients' resilience and self-efficacy. Moreover, in a study by Abrams et al (2018), the protective quality of resilience was described as a contributory factor in recovering from burn injuries. Also, it was shown that different aspects of resilience, including motivation for success, innovativeness, spirituality, and empathy, have positive impacts on the lasting recovery of burn patients.<sup>40</sup>

According to another study (Gucclone, 2014), resilience in individuals with a physical disability is connected with self-efficacy, self-esteem, internal locus of control, optimism, eagerness to learn, hope, self-empowerment, and illness adaptation. In this regard, resilience motivates burn patients to improve their physical health, perform self-care activities, and increase their quality of life.<sup>27</sup> In addition, another study reported that resilient individuals demonstrate higher levels of self-efficacy.<sup>41</sup> The belief that a disease is catastrophic makes it hard to be tolerated, which also reduces resilience. By strengthening resilience and improving the strategies of coping with stress, one can help reducing pain and suffering.<sup>42</sup> One of the characteristics of resilient people is a high self-efficacy.<sup>43</sup>



**Table 2** The Relationship Between the Study Variables and Quality of Life

Variable	Quality of Life					
	$\beta$	SE	Beta	t	R <sup>2</sup>	P value
Resiliency	1.05	0.08	0.58	12.41	0.39	<0.001
Self-efficacy	0.20	0.01	0.63	14.39		<0.001
Age	-0.55	0.42	-0.07	-1.28		0.2
Education level	1.02	0.18	0.29	5.45		<0.001
Income	0.20	0.09	0.12	2.14		0.03
Degree of burns	-0.09	0.04	-0.12	-2.001		0.02
TBSA%	-0.19	0.51	-0.39	-0.60		0.43
Marital status	2.61	0.53	0.27	4.88		<0.001
Household status	-1.46	0.73	-0.61	-4.71		<0.001
The time of damage	0.04	0.48	0.08	4.10		0.28

Coping self-efficacy is the ability that effectively controls trauma, which has a significant protective impact on the traumatized population. The results of a study showed that adaptive self-efficacy is a strong predictor of early signs of post-traumatic stress disorder as well as a predictor by passing 12 months from a burn accident.<sup>44</sup>

Another finding of the present study was that there was a significant positive correlation between the burn patients' resilience and quality of life. Low levels of resilience are correlated with anxiety and negative emotions.<sup>45</sup> Also, burned patients who receive less social support are more likely to be affected by some undesirable health issues like anxiety.<sup>46</sup> On the other hand, resilient individuals are more able to find a positive meaning in life in the face of stressful situations and the ensuing problems. Accordingly, when faced with hardships in life, resilient individuals indicate more adaptability, wisdom, and imagination.<sup>47</sup> Several studies have shown that those individuals with greater resilience enjoy higher levels of quality of life as well as a greater psychological well-being.<sup>48-50</sup>

Resilience can also enable burned patients to have a better relationship with themselves and with others and improve their positive social connections. Resilience helps burn survivors to develop some positive coping strategies.<sup>19</sup>

There is another clinical evidence indicating that resilience and optimism can reduce the risk of disorders in the psychological functioning of burned patients.<sup>51</sup> The results of the study by Quezada (2015) showed that resilience training improves the quality of life, self-efficacy, and coping skills of burned patients.<sup>52</sup> Although there is not a single definition of the construct of resilience, it can be regarded as a part of the psychological process of coping with stress.

Limited evidence are available regarding the role of resilience in burn healing. Also, resilience is an essential concept that facilitates the adaptation required to be recovered in complex situations. However, resilience is often cited as an internal characteristic. Moreover, a regular review of resilience in clinical practice helps identifying the social psychological interventions needed to better support burned patients during their recovery from burn trauma. Relationship strengths, positive adaptability, and resistance to trauma symptoms are known as fundamental structures of sustainable and developed resilience that play important roles in post-burn recovery.<sup>46</sup>

The results of the present study also show that there was a significant positive correlation between the burned patients' self-efficacy and quality of life. In the studies by Bosmans et al (2015) and Luszczynska (2009), self-efficacy was found to play a key role in reducing stress from burn-related trauma as well as increasing the quality of life of the survivors.<sup>44,53</sup> In addition, according to Beckerle's study (2012), self-efficacy improves the quality of life in diabetic patients. Also, the patients with COPD who have greater self-efficacy have better pulmonary ventilation and better perform their daily activities. In fact, self-efficacy helps the patients to be successfully adapted with the limitations caused by their condition and also to manage their daily activities more effectively.<sup>54</sup>

As a factor with an impact on quality of life, self-efficacy enables individuals to understand their skills and abilities to accomplish their goals.

In this regard, low self-esteem can lead to poor self-esteem towards ones' abilities, the decreased feeling of self-value, lack of psychological help, abnormal social interactions or dangerous behaviors. Accordingly, it can in turn reduce the quality of life of burn victims. Because the life quality of burned patients includes the degree of satisfaction and level of performance in various areas such as physical performance, social performance, mental well-being, and patient's understanding of ones' health,<sup>55</sup> so it seems that therapeutic interventions that improve a person's belief in his ability and improve patients' knowledge and skills can improve the quality of life of burned patients.

In the present study, the results show that self-efficacy is more significantly correlated with the quality of life of burn patients compared to resilience. Similarly, in a study by Hinz et al (2019), self-efficacy and resilience are both found to be correlated with the quality of life of cancer patients. However, self-efficacy is known as the predictor variable of their quality of life. Encouraging patients to

believe that they are capable of coping with their condition can help them to achieve higher levels of life quality. Moreover, self-efficacy is a personality trait that affects motivation, in a way that the more confident individuals are about their abilities, the more active they are and the more persistently they try to accomplish their goals.<sup>56</sup>

It was found that a successful performance depends on both having skills and being confident about one's ability to exercise those skills. Perceived self-efficacy affects the amount of effort that one makes to perform a task, in a way that those individuals who believe in their self-efficacy make an extra effort to overcome barriers. In other words, self-efficacy has an impact on individuals' perception, performance, adaptive behavior, choice of environment, and the conditions, which they attempt to achieve.<sup>57</sup>

The findings of the present study on the one hand showed a significant positive correlation between the burn patients' demographic variables of education and their financial status, and with their quality of life on the other hand; however, there was a negative correlation between the patients' burn percentage and quality of life. In a study by Kazemzadeh (2019), there was no significant correlation among the variables of age, financial status, and education on the one hand and quality of life on the other hand in female burn survivors. However, the larger the area of their burned skin surface, the lower their quality of life.<sup>58</sup> The studies by Pishnamazi and Eleshherbing showed that there is no correlation between age and quality of life in burned patients, but the patients with higher education have a higher quality of life.<sup>39,59</sup> Another study reported a significant correlation between age and quality of life.<sup>60</sup> In a study by Pope et al, younger burn survivors were found to demonstrate better adaptation despite the physical, psychological, and social consequences of their injuries.<sup>61</sup> In the present study, it was found that there is a significant relationship between TBSA% and quality of life score. So that the increase in the percentage of burn had reduced the quality of life. The study of Anzarut showed that an increase in the percentage or extent of burns was related to patients' physical function, and an increase in the percentage of burns led to a decrease in physical function and a decrease in quality of life.<sup>60</sup> Moreover, according to another study, it was indicated that, the larger the skin area affected by their burn injuries, the lower the quality of life of the victims.<sup>59</sup> Another study reported that burned patients with a burn percentage of over 20% have a low quality of life.<sup>62</sup>

In a study by Kildal, being employed, being male, being married, and having a decent home were shown to be correlated with better recovery outcomes.<sup>63</sup> It appears that a good financial status, employment, having the support of one's spouse, and higher education levels are important resources in improving the quality of life of burned patients. The results of some studies also showed that there is a need for more extensive and accurate research into the relationships between demographic variables and quality of life in burned patients.

## Limitation

One of the limitations of the present study is that the possible inclination of the participants to select the answers with higher scores on the Likert scale in the questionnaires may have adversely affected the accuracy of the results. Another limitation of the study is social desirability bias which is a tendency on the part of respondents to exaggerate their socially and culturally acceptable behaviors and attitude and understate their unacceptable ones. The researchers tried to control the impact of this kind of bias by informing the participants about the objectives of the study and the confidentiality and anonymity of their information and increasing the sample size.

## Conclusion

According to the findings of the present study, although clinical characteristics such as total burn percentage, burn degree, and individual characteristics of the patients affect the quality of life of burned patients, self-efficacy and resilience factors were shown to play a greater role in developing the quality of life of burned patients. Therefore, in the treatment of burned patients, one-dimensional view should not be considered, and besides physical aspects, physical, behavioral, social, and psychological aspects should also be considered. Based on the results of this study, it seems that management and adaptation to the difficulties, problems, and challenges caused by burn injuries play important roles in improving their health and quality of life. In order to improve the quality of life of burned patients, members of the health staff can contribute to the development of their self-efficacy and empowerment of burned patients by creating the right environment for the acquisition of knowledge and ability required as well as for achieving it. In addition, along with the physical treatment of burned patients, the physical health and psychological aspects of them should also be considered. Educational interventions in the field of

training life skills such as an effective disease management, improving belief in disease, skills of coping with mental stress, and stress management are recommended to improve the quality of life of burned patients.

## Acknowledgments

The present paper was extracted from a research project registered under the ethical code (IR.FUMS.REC.1399.017) at Fasa University of Medical Sciences, Fasa, Iran. The authors would like to appreciate Fasa University of Medical Sciences for financially supporting this research.

## Funding

This research did not receive any specific grants from funding agencies in the public, commercial, or not-for-profit sectors.

## Disclosure

The authors report no conflicts of interest in this work.

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