



## Self-Efficacy as a Mediator in the Relationship between Social Support and Self-Care in Patients with Heart Failure

Nastaran Mansouriyeh<sup>1</sup>, Hamid Poursharifi<sup>2\*</sup>, Mohammad Reza Taban Sadeghi<sup>3</sup>,  
Mohammad Raze Seirafi<sup>4</sup>

<sup>1</sup> PhD Candidate in Health Psychology, Department of psychology, Kish International Branch, Islamic Azad University, Kish Island, Iran

<sup>2</sup> Associate Professor, Department of Psychology, University of Tabriz, Tabriz, Iran

<sup>3</sup> MD, Associate Professor, Department of Heart, Tabriz University of Medical Sciences, Tabriz, Iran

<sup>4</sup> Assistant Professor, Department of Psychology, Karaj Branch, Islamic Azad University, Karaj, Iran

\*Corresponding e-mail: [poursharifih@gmail.com](mailto:poursharifih@gmail.com)

### ABSTRACT

**Background:** Heart failure - as a chronic disease - is a growing problem in communities in such a way that not only individuals but also family members and friends are being affected. The main role of self-care after heart failure has been demonstrated by research. Self-efficacy and social support are associated with self-care. The aim of this study is to explore the role of self-efficacy as a mediator in the relationship between social support and self-care in patients with heart failure. **Methods:** This descriptive and correlational study was conducted on heart failure patients in 2016. As many as 149 patients were examined, based on inclusion and exclusion criteria, and were selected for sampling. For data collection, a demographic information questionnaire, self-care behaviour scale, general self-efficacy (GSE), and social support scale were used. In addition, the Pearson correlation coefficient and Sobel test were also conducted. **Results:** Sobel test results for understanding the mediating role in the relationship between perceived social support and self-care was  $-5.43$ ,  $p < 0.01$ . The correlation between social support and self-care was  $-0.518$ ,  $p < 0.01$ . **Conclusion:** This study showed that self-efficacy as a mediator helps explain the relationship between social support and self-care and there was negative correlation between social support and lack of self-care.

**Keywords:** Self-efficacy, Social support, Self-care, Heart failure

### INTRODUCTION

Heart failure (HF) is an important problem that not only affects the patient but also his/her family and social network; it reduces the patient's functional capacity and creates disturbances in social life [1]. The basic role of HF patients in managing their condition using good self-care has been investigated by recent guidelines for heart failure [2]. Practice of self-care by HF patients can usually decrease hospitalization [3] and mortality [4]; it potentially reduces the effects of HF on the quality of life. However, the care required for HF is complex, unrelenting, and increasingly burdensome, as HF worsens and comorbid conditions appear. It can be observed that many patients have trouble with HF self-care and often need the support of others, such as spouses, who also play an important role in HF patients' care [5,6].

Social support is one of the most investigated parameters, which is defined as the degree of passion, care, and help from family members, friends, and others. Social support is a multidimensional concept that shows a variety of actual or perceived resources. These supportive resources can be emotional (e.g., nurturance), tangible (e.g., financial assistance), informational (e.g., advice), or companionship (e.g., sense of belonging) and intangible (e.g., personal advice); these can be available to an individual through his/her relationship with others [7]. Social support has been shown to positively influence health outcomes for several chronic diseases [5], while others show that social support is associated with worse self-care [8].

Psychologist Albert Bandura has defined self-efficacy as belief in one's ability to succeed in specific situations or accomplish a task. One's sense of self-efficacy can play a major role in how one approaches goals, tasks, and challenges. Albert Bandura in the year 1986 has defined self-efficacy as 'people's judgments of their capabilities to organize and

execute courses of action required to attain designated types of performances'. In contrast, efficacy expectation (or perceived self-efficacy) is belief in one's ability to succeed in specific situations or accomplish a task. One's sense of self-efficacy can play a major role in how one approaches goals, tasks, and challenges [9]. It is stated that self-efficacy is effective in health and health-related results, based on the behaviour in treating patients with chronic diseases; in fact, it is considered one of the most important parameters for predicting behavioural modifications in patients [10]. On the other hand, self-efficacy has a direct relationship with healthy behaviour and indirectly influences healthy behaviour to reach goals. It also helps individuals face challenges, and boosts perseverance, commitment, and effort to achieve goals. Self-efficacy impacts health choices and behaviour in heart failure patients [9]. Early studies found that increased self-efficacy improves self-care ability [11]. Many studies have shown that self-efficacy is associated with diabetes self-care [12]. Prior studies have indicated that low self-efficacy was correlated with poor self-care adherence in heart failure patients [13].

However, because of the importance of self-efficacy and social support, two important variables are involved in self-care. The question in this study is whether self-efficacy can be used as a mediator in the relationship between social support and self-care in heart failure patients.

In previous studies, self-care after heart failure has been affected by social support and self-efficacy. But so far, the relationship between social support and self-care with self-efficacy as a mediator has not been investigated.

## MATERIAL AND METHODS

This cross-sectional study was conducted on 149 heart failure patients attending Tabriz Research Treatment Centre of Heart, Iran, during 2016. All patients signed the consent form and voluntarily agreed to participate in the study, which has been approved by the Institutional Review Board at Tabriz University of Medical Sciences. The criteria to participate in the study included an understanding of Persian, a willingness to participate in the study, reporting heart failure based on positive echocardiography, at least one year's experience with heart failure, and certification by a cardiologist. Data was analysed by SPSS Version 20 software by using Pearson correlation statistics and Sobel test.

### Measurement questionnaire included four sections

**Part 1: Background data:** The variables assessed in this study included age (years), sex (men or women), and marital status (single, married, divorced, or widower).

**Part 2: Self-care behaviour scale:** The 15-item European heart failure self-care behaviour scale was the criterion to examine self-care. Cronbach's alpha of 0.8 for the self-care behaviour scale was determined, which shows excellent internal consistency. Each of them was rated by five response options ranging from 1 (I completely agree) to 5 (I do not agree at all). The range of self-care behaviour questionnaire was 15 to 75. An example of such items is: I weigh myself every day [14].

**Part 3: General self-efficacy (GSE):** The GSE is a 17-item Likert scale. The examples of items of this scale include: 'When I make plans, I am certain I can make them work', 'I give up easily', 'I am a self-reliant person', and 'I avoid facing difficulties'. The response is presented by a five-point scale (1=strongly disagree, 5=strongly agree). General self-efficacy is determined based on the sum of item scores. The higher the total score, the more the self-efficacy that can be observed in the respondent. Sherer et al. developed the GSE scale to measure 'a general set of expectations that the individual carries into new situations' (p. 664). The SGSES, which was primarily developed and used for clinical and personality research, has been the most widely-used GSE measure. Later, it has also been used in organizational cases. Reviewing various organizational studies, Chen, et al. found moderate-to-high internal consistency reliabilities for the SGSES ( $\alpha=0.76$  to  $0.89$ ). Using samples of university students and managers in two of their studies, Chen, et al. reported high internal consistency reliability for the SGSES ( $\alpha=0.88$  to  $0.91$ ). Considering the temporal stability of SGSES, Chen and Gully (as cited in Chen, et al.), found a low test-retest value ( $r=0.23$ ) over only three weeks. However, Chen et al. obtained high test-retest reliability ( $r=0.74$  and  $0.90$ ). Several studies have investigated the unidimensionality of the SGSES. In this respect, Woodruff and Cashman found that SGSES items measure three distinct empirical factors reflecting self-perception of behaviour initiation, effort, and persistence. Recent studies have also reported three-factor forms of SGSES [15-17].

**Part 4: Social support scale:** The 12-item standard scale was used to evaluate the social support and each item was measured on an ordinal seven-point Likert-type scaling (1=strongly disagree to 7=strongly agree). The multidimensional scale of perceived social support included three scopes (family, friend, and significant other). An example of the items is: There is a special person who is around when I am in need. Cronbach's alpha of 0.85 to 0.91

was obtained for the social support scale, as reported by Mitchell and Zimet, and demonstrated excellent internal consistency; in addition, the range of social support questioner was 12 to 84 [18].

## RESULTS

Considering all the 149 subjects under study, 68% (101 subjects) were men and 32% (47 subjects) women. Moreover, the mean and standard deviation of the samples' ages were ( $64.40 \pm 10.32$ ); they belonged to the 37-88 years age range. The majority of the subjects was married (82% or 122 subjects).

Additionally, mean, and standard deviation of the patients' self-care were ( $40.66 \pm 13.16$ ). The mean and standard deviation of the patients' self-efficacy were ( $45.81 \pm 22.03$ ). The mean and standard deviation of the patients' social support were ( $49.09 \pm 6.74$ ) (Table 1).

**Table 1 The descriptive indexes of self-care, self-efficacy, social support**

Variables	Mean	Std. Deviation	N
self-care	40.66	13.16	149
Self-efficacy	45.8188	22.03101	149
social support	49.094	6.74571	149

The results showed that there was a significantly negative relationship between self-care and social support ( $p < 0.001$ ,  $r = -0.518$ ), and between self-care and self-efficacy, there was a significantly negative relationship as well ( $p < 0.001$ ,  $r = -0.678$ ) (Table 2).

**Table 2 Pearson's correlation matrix between self-efficacy, social support and self-care**

Component	1	2	3
Self-care	1	-	-
Self-efficacy	-0.678	1	-
Social support	-0.518	0.517	1

The results of Sobel test analysis are shown in Table 3.

**Table 3 Sobel test results to determine the role of self-efficacy as mediator in the relationship between social support and self-care**

A path coefficient (social support, self-efficacy)	The standard error of a path coefficient	b path coefficient (self-efficacy, self-care)	The standard error of b path coefficient	Sobel test result	The significance level
1.688	0.231	-0.334	0.041	-5.43	$p < 0.01$

## DISCUSSION

The present experimental study aimed to explore the role of self-efficacy as mediator in the relationship between social support and self-care in patients with heart failure in Tabriz, Iran, in 2016. The mean score of self-care among HF patients was (40.66); the standard deviation was (13.60), which represents the average self-care among patients. In this study, people who took higher scores in the self-care scale exhibited mean lack self-care behaviour.

The mean score of self-efficacy among HF was (45.81), and, in the current study, self-efficacy's highest negative correlation was with self-care. The mean self-efficacy scores were higher than the average scores on the questionnaire and, hence, patients in the study had higher scores in the self-efficacy questionnaire and lower scores on self-care scale, thereby representing better self-care behaviour in patients. All this negative correlation between self-efficacy and lack of self-care in patients with heart failure indicated how one responds to challenges and setbacks and what one expects will occur when a behaviour change is affected by self-efficacy.

In the current study, the average scores of social supports among heart failure patients were (49.9). In this study, the mean scores in social support is above average in the perceived social support questionnaire. Higher scores in social support indicate good social support from family, friends, and important individuals. In this study, the patients had good perceived social support. Social support leads to health behaviour and increases self-care behaviour. Social support is major source compatibility and plays a very effective and important role in the outcome of the function and psychological adjustment of patients with chronic diseases. Supportive relationships with others may be through development, promotion and increase in healthy behaviours to help maintain a person's health [7]. The results of the analysis were positively correlated between social support and self-efficacy. These were similar to the results by Karademas, Chih, et al., and Sacco, et al. [19-21]. Studies have shown that the social support network is an important

factor for a positive and rewarding experience, which could eventually lead to a sense of self-worth, self-esteem, and self-efficacy [22].

In the results obtained in this study, the role of self-efficacy as a mediator in the relationship between perceived social support and self-care was confirmed. The results obtained in the tests show that the number Sobel was (-5.43). When this ratio is greater than ( $\pm 1.96$ ), the mediating role of self-efficacy is confirmed. The mediating role of the self-efficacy results was coordinated with the results by Haslam, Pakenham and Smith [23]. In their model, in the relationship between social support and depression, self-efficacy was a mediator. Self-efficacy is an important concept in Bandura's social cognitive theory [24]. Self-efficacy is the ability to respond to a particular situation [24]. Bandura saw self-efficacy as something that can predict the intention and ability to accept health patterns and create appropriate skills and knowledge to boost the capability and effectiveness of treatment [25]. A person with low self-efficacy is less likely to achieve the health behaviour change he was trying to achieve. Patients with a high sense of self-efficacy and self-enabling abilities are empowered to know of the disease and its control. Self-efficacy can play a modifying role or act as a mediator in the field of rehabilitation. In another study, self-efficacy was a mediator between the extent of disease and compatibility with the disease in patients with rheumatoid [26]. In another study, self-efficacy as a mediator changes exercise behaviour among patients with osteoarthritis of the knee [27].

In explaining the findings, the following can be concluded: Self-efficacy increased confidence in patients who said that they will be able to perform self-care tasks entrusted to them, considering the disease they are suffering from. So, perseverance is more and, therefore, frustration is less. There is a positive attitude towards self-care in heart failure patients and this will make them consistent. According to the results, health psychologists, nurses, and doctors said in order to prevent a decline in the care of people who receive little social support or those with low self-efficacy, social skills and life skills training can be added to the training programme. This will increase efficiency and reduce social isolation among patients. Even if there is low perceived social support in patients with heart failure, they can still improve self-care, given the role of self-efficacy. If social support among patients was high enough, self-efficacy for self-care can be boosted through mediation by relying on the mediator role of self-efficacy. These are very important research findings because of increased mortality and Readmission are associated with poor self-care. So, self-efficacy plays a key role in self-care in heart failure patients.

### CONCLUSION

In this study, self-efficacy is a mediator in the relationship between social support and self-care heart failure patients. Educational administrators, doctors, nurses, and health psychologists recommended identifying the factors and variables involved in the self-care programme. They called for strategic plans and training to increase self-efficacy, ability to control the disease, and eventually self-care among heart failure patients. This is to increase mortality rates, reduce readmission, and lighten the burden of disease in these patients.

### Limitations

In the current study, data was collected using a self-reporting method, which may affect the accuracy of the results. Furthermore, personal differences of participants may affect the generalization of our findings. Also, owing to the existing restrictions, it is suggested that a broader population, which includes other universities, be used to enhance the general nature of the findings.

### DECLARATIONS

#### Compliance with ethical standards

This research is in compliance with ethical standards. Research carried out by the authors in this study is not associated with any company. There is no conflict of interest between this personal research and the company. Participants who filled the questionnaires were satisfied and informed consent was obtained from all participants included in the study.

### ACKNOWLEDGEMENTS

This article is original and part of first author thesis.

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