

*Original/Research Paper***Self-care behaviors and related factors in cardiovascular patients: A cross-sectional study****Mehrnegar Amiri ^a | Hedayat Jafari ^{b*}  | Mohammad Hosein Jafari ^c  | Fateme Norouzi ^a | Fateme Nabinejad Maleh ^a**

a. Student Research Committee, Mazandaran University of Medical Sciences, Sari, Iran

b. Traditional and Complementary Medicine Research Center, Addiction Research Institute, Mazandaran University of Medical Sciences, Sari, Iran

c. Student Research Committee, Islamic Azad University, Sari, Iran

***Corresponding author(s):** Hedayat Jafari (PhD), Traditional and Complementary Medicine Research Center, Addiction Research Institute, Mazandaran University of Medical Sciences, Sari, Iran.Email: hjafari@mazums.ac.irThis is an open access article under the terms of the [Creative Commons Attribution-NonCommercial 4.0 License](https://creativecommons.org/licenses/by-nc/4.0/) (CC BY-NC 4.0).

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Abstract

This study was conducted to investigate self-care behaviors and related factors in cardiovascular patients. This cross-sectional study was conducted to determine the self-care behaviors of patients with cardiovascular diseases in the heart center of Mazandaran province in 2015. The data collection tool was a two-part questionnaire. The first part of the questionnaire was demographic information (age, sex, level of education, duration of hospitalization, occupation, disease diagnosis, hospitalization department, and marital status). The second part included a 12-question European Heart Failure Self Care Behavior questionnaire, each item of which is graded from 1 to 5 based on a Likert scale. A total of 268 cardiovascular patients participated in this study. The mean age of patients was 58.37 (SD=11.95). Among the participants, 52.61% were male, 86.19% were married, and 65.67% were literate. Hypertension was present in 52.61% of them and the average duration of cardiovascular disease in them was 5.10 (SD=4.39). The mean of self-care was 29.00 (SD=6.76). 141 people (52.61%) had good self-care behaviors, 121 people (45.15%) had moderate self-care behaviors, and 6 people (2.24%) had poor self-care behaviors. In the context of the relationship between demographic variables and self-care behaviors, no statistically significant relationship was observed ($P>0.05$). The most self-care behaviors were related to going to the doctor or health centers in case of shortness of breath, taking medicines as recommended by the doctor, allocating enough time to rest, and the least self-care behaviors were related to regular exercise, influenza vaccine injection, and easy handling in case of shortness of breath. Therefore, teaching patients about the importance and how to perform self-care behaviors is very effective in promoting these behaviors and as a result, reducing mortality and hospitalization costs, and nurses play an important role in teaching these behaviors.

Keywords: Self Care, Cardiovascular Diseases, Nursing, Nursing Care, Cardiac Event.**1 | Introduction**

Cardiovascular disease and its complications are one of the most important causes of death in industrialized and developing countries, including Iran. Heart diseases affect not only the comfort and well-being of the patient but also the social connection, lifestyle, occupation, and income level of the person [1]. Heart failure is a chronic and growing problem, which is currently the most common reason for hospitalization in people over 60 years old [2]. The prevalence of cardiovascular disease in Iran is 32.2% [3]. Currently, heart failure is the most common reason for hospitalization of heart patients over 60 years old [4].

Self-care is one of those health measures that are implemented by the individual [5]. Self-care activity in patients with cardiovascular disease includes uniting the patient to accept responsibility and regulate activities related to their health, such as how to consume fluids, diet, drug regimen, and perform therapeutic measures when the symptoms of the disease worsen [6]. Self-care leads to maintaining health and well-being and increasing one's adaptability. Also, it reduces the level of disability and disability of patients and treatment costs [7]. The principle of self-care is participation and acceptance of responsibility on behalf of the patient. Considering that chronic diseases have a significant

impact on patient's lives, patient control of disease complications is possible through self-care behaviors [8]. The increase in treatment costs and distance from the family and the increase in hospital infections lead to day-by-day home care and self-care being welcomed [1].

Unfortunately, patient education is considered less important compared to other clinical practices, and educational interventions for patients are mostly unplanned [9]. Preparing an educational program that fits the needs, experiences, and interests of patients is still a big challenge for healthcare workers [10]. In the research on self-care behaviors and related factors in heart failure patients, only the self-care program in heart failure patients has been discussed [11]. Therefore, the current research was conducted to determine the self-care behaviors of patients with heart diseases.

2 | Methods

2.1 | Study design and subjects

This cross-sectional study was conducted to determine the self-care behaviors of patients with cardiovascular diseases in the heart center of Mazandaran province in 2015. The research population included all patients hospitalized in Mazandaran heart center who were satisfied to participate in the study.

2.2 | Ethics consideration

This study has been registered at Mazandaran University of Medical Sciences. Ethics-related considerations, such as securing information confidentiality and obtaining written informed permission, were taken into account.

2.3 | Data collection

In this study, the sampling method was convenient. Patients were selected based on the study entry criteria, which included being over 18 years old and fully aware of the time and place, and the exclusion criteria of having speech, mental, and hearing problems and lack of satisfaction.

The data collection tool was a two-part questionnaire. The first part of the questionnaire was demographic information (age, sex, level of education, duration of hospitalization, occupation, disease diagnosis, hospitalization department, and marital status).

The second part included a 12-question European Heart Failure Self-Care Behavior questionnaire, each item of which is graded from 1 to 5 based on a Likert scale. The answer to each question varies from the option "It is true" with a score of one to the option "It is not true" with a score of five. Each question is assigned 1 point, which was about 12 to 36, which was

categorized in the ranges of 12 to 20, 21 to 28, and 29 to 36, which included poor, average, and excellent attitudes, respectively [12]. The content validity of the questionnaire was confirmed by asking the opinion of 5 members of the academic staff, and the reliability of the questionnaire was evaluated by the test and retest method on 20 hospitalized patients.

2.4 | Statistical analysis

Data were analyzed using the SPSS software package (version 16.0, SPSS Inc., Chicago, IL, USA). Continuous and categorical variables were presented using mean (standard deviation (SD)) and frequency (percentage), respectively. Descriptive statistics (mean, SD, median and mean) and inferential statistics were analyzed using independent t and chi-square tests. The significance level was set at 0.05.

3 | Results

3.1 | Participants' characteristics

As shown in Table 1, a total of 268 cardiovascular patients participated in this study. Their mean age was 58.37 (SD=11.95). Among the participants, 52.61% were male, 86.19% were married, and 65.67% were literate. 52.61% of them lived in the city and 88.43% of them lived with their families. Hypertension was present in 52.61% of them and the average duration of cardiovascular disease in them was 5.10 (SD=4.39).

Table 1. Individual characteristics of participants (N=268).

	Frequency (%) or Mean (SD)
Age	58.37 (SD=11.95)
Gender	
Male	127 (47.39)
Female	141 (52.61)
Marital status	
Single	37 (13.81)
Married	231 (86.19)
Level of education	
Literate	176 (65.67)
Illiterate	92 (34.33)
Place of residence	
City	141 (52.61)
Village	127 (47.39)
Living condition	
With family	237 (88.43)
Lonely	31 (11.57)
Comorbidities	
Hypertension	141 (52.61)
Diabetes	82 (30.60)
Kidney disorders	26 (9.70)
Others	19 (7.09)
Duration of cardiovascular disease	5.10 (SD=4.39)

Values are given as a number (percentage) for categorical variables and mean (SD) for continuous variables.

3.2 | Self-care behaviors and related factors in cardiovascular patients

The mean of self-care was 29.00 (SD=6.76). 141 people (52.61%) had good self-care behaviors, 121 people (45.15%) had moderate self-care behaviors, and 6 people (2.24%) had poor self-care behaviors. In the context of the relationship between demographic variables and self-care behaviors, no statistically significant relationship was observed ($P>0.05$). As shown in Table 2, the most self-care behaviors were related to going to the doctor or health centers in case of shortness of breath, taking medicines as recommended by the doctor, allocating enough time to rest, and the least self-care behaviors were related to regular exercise, influenza vaccine injection, and easy handling in case of shortness of breath.

Table 2. Most and least self-care behaviors in cardiac patients (N=268).

	Frequency (%) or Mean (SD)
Most self-care behaviors	
See a doctor or medical center in case of shortness of breath	1.70 (SD=0.94)
Taking medicines according to the doctor's advice	1.10 (SD=0.09)
Allocating enough time to rest	2.05 (SD=1.15)
The least self-care behaviors	
Regular exercise	3.67 (SD=1.31)
Influenza vaccine injection	3.36 (SD=1.37)
Easy handling in case of shortness of breath	2.63 (SD=1.17)

Values are given as a mean (SD) for continuous variables.

4 | Discussion

According to the findings of this research, only 52.6% of patients had good self-care behaviors and 45.2% of them had average self-care behaviors. These findings were consistent with the study of Shojaee et al., which was conducted to investigate self-care behaviors in heart failure patients. The amount of desirable self-care behaviors was higher so 26% of patients had appropriate self-care behaviors and the rest followed these behaviors at an average and weak level [13]. In the Azarbad study, which was conducted on the relationship between self-care behaviors and self-care needs in heart failure patients, half of the patients had moderate self-care behaviors [14]. Also, in the Oksel study in Turkey, the self-care ability of heart failure patients was reported to be weak [15]. Also, the study of Seyam et al., which examined self-care behaviors in heart patients after coronary artery bypass surgery, showed that only 10% of patients had good self-care behaviors [5].

In the present study, there was no significant relationship between age groups in terms of self-care behaviors, which is in line

with the results of the study of Momeni et al [11]. In the studies of Daryasari, Shojaee, Azarbad, and Artinian, age was an influencing factor in the self-care ability of patients in such a way that research units with younger ages had the better self-care ability [6, 13, 14, 16]. In this research, there was no significant difference between men and women in terms of self-care behaviors. Daryasari, Azarbad, Artinian, and Momeni also did not find a relationship between these two variables [6, 11, 14, 16]. But in the study of Shojaee, men had more appropriate self-care behaviors than women [13]. In another study by Daryasari on patients with high blood pressure, men also had better self-care abilities than women [6]. In the study of Seyam et al., men had better self-care behaviors than women, and a significant relationship was found between gender and self-care behaviors [5]. It seems that the effect of gender differences on self-care ability can be affected by other variables such as the level of knowledge and the physical, mental, and behavioral condition of people. In the present study, the level of education of women was lower than that of men, and it seems that their lack of information and awareness in this field affects their self-care behaviors to a great extent, which is consistent with the findings of the study of Momeni et al [11]. Women probably have less time to perform self-care behaviors due to the busyness of housekeeping and home management.

In the present study, although single people had better self-care behaviors than married and widowed people, this difference was not significant, which is consistent with the study of Momeni et al [11]. In the study of Shojaee, married people had better self-care behaviors than widows, but single people had the best scores. Of course, in their research, unmarried people often had higher education, which can affect their level of awareness and adherence to self-care behaviors [13]. On the other hand, single people may have more opportunities to implement self-care behaviors due to fewer family responsibilities. Meanwhile, in the study of Artinian, marital relationships had a significant relationship with three behaviors resting during the day, controlling the absorption and excretion of fluids, and believing in having a happy life despite suffering from heart failure [16]. Also, in the study of Azarbad, the marital factor was effective in patients' knowledge of heart failure, and married people had more knowledge than unmarried people [14]. In the study of Daryasari, married people had better self-care abilities than unmarried people [6]. Considering the role that the spouse can play in reducing job stress through emotional support and also helping to change the lifestyle, marriage seems to affect people's ability to self-care.

The present study showed that people with a university education and diploma have more appropriate self-care behavior, but the difference was not statistically significant. In the study of

Shojaee, self-care behaviors were more appropriate in the diploma and university education group than in other groups [13]. In the study of Momeni et al, a significant relationship was observed between education and self-care behaviors, so patients with higher levels of education had better self-care behaviors [11]. Rockwell says that patients with higher education usually have higher judgment power to implement self-care behaviors [17]. Akyol et al. stated that patients with higher education have better self-care abilities due to their higher job status and better income [18].

In this study, there was no significant relationship between the average self-care behaviors and the incidence of other chronic diseases. This is even though in the studies of Daryasari, Shojaee, Azarbad, Artinian, and Chris, suffering from other chronic diseases has reduced self-care behaviors [6, 13, 14, 16, 19]. Suffering from other chronic diseases at the same time complicates the treatment regimen and self-care in patients, and they will need more skill and time to perform these behaviors, which will affect their self-care behavior [20]. In the current study, most self-care behaviors are related to going to the doctor or medical centers in case of shortness of breath, taking medicines according to the doctor's recommendation, and allocating enough time to rest. In this study, taking medications according to the doctor's recommendation was the second self-care promotion behavior. Maybe patients' belief in the effectiveness of drugs can justify this result. Or many patients may not consider forgetting to take medicine once or twice a week to be important and have given a more appropriate answer to this question. Also, in this study, the information obtained was collected based on the patient's statement, and the researcher was not able to observe the behavior, so a more objective investigation and long-term follow-up may yield different results. In the study of Shojaee, this behavior was assigned the highest score [13]. Also, Ni et al., in their research to investigate factors affecting knowledge and dependence on self-care behaviors in heart failure patients, stated that 74% of patients took their medications on time and as prescribed by the doctor [21]. Artinian, in the study of self-care behaviors in patients with heart failure, stated that this behavior was observed by patients most of the time [16]. This is although in the study of Daryasari, "regular use of medicines" was the third self-care behavior that patients followed most [6]. Also, in their research, Monane et al determined that only 10% of patients with heart failure were taking their medications as prescribed by the doctor in a one-year follow-up [22].

In the present study, the behavior "I rest enough during the day" is considered the third self-care improvement behavior. In the study of Momeni et al., the behavior "I allocate time to rest

during the day" was the second self-care behavior that was properly observed in patients [11]. This result may be because afternoon nap is part of the common culture in the country and perhaps many patients observe it properly without even knowing the reason for doing this behavior. In the study of Shojaee, this behavior was the second self-care behavior that had a lower average (better status) among other behaviors [13]. However, in the study of Daryasari, after "limiting the amount of liquid consumption", the behavior of "limiting the consumption of salt" was the second self-care behavior that patients performed more often [6]. In the current study, the least self-care behaviors are related to regular exercise, influenza vaccine injection, and easy treatment in case of shortness of breath. The results of the study by Daryasari et al. and Momeni et al. are in line with the present study [6, 11]. Regular exercise behavior and influenza vaccine injection are considered the second and third categories of the least self-care behavior. While in the study of Momeni et al. and Daryasari et al., the lack of daily weighing is stated as the first self-care behavior that is less observed [6, 11].

4.1 | Limitations

The fact that this study was cross-sectional limits our ability to fully understand contributing factors. Conducting this research in a medical center reduces the generalizability, which is another limitation of the present study.

4.2 | Recommendations for future research

It is suggested that future studies with a larger number of samples investigate the influencing factors on the self-care of cardiovascular patients. It is also suggested that experimental studies be conducted to investigate appropriate educational methods to increase self-care behavior in these patients.

5 | Conclusions

Teaching patients about the importance and how to perform self-care behaviors is very effective in promoting these behaviors and as a result, reducing mortality and hospitalization costs, and nurses play an important role in teaching these behaviors.

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Authors' contributions

Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work: MA, HJ, MHJ, FN, FNM; Drafting the work or revising it

critically for important intellectual content: MA, HJ, MHJ, FN, FNM; Final approval of the version to be published: MA, HJ, MHJ, FN, FNM; Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved: MA, HJ, MHJ, FN, FNM.

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Ethics approval and consent to participate

This study has been registered at Mazandaran University of Medical Sciences. Ethics-related considerations, such as securing information confidentiality and obtaining written informed permission, were taken into account.

Competing interests

We do not have potential conflicts of interest with respect to the research, authorship, and publication of this article.

Availability of data and materials

The datasets used during the current study are available from the corresponding author on request.

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