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Evaluation of Symptoms and Predictors in Patients With Heart Failure in Turkey

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In heart failure (HF) patients, the aim of treatment and care is to eliminate or alleviate symptoms, improve quality of life with successful symptom management, and reduce hospitalizations due to acute worsening. This study evaluated the frequency and magnitude of symptoms related to hospital admission in the case of HF patients and to determine sociodemographic and clinical features. The sample of the study consisted of 117 patients hospitalized in the cardiology department. The data were collected using the ''patient interview form'' and the ''Memorial Symptom Assessment Scale–Heart Failure.'' Numbers, percentages, means, and regression analysis were used in the analysis of data. The mean age of patients in the study was 68.60 ± 12.55 years, and 66.7% were male. Among the patients, 40.2% were diagnosed with HF 1 to 3 years ago. The patients had been hospitalized 1 to 3 times (42.7%) and for 3 to 5 days (63.2%) because of HF in the past year. The most common symptoms experienced by the patients were waking up breathless at night (82.1%), shortness of breath (81.2%), difficulty sleeping (77.8%), and fatigue (65.8%). Regression analysis revealed that marital status, smoking, a family history of heart disease, and sleeping regularly were the predictors of symptom burden ($R = 0.607$, $R^2 = 0.368$, $F = 6.921$, $P = .000$). In conclusion, patients experienced intense or severe symptoms such as pain, feeling bloated, worrying, problems with urination, swelling of the arms or legs, and difficulty breathing when lying flat. Patients are unable to cope with symptoms at home and cannot maintain self-care.

KEY WORDS

heart failure, hospital admission, nursing, symptom evaluation

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Heart failure (HF) is a complex syndrome resulting from structural or functional disorders of the heart, worsening symptoms, and poor quality of life, which can be cause for readmission to the hospital.[1] The estimated prevalence of HF in the United States and in European countries varies between 1% and 4% and is growing steadily with the increase in the elderly population.[2] Primary prevention of HF can be achieved by prevention of failure development, inhibition of progression, and control of symptoms.[3] According to the Heart Failure Prevalence and Predictors study conducted in Turkey, the prevalence of adult HF was found to be 2.9%. Despite having a younger population compared with Western countries, prevalence is higher in Turkey, and approximately 2 million people live with HF.[4] The need for lifelong treatment and readmissions to the hospital places a direct and indirect burden of high costs on the health economy. More than half of patients are readmitted to the hospital many times, and some require care in intensive care units.[5]

Heart failure is a disease that causes many physical and emotional symptoms.[6] Patients with HF experience numerous symptoms such as shortness of breath, swelling in the feet, weight gain, weakness, fatigue, lack of energy, and fatigue in daily activities.[5,6] Goldberg et al[7] examined the type and frequency of symptoms in patients hospitalized with HF as well as the relationship between symptom patterns and patient characteristics and found that patients who report fewer symptoms tend to be older, be female, and have fewer comorbidities present in comparison with patients who report multiple acute symptoms.[7] Elderly patients, the severity of HF, and the presence of comorbidities are the risk factors for prolonged hospitalization, readmissions, and death after a first hospitalization for HF with reduced ejection fraction.[8] Retrum et al[9] reported that the reasons for recurrent admission to the hospital included many factors such as distressing symptoms, illness progression, the effect of psychosocial factors, the lack of self-care compliance, and health system failures.[9] Regardless of the underlying cause of readmission to the hospital, the prognosis for patients with HF is very poor. The survival rate of 5 to 10 years after diagnosis of HF is approximately 10% to 50%.[10] Community-based studies have reported that between 30% and 40% of those newly diagnosed with HF die within the first year.[11]

Patients with HF face worries about quality of life, worsening of accompanying symptoms, an excess of comorbid conditions, and deterioration of functional status. For these reasons, patients need early palliative care approaches. Palliative care must be integrated to improve quality of life through early recognition and treatment of physical and psychological symptoms and attention to social and spiritual needs.[12,13]

The guidelines related to HF of the European Society of Cardiology published in 2016 include recommendations for the process of care management, discharge planning, lifestyle recommendations, exercise training, follow-up and monitoring, aging, frailty, cognitive impairment, palliative care, and end-of-life care.[14]

Evidence suggests that "recognizing and monitoring changes in symptoms of patients" is an important parameter in complying with HF treatment, reducing the severity and frequency of symptoms, thus preventing readmissions to the hospital. Despite the burden that HF places on society, awareness of the disease is weak. More research is needed to strengthen the evidence base and prevent disease progression.

The purpose of the current study was to determine the frequency and magnitude of symptoms that are related to hospital admissions in HF patients and to evaluate the results of regression analysis performed to assess clinical characteristics. The data obtained from the study are expected to contribute to nursing education and clinic practice and to prevent readmissions to the hospital.

METHODS

Design and Sample

This study was conducted as a cross-sectional design with a convenience sample of 117 hospitalized patients who had experienced HF. The ethics committee approved the study. Patients were recruited from the cardiology units at the Trabzon Ahi Evren Chest, Cardiac Surgery Training and Research Hospital over the period of June to November 2015. Patient eligibility was confirmed by checking the patient file with respect to the inclusion and exclusion criteria. Patients were included if (1) they were 18 years or older, (2) they were in the first 2 to 3 days of hospitalization (because patients' conditions may be more complex on the first day of their arrival), (3) their condition was stable, (4) they were capable of communication, and (5) agreed to participate in the research. Patients were excluded if they (1) had undergone heart surgery; (2) had a history of heart valve disease, cancer, myocardial infarction, or chronic obstructive pulmonary disease; or (3) had more than 50% ejection fraction at the time of diagnosis. Sixteen patients were eligible but were not included in the study because they were in poor health or did not want to respond to questions. The researcher informed all of the participants about the aim of the study. After being informed and confirmed stable, the patients were approached to participate in the study and asked for their verbal consent. Participation in the study was voluntary. All forms were completed by the researcher based on the participants' responses and medical records. The interview lasted for 30 to 45 minutes. The subjects were guaranteed anonymity and confidentiality and informed that they could withdraw from the study at any time.

Instruments and Measurements

Patient Interview Form

The researcher prepared the questionnaire in accordance with the related literature.[15,16] Sociodemographic characteristics were assessed using a questionnaire that inquired about sex, age, marital status, education status, place of residence, caregivers, and level of income. Clinical information was collected from the patients on smoking, using alcohol, the family history of heart disease, adhering to medication orders, difficulty in maintaining a special diet, difficulty in maintaining fluid restriction, daily weight monitoring, sleeping regularly, exercising, coping strategies for symptoms, problems with maintaining self-care at home, receiving training associated with the disease, health personnel providing training, and the adequacy of the training. The time elapsed since the diagnosis of HF, the New York Heart Association functional classification, the ejection fraction value, the number of hospitalizations due to HF over the past 12 months, the number of inpatient days, and the last time of discharge were recorded from the patients' medical file.

The presence of comorbid conditions was assessed with the Charlson comorbidity index. Comorbidities were scored in order of severity, from mild disease to severe disease. The 19 diseases in this index were rated as between 1 and 6. If there is no disease, 0 points were given. The total score was obtained by summing these scores.[17]

Memorial Symptom Assessment Scale–Heart Failure

The Memorial Symptom Assessment Scale-Heart Failure (MSAS-HF) was used to evaluate symptom prevalence, severity, and distress. Zambroski et al[18,19] modified the original MSAS to evaluate symptoms specific to HF patients. Zambroski et al[18,19] reported strong internal consistency ($\alpha = .83$-$.92$). For each of the 32 items, the patient indicated whether he/she had experienced the symptom by selecting "yes" or "no." If "yes" was selected, the severity of a symptom over the past 7 days was assessed using the response metric of (0) not at all, (1) a little bit, (2) somewhat severe, (3) severe, and (4) very severe. Symptoms endorsed by patients were then rated for the distress caused by a symptom with the response metric (0) not at all, (1) a little bit, (2) somewhat, (3) quite a bit, or (4) very much. Higher scores on the MSAS-HF indicate greater symptom prevalence, symptom severity, and symptom distress.[18,19]

The MSAS-HF also measures the associated burden for each symptom recorded as prevalent. Symptom burden scores are determined by the mean of the frequency, severity, and distress of each symptom. The total symptom burden score is the overall mean for all symptoms.[18,19] Scale validity and reliability in a Turkish setting were tested by Özdemir.[20] The Cronbach α coefficients for the total MSAS-HF, MSAS-PSYCH, and MSAS-PHYS subscales were found to be 0.70, 0.38, and 0.55, respectively.[20]

Data Analysis

Descriptive statistics, including frequencies with percentages and mean scores with SDs, were used to describe the patients' characteristics. For each item in the MSAS-HF, prevalent and associated burdens were calculated. Multiple linear regression analysis was used to identify associated predictors of total MSAS-HF and the MSAS subscale in patients with HF. In each model, the dependent variables were the MSAS-HF total and subscale scores, and the independent variables were entered consecutively as sociodemographic and clinical variables.

RESULTS

Characteristic of the Sample

Demographic data are summarized in Table 1. The average Charlson comorbidity index of the patients was 1.42 ± 0.93. Seventy-six percent had a history of heart disease in first-degree family members, and in 40.2%, the time since the diagnosis of HF ranged from 1 to 3 years ago. Fifty-nine percent were categorized as class III according to New York Heart Association classification criteria, and in 58.1%, ejection fraction values ranged from 10% to 25%. The patients had been hospitalized 1 to 3 times (42.7%) and for 3 to 5 days (63.2%) because of HF in the past 1 year. The average discharge time of the patients was 5.20 ± 3.11 months. In 37.6% of the patients, difficulty was encountered in taking medications regularly, whereas 58.1% found it hard to maintain fluid restriction, 34.2% found it hard to maintain the special diet, and 91.5% did not monitor their weight daily. Seventy-nine percent said that they could not sleep regularly, and 86.3% reported that they did not exercise. Sixty-four percent said that they felt more comfortable with applications such as raising the head of the bed, lying on 2 or 3 pillows, and ventilating the room when they had difficulty breathing; 71% had problems with self-care at home. Another 72.6% of the patients received training about the disease, and in 87.1%, this training was given by the doctor; 45.9% stated that the training had been sufficient (Table 1).

Symptom Prevalence and Burden

The patients with HF experienced a wide variety of symptoms (Table 2). High-prevalence symptoms included waking

TABLE 1 Sociodemographic and Clinical Characteristics of Patients (N = 117)

Characteristics	n	%
Sex		
Female	39	33.3
Male	78	66.7
Age, M ± SD, y 68.60 ± 12.55		
Marital status		
Single[a]	52	44.4
Married	65	55.6
Educational status		
Illiterate	16	13.7
Literate	37	31.6
Primary school	51	43.6
High school and university	13	11.1
Place of residence		
Village	7	6.0
District	55	47.0
Province	55	47.0
Caregivers		
Self/other family members[b]	5	4.3
Partner	16	13.7
Partner and children	46	39.3
Children	50	42.7
Level of income		
Higher revenues than expenses	7	6.0
Equal to revenues and expenses	61	52.1
Less revenues than expenses	49	49.1
Smoking		
Yes	10	8.5
No	57	48.7
Cessation due to illness	50	42.7

(continues)

TABLE 1 Sociodemographic and Clinical Characteristics of Patients (N = 117), Continued

Characteristics	n	%
Alcohol		
Yes	4	3.4
No	89	76.1
Cessation due to illness	24	20.5
Charlson comorbidity index (1.42 ± 0.93)		
0 score	17	14.5
1 score	52	44.4
2 score	29	24.8
3 score	19	16.2
Family history of heart disease		
Yes	89	76.1
No	28	23.9
The time elapsed since the diagnosis of heart failure, y		
<1	33	28.2
1-3	47	40.2
4-5	23	19.7
>5	14	12.0
NYHA classification		
I	5	4.3
II	32	27.4
III	70	59.8
IV	10	8.5
The ejection fraction value		
10%-25%	68	58.1
26%-35%	33	28.2
36%-45%	12	10.3
46%-50%	4	3.4
No. hospitalizations due to heart failure over the past 12 mo		
1 time	46	39.3

(continues)

TABLE 1 Sociodemographic and Clinical Characteristics of Patients (N = 117), Continued

Characteristics	n	%
1-3 time	50	42.7
>3 time	21	17.9
No. inpatients, d		
3-5	74	63.2
6-10	40	34.2
>10	3	2.6
The last time of discharge (5.20 ± 3.11), mo		
0-3	41	35.0
4-6	37	31.6
7-9	27	23.1
≥10	12	10.3
Adhering to the medication orders		
Yes	44	37.6
No	73	62.4
Difficulty in maintaining fluid restriction		
Yes	68	58.1
No	49	41.9
Difficulty in maintaining a special diet		
Yes	40	34.2
No	77	65.8
Daily weight monitoring		
Yes	10	8.5
No	107	91.5
Sleeping regularly		
Yes	24	20.5
No	93	79.5
Exercising[c]		
Yes	16	13.7
No	101	86.3

(continues)

TABLE 1 Sociodemographic and Clinical Characteristics of Patients (N = 117), Continued

Characteristics	n	%
Coping strategies for symptoms[d]		
Yes	75	64.1
No	42	35.9
Problems with maintaining self-care at home		
Yes	84	71.8
No	33	28.2
Receiving training associated with the disease		
Yes	85	72.6
No	32	27.4
Health personnel providing training (n = 85)		
Doctor	74	87.1
Nurse	11	12.9
The adequacy of the training (n = 85)		
Sufficient	39	45.9
Insufficient	46	54.1

Abbreviation: NYHA, New York Heart Association.

[a] *Single and widow lines were combined.*

[b] *Self and other family members were combined.*

[c] *The frequency of exercise: patients stated that jogging or walking 1 to 2 days a week (11) and jogging or walking 1 to 2 days a month (5).*

[d] *They were coping methods using for shortness of breath.*

up breathless at night (82.1%), shortness of breath (81.2%), difficulty sleeping (77.8%), lack of energy (65.8%), and difficulty breathing when lying flat (59.8%). The most frequent symptoms were worrying (78.3%), difficulty sleeping (74.7%), cough (70.9%), shortness of breath (66.0%), and waking up breathless at night (63.5%). The most severe symptoms were in the categories of other were pain (91.7%), feeling bloated (85.7%), worrying (81.2%), problems with urination (80.6%), swelling of the arms or legs (80.4%), and difficulty breathing when lying flat (71.4%). Symptoms that were the most distressing were cough (94.5%), swelling of the arms or legs (89.1%), problems with urination (85.5.%), shortness of breath (77.7%), difficulty breathing when lying flat (77.1%), difficulty sleeping (75.8%), weight gain (74.1%), and waking up breathless at night (74.0%).

The most burdensome symptoms were waking up breathless at night (2.64 ± 1.38), shortness of breath (2.55 ± 1.35), difficulty sleeping (2.53 ± 1.45), difficulty breathing when lying flat (2.08 ± 1.78), lack of energy (1.90 ± 1.44), feeling bloated (1.84 ± 1.57), and worrying (1.82 ± 1.56) (Table 2).

Regression Analysis of Total MSAS-HF and Subscales

Regression analysis revealed that marital status, family history of heart disease, smoking, and sleeping regularly were significantly related to the symptom burden scale (R = 0.607, R^2 = 0.368, F = 6.921, P = .000). Patients who were single, who had a family history of heart disease, who did not smoke, and who could not sleep regularly had higher mean scores. Marital status, caregivers, sleeping regularly, and coping strategies for symptoms were significantly related to psychological subscale scores (R = 0.655, R^2 = 0.428, F = 11.672, P = .000). Patients who were single, who could not sleep regularly, who received support from other family members or were lonely, and those with strategies to cope with symptoms had higher mean scores. Educational status, caregivers, smoking, the number of days the patients had last stayed in the hospital, adhering to medication orders, and exercising were significantly related to physical subscale scores (R = 0.575, R^2 = 0.331, F = 4.713, P = .000). The mean score was higher in patients at lower educational levels, who were receiving support from other family members or were lonely, who did not smoke, who stayed in the hospital the most number of days in their last hospitalization, and who were not exercising. Sex, marital status, sleeping regularly, and difficulty in maintaining a special diet were significantly related to global distress index symptom subscale scores (R = 0.527, R^2 = 0.327, F = 6.551, P = .000). The mean score was higher in patients who were single, who were female, who could not sleep regularly, and who had difficulty in maintaining a special diet. Marital status was the positive predictor; sex, sleeping regularly, and difficulty in maintaining a special diet were the negative predictors of global distress index symptom subscale scores.

DISCUSSION

Patients with heart disease are often hospitalized because of one or more worsening symptom. In the current study, the most common symptoms in HF patients were waking up breathless at night, shortness of breath, difficulty sleeping, lack of energy, and difficulty breathing when lying flat. These results are similar to other studies examining HF.[6,11,21]

The main predictor of symptom burden, the psychological and global distress index symptoms, was single patients in the current study. Social support for patients

TABLE 2 Characteristics and Prevalence of Symptoms (n = 117)

Symptom	n	%	Frequency[a]	Severity[b]	Distress[c]	Symptom Burden (M ± SD)
Waking up breathless at night	**96**	**82.1**	**63.5**	**53.1**	**74.0**	**2.64 ± 1.38**
Shortness of breath	**95**	**81.2**	**66.0**	**68.1**	**77.7**	**2.55 ± 1.35**
Difficulty sleeping	**91**	**77.8**	**74.7**	**62.6**	**75.8**	**2.53 ± 1.45**
Lack of energy	**77**	**65.8**	39.0	**51.9**	**58.4**	1.90 ± 1.44
Feeling bloated	**70**	**59.8**	**52.9**	**85.7**	**52.9**	1.84 ± 1.57
Difficulty breathing when lying flat	**70**	**59.8**	—	**71.4**	**77.1**	**2.08 ± 1.78**
Feeling sad	**70**	**59.8**	40.6	45.7	51.4	1.66 ± 1.41
Worrying	**69**	**59.0**	**78.3**	**81.2**	**75.4**	1.82 ± 1.56
Feeling drowsy	**65**	**55.6**	21.5	24.6	27.7	1.43 ± 1.32
Chest pain	**64**	**54.7**	49.2	30.2	**57.1**	1.51 ± 1.44
Problem with urination	**62**	**53.0**	25.8	**80.6**	**85.5**	1.65 ± 1.59
Dry mouth	**62**	**53.0**	23.8	14.3	17.5	1.34 ± 1.32
Feeling nervous	**60**	**51.3**	28.3	45.0	45.0	1.38 ± 1.39
Difficulty concentrating	**59**	**50.4**	47.5	39.0	28.8	1.18 ± 1.21
Palpitations	**58**	49.6	6.9	5.1	8.6	1.00 ± 1.08
Cough	**55**	47.0	**70.9**	49.1	**94.5**	1.15 ± 1.27
Swelling of arms or legs	46	39.3	-	**80.4**	**89.1**	1.48 ± 1.87
Other pain	12	10.3	**50.0**	**91.7**	**66.7**	0.30 ± 0.90
Lack of appetite	48	41.0	27.1	**56.3**	**60.4**	1.16 ± 1.41
Weight gain	27	23.1	—	29.6	**74.1**	0.68 ± 1.27
Constipation	21	17.9	—	28.6	**61.9**	0.49 ± 1.10
Itching	25	21.4	4.0	16.0	**56.0**	0.55 ± 1.07
Change in the way food tastes	24	20.5	—	—	47.4	0.52 ± 1.06
Sweats	42	35.9	16.7	—	—	0.85 ± 1.14
Dizziness	16	13.7	37.5	25.0	43.8	0.37 ± 0.94
Feeling irritable	49	41.9	30.6	36.4	38.8	1.10 ± 0.89
Problems with sexual interest or activity	37	31.6	30.6	16.7	36.1	0.82 ± 1.23
Weight loss	19	16.2	—	16.2	7.7	0.43 ± 0.97

(continues)

TABLE 2 Characteristics and Prevalence of Symptoms (n = 117), Continued

Symptom	n	%	Frequency[a]	Severity[b]	Distress[c]	Symptom Burden (M ± SD)
Nausea	20	17.1	20.0	15.0	25.0	0.33 ± 0.79
Vomiting	9	7.7	—	44.4	22.2	0.17 ± 0.62
Numbness or tingling in hands and feet	42	35.9	21.4	38.1	33.3	0.95 ± 1.30
Diarrhea	5	4.3	—	—	—	0.09 ± 0.47

Data in bold indicate symptoms with high rates.

[a] *Percentage of patients with symptom describing the frequency of the symptom as ''frequently'' or ''almost constantly.''*

[b] *Percentage of patients with symptom describing the severity of the symptom as ''severe'' or ''very severe.''*

[c] *Percentage of patients with symptom describing the distress of the symptom as ''quite a bit'' or ''very much.''*

with HF is suggested as an effective intervention in increasing quality of life, contributing to positive health outcomes, and reducing mortality and morbidity. Having a partner is usually an indication of the highest level of social support available and has been shown to be an important factor in reducing depressive symptoms and improving survival.[22,23] As another social support determiner of the current study, it was observed that patients receiving care firstly from their spouse and secondly from their children experience less physical and psychological symptoms. Family support can be effective in improving self-care behaviors such as recognizing and managing of symptoms.[24] Perceived family/social support might play a buffering role in preventing symptoms and readmissions to the hospital.

The results showed that the global distress index symptoms were more prevalent in females than in males. Similarly, Zambroski et al[18] reported that women experience symptoms of nervousness and sweat more often than men[18]; Razzolini et al[25] reported that symptoms were more severe in women.[25]

The level of education of patients may affect treatment, compliance with sodium and fluid restrictions, identification of symptoms and signs, and readmission to the hospital. In the current study, the low education levels of patients were an important predictor of physical symptoms, especially in terms of experiencing the symptoms more intensely. Unlike the present study, Lokker et al[11] have reported that level of education does not affect symptom scores. [11]

This study found that the etiology of HF, particularly a history of heart disease in the family, was a factor that can affect the symptom burden of cardiac disease. It can be said that patients with a family history of heart disease experience more intense symptoms because of the negative experiences of family members in the course of their disease and because of psychological problems such as anxiety, fear, and worry.

In the current study, the number of inpatient days was the predictor of the physical symptoms. Similarly, Lokker et al[11] reported that there were positive correlations between previous hospital admissions and the physical, psychological, global distress index and symptom burden. [11] This may be related to the fact that most patients do not realize that their symptoms are worsening or that they are associated with HF.

Patients with HF may experience psychosocial stressors due to illness and changes in daily life. Watson et al[26] examined the interrelationships between social anxiety, smoking to cope, and cigarette craving and have reported that participants who experienced higher levels of social anxiety said that they need more cigarettes to feel comfortable in social situations.[26] This current study found that smoking was a significant predictor of symptom burden and the physical symptoms.

In the current study, sleeping regularly was the predictor of symptom burden, the global distress index, and the psychological symptoms. The general emotional state of the patient, stress due to the progress of the disease, and the level of anxiety contribute to the psychological condition and sleep problem.

Noncompliance in practicing self-care measures such as monitoring weight on a daily basis, following a special diet, doing exercises regularly, and following a regular regime of medication can lead to a worsening of symptoms (shortness of breath, edema), deterioration in the quality of life, and readmission to the hospital. Difficulty in maintaining a special diet was the other indicator of the global distress index symptom. In the current study, it was seen unfortunately that the taste of foods low in sodium was unpalatable for the Turkish community, which has a strong culture of consuming food rich in salt such as pickles, and thus proved to be a barrier for following special diets. Son et al[27] reported that there were significance differences in the frequency and severity of symptoms, shortness of breath, difficulty breathing when lying flat, lack of energy and lack of appetite in patients showing compliance/noncompliance to sodium-restricted diets and that adjustments made to adopt a sodium-restricted diet and the compliance of patients to such an eating plan could have a positive impact on clinical health outcomes and on the burden perceived.[27]

In the current study, adhering to medication orders and exercising were the predictors of physical symptoms. Jones et al[28] reported that self-adjustment of medications in diuretic treatment and compliance in taking medications decreased cardiac disease–based admissions to the emergency department, readmissions to the hospital, and mortality.[28] Reeder et al[29] reported that 41.7% of patients thought that the symptoms they experienced were associated with changes in their self-management and that changes in the exercising scheme affected their symptoms.[29] Symptoms such as depression and fatigue and physical limitation may cause patients to have low motivation and thus poor physical activity.[30,31]

Heart failure patients apply methods such as raising the head of the bed, resting on 2 or 3 pillows, and ventilating the room to relieve themselves of symptoms. Reeder et al[29] stated that 43.3% of patients used self-care strategies to relieve symptoms at least once a day, these strategies being self-medication, raising the head of the bed, resting, walking, and changes in diet.[29] In the current study, coping strategies for symptoms was the predictor of the psychological symptom.

Several methodological limitations may affect the interpretation of the data from our study. The cross sectional design was also a limitation in this research. In this context, HF symptoms were evaluated only once and not evaluated in depth in the ongoing process. Another limitation is that HF symptoms may also be affected by pharmacological and nonpharmacological treatment and comorbidities and individual characteristics.

CONCLUSION

In the current study, patients with HF experienced severe symptoms related to the disease. These results indicate that patients display treatment-seeking behavior after symptoms have worsened. This may be related to the deficiency in patients' recognizing and monitoring their symptoms. The person in charge of the care process, sleeping regularly, having problems in maintaining a special diet, fluid control, weight control and patients receiving spousal support are among the factors determining the symptom burden. In addition, most patients reported having problems with maintaining self-care at home. Shortness of breath, lack of energy, and sleep problems in HF are the most important reasons to return to the hospital in the short term. These symptoms can be used as an evaluation criterion for high-risk patients. In addition, health care providers need to pay more attention to HF patients who have more of a symptoms burden, and a palliative care team is needed to improve home care services.

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