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Self-care as a symptom management strategy in people with heart failure

Autocuidado como estratégia de manejo dos sintomas em pessoas com insuficiência cardíaca

Autocuidado como estrategia de manejo de los síntomas en personas con insuficiencia cardíaca

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ABSTRACT

Objective: to evaluate strategies adopted for symptom management in people with heart failure. Method: this is a descriptive, qualitative-quantitative study conducted at a University Hospital in Paraná with individuals diagnosed with heart failure. Data collection instruments included sociodemographic and clinical data, open interviews, and the European Heart Failure Self-Care Behavior Scale, analyzed through content analysis and descriptive statistics. Results: the average score on the European Heart Failure Self-Care Behavior Scale among 81 participants was 32.8 (±6.4). Rest, medication adherence, and rest in case of shortness of breath were the most common self-care behaviors. Five thematic categories emerged: adherence to medical prescriptions and seeking healthcare services; self-medication; rest and waiting for improvement; use of complementary therapies; and healthy habits. Conclusion: the main strategies for symptom management were adherence to medical prescriptions, seeking healthcare services, self-medication, rest and waiting for symptom improvement, use of complementary therapies, and the introduction and maintenance of healthy habits.
Descriptors: Nursing; Heart Failure; Signs and Symptoms; Self Care.

RESUMO

Objetivo: avaliar estratégias adotadas para o manejo dos sintomas em pessoas com insuficiência cardíaca. **Método:** estudo descritivo, quali-quantitativo, realizado em um Hospital Universitário no Paraná, com pessoas com diagnóstico de IC, utilizando instrumento de dados sociodemográficos e clínicos, entrevista aberta e a *European Heart Failure Self-Care Behavior Scale*, analisados por análise de conteúdo e análise de estatística descritiva. **Resultados:** entre 81 participantes, obteve-se média de 32,8 (±6,4) pontos na *European Heart Failure Self-Care Behavior Scale*. Repouso, adesão às medicações e repouso em caso de falta de ar. Emergiram cinco categorias temáticas: cumprimento da prescrição médica e procura pelo serviço de saúde; automedicação; repouso e espera pela melhora; uso de terapias complementares e hábitos saudáveis foram comportamentos de autocuidado com melhor adesão. **Conclusão:** as principais estratégias para o manejo dos sintomas foram cumprimento da prescrição médica, procura pelo serviço de saúde, automedicação, repouso e espera pela melhora dos sintomas, uso de terapias complementares, e introdução e manutenção de hábitos saudáveis.
Descritores: Enfermagem; Insuficiência Cardíaca; Sinais e Sintomas; Autocuidado.

RESUMEN

Objetivo: evaluar las estrategias adoptadas para el manejo de los síntomas en personas con insuficiencia cardíaca. **Método:** estudio descriptivo, cualitativo-cuantitativo, realizado en un Hospital Universitario en Paraná, con personas diagnosticadas con insuficiencia cardíaca. Se utilizó un instrumento para la recolección de datos sociodemográficos y clínicos, una entrevista abierta y la European Heart Failure Self-Care Behavior Scale. Los datos se analizaron mediante análisis de contenido y estadística descriptiva. **Resultados:** entre los 81 participantes, se obtuvo un promedio de 32,8 (±6,4) puntos en la European Heart Failure Self-Care Behavior Scale. Las prácticas más frecuentes fueron el reposo, la adherencia al tratamiento farmacológico y el descanso ante la aparición de disnea. Emergieron cinco categorías temáticas: cumplimiento de la prescripción médica y búsqueda de atención sanitaria; automedicación; reposo y espera de la mejoría; uso de terapias complementarias; y adopción de hábitos saludables, los cuales fueron los comportamientos de autocuidado con mayor adherencia. **Conclusión:** las principales estrategias empleadas para el manejo de los síntomas fueron el cumplimiento de la prescripción médica, la búsqueda de atención sanitaria, la automedicación, el reposo y la espera de la mejoría de los síntomas, el uso de terapias complementarias y la adopción y mantenimiento de hábitos saludables.
Descriptores: Enfermería; Insuficiência Cardíaca; Signos y Síntomas; Autocuidado.

INTRODUCTION

Heart failure (HF) has a high prevalence and a considerable impact on mortality and quality of life[1], representing a significant public health problem. HF is a syndrome that cannot be completely cured, requiring constant and long-term management[2].

The BREATHE prospective study in Brazil, which evaluated hospitalized patients with HF at two time points (2011 to 2012 and 2016 to 2018), showed a cumulative 12-month mortality incidence of 27.7%, with 24.3% hospital

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readmission within 90 days and 44.4% within 12 months[3]. According to the author, mortality and readmission rates in this prospective registry were higher than those reported globally[3], which makes the problem even more serious in Brazi.

Brazil recorded a total of 206,978 hospitalizations for heart failure in 2023 alone, with 24,271 deaths, corresponding to a mortality rate of 11.73%, and a total hospital cost of approximately R$482 million[4]. While the number of hospitalizations in 2022 was slightly lower (201,793), there was an increase in the mortality rate of 12.37%[4].

The treatment of heart failure consists of pharmacological and non-pharmacological measures. The former aims to minimize symptoms and reduce morbidity and readmission and death rates resulting from heart failure[5]. Non-pharmacological treatment involves lifestyle management through changes in habits and promoting adherence and persistence in treatment, and is essential for preventing cardiovascular events and management of heart failure[1]. Such changes include adequate nutrition, a low-sodium diet, reduction of fats and processed foods; adequate fluid intake; weight control, smoking cessation; appropriate alcohol consumption; physical activity according to the individual's conditions, as well as maintaining sexual activity. Beliefs, values, and spirituality can also be favorable factors to health[1,6,7].

Adherence to treatment is outlined as an important component of self-care in improving outcomes in the context of HF[8]. Due to the complexity of pharmacological and non-pharmacological treatment, the need to manage it can lead to adherence failures, which is a strong predictor of hospitalizations in HF situations[2].

The implementation or non-implementation of such recommendations also reflects on the individual's self-care in relation to their health condition. Self-care is considered to be the ability to take care of oneself and to perform actions to promote, maintain, and protect one's health. Management behavior within self-care includes decisions made based on the perception of a symptom or its worsening, and maintenance behavior involves adherence to therapeutic recommendations[8].

In this context, and considering heart failure as a public health problem whose prevalence and incidence remain at high levels in Brazil, it is necessary to adopt self-care behaviors with a view to managing symptoms, preventing clinical decompensation, and recovering quality of life.

Thus, the research question was raised: what self-care strategies are adopted for symptom management among people with heart failure? In light of the above, the objective of this study was to evaluate strategies adopted for symptom management in people with heart failure.

THEORETICAL REFERENCE

The theoretical reference of the Symptom Management Theory was used to ground the study, which made it possible to contextualize symptom management from the perspective of its multidimensionality. This study will be of great importance for developing the theory, professional nursing practice, and improving care for the individual due to the scarcity of national studies addressing the theory in cardiovascular diseases, especially heart failure.

The Symptom Management Theory (SMT) was published in 1994 by the faculty of the School of Nursing at the University of California, San Francisco, United States. It was developed to describe the multidimensional process of symptom management and assumes that the effective management of a symptom or set of symptoms depends on three components and three nursing domains, which must be interconnected[9-11].

The three nursing domains which are interconnected for symptom management are: the person, the environment, and health and disease. The Person domain relates to the variables intrinsic to the individual and their way of perceiving and responding to symptoms, such as personal, demographic, psychological, and sociological variables. The Environment domain considers the conditions or contexts in which each symptom occurs, including physical, social, and cultural variables, such as the home, work environment, health institutions, support network, interpersonal relationships, and the individual's beliefs and values. Finally, the Health and Illness domain comprises variables exclusive to the state of health and illness and their associated risk factors, such as diseases, injuries, and/or disabilities[9-11].

The SMT components comprise: symptom experience, symptom management strategy, and outcomes. Component one, symptom experience, precedes the symptom management strategy component and is defined as a dynamic process which includes the individual's perception of a symptom, the evaluation of its meaning, and the response to a symptom[9,11]. Symptom perception occurs when an individual identifies a feeling that is different from usual, whether in frequency or severity[11,12], while evaluation occurs when the individual makes a judgment about the severity and frequency of the symptom, its origin, location, and impacts on daily life and routine. Evaluation can be enhanced if the symptom subjectively represents a threat to life or has a disabling effect. The negative effect on

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symptom evaluation can be amplified when the person seeks strategies to minimize it, and in doing so does not perceive improvement, resulting in greater suffering[11].

Next, component two, symptom management strategy, aims to avoid, delay, alleviate, or minimize the symptom experience. It starts with individual assessment, followed by identification of some intervention that is related to the affected symptom domain[9].

Three paths are considered when planning a management strategy: reducing the frequency of symptoms; reducing the severity of symptoms; or alleviating the distress associated with the symptom. It is important that the person is responsible for managing the symptoms, independently or with the help of a family member/caregiver, facilitating that they themselves are the protagonist of their health, whenever possible[11].

SMT has been widely studied in various areas of nursing[13] and international studies in the cardiovascular field have investigated this topic exploring the theory in people with HF[14-16] and in women with acute coronary syndrome[17]. However, no studies were found at the national level which address SMT with HF.

METHOD

This is a descriptive, exploratory, cross-sectional, qualitative-quantitative (QUAL+QUAN) study. The choice of the QUAL+QUAN method is justified by the intention to complement the subjective data from the interviews with precise information resulting from the application of a specific instrument. The study met the recommendations of the Consolidated Criteria for Reporting Qualitative Research (COREQ).

The qualitative and quantitative data were simultaneously collected from January to July 2023, in the heart failure outpatient clinic and in the inpatient units (wards, emergency room, and ICU attached to the emergency room) of a University Hospital (HU), a reference center for the care of the western macro-region of Paraná.

The participants were people diagnosed with heart failure (HF), selected non-randomly, and included according to the eligibility criteria adopted: knowledge of the HF diagnosis; age equal to or greater than 18 years; preserved communication capacity. Participants with a recent HF diagnosis (confirmed during the data collection period) were excluded; or with cognitive impairments (asked for name, today's date, day of the week, place of residence, place of birth, place of location at that moment); or anyone who provided more than two incorrect answers were excluded from the study. Participant selection was performed using electronic medical records, and recruitment was done in person.

Sociodemographic data (personal and economic) and clinical data (history of the current illness, HF classification by the New York Association[18], comorbidities, medications used continuously, lifestyle habits) were collected. Data collection was performed using electronic medical records and supplemented with the participant through an interview.

An audio-recorded interview was conducted to collect subjective data with the open-ended question: "Tell me how you take care of yourself or what you do when you feel or notice any symptom related to your heart problem." The question investigated the strategies adopted for managing symptoms, and the participant was offered the opportunity to listen to their interview for validation at the end.

Next, the European Heart Failure Self-Care Behavior Scale (EHFScBs) was applied to assess self-care behaviors. This scale has 12 questions with a single domain. Responses follow a Likert scale ranging from 1 to 5 points, where 1 is "strongly agree," 2 is "almost always agree," 3 is "sometimes agree," 4 is "almost never agree," and 5 is "strongly disagree." The total score is obtained by summing the scores of all responses, ranging from 12 to 60 points. The higher the score, the lower the self-care. The items correspond to self-care behaviors related to daily weight checks, rest, seeking help from the healthcare team, fluid restriction, diet, medication adherence, annual flu vaccination, and exercise[19]. The items encompass symptom management strategies that elicit self-care. Thus, the instrument became useful insofar as it investigates component two of the SMT: symptom management strategies[9]. The reliability index for this study measured by Cronbach's Alpha was 0.46.

Content analysis[20] was used to analyze the qualitative data following the data preparation and organization steps; transcription of interviews and field notes; reading of organized data; data coding and organization into thematic categories; presentation and description of data and categories; and data interpretation.

The collected data were compiled in Microsoft Excel 2013® spreadsheets for quantitative analysis, and subsequently processed and analyzed using the Statistical Package for the Social Sciences (IBM SPSS®) statistical program, version 26. In turn, percentage proportion measures were used for categorical variables and central

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tendency and dispersion measures for continuous variables for the descriptive analyses. The assumptions of the variables were tested with normality (Shapiro-Wilk) and homogeneity (Levene's test) tests. Pearson's correlation test was performed for the response variables of the EHFScBS assessments with the variables: age (in years), sex, time since diagnosis of heart failure (in years), functional class, number of comorbidities, number of medications in continuous use, and education level. Correlations of these variables with the continuous values of the EHFScBS were used, including Pearson's correlation test, ANOVA, and Student's t-test for independent samples. The significance level assumed was 5%, with variables with a p-value<0.05 considered statistically significant.

The research protocol followed the recommendations of Resolution 466/2012 of the National Health Council, respecting its ethical precepts and guaranteeing the anonymity, confidentiality, and privacy of the participants' data. The following identifier code was used for coding the participants: P (participant); F or M (female or male); X (number in Arabic numerals in ascending order of participants as per data collection).

RESULTS

There was a total of 81 participants with heart failure, with the sociodemographic characteristics presented in Table 1.

Table 1: Sociodemographic characteristics of participants with heart failure at a University Hospital (n=81). Cascavel, PR, Brazil, 2023.

Variables		n (%)	Mean± SD	Median	Amplitude
Sex					
	Male	44 (54.3)			
	Female	37 (45.7)			
Age			66.81±12.8	69.00	25 to 93
Civil status					
	Married	43 (53.0)			
	Widowed	22 (27.1)			
	Single	7 (8.6)			
	Common-law marriage	3 (3.7)			
	Separated/Divorced	6 (7.4)			
Education					
	No formal schooling	13 (16.0)			
	Incomplete primary education	46 (56.8)			
	Completed primary education	6 (7.4)			
	Incomplete secondary education	6 (7.4)			
	Completed secondary education	9 (11.1)			
	Incomplete higher education	1 (1.2)			
Main caregiver					
	Family member	45 (55.6)			
	Him/herself	24 (29.6)			
	Him/herself and family member	11 (13.6)			
	Family member and caregiver	1 (1.2)			

Note: SDP=Standard Deviation.

Among the participants, 54.3% were male (n=44), with a mean age of 66.81 years, 53.0% were married (n=43), and 56.8% had incomplete primary education (n=46). In addition, 55.5% of the participants (n=45) had a family member responsible for their healthcare.

Regarding clinical characteristics, the mean time since diagnosis of heart failure (in years) was 7.16 (±7.8) years. The functional class according to the NYHA was predominantly NYHA class II with 50% (n=40), followed by NYHA class III with 32.5% (n=26), NYHA class IV with 10% (n=8), and NYHA class I with 7.5% (n=6).

Systemic arterial hypertension (n=65; 80.2%), diabetes mellitus (n=36; 44.4%), and chronic kidney disease (n=17; 21%) predominated regarding associated comorbidities, among others in smaller quantities. Among the participants, 12.3% self-reported as smokers (n=10) and 6.2% as alcoholics (n=5).

Participants used an average of 8.26 (±3.96) different continuous medication types daily, ranging from zero to 21 medications. The use of beta-blockers (n=77; 96.3%) followed by loop diuretics (n=59; 72.8%) and lipid modifiers (n=58; 71.6%) predominated.

The result of the analysis of self-care behavior assessed by the EHFScBs is presented in Table 2.

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The average total score was 32.8 (+6.4), ranging from 20 to 47 points. When analyzing the strategies for symptom management and self-care, the emphasis between the extremes (1 and 5) stands out: strongly agree and strongly disagree, respectively.

Table 2: Descriptive analysis of the frequency of EHFScBs items assessed by participants with heart failure at a University Hospital (n=81). Cascavel, PR, Brazil, 2023.

Item	Question	Mean±SD	Strongly agree 1	Almost always agree 2	Sometimes agree 3	Almost never agree 4	Strongly disagree 5
1	I weigh myself every day.	**4.47±1.00**	**1 (1.2)**	5 (6.2)	9 (11.1)	6 (7.4)	**60 (74.1)**
2	If I feel short of breath, I rest.	**1.62±1.23**	**61 (75.3)**	5 (6.2)	6 (7.4)	**3 (3.7)**	6 (7.4)
3	If my shortness of breath increases, I contact the health service.	2.41±1.67	**44 (54.3)**	**2 (2.5)**	10 (12.3)	8 (9.9)	17 (21.0)
4	If my feet or legs become more swollen than usual, I contact the health service.	2.59±1.77	**40 (49.4)**	6 (7.4)	**5 (6.2)**	7 (8.6)	23 (28.4)
5	If I gain 2 kg in 1 week, I contact the health service.	**4.14±1.48**	12 (14.8)	**2 (2.5)**	5 (6.2)	6 (7.4)	**56 (69.1)**
6	I limit the amount of fluids I drink (no more than 1.5 to 2 liters per day).	**4.16±1.40**	10 (12.3)	**3 (3.7)**	5 (6.2)	9 (11.1)	**54 (66.7)**
7	I rest during the day.	**1.19±0.69**	**73 (90.1)**	5 (6.2)	1 (1.2)	**0**	2 (2.5)
8	If my tiredness increases, I contact the health service.	2.56±1.72	**41 (50.6)**	**2 (2.5)**	10 (12.3)	8 (9.9)	20 (24.7)
9	I follow a low-salt diet.	1.94±1.40	**52 (64.2)**	**4 (4.9)**	11 (13.6)	6 (7.4)	8 (9.9)
10	I take my medication as prescribed.	**1.27±0.86**	**72 (88.9)**	**2 (2.5)**	4 (4.9)	0	3 (3.7)
11	I get the flu vaccine every year.	2.22±1.71	**50 (61.7)**	4 (4.9)	5 (6.2)	**3 (3.7)**	19 (23.5)
12	I exercise regularly.	**4.21±1.26**	9 (11.1)	**2 (2.5)**	7 (8.6)	9 (11.1)	**53 (65.4)**

Note: SD=Standard deviation.

The items with the lowest average scores and highest self-care behavior were: 90.1% (n=73) for Item 7 (resting during the day), with an average of 1.19 (+0.69); 88.9% (n=72) for Item 10 (taking medication as prescribed), with an average of 1.27 (+0.87); and 75.3% (n=61) for Item 2 (resting in case of shortness of breath), with an average of 1.62 (+1.23).

Conversely, the items with the highest average scores and consequently the lowest self-care behavior were: 74.1% (n=60) for Item 1 (weighing oneself daily), with an average of 4.47 (+1.00); 69.1% (n=56) for Item 5 (seeking health services if gaining 2kg in a week), with an average of 4.14 (+1.48); 66.7% (n=54) for Item 6 (limiting fluid intake), with 4.16 (+1.40); and 65.4% (n=53) for Item 12 (exercising regularly), with an average of 4.21 (+1.26).

Correlation tests of the variables showed no association, nor statistical significance, between the variables: age, sex, time since diagnosis of heart failure, functional class, number of comorbidities, number of medications in continuous use, education level, and the EHFScBs. The symptom management strategies are consistent with the results indicated by the EHFScBs instrument and vary according to the perceived symptom or the health condition in which the participants find themselves.

In turn, five thematic categories emerged considering the interview data which corroborate the data from the EHFScBs instrument: adherence to medical prescriptions and seeking healthcare services; self-medication; rest and waiting for improvement; use and introduction of complementary therapies; and maintenance of healthy habits, presented below.

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Adherence to medical prescriptions and seeking healthcare services

This refers to the act of taking medication correctly following the doctor's prescription, at the right times and in the correct quantity, as well as following the recommendations. It also involves seeking healthcare services, whether that means going to the emergency room when noticing a symptom or having regular medical check-ups. This category reinforces the data evaluated by the EHFScBs in item 10 (taking medication as prescribed).

> *[...] I have my monthly checkups [...], when I come here it's because I'm really unwell, but I go to the health center every month, I go to the cardiologist every 2 months and I take my medication correctly (P44M).*
>
> *There's nothing else to do, it's just hospitalization, only in the hospital when I'm hospitalized, I look for a doctor. There's nothing else, you have to see a doctor urgently when it starts to swell [...] (P81M).*

Prior experience with a symptom influenced the decision-making process regarding strategies. One account highlights the importance of adherence to medication therapy, stating that interrupting medication use will result in worsening of the clinical picture and therefore the patient follows the prescription and undergoes regular follow-up:

> *I always take my medication; if I stop taking it, I'll die, I'm sure of it. [...] If I stop taking the carvedilol medication for 30 days, the symptoms will return, they'll definitely return, no doubt about it [...] (P69M).*

Rest and wait for the symptom to improve

Strategies related to managing fatigue, dyspnea, asthenia, and dizziness symptoms stand out. In cases where these symptoms are perceived, it was common to report waiting for them to pass, drinking water, staying quiet, controlling breathing, and controlling the speed and intensity of the activity. Understanding that there is nothing to do, participants believe that resting and waiting for improvement is synonymous with doing nothing and waiting for it to pass.

This category converges with the data evidenced in the EHFScBs, in items 2 and 7 (resting in case of shortness of breath and resting during the day).

> *I have to sit down and fan myself, take a deep breath, inhale and exhale slowly. The nurse taught me to breathe slowly through my nose and exhale through my mouth. [...] (P11M).*
>
> *Lately I've had to walk while resting, I would walk a bit, rest, and wait for it to calm down before starting to walk again (P28F).*
>
> *Sometimes I have to stop what I'm doing, close my eyes, and try to breathe as deeply as I can. [...] Sometimes I stop completely, stay quiet, waiting to get better so I can react again (P56F).*

Self-medication

Self-medication was mainly adopted as a strategy in relation to adjusting medication doses, as well as discontinuing medication due to the onset of symptoms such as dizziness, fatigue, or polyuria.

> *I stopped taking one medication and I no longer felt dizzy. I take 11 medications in the morning and I thought that wasn't good. I would take them and feel unwell. So, I stopped taking that pill and started taking losartan again. Since I stopped on my own, I'll have to tell the doctor. But, I stopped feeling those things [...]. When my heart races, sometimes I take the propranolol that I used to take and couldn't do without, even today if I don't take it my heart races (P71F).*
>
> *[...] I take furosemide to remove water from my body. The doctor told me to take it every day, but I don't because it makes me very weak if I take it every day (P43F).*
>
> *The increased dosage of the diuretic furosemide used to alleviate edema is noteworthy, especially when patients felt their lower limbs or body were swollen.*
>
> *[...] If I feel more bloated, I increase the dose of the diuretic; sometimes I go to the bathroom 8 times by midday, which reduces the bloating (P18M).*
>
> *[...] I take an extra diuretic. He [the doctor] said it's good for urinating, because I was urinating more (P29F).*

Use of complementary therapies

Complementary therapies (i.e. using medicinal plants in the form of teas and ointments) were used to manage symptoms. The target symptoms were: fatigue, cough, anxiety, pain, lower limb edema, loss of appetite, epigastric pain, and to improve health conditions (i.e. improve diabetes, cholesterol, cardiovascular system, among others). The use of teas was by self-medication, without prescription or recommendation from a health professional.

The main herbs mentioned were: chamomile, lemon balm, and rosemary, with chamomile and lemon balm being used as a calming agent and rosemary for being beneficial to the heart. Other plants mentioned less frequently were: parsley root; swamp cane; stonebreaker; mint, horsetail; among others.

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> *I drink fennel tea with rosemary, because rosemary is good for the heart, or lemon balm (P23F).*
>
> *Sometimes when I'm swollen I make horsetail tea to urinate (P35F).*
>
> *[...] I make tea from parsley root, cane of the swamp and stonebreaker for the kidney, it helps with infection and to urinate a lot, sometimes I drink mint tea (P17F).*
>
> *This camphorated ointment takes the heat out of my feet and eliminates the feeling of heaviness, but now it's swollen again (P63M).*

Other complementary strategies implemented included foot baths, characterized by immersing the feet and legs in salt and water as a measure to reduce edema, referred to as "brine soaking".

> *I use brine, heat the water in an empty pan with salt and put my feet in it, I feel like it takes away all the tiredness, and the next day my feet were dry, without swelling (P03M).*
>
> *For swollen legs I usually make a hot brine solution and elevate my legs, I don't stay under a tree (P40F).*

Introduction and maintenance of healthy habits

This category encompasses adopting and maintaining healthy habits, as well as engaging in leisure activities and self-care. Lifestyle changes through healthy habits include engaging in light physical exercise, quitting smoking, and reducing alcohol consumption.

> *I take my walks inside my condominium. [...] I walk almost every day, at least three laps around the condominium, even if it tires me out [...] To reduce tiredness I exercise, I walk, I try not to stay still, because it's worse if you stay still in bed or on the sofa for too long (P07M).*
>
> *I stopped drinking and smoking before the heart attack, I stopped of my own accord, I was drinking excessively, and I wanted to take care of my health (P11M).*
>
> *When I'm sad I go see my plants, I go outside and it soon passes (N71F).*

Therefore, several symptom management strategies related to heart failure and other causes were identified. It was observed that the statements not only corroborated the data obtained in the EHFScBs (Brazilian Symptom Assessment Scale), but also complemented them with other management strategies not evaluated by the EHFScBs, including self-medication and the use of complementary therapies.

DISCUSSION

The symptom management strategy aims to avoid, delay, or alleviate the symptom experience, reducing its frequency, severity, or distress. The person is responsible for managing their symptoms themselves, and may have the help of a family member and/or caregiver[9], as was the case for most participants in this study.

Comorbidities are part of the Health and Disease domain and interfere with the experience and management of symptoms, with the high incidence of comorbidities among participants being highlighted in this study[9]. The comorbidities observed are consistent with other studies conducted in Brazil[21,22] and Turkey[23], especially hypertension and diabetes mellitus.

The medications for continuous use related to treating HF follow the recommendations of the disease treatment guidelines and support the results of other studies by presenting the use of beta-blockers, diuretics, and angiotensin-converting enzyme inhibitors, among others[24].

From the perspective of strategies for symptom management and self-care, the EHFScBs has the necessary behaviors for self-care in HF: the recognition of signs and symptoms of exacerbation and decision-making when these symptoms are perceived[19].

The total average for self-care behavior in this study was 32.8 (±6.4) points. Results with similar averages were found in studies conducted in Korea[25], Japan[26] and Brazil[27]; however, there are also studies which pointed to lower averages (i.e. better self-care behaviors)[19,28].

Studies conducted in India, Switzerland, and Iceland found EHFScBS superior results to those of this study[29-31], indicating worse self-care behavior. Researchers in India[29] and Switzerland[30] found average scores of 45.0 and 41.09 points on the EHFScBS, while the average in Iceland was 57.2[31].

The items in the present study which showed the best self-care behavior among participants are resting when experiencing dyspnea, rest, adherence to medical prescriptions, and a low-sodium diet. The data corroborate a study conducted in Korea in which similar results were identified[25].

On the other hand, the items with the worst behavior when it comes to lower self-care among participants were those related to daily weight monitoring, regular exercise, fluid restriction, and seeking services in case of weight gain. Another study conducted in Brazil also identified the same behaviors as more compromised, with the exception

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of weight gain[27]. The strategies analyzed from the EHFScBS and the participants' statements emerged clearly and consistently. In this case, rest in cases of dyspnea, rest during the day, and use of medication as prescribed by the doctor.

A study in Ethiopia addressing SMT in patients with HF presented similar symptom management strategies to the present study, namely adherence to medication, adequate rest, attendance at regular appointments, dietary modifications, involvement in exercise and weight monitoring, use of herbal products, and avoiding harmful habits[14].

The report of compliance with the medical prescription reflects the experience and subjective perception of adherence to drug therapy. The strategy of following the medical prescription was reported in studies conducted in countries in Europe[32], Asia[16] and the United States (USA)[33]. In Europe, 78.8% of participants take the medication according to the medical prescription and 71% did not forget to take them[32]. A study conducted in Italy also showed that 90% of participants never forgot to take their medications and emphasized that older people use reminders to remember the correct time[34], which is similar to the present study considering the assistance of family members in the care provided.

Some participants in the study conducted in the USA believed that their family members or they themselves should control the dose and time for administering medications. In contrast, some participants considered medication control to be the responsibility of the healthcare professional[33].

Rest in cases of dyspnea and daily rest can reflect good health behaviors if done cautiously. Sleeping and resting were identified as strategies for relieving symptoms, especially fatigue[35], and deep inspiration for controlling dyspnea[16].

The practice of doing nothing, waiting for it to pass, and remaining calm are non-pharmacological, cognitive-behavioral strategies[16], which have also been reported in studies conducted in the USA[36], Asia[16], and China[37,38]. Such behavior can cause complications, as neglecting the symptom believing that it will improve spontaneously leads to delays in seeking health services, worsening the clinical picture[36].

A study conducted in the Northeastern region of the USA identifying the response to symptoms in people with HF related to seeking care found that the delay in seeking health services was justified by an attempt to use relaxation techniques, in which few participants sought help from a health professional or service. The delay may be justified by the difficulty in recognizing the symptoms related to HF, attributing them to other causes such as flu-like symptoms or fatigue[36].

There were paradoxically reports of strategies not evaluated by the EHFScBs: self-medication and the use of complementary therapies. Self-medication has been reported through dose adjustments of diuretics or in the occurrence of adverse effects attributed to some medication. Other studies conducted in the USA[35] and Japan[38] have identified the management of diuretics and other medications for the control of edema, pain, and diabetes control[35].

However, the safety and quality of self-care related to the use of medications selected by the patient are unknown; taking extra doses of prescribed medications may impair treatment of worsening HF symptoms and even contribute to adverse outcomes[35].

In turn, behaviors regarding complementary therapy approaches have especially been adopted related to the use of teas for symptoms related to HF, as well as for other causes such as diabetes and hypertension control, colds, anxiety, or insomnia. A Brazilian study points to the use of teas as symptom management measures among HF patients[39]. However, studies in HF are incipient, with publications in populations with other chronic diseases such as hypertension and diabetes[40]. Teas and other complementary natural practices as resources for managing symptoms and disease reflect the need to consider the roots and cultural meanings attributed to such therapeutic practices in the approach to healthcare, which should be considered in the person's therapeutic plan[40].

Another behavior to manage the symptom and the disease is to introduce healthy habits, mainly interrupting smoking and/or alcohol consumption, physical exercise, and adopting a balanced diet, reducing sodium, fat, and sugars. Strategies for managing symptoms in HF include healthy nutrition and/or sodium restriction[16,33]. However, there is a lack of knowledge about the amount of sodium that can be ingested[33].

The practice of physical exercise and a low-salt diet was observed in 40.2% of participants with HF in a study conducted in Japan. However, 80.4% fully trusted the effectiveness of the medications they used the last time to relieve symptoms[38].

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Difficulty in controlling weight and fluid intake impairs preventing fluid retention and signs of congestion. Weight gain is related to signs of systemic congestion, and weighing oneself daily implies noticing this symptom. However, participants demonstrate recognition of signs of congestion when they report using extra diuretics to relieve edema.

Daily weight monitoring is an effective recommendation in managing HF, and fluid retention is a sign of worsening and non-adherence to diuretic treatment. In addition, it may be the most common clinical sign in people with heart failure[1].

Recognizing decompensation symptoms makes management and self-care in HF difficult. A study in Switzerland[30] revealed that 50% of participants do not recognize dyspnea or edema as the main symptoms of HF, and 60% do not take measures to control them and 43% sought guidance from a health professional. When adopting management measures, 62% would not reduce salt, 70% would not regulate fluid intake and 83% would not take an extra diuretic tablet in case of dyspnea or edema, 83% did not consume a low-salt diet when eating out, 47% do not have the habit of weighing themselves and 42% rarely or never exercised[30].

In summary, the strategies considered for symptom management and self-care align with component two of the SMT – symptom management strategies. However, failure to fully implement these strategies compromises the effectiveness of symptom management.

Study limitations

This study used the EHFScBs instrument composed of 12 items which presented a reliability index of 0.46, constituting a lower value than that found in the Brazilian validation of the instrument (Cronbach's alpha = 0.70). This discrepancy can be attributed to the heterogeneous profile of the participants and the occurrence of ceiling or floor effects in the responses. However, it should be noted that these limitations do not compromise the findings of this investigation, since the study objective was not to perform a psychometric analysis of the instrument, but rather to evaluate the strategies adopted for managing symptoms in people with heart failure. It is suggested to achieve homogeneity among the participants through probabilistic sampling for future studies in order to enable generalizing the data.

Based on scientific evidence, this study offers a consistent basis for planning nursing actions in promotion and recovery of health in people with HF. By understanding symptom management strategies, nurses can identify and address any gaps in care, and then create conditions to optimize the therapeutic plan, encourage adherence to treatment, and promote patient autonomy in managing their health. In doing so, the patient becomes the person who takes the central role in their own care, which can contribute to a better quality of life.

With a novel approach in the Brazilian context, this study presents little-explored evidence in the country relating heart failure to the SMT. The obtained results promote development of the theory, strengthening its application in nursing practice.

CONCLUSION

The symptom management strategy is performed by a person with heart failure and/or a family member responsible for their care, or both, to alleviate the intensity and frequency of symptoms and control disease progression. The main self-care strategies adopted for symptom management in this study were: adherence to medical prescriptions; correct use of prescribed medications; seeking healthcare services when symptoms causing discomfort and signs of clinical decompensation were noticed; self-medication with diuretics to control edema; rest and waiting for symptom improvement; use of complementary therapies through medicinal plants; introducing and maintaining healthy habits related to a healthy diet and stopping smoking and alcohol consumption.

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Authors contributions

Conceptualization, L.K.M. and N.N.A.M.; methodology, L.K.M., N.N.A.M. and A.R.S.C.; software, L.K.M. and A.R.S.C.; validation, L.K.M., N.N.A.M., A.R.S.C., S.B. and M.F.M.; formal analysis, L.K.M., N.N.A.M., A.R.S.C., S.B., M.F.M. and R.C.S.P.; investigation, L.K.M., N.N.A.M. and A.R.S.C.; resources, L.K.M., N.N.A.M.; A.R.S.C.; data curation, L.K.M., N.N.A.M. and A.R.S.C.; manuscript writing, L.K.M.; review and editing, L.K.M., N.N.A.M., A.R.S.C. and R.C.S.P.; visualization, L.K.M., N.N.A.M., A.R.S.C., S.B., M.F.M. and R.C.S.P.; supervision, N.N.A.M. and A.R.S.C.; project administration, N.N.A.M. All authors read and agreed with the published version of the manuscript.

Use of artificial intelligence tools

Authors declare that no artificial intelligence tools were used in the composition of the manuscript "*Self-care as a symptom management strategy in people with heart failure*".