Cogitare Enfermagem

ORIGINAL ARTICLE

Factors associated with the symptoms of depression in people with heart failure

HIGHLIGHTS

1. 32.6% of respondents reported symptoms of depression.
2. There was a statistically relevant association with the variables sex, self-assessment of health, functional class, and hospitalization for heart failure.
3. A holistic and comprehensive assistance is essential.

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ABSTRACT

Objective: Identify the factors associated with the symptoms of depression in people with heart failure. **Method:** Cross-sectional study with a quantitative approach, conducted with individuals diagnosed with heart failure in follow-up at the cardiology outpatient clinic of a university hospital in the municipality of João Pessoa, Paraíba, Brazil. The data was collected from December 2021 to May 2022 using a sociodemographic and clinical characterization instrument and the Patient Health Questionnaire-9. Analysis by descriptive and inferential statistics. **Results:** Of the 89 participants, 32.6% reported symptoms of depression. In the association between the variables, symptoms of depression were associated with sex (p=0.004), self-assessment of health (p=0.042), functional class (p<0.001), and hospitalization for heart failure (p=0.044). **Conclusion:** Such findings can support new research and nursing interventions to provide comprehensive and quality care.

KEYWORDS: Heart Failure; Cardiovascular Diseases; Depression; Adult Health; Health of the Elderly.

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INTRODUCTION

Heart failure is a complex syndrome characterized by the heart's inability to pump enough blood to meet the body's metabolic needs due to structural and/or functional cardiac changes[1]. Due to its high prevalence, it is currently considered one of the biggest challenges in the health field[2]. Estimates are that 23 million people are affected by the disease, with a projected increase of 46% by 2030 worldwide[3].

In Brazil, approximately 6.5 million people have heart failure, which is the main cause of hospitalization in the Unified Health System (SUS)[2,4]. Between January and November 2022, there were about 200 thousand hospitalizations[5]. Studies on deaths from heart failure identified a mortality rate of up to 15% during hospitalizations[6-7]. The economic impact on health services exceeds 3 billion reais[8].

The main symptoms of heart failure include dyspnea, pain, cough, fatigue, nausea, and constipation, which generally occur concurrently, worsening with the progression of the disease[9-11]. These symptoms are related to impairments in functional capacity and self-care management, interfering with the well-being and quality of life of patients[12].

Living with chronic illness can provoke depressive symptoms, such as feelings of hopelessness, fear, sadness, sleep disturbances, and anxiety, which are frequently reported by these patients and are not favorable for the control and treatment of the disease. Researchers identified exacerbations and hospitalizations linked to a worse prognosis in patients with depressive symptoms[12-13].

Factors such as the chronicity of heart failure, the requirement to adopt a healthy lifestyle, and changes in behaviors for disease control can be a daunting task for the patient and their families, potentially triggering stressful events and depressive symptoms[12]. The prevalence of depression in patients with heart failure can reach 70%[14].

Health professionals, especially nurses, are essential in helping these individuals cope with the disease[15]. Nursing assistance occurs through the provision of comprehensive care, which utilizes a set of planned and personalized actions and interventions in an individual and humanized manner aimed at alleviating the symptoms of the disease and enhancing the physical and psychological well-being of the patient[12].

However, studies that identify these factors and characterize the profile of these people are still scarce. Therefore, it is essential to understand and study this relevant topic to promote the knowledge of health professionals, especially nurses, involved in the care of patients with heart failure, as well as to support the creation of public policies aimed at reducing morbidity and mortality rates and improving the quality of life of these individuals. Thus, the objective of this study is to identify the factors associated with the symptoms of depression in people with heart failure.

METHOD

This is a cross-sectional study with a quantitative approach, conducted at the cardiology outpatient clinic of a university hospital in João Pessoa, Paraíba - BR, from December 2021 to May 2022. For data collection, the following inclusion criteria were established: being 18 years of age or older, having a diagnosis of heart failure, and being in outpatient

follow-up at the institution for at least three months to capture patients adapted to the established therapy.

The individuals who presented clinical complications during the collection that made it impossible to carry out the research or cognitive deficits assessed by the Mini-Mental State Examination, whose cutoff points were used according to the participant's education level, did not participate in the survey. 13 points for illiterates, 18 for low (one to four incomplete years) and medium education (four to eight incomplete years) and 26 for high education (more than eight years)[16].

To define the sample calculation, data obtained from the hospital's computerized registration system were used, referring to outpatient services offered to patients with heart failure from January to December 2021, resulting in a population of 211 patients. Taking into account a confidence level of 99% and a margin of error of 5%, based on the variables and instruments of the present study, the calculation was performed by software statistical R, based on the margin of error of the sample mean, totaling 89 participants.

Data collection occurred through individualized interviews in the outpatient clinic, using a semi-structured instrument developed by the researchers of this study, submitted to prior evaluation by master and doctoral judges in the field to obtain the sociodemographic and health profiles of the participants. For the understanding of the elderly person, the World Health Organization (WHO) classification was considered, which defines the elderly population as individuals aged 60 years or older.

The Patient Health Questionnaire (PHQ-9) instrument was developed by Robert L. Spitzer, Janet B. W. Williams, and Kurt Kroenke are validated in the general Brazilian population by Santos et al.[17], being in the public domain. This unidimensional instrument was used to identify the presence of depressive symptoms, consisting of nine questions to assess the existence of major depression symptoms in the last two weeks, using the Likert scale from 0 to 3, and the tenth question to evaluate the interference of these symptoms in the performance of daily activities. This instrument's score can vary from 0 to 27 points, with a cutoff point for screening depressive symptoms ≥ 9[17].

The collected data was compiled and stored in the Microsoft Office Excel 2010 program, with double entries containing the encoding and dictionary of all variables. Subsequently, it was imported into the Statistical Package for the Social Sciences (SPSS) version 24.0 for descriptive statistical analysis and inference program. The Pearson Chi-Square test or Fisher's Exact test was used to identify the association between the variables. The significance level used for the statistical analyses was 5% ($p \leq 0.05$).

The present research was approved by the Research Ethics Committee of the Lauro Wanderley University Hospital of the Universidade Federal da Paraíba with opinion no. 4.865.295.

RESULTS

Of the 89 participants, 47 (52.8%) were male; 51 (57.3%) elderly; 66 (74.2%) self-declared non-white; 54 (60.7%) married or in a stable union; 24 (27.0%) with five to eight years of education; 83 (93.3%) practicing some religion; 89 (84.3%) not working; 53 (59.6%) retired; 78 and 75 (87.6% and 84.3%, respectively) with individual and family income of one to

three minimum wages; 44 (49.4%) who lived with one to two people; and 63 (70.8%) from municipalities in the interior.

Regarding the clinical profile, 58 (65.2%) self-assessed their health as fair; 54 (60.7%) did not engage in physical activity; 60 (67.4%) participated in some leisure activity; 87 (97.8%) were not current smokers, but 60 (67.4%) had smoked previously; 84 (94.4%) did not consume alcoholic beverages currently, but 50 (56.2%) had consumed them previously; 86 (96.6%) had some comorbidity, of which 65 (73.0%) had systemic arterial hypertension; 71 (79.8%) were eutrophic; 38 (42.7%) had a normal Body Mass Index; 89 (100.0%) were using medications; 74 (83.1%) were receiving nutritional follow-up; and 60 (67.4%) did not have a caregiver.

Regarding the characteristics related to the disease of this population, 24 (27.0%) reported having 1 to 2 years or more than 10 years of diagnosis; 49 (55.1%) were classified as NYHA II; 63 (70.8%) had already been hospitalized for heart failure; 60 (67.5%) had a left ventricular ejection fraction of 40% or less; and 80 (89.9%) did not have a pacemaker. Regarding the symptoms of depression, 29 (32.6%) reported their presence (Table 1).

Table 1 – Symptoms of depression in patients with heart failure. João Pessoa, PB, Brazil, 2022

Variables	n	%
Symptoms of depression		
No	60	67.4
Yes	29	32.6
Total	89	100.0

Source: The authors (2022)

In the association between depression symptoms and sociodemographic variables, an association with sex was observed (p=0.004) (Table 2).

Table 2 – Association between sociodemographic characteristics and depression symptoms in patients with heart failure. João Pessoa, PB, Brazil, 2022

(continue)

Variables	Symptoms of Depression				Value p
	Yes		Do not		
	n	%	n	%	
Sex					
Female	20	69.0	22	36.7	0.004*
Male	9	31.0	38	63.3	
Age range					
Adult	13	44.8	25	41.7	0.778*
Elderly	16	55.2	35	58.3	
Race					
Not white	8	27.6	15	25.0	0.794*
White	21	72.4	45	75.0	
Marital status					
Married or stable union	7	24.1	16	26.7	0.884**
Single	17	58.6	37	61.7	
Widower/Widow	4	13.8	5	8.3	
Divorced	1	3.4	2	3.3	
Education (years of study)					
Illiterate	8	27.6	10	16.7	0.165**
1 – 4	7	24.1	12	20.0	
5 – 8	7	24.1	17	28.3	
9 – 12	5	17.2	16	26.7	
13 or more	2	6.9	5	8.3	

Table 2 – Association between sociodemographic characteristics and depression symptoms in patients with heart failure. João Pessoa, PB, Brazil, 2022

(conclusion)

Variables	Symptoms of Depression				Value p
	Yes		Do not		
	n	%	n	%	
Religion					
Yes	29	100.0	54	90.0	0.078*
No	-	-	6	10.0	
Work					
There is no occupation	26	89.7	49	81.7	0.622**
Informal	2	6.9	7	11.7	
Formal	1	3.4	4	6.7	
Type of income					
Retirement	17	58.7	36	60.0	0.927**
Benefit	7	24.1	9	15.0	
Own work	3	10.4	7	11.7	
There isn't	1	3.4	3	5.0	
Pension	1	3.4	2	3.3	
Others	-	-	3	5.0	
Individual income (minimum wage)					
< 1	4	13.8	4	6.7	0.366**
1 – 3	24	82.8	54	90.0	
There isn't	1	3.4	2	3.3	
Family income (minimum wage)					
< 1	2	6.9	2	3.3	0.538**
1 – 3	22	75.9	53	88.3	
4 – 5	4	13.8	3	5.0	
6 or more	-	-	1	1.7	
There isn't	1	3.4	1	1.7	
Family arrangement (number of people)					
1 – 2	10	34.5	34	56.7	0.166**
3 – 4	17	58.6	18	30.0	
5 or more	2	6.9	8	13.3	
Caregiver					
No	10	34.5	19	31.7	0.790*
Yes	19	65.5	41	68.3	
Provenance					
Interior municipalities	22	75.9	41	68.3	0.464*
Grande João Pessoa	7	24.1	19	31.7	
Total	29	100.0	60	100.0	

*Pearson Chi-Square Test **Fisher's Exact Test
Source: The authors (2022)

In Table 3, there is an association between depression symptoms and self-assessment of health (p=0.042).

Table 3 - Association between health conditions and depression symptoms in patients with heart failure. João Pessoa, PB, Brazil, 2022

Variables	Symptoms of Depression				Value p
	Yes		Do not		
	n	%	n	%	
Self-assessment of health					
Bad	3	10.3	5	8.3	0.042**
Regular	23	79.3	35	58.3	
Good	3	10.3	20	33.3	
Practice of physical activity					
No	8	27.6	27	45.0	0.115*
Yes	21	72.4	33	55.0	
Leisure activity					
Yes	20	69.0	40	66.7	0.828*
No	9	31.0	20	33.3	
Current smoking					
No	1	3.4	1	1.7	0.595**
Yes	28	96.6	59	98.3	
Previous smoking					
Yes	18	62.1	42	70.0	0.454*
No	11	37.9	18	30.0	
Current consumption of alcoholic beverages					
No	1	3.4	4	6.7	0.537**
Yes	28	96.6	56	93.3	
Previous consumption of alcoholic beverages					
Yes	14	48.3	36	60.0	0.296*
No	15	51.7	24	40.0	
Presence of comorbidities					
Yes	29	100.0	57	95.0	0.221**
No	-	-	3	5.0	
Type of comorbidity					
Systemic arterial hypertension	24	82.8	41	68.3	0.151*
Diabetes *mellitus*	13	44.8	27	45.0	0.988*
Dyslipidemia	11	37.9	20	33.0	0.670*
Obesity	5	17.2	12	20.0	0.756*
Cardiac arrhythmia	3	10.3	9	15.0	0.547**
Nutrition conditions					
Eutrophic	24	82.8	47	78.3	0.737**
Obese	5	17.2	12	20.0	
Cachectic	-	-	1	1.7	
Body Mass Index					
Underweight (< 18.5)	-	-	1	1.7	0.153**
Normal weight (18.5 - 24.9)	17	58.6	21	35.0	
Overweight (25 - 29.9)	6	20.7	24	40.0	
Obesity (≥ 30)	6	20.7	14	23.3	
Nutrition monitoring					
Yes	3	10.3	12	20.0	0.254**
No	26	89.7	48	80.0	
Total	29	100.0	60	100.0	

*Pearson Chi-Square Test **Fisher's Exact Test
Source: The authors (2022)

The symptoms of depression were associated with the functional class variables (p<0.001) and hospitalization for heart failure (p=0.044) (Table 4).

Table 4 – Association between disease-related characteristics and depression symptoms in patients with heart failure. João Pessoa, PB, Brazil, 2022

Variables	Symptoms of Depression				Value p
	Yes		Do not		
	n	%	n	%	
Diagnosis time (years)					
1 – 2	7	24.1	17	28.3	0.423**
3 – 5	6	20.7	13	21.7	
6 - 10	6	20.7	16	26.7	
> 10	10	34.5	14	23.3	
NYHA Functional Class					
I	-	-	10	16.7	<0.001**
II	11	37.9	38	63.3	
III	17	58.6	12	20.0	
IV	1	3.4	-	-	
Hospitalization for heart failure					
Yes	24	82.8	39	65.0	0.044*
No	5	17.2	21	35.0	
Left ventricle ejection fraction (%)					
≤ 40	19	65.5	41	68.3	0.779**
41 - 49	4	13.8	8	13.3	
≥ 50	6	20.7	11	18.3	
Pacemaker					
No	3	10.3	6	10.0	0.960*
Yes	26	89.7	54	90.0	
Total	**29**	**100.0**	**60**	**100.0**	

*Pearson Chi-Square Test **Fisher's Exact Test
Source: The authors (2022)

DISCUSSION

In a cross-sectional observational study conducted with patients undergoing outpatient and inpatient treatment for heart failure in the wards of two hospitals in Rio de Janeiro - RJ, it was observed that 39.6% of the hospitalized group and 32.7% of the outpatient group exhibited symptoms of depression, data similar to that obtained in this research[12].

New pathophysiological findings demonstrate that, in the context of this heart disease, inflammatory changes, neuro-humoral mechanisms, and low cerebral flow may be associated with the onset of these symptoms[12]. However, beyond that, the very condition that this syndrome imposes, as well as the changes that occur due to the treatment to which the patient is subjected, can affect that person's quality of life (QoL) and, consequently, increase the risk of developing depression[11,18].

More depressed individuals demonstrate a worse ability for self-care. Thus, there is a strong obstacle to therapeutic adherence, which creates a cyclical event in which there is a worsening of the heart failure condition and a decline in quality of life[12]. This was demonstrated by the research above, which identified that patients with heart failure with depression symptoms scoring equal to or greater than 18 had their quality of life more affected in all dimensions and worse total scores[12].

A study conducted by the Brazilian Institute of Geography and Statistics (IBGE) with 60,202 (2013) and 90,846 (2019) people from all over Brazil identified a higher prevalence of self-reported depression in females, with an increase from 7.6% to 10.2%

between 2013 and 2019[19]. In contrast, a cross-sectional observational study conducted in two basic health units in Pindamonhangaba – SP found that, despite the higher prevalence of depression in males, only women exhibited more severe depression symptoms[11].

According to the WHO, the female population shows higher rates of emotional disorders, as they face various difficulties in daily activities and in taking care of the home and family[20]. Moreover, women also tend to identify the presence of symptoms and seek professional help more than men, which contributes to the diagnosis of psychological disorders, especially depression[19].

Self-assessment of health is considered an important subjective indicator, which considers the individual's physical and emotional components, as well as their well-being and satisfaction with their own life. In a cross-sectional study conducted with health workers in the municipality of Diamantina - MG, there was a higher prevalence of negative self-assessment of health among individuals with a medical diagnosis of some disease or who had multimorbidities[21].

In this research, self-rated health was associated with depression symptoms, demonstrating a low positive perception of health among those with depressive symptoms. This can be justified due to the numerous changes that occur in the life of the patient with heart failure due to the clinical condition of this pathology and also the treatment itself, which imposes limits and changes that are not always considered pleasant for those who need to undergo[14].

In light of this, one realizes the importance of understanding health self-assessment and using it in the work process of health professionals, especially in the care of patients with heart failure, to better understand the diagnosis and enable acceptance of these people's new life conditions.

The New York Heart Association (NYHA) was used in this research for the functional class, based on the individual's tolerance to exercise[1]. In this study, an association was observed between the functional class variable and depressive symptoms, highlighting a high frequency of depressive symptoms in those who presented high functional impairment. The literature indicates that the higher the functional class, the worse the symptoms and the consequences in the patient's daily activities[13].

Regarding hospitalization, it is known that such a situation is not unpleasant. Therefore, it is understood that there is a strong relationship between hospitalizations and the onset of depression[13]. When the hospitalized patient presents as depressed, it is expected that there will be a worsening of the symptoms of the syndrome, mainly fatigue, and dyspnea, and the risk of mortality becomes 60% higher in patients with heart failure associated with depression[22-23].

A cross-sectional and descriptive study conducted in the emergency department and cardiology wards of a public hospital in the state of Pernambuco with 133 patients revealed that 54 individuals with a length of stay of less than 7 days already exhibited minimal to mild symptoms of depression, while 16 respondents showed moderate to severe depressive symptoms[24].

In this context, it is clear how fundamental nursing professionals are. They work fully not only in hospital care but also in the health education of patients to optimize their self-care practice[25]. Therefore, nurses must have the technical and scientific foundation to act effectively in preventing harm and promoting health for this population.

However, the study's cross-sectional design has limitations, as it is not possible to establish a cause-and-effect relationship between the obtained variables. Therefore, longitudinal studies can be conducted to more closely observe the association of depressive symptoms in the health-disease process of patients with heart failure.

CONCLUSION

The results of this study showed that 32.6% of respondents reported symptoms of depression, where an association was observed with the variables of sex, self-assessment of health, functional class, and hospitalization due to heart failure.

The results of this study become relevant for nursing, as well as for other areas of health, as they provide the sociodemographic and clinical profile of this population and identify associations with symptoms of depression. This allows for new discussions about public policies and actions for the prevention, treatment, and rehabilitation of this population at different levels of health care.

In this way, one also realizes the indispensability of these findings to support new research and subsidize interventions, especially those carried out by nursing, to reduce the presence of depressive symptoms in patients with heart failure through comprehensive care, thus providing a better quality of life and greater adherence to the treatment of this pathology.

ACKNOWLEDGMENTS

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