

Association between resilience, depressive symptoms and quality of life in patients with chronic heart failure

Associação entre resiliência, sintomas depressivos e qualidade de vida de pacientes com insuficiência cardíaca crônica

El riesgo de violencia y la calidad de vida de ancianos atendidos en ambiente hospitalario

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ABSTRACT

Objective: to determine levels of resilience among heart failure patients and its association with quality of life and depressive symptoms. **Method:** in this cross-sectional study involving 102 patients, data were collected from January to December 2019, by administering the following instruments: the Minnesota Living with Heart Failure Questionnaire, the World Health Organization Quality of Life (WHOQOL-Bref) questionnaire, the depression subscale of the Hospital Anxiety and Depression Scale (HADS-D), and the Wagnild and Young Resilience Scale. Pearson's Correlation Coefficient and Spearman's Correlation Coefficient tests were used to assess correlation among scale scores. **Results:** when associating the resilience scale with quality of life and depressive symptoms, the only significant association found was between the resilience scale and the HADS-D. **Conclusion:** in this study, the most resilient individuals were found not to have depressive symptoms. **Descriptors:** Resilience, Psychological; Depression; Quality of Life; Heart Failure.

RESUMO

Objetivo: determinar os níveis de resiliência de pacientes com insuficiência cardíaca e sua associação com a qualidade de vida e sintomas depressivos. **Método:** estudo transversal envolvendo 102 pacientes. O período da coleta foi de janeiro a dezembro de 2019. Foram aplicados os seguintes instrumentos: o *Minnesota Living with Heart Failure Questionnaire*, o *World Health Organization Quality of Life - WHOQOL-Bref*, o instrumento *Hospital Anxiety and Depression Scale* na subescala depressão e a Escala de Resiliência de Wagnild e Young. Para avaliar correlação dos escores das escalas foram utilizados os testes coeficiente de Correlação de Pearson ou Coeficiente de Correlação de Spearman. **Resultados:** ao associar a escala de resiliência com qualidade de vida e sintomas depressivos, apenas o HADS-D foi significante com a escala de resiliência. **Conclusão:** nesse estudo observou-se que os indivíduos mais resilientes não possuíam sintomas depressivos. **Descritores:** Resiliência Psicológica; Depressão; Qualidade de Vida; Insuficiência Cardíaca.

RESUMEN

Objetivo: analizar la asociación entre el riesgo de violencia y la calidad de vida de ancianos en el ambiente hospitalario. **Método:** estudio cuantitativo, transversal, multicéntrico, desarrollado junto a 323 pacientes atendidos en dos hospitales universitarios de Paraíba. Se utilizaron instrumentos de caracterización sociodemográfica, riesgo de violencia y calidad de vida. Los datos fueron analizados mediante estadística descriptiva e inferencial, utilizando la prueba de chi-cuadrado de Pearson, correlación de Spearman y regresión logística múltiple. **Resultados:** el riesgo de violencia fue prevalente en ancianos con baja calidad de vida. Los ancianos con baja calidad de vida fueron 5,24 (IC = 3,04 - 9,05; $p < 0,001$) más propensos a estar en riesgo de violencia. **Conclusión:** se identificó una asociación estadísticamente significativa entre la calidad de vida y el riesgo de violencia entre los ancianos. **Descritores:** Resiliencia Psicológica; Depresión; Calidad de Vida; Insuficiencia Cardíaca.

INTRODUCTION

Heart Failure (HF) affects more than 26 million people worldwide and its prevalence has been increasing due to population aging and to increased survival of patients with systemic arterial hypertension and coronary diseases¹. According to data obtained through DATASUS, more than 8,000 people were hospitalized due to HF in Brazil in the last 05 years. The Mortality rate has been progressively increasing in recent years, reaching a value close to 14% in 2021².

Patients with HF can present multiple comorbidities, which worsen with aging and may exert an impact on the process of coping with the disease³, compromising Quality of Life (QoL) in patients and their caregivers and potentially leading to more frequent or intense depressive symptoms^{4,5}. Consequently, treatment of chronic diseases involves control of the disease and prevention of complications, while seeking to improve the patients' quality of life, increase resilience, and help them to independently achieve positive adaptation⁶.

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Therefore, studying resilience gains relevance in the context of chronic diseases, as it consists in developing various phenomena regarding resistance to, recovery from and overcoming stressful events; in addition, it involves factors such as social support, intelligence, self-control, self-esteem, religious beliefs, sense of meaning in life, and faith⁷. The resilience science aims at elucidating the mechanisms of successful adaptation after adverse situations, allowing researchers to better understand why some individuals adapt better than others⁸.

Resilience is a construct with its origin in Physics, and was later applied in the field of the Human and Psychology sciences. With increasing application in various areas, it is based on three different perspectives: (1) the ability to adapt to a problem; (2) the ability to overcome trauma; and (3) the ability to deal with stressful situations⁹.

Resilience was defined as emotional energy or as a positive character trait that alleviates the negative effects of stress and improves adaptation¹⁰, contributing to avoiding occurrence of significant dysfunctions and of several organic or mental diseases¹¹.

Resilience can also be understood as the ability regarding coping, adaptation and positive responses in the face of changes as age advances. Psychologically resilient older adults do not surrender to adverse situations and, when facing them, demonstrate positive adaptation ability, dealing with them and recovering their levels of subjective well-being. Thus, resilience has been expressed as a protective factor for older adults, possibly being a potential resource for changing habits and behaviors that offer a greater sense of well-being, in addition to maintaining physical and mental health¹².

The higher the resilience level, the lower the vulnerability and the risk for illness. Resilient individuals tend to be optimistic, have a tendency to see everything as a useful experience, focus on personal strengths and qualities, have developed social skills, and are emotionally conscious¹¹. Conversely, little resilient people tend to present higher stress levels in the face of adverse situations, consequently leading to anxiety, depression, anger, impulsiveness, and low self-esteem. Therefore, chronic pathological conditions represent manifestations of adversity that sustain higher stress levels¹¹.

The association between depressive syndrome and HF has been an increasingly common finding in the literature, relevant due to its relationship with clinical deterioration and increased hospitalization and mortality rates in these patients¹³⁻¹⁵. These rates are up to five times higher when compared to the general population, thus representing an important predictor of Quality of Life in patients with HF¹⁶.

Due to acknowledging this vulnerability, there is a growing interest in chronic disease care programs aimed at improving patients' Quality of Life (QoL) and at promoting positive adaptation. Some of these potential interventions are related to a model oriented to strengthening the patients, promoting adaptation by reinforcing the positive factors instead of reducing the negative ones, which has shown to be effective for patients with chronic diseases⁶.

For patients with heart failure, living with chronicity of the disease implies adopting new lifestyles, which represents a challenge because it involves abandoning lifetime behaviors¹⁷. A committed multiprofessional team and education of patients and their caregivers exert a positive impact on the clinical outcomes, such as reduced depressive symptoms and improved Quality of Life^{4,5}.

The current study aimed at determining the resilience levels of patients with heart failure and their association with Quality of Life and depressive symptoms, hypothesizing that more resilient patients would have better QoL and less psychological distress.

METHOD

This is a cross-sectional, quantitative and descriptive study involving 102 patients with reduced ejection fraction HF treated in the Outpatient Cardiology service of a university hospital in the state of Maranhão, a reference service in the care of these patients. The collection period was from January to December 2019.

Previous selection of the patients was performed by consulting medical charts through the Management App for University Hospitals (*Aplicativo de Gestão para Hospitais Universitários*, AGHU), which allows accessing the list of patients to be seen on the day of the patients' appointments at the CHF outpatient service. Subsequently, the patients' medical charts were accessed in order to evaluate and define the possible participants. This analysis was performed one day before the appointment. The possible participants were approached in the outpatient service, before the medical appointment. The eligible patients were informed about the study objectives and benefits and the written informed consent was obtained from those who agreed to participate.

The inclusion criteria were having a medical diagnosis of HF, being at least 18 years old, and ejection fraction (EF) < 40%. Patients with communication difficulties were excluded, as well as those with degenerative neurological diseases or those who did not accept to take part in the study.

Non-probabilistic sample selection was through the consecutive selection of outpatients twice a week during the data collection period. The number of patients assessed for eligibility was 130, of which ten refused to take part in the study and eight did not attend the scheduled appointment, resulting in a final sample of 102 patients.

The following instruments were used for data collection: socioeconomic and clinical characterization of HF, the Minnesota Living with Heart Failure Questionnaire (MLHFQ), the World Health Organization Quality of Life questionnaire (WHOQOL-Bref), the depression subscale from the Hospital Anxiety and Depression Scale (HADS-D), and Wagnild and Young's Resilience Scale.

In order to assess Quality of Life (QoL), the validated version for the Portuguese language of the MLHFQ questionnaire was used, which is free-access content fully available online¹⁸. It is the main method to assess Quality of Life in patients with HF at the global level¹⁹.

This instrument measures the patients' perception about the effect of HF on their everyday life in the two weeks prior to the interview. MLHFQ consists of 21 questions with answers referring to the individual's perception in relation to the influence of HF on the physical, economic and emotional aspects of life.

In addition to MLHFQ, the World Health Organization Quality of Life (WHOQOL-Bref) questionnaire was also used. This is a brief and fast-to-apply instrument that can be used both in populations with some type of disease and in healthy populations. The version in Portuguese was prepared according to the methodology recommended by the WHOQOL Center for Brazil and presented satisfactory psychometric characteristics²⁰.

The depressive symptoms were assessed using the Depression subscale from the Hospital Anxiety and Depression Scale (HADS)²¹ validated and adapted to Portuguese²².

To assess the tendency to resilience, the Resilience Scale was resorted to, which is a public domain instrument developed by Wagnild and Young¹⁰. In Brazil, the scale was recently adapted by Pesce et al²³. The scale is divided into three domains: (1) Resolution of actions and values, which includes the items; (2) Independence and determination; and (3) Self-confidence and ability to adapt to situations. The authors of the instrument consider results below 121 as "low resilience"; between 121 and 145, as "moderate resilience"; and above 145, as "high resilience"²³.

The variables are qualitative and were described in tables containing absolute and relative frequencies. Correlation of the scale scores was assessed using the Pearson's or Spearman's correlation coefficients, according to data distribution normality, as evaluated by means of the Shapiro-Wilk test. All the analyses were performed in the *Data Analysis and Statistical Software* (STATA®) program, version 14.0, and the significance level was set at 5% ($p < 0.05$). This study respected the ethical characteristics and requirements set forth in Resolution No. 466 of the National Health Council, dated December 12th, 2012; and was approved by the Research Ethics Committee (*Comitê de Ética em Pesquisa*, CEP) of the institution involved.

RESULTS

Of the 102 patients who took part in the study, 76 (74.51%) were male and 26 (25.49%) were female, with a mean age of 55 years old (SD: 13.28). Regarding the clinical characteristics, 87 (85.29%) of the interviewees had some comorbidity, with hypertension as the most prevalent (52 [59.77%]).

The results obtained in the Resilience Scale are presented in Tables 1 and 2.

TABLE 1: Description of the results obtained in the Resilience Scale by patients with chronic heart failure treated in the outpatient service of a university hospital (n=102). São Luís, MA, Brazil, 2019.

Resilience Scale	I disagree			I neither agree nor disagree (4)	I agree		
	Totally (1)	Very much (2)	A little (3)		A little (5)	Very much (6)	Totally (7)
	n (%)	n (%)	n (%)		n (%)	n (%)	n (%)
Resolution of actions and values							
1. When I make plans, I follow through with them.	1 (0.98)	1 (0.98)	4 (3.92)	3 (2.94)	36 (35.29)	17 (16.67)	40 (39.22)
2. I usually manage one way or another.	0 (-)	0 (-)	6 (5.88)	5 (4.90)	40 (39.22)	14 (13.73)	37 (36.27)
6. I feel proud that I have accomplished things in life.	0 (-)	1 (0.98)	4 (3.92)	0 (-)	54 (52.94)	8 (7.84)	35 (34.31)
8. I am friends with myself.	0 (-)	2 (1.96)	0 (-)	0 (-)	53 (51.96)	4 (3.92)	43 (42.16)
10. I am determined.	0 (-)	4 (3.92)	2 (1.96)	3 (2.94)	54 (52.94)	9 (8.82)	30 (29.41)
12. I take things one day at a time.	0 (-)	7 (6.86)	2 (1.96)	2 (1.96)	45 (44.12)	5 (4.90)	41 (40.20)
14. I have self-discipline.	0 (-)	5 (4.90)	4 (3.92)	3 (2.94)	44 (43.14)	19 (18.63)	27 (26.47)
16. I can usually find something to laugh about.	0 (-)	5 (4.90)	3 (2.94)	0 (-)	43 (42.16)	18 (17.65)	33 (32.35)
18. In an emergency, I'm someone people can generally rely on.	0 (-)	0 (-)	0 (-)	1 (0.98)	52 (50.98)	3 (2.94)	46 (45.10)
19. I can usually look at a situation in a number of ways.	0 (-)	0 (-)	6 (5.88)	1 (0.98)	58 (56.86)	6 (5.88)	31 (30.39)
21. My life has meaning.	0 (-)	1 (0.98)	1 (0.98)	0 (-)	53 (51.96)	7 (6.86)	40 (39.22)
23. When I'm in a difficult situation, I can usually find my way out of it.	0 (-)	1 (0.98)	1 (0.98)	2 (1.96)	48 (47.06)	7 (6.86)	43 (42.16)
24. I have enough energy to do what I have to do.	2 (1.96)	21 (20.59)	10 (9.80)	1 (0.98)	31 (30.39)	21 (20.59)	16 (15.69)
25. It's okay if there are people who don't like me.	0 (-)	2 (1.96)	6 (5.88)	0 (-)	57 (55.88)	6 (5.88)	31 (30.39)
Independence and determination							
5. I can be on my own if I have to.	3 (2.94)	21 (20.59)	11 (10.78)	0 (-)	31 (30.39)	15 (14.71)	21 (20.59)
7. I usually take things in stride.	1 (0.98)	14 (13.73)	9 (8.82)	3 (2.94)	32 (31.37)	19 (18.63)	24 (23.53)
9. I feel that I can handle many things at a time.	4 (3.92)	44 (43.14)	9 (8.82)	1 (0.98)	15 (14.71)	20 (19.61)	9 (8.82)
11. I seldom wonder what the point of it all is.	0 (-)	33 (32.35)	28 (27.45)	5 (4.90)	10 (9.80)	12 (11.76)	14 (13.73)
13. I can get through difficult times because I've experienced difficulty before.	0 (-)	2 (1.96)	2 (1.96)	0 (-)	56 (54.90)	3 (2.94)	39 (38.24)
22. I do not dwell on things that I can't do anything about.	0 (-)	8 (7.84)	5 (4.90)	0 (-)	55 (53.92)	1 (0.98)	33 (32.35)
Self-confidence and ability to adapt to situations							
3. I am able to depend on myself more than anyone else.	3 (2.94)	21 (20.59)	12 (11.76)	1 (0.98)	23 (22.55)	14 (13.73)	28 (27.45)
4. Keeping interested in things is important to me.	0 (-)	1 (0.98)	2 (1.96)	4 (3.92)	53 (51.96)	5 (4.90)	37 (36.27)
15. I keep interested in things.	0 (-)	1 (0.98)	2 (1.96)	1 (0.98)	55 (53.92)	10 (9.80)	33 (32.35)
17. My belief in myself gets me through hard times.	0 (-)	0 (-)	1 (0.98)	0 (-)	58 (56.86)	3 (2.94)	40 (39.22)
20. Sometimes I make myself do things whether I want to or not.	3 (2.94)	31 (30.39)	18 (17.65)	0 (-)	9 (8.82)	29 (28.43)	12 (11.76)

TABLE 2: Classification of the total results obtained in the Resilience Scale by patients with chronic heart failure treated in the outpatient service of a university hospital (n=102). São Luís, MA, Brazil, 2019.

Overall resilience classification	n	f(%)
Low resilience	35	34.31
Moderate resilience	45	44.12
High resilience	22	21.57

When assessing the overall resilience classification, “moderate resilience” obtained the highest percentage (44.12%), followed by “low resilience” (34.31%) and by “high resilience” (21.57%). The scale items with the highest negative representativeness for the interviewees were “I feel that I can handle many things at a time” (n=44, 43.14%), and “I seldom wonder what the point of it all is” (n=33, 32.35%), both of which belonged to the “Independence and determination” domain.

Table 3 presents the association analysis between the scales used.

TABLE 3: Association of the Resilience Scale with the quality of life scales (WHOQOL-BREF and MLHFQ) and with the depressive symptom scale (HADS-D) in patients with chronic heart failure treated in the outpatient service of a university hospital. São Luís - MA, 2021.

SCALES	WHOQOL-BREF	MLHFQ	HADS-D	RESILIENCE SCALE
	Coefficient(p-value)	Coefficient(p-value)	Coefficient(p-value)	Coefficient(p-value)
Resilience Scale	0.114* (0.252)	-0.163 ^S (0.100)	-0.201* (0.042)	1
Hospital Anxiety and Depression Scale – Depression subscale (HADS-D)	-0.504* (<0.001)	0.311 ^S (0.001)	1	-

* Pearson's correlation coefficient; S Spearman's correlation coefficient

The association analysis of the Resilience Scale with Quality of Life and depressive symptoms showed that only HADS-D was significantly associated with the Resilience Scale, consisting of a negative association ($r=-0.201$, $p<0.042$). There was a statistical significance when associating the HADS-D scale and Quality of Life (WHOQOL-BREF and MLHFQ), evidencing that, in both questionnaires used, worse Quality of Life was associated with presence of depressive symptoms.

DISCUSSION

In this study involving patients with reduced ejection fraction HF, a higher proportion of patients with moderate resilience and a negative correlation to depressive symptoms was observed, thus showing that more resilient patients had fewer depressive symptoms. However, no statistically significance was observed in the association with the Quality of Life scales (WHOQOL-BREF and MLHFQ).

It is important to note that, in the scientific scope, both in the international and national/local contexts, there is scarcity of studies aimed at assessing the association of resilience with depressive symptoms and Quality of Life in patients with CHF, especially with depressive symptoms.

Chronic diseases are generally associated with long-term degenerative conditions, which require continuous care and adaptive behaviors both from the patients and from their caregivers, in addition to access to all the necessary information for satisfactory disease management. Thus, resilience is an important attribute for the patients who face the challenge of a chronic disease²⁴. Resilience can affect satisfaction with life, allowing for faster psychological and physiological responses. A number of studies have evidenced the importance of resilience in several diseases, with its protective effect on chronic diseases standing out²⁵. This can be attributed to early acceptance, resulting in faster self-care actions²⁶.

With regard to the depressive symptoms, they are associated with increased morbidity and mortality and with impaired health status in patients with Heart Failure.

In line with our findings, resilience was negatively associated with anxiety and depression in a sample comprised by 215 participants. Individuals with high resilience scores presented better quality of life levels during their hospitalization²⁷.

In a study involving older adults with chronic diseases, where congestive heart failure was the most prevalent, more resilient people were less prone to depressive symptoms, and resilience had a positive relationship with Quality of Life, satisfaction with life and happiness. After adjusting the models for health and sociodemographic factors, the

effect of resilience lost significance for the satisfaction with life model, trended towards significance for Quality of Life, and remained highly significant for the psychological distress and happiness models²³.

In a sample comprised by 710 stroke patients, resilience ($\beta = -0.179$, $p < 0.001$) was negatively associated with depressive symptoms²⁸. Resilience moderated the direct and indirect effects of the depressive symptoms through self-confidence and self-care maintenance in patients with heart failure²⁹. In another study, patients with low resilience presented higher depression scores and lower perceptions regarding quality of life³⁰.

Consequently, it is possible to infer that depression represents an important product of the living conditions, where presence or absence of resilience can be a determinant for the occurrence of depressive symptoms.

In both instruments used, the association analysis between depressive syndrome and the interviewees' quality of life revealed that worse Quality of Life was significantly associated with presence of depressive symptoms. This same relationship was found in other studies, whose findings evidenced that depressive and anxiety symptoms contribute to QoL deterioration related to the HF physical symptoms^{15,31,32}.

It was verified that resilience, as well as its constant improvement and development, can be a resource to reduce psychological distress and increase happiness, Quality of Life, and satisfaction with life among people with chronic diseases, such as Heart Failure, with better control over the disease and greater acceptance and adaptation to the limitations imposed by the disease.

Therefore, it is extremely important to understand that resilience is not acquired and that it can be learned in different ways; for this, it is essential to engage both health institutions and professionals in the promotion of resilience, emphasizing other aspects in addition to those related to pathologies and their resulting problems. It is necessary to have a global view of each person, watching their strategies and interpersonal relationships.

To our knowledge, this is the first study to simultaneously examine the relationships between resilience, depressive symptoms and quality of life in patients with heart failure.

Study limitations

The current study does have some limitations. Up to the present day, there is no instrument in the literature designed to assess resilience specifically in patients with heart diseases. However, the scale employed in this study has already been used in other groups of patients with chronic diseases, as exemplified in previous paragraphs. In addition, there is no consensus on the definition of a cutoff point to categorize individuals as "resilient" or as "non-resilient". Finally, although the study methodology has met the objective proposed, one of the study limitations is the fact that the sample was evaluated at a single moment, evidencing the need for a new prospective study aimed at investigating resilience and its correlation with reduced ejection fraction Heart Failure over time, which somehow would contribute to elucidating the real impact of resilience on the Quality of Life of these patients.

CONCLUSION

Resilience of patients with HF presented a negative and significant correlation with depressive symptoms: in other words, the more resilient the individuals, the less prone they are to depressive symptoms.

Development of resilience in these patients shows to be relevant, as it provides subsidies to understand the disease, in order for patients to become co-responsible for their treatment, thus reducing their psychological distress, as evidenced in our research by the absence of depressive symptoms.

The current study has important implications for the clinical practice and for Nursing research, as it indicates paths to improve the approach to patients both in hospital and in outpatient environments and directs future studies on interventions aimed at better coping with the adversities and promoting a positive self-perception.

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