Quality of life related to health for heart failure patients

Qualidade de vida relacionada à saúde em pacientes com insuficiência cardíaca

Calidad de vida relacionada con la salud de pacientes con insuficiencia cardiaca

ABSTRACT

Objective: To assess the quality of life related to health for heart failure patients and to relate sociodemographic and clinical data. Method: It is an observational and transversal study, with quantitative approach, carried out in a heart failure ambulatory in the state of Pernambuco. Results: In the sample (n=101), there was prevalence of men older than 60 years old, married and professionally inactive. The quality of life related to health, based on the Minnesota Living With Heart Failure Questionnaire, was considered moderate (34.3±21.6), being significantly related to age (p=0.004), functional class (p<0.001), and patients with chagasic cardiopathy (p=0.02). Conclusion: The quality of life in the HF group of chagasic etiology was more compromised, specially in the emotional dimension. It is suggested that studies on the hypothesis that longer ambulatory follow-up improves quality of life and that having Chagas disease interferes negatively with the quality of life of heart failure patients.

Descriptors: Quality of Life; Heart Failure; Ambulatory Assistance; Chagas Disease; Nursing.

RESUMO

Objetivo: Avaliar a qualidade de vida relacionada à saúde dos pacientes com insuficiência cardíaca e relacionar aos dados sociodemográficos e clínicos. Método: Trata-se de estudo observacional, de corte transversal, com abordagem quantitativa realizado em ambulatório de insuficiência cardíaca no estado de Pernambuco. Resultados: Na amostra (n=101) houve prevalência de homens, maiores de 60 anos, casados, profissionalmente inativos. A qualidade de vida relacionada à saúde, a partir do questionário Minnesota Living With Heart Failure Questionnaire foi considerada moderada (34,3±21,6), apresentando relação significativa com idade (p=0,004), classe funcional (p<0,001) e em pacientes com cardiopatia chagásica (p=0,02). Conclusão: A qualidade de vida no grupo IC de etiologia chagásica esteve mais comprometida, especialmente na dimensão emocional. Sugere-se a realização de estudos abordando as hipóteses de que maior tempo de acompanhamento ambulatorial melhora a qualidade de vida e que ter doença de Chagas interfere negativamente na qualidade de vida de pacientes com insuficiência cardíaca.

Descritores: Qualidade de Vida; Insuficiência Cardíaca; Assistência Ambulatorial; Doença de Chagas; Enfermagem.

RESUMEN

Objetivo: Evaluar la calidad de vida relacionada con la salud de los pacientes con insuficiencia cardíaca (IC) y relacionar los datos sociodemográficos y clínicos. Método: Se trata de estudio observational, de corte transversal, con abordaje cuantitativo realizado en Ambulatorio de insuficiencia cardíaca en el estado de Pernambuco. Resultados: En la muestra (n=101) hubo un predominio de hombres, mayores de 60 años de edad, casados y profesionalmente inactivos. La calidad de vida relacionada con la salud, desde el cuestionario Minnesota Living With Heart Failure Questionnaire, fue moderada (34,3±21,6), presentando una relación significativa con la edad (p=0,004), la clase funcional (p<0,001) y en pacientes con cardiopatía chagásica (p=0,02). Conclusión: La calidad de vida en el grupo IC de etiología chagásica estuvo más comprometida, principalmente la dimensión emocional. Se recomienda realizar estudios que aborden las hipótesis de que el mayor tiempo de seguimiento ambulatorial mejora la calidad de vida y de que tener la enfermedad de Chagas interfere negativamente en la calidad de vida de pacientes con insuficiencia cardíaca.

Descriptores: Calidad de Vida; Insuficiencia Cardíaca; Atención Ambulatoria; Enfermedad de Chagas; Enfermería.
INTRODUCTION

Considered a epidemic in progression, heart failure (HF) is defined as a clinic syndrome characterized by the disfunction in heart structure and functioning, preventing the necessary blood to be pumped to meet the organism's metabolic and tissue needs(1).

Between 2013 and 2014, the disease was responsible for 460,813 hospitalizations in Brazil, a fact that may be related to the increasing population ageing and the high life expectation, which, along with the optimization of clinical treatment, contributes to the increase and prevalence of the disease(2).

Due to high hospitalization rates, mortality levels, and economic and social costs, the disease is considered a challenging public health issue(3). According to a Brazilian study, the most prevailing etiologies in HF are ischemic (30.3%), hypertensive (20.4%), idiopathic (14.5%), valve (12.4%) and, later on, chagasic ones (10.8%)(4).

The New York Heart Association (NYHA) classifies HF according to the intensity of the symptoms into four functional classes (FC), establishing the patient's level of physical commitment during the performance of daily life activities and exercises(4).

Clinical manifestations, as edema, dyspnea, and decrease of tolerance to daily life activities, associated to the disease' prolonged course and complexity, affect not only biological aspects, but also social, psychological, and spiritual aspects of HF patients, interfering systematically with their quality of life (QL) and well-being(5).

The concern with the individuals' QL has been highlighted in the Health Sciences area. The definition and coverage of the concept of quality of life related to health (QLRH) are considered measures that quantify the patients' perception on the disease's functional effects and of the treatment on different aspects of life, considering the subjectivity of the physical, emotional, and social dimensions(6).

The interest in monitoring QLRH is growing, given its importance as a prognostic indicator for morbidity and mortality, being recognized as a public health indicator (7). Knowing that HF is a debilitating disease that compromises not only daily life activities, but also psychological and social aspects, and interferes directly with the quality of life related to the patients' health, measuring these damages will provide important information in order to improve the work of the multi-professional team, aiming to improve patients' adaptation and, consequently, the quality of life of this population.

OBJECTIVE

To assess the quality of life related to the health of heart failure patients and to relate it to sociodemographic and clinical data.

METHOD

Ethical aspects

This research complies to the Resolution 466/2012 by the National Council of Health of the Ministry of Health and it was approved by the Committee of Research Ethics of the Oswaldo Cruz University Hospital (HUOC/PROCAPE).

Study design, place, and period

It is a observational and transversal study, with quantitative approach, carried out between November and December 2017 in the Chagas Disease and Heart Failure Ambulatory of Pernambuco, associated to the Cardiological University Medical Center Luis Tavares (PROCAPE/UPE).

Population or sample: inclusion and exclusion criteria

108 patients were invited to take part in the study, they were older than 18 years old, male and female, diagnosed with HF in ambulatory follow-up. Among the assessed patients, four were excluded for presenting neurological diseases (1), for refusing to participate (1) and due to locomotion difficulties (2). Therefore, the non-probabilistic convenience sample was composed by 101 patients.

Study protocol

The patients were invited to participate in the research while waiting for medical attendance and signed an Informed Consent Form. Sociodemographic and economic data were collected by an interview in a own tool and clinical information were collected by the Patient's Electronic Record (PER).

Among the variables analyzed, it was considered as independent variables the sociodemographic, economic and clinical data, such as: age, gender, race/color, precedence, marital status, schooling level, job, income per capita, costs with transportation to the ambulatory, costs with medicines per month, time since the HF diagnosis, etiology, functional class, ejection fraction, all medicines, and cardiological medicines. The age was dichotomized into younger and older than 60 years old. The functional class was analyzed into four categories and determined in the collection through the Specific Activity Scale (SAS).

With the intention of evaluating the QLRH of HF patients, the Minnesota questionnaire was used, which was translated into Portuguese and validated in 2009(8). This tool evaluates the patients' perception in physical and emotional aspects related to HF through 21 items with a 0 to 5 answer scale. The total score ranges from 0 to 105, given that the best QL is associated with lower scores. Scores up to <24 points indicate good QL, scores between 24 and 45 indicate moderate QL, and above 45, bad QL(9). The items are subdivided into three dimensions and are related to physical difficulties (questions no. 1 to 7, 12, and 13); as well as emotional ones (questions no. 17 to 21); and general aspects, involving the items related to financial considerations, side effects of medicines and lifestyles (questions no. 8 to 11, and 14 to 16)(10).

Result analysis and statistics

The data were stored in the Microsoft Excel 2013 program and analyzed in the statistical software Statistical Package for the Social Sciences (SPSS) for Windows version 21.0. The descriptive statistics of the quantitative variables were presented as averages, minimum and maximum standard-deviation, and variance. Categorical variables were presented in their absolute and relative frequencies.
To compare the groups in relation to qualitative variables, the Pearson’s Chi-Square test or Fisher’s exact test were used, when needed. For quantitative variables, the Student’s T test was used in cases that the normality distribution was not rejected. Otherwise, the non-parametric Mann-Whitney test was applied. It was performed the analysis of average differences between the Minnesota scale and the physical and emotional dimensions by the ANOVA test. The confidence interval used was 95% and the assumed significance level was p < 0.05.

RESULTS

The sample was comprised by 101 patients in ambulatory care. There was prevalence of man, who were older than 60 years old, married, and had studied until elementary school, according to Table 1.

According to the data in Table 2, β-blockers, ACE inhibitors/ARBs, and diuretics are the most used medicine classes. Among the interviewed patients, six (5.9%) had pacemakers and one (0.9%) had a cardiac resynchronizer.

The QL average and dimensions analyzed were considered moderate (34.3±21.6) and, according to the data in Table 3, which related the total Minnesota scores to the QLRH classification, it is possible to see statistically significant relations stablished among FC, age, and chagasic HF (Chagas HF).

By analyzing sociodemographic, economic, and clinical variables with the Minnesota dimensions, it was observed a significant influence of jobs over physical dimensions and the total QLRH score. Economically active patients had better QL perceptions, and the FC variable was significant for both analyzed dimensions (physical and emotional) and for the total score. The scores were higher among patients with Chagas HF, with the emotional dimension as the aspect that affected bad QL perceptions the most (Table 4).

Despite not having identified significant differences between QLRH and race, marital status, monthly costs with medication, time being cared for in the ambulatory, and EF, black patients had worse numbers in the total QLRH score (38.8±20.4), when compared to self-declared white patients (30.5±17.3).

Similar results were observed for divorced patients (40.3±22.8) as well as married ones (33.8±21.4); with costs surpassing 200.00 Reais on medication/month (38.3±21.4), and for those with no costs (21.8±21.2); among the patients who had being cared for less than 1 year in the ambulatory (64.0±21.2) in relation to the ones going to the ambulatory for more then one year (32.7±22.4); and those with reduced FE (38.0±19.3) when compared to the ones with preserved FE (29.3±31.7).

Table 1 – Sociodemographic and economic data of heart failure patients, Recife, Pernambuco, Brazil, 2017

| Sociodemographic Variables | Average±SD | Minimum/maximum | n (%) |
|----------------------------|------------|-----------------|------|
| Age                        | 60.23±10.81| 30-79           |      |
| Gender                     |            |                 |      |
| Male                       |            |                 |      |
| Female                     |            |                 |      |
| Race/Color                 |            |                 |      |
| Brown                      |            |                 |      |
| Black                      |            |                 |      |
| White                      |            |                 |      |
| Yellow                     | 1 (1)      |                 |      |
| Marital status             |            |                 |      |
| Married                    |            |                 |      |
| Single                     |            |                 |      |
| Widow(er)                  |            |                 |      |
| Divorced                   | 8 (7.9)    |                 |      |
| Precedence                 |            |                 |      |
| Metropolitan Region        |            |                 |      |
| Other Regions              |            |                 |      |
| Schooling levels           |            |                 |      |
| Elementary school          |            |                 |      |
| High School                |            |                 |      |
| Illiterate                 | 1 (1)      |                 |      |
| Job                        |            |                 |      |
| Retired                    |            |                 |      |
| Illness pay                | 4 (4)      |                 |      |
| Wage labor                 | 2 (2)      |                 |      |
| Self-employed              |            |                 |      |
| Others                     |            |                 |      |
| Income per capita          |            |                 |      |
| Up to 1 minimum wage       |            |                 |      |
| Up to 2 minimum wages      |            |                 |      |
| Up to 3 minimum wages      | 2 (2)      |                 |      |
| No income                  | 2 (2)      |                 |      |
| Cost of transportation to the ambulatory per appointment | | |
| Up to R$ 50.00             |            |                 |      |
| More than R$ 50.00         |            |                 |      |
| Monthly costs of medication |            |                 |      |
| More than R$ 200.00        |            |                 |      |
| From R$ 101 to 200.00      |            |                 |      |
| Up to R$ 100.00            |            |                 |      |
| Time being assisted by the ambulatory |           |                 |      |
| 1 to 5 years               |            |                 |      |
| 6 to 10 years              |            |                 |      |
| ≥ 11 years                 | 2 (1.9)    |                 |      |

Note: SD = standard deviation.

Table 2 – Clinical data of heart failure patients, Recife, Pernambuco, Brazil, 2017

| Clinical Variable       | Average±SD | Variance | n (%) |
|-------------------------|------------|----------|-------|
| Etiology                |            |          |      |
| Idiopathic              | 32 (31.7)  |          |      |
| Hypertensive            | 26 (25.7)  |          |      |
| Chagas                  | 23 (22.8)  |          |      |
| Others                  | 20 (19.8)  |          |      |
| Functional Class        |            |          |      |
| I                       | 43 (42.6)  |          |      |
| II                      | 39 (38.6)  |          |      |
| III                     | 19 (18.8)  |          |      |
| Ejection                |            |          |      |
| Reduced EF ≤ 40%        | 58 (57.4)  |          |      |
| Intermediate EF 41-49%  | 26 (25.5)  |          |      |
| Preserved EF ≥50%       | 15 (14.9)  |          |      |
| Information not found   | 2 (2.2)    |          |      |
| Associated comorbidities|            |          |      |
| Systemic arterial hypertension | 75 (74.3) |          |      |
| Dyslipidemia            | 49 (48.5)  |          |      |
| Diabetes mellitus       | 27 (26.7)  |          |      |
| Coronary arterial disease | 17 (16.8) |          |      |
| Medicines in use        |            |          |      |
| All medications        | 5,64±1,79  | 2-11     |      |
| Cardiologic medications| 4,72±1,39  | 2-10     |      |

To be continued
The increasing population ageing, high life expectation, and improvements in the treatments of severe cardiopathies has been contributing for the growth in cardiovascular diseases (CVD), among, among them, HF, the final path of most cardiopathies(20). According to this view, the sociodemographic profile of this study was similar to the ones performed in other cardiology ambulatories(10-11).

A study that related schooling levels to QLRH has shown that schooling levels are set as an important factor for the QL of heart diseases patients, and it is related to the prevalence of re-hospitalizations and mortality(21). In agreement to a research carried out in Ribeirão Preto, São Paulo, Brazil(16), the schooling levels of this study’s sample was up to elementary school. This datum is significant, since low schooling levels could reduce the opportunity for information and access to health care, since it is essential for the communication and for performing the guidelines given by the health team(16).

Unlike the results found in a multicentric study with 1,263 patients, in which ischemic etiology was prevalent in the national scenario as well as in the Northeast region(14), the data in this research show the idiopathic and hypertensive prevalence. A similar research developed in a HF ambulatory in the Brazilian Northeast had also shown idiopathic etiology as the most frequent one(10).

In this research, Chagas disease (CD) was the third most frequent cause of HF, given that it may be related to the functioning, in the ambulatory, of the reference in the state of Pernambuco, for Chagas disease. According to the II Brazilian Consensus on Chagas Disease, the Northeast region is characterized as the second region with the highest prevalence of this disease in the country(13).

In the pharmacological treatment of HF, the most frequently used cardiologic medications were β-blockers, diuretics, and ACE inhibitors and ARBs, as found in literature(10). A longitudinal study developed in the Netherlands to assess the QLRH of HF patients has found a significant relation between the use of β-blockers, ARBs and ACE inhibitors in the survival group, throughout the three years of the research. Besides, worst QLRH scores were also related to lower β-blocker prescription numbers(16).

Also on the medications, it is important to highlight that cardiovascular medications are among the ones that most contribute to polypharmacy(17). The average found in this sample for all medications (5.64±1.79) was lower than in other studies developed with HF patients (7.0±2.0, 11.4±4.3)(18-19).

The data analyzed by the Minnesota questionnaire show moderate QL (34.3±21.6). The averages found were lower than the ones available in national literature (38.0±17)(20) as well as in the international
one (44±21; 34.5±22.8)\(^{16,21}\). The physical dimension, which assesses the disease's symptomatology, has shown higher scores (14.6±12.5) when compared to the emotional one (10.8±8.8), suggesting an important influence of physical alterations, such as dyspnea, fatigue, and edema over the QLRH.

A significant difference was found between age and QLRH in the physical dimension (p<0.001) and in the total score (p<0.001). This result is similar to the one found in a research with 91 HF patients in a ambulatory segment in the municipality of João Pessoa, Paraíba, Brazil\(^{13}\), in which better QLRH perceptions were shown for older people. Similar studies carried out in São Paulo and Canada have also published similar results, despite regional differences and development indexes\(^{11,22}\).

The fact that elderly people have a global understanding of the QL concept, articulating knowledge built in their daily lives and in technic-professional experiences, shows the multidimensionality of the QLRH concept for elderly people, and it explains the better scores when compared to younger patients\(^{23}\).

HF presents a great impact on the worker's health and the symptoms make it harder to perform work duties, demanding changes in function, workload, or even causing occupational inactivity. In agreement to data from a national research\(^{11}\), in this study, a considerable percentage has declared themselves as professionally inactive, possibly due to the average age of the sample and the precocious physical commitment of HF patients.

The significance found, when related to the occupation and QLRH in the physical dimension (p=0.01) and total score (p=0.01), shows a negative influence on occupational inactivity in the QL of HF patients, specially among the ones that are unemployed and receiving illness pay. The reduction of labor or productive years of HF patients due to the symptoms may increase costs with medications and negatively affect the QL reported by the patients, in face of the reduction of income per capita\(^{14,22}\) and family income\(^{24}\).

The income per capita up to one minimum wage is set as a risk variable for low scores in the physical dimension (p=0.04) and total score (p=0.01), corroborating to what is found in literature\(^{25}\). Those who declared not possessing any income had almost twice worst QLRH scores, when compared to the ones that have monthly incomes of up to a minimum wage.

The impact caused in QLRH due to low income is related to the difficulty in accessing health services, in acquiring medications, food, and to necessary changes in lifestyle, contributing to rehospitalizations, low therapeutic adhesion, and worse QL scores\(^{14}\).

In HF ambulatories, it is expected the prevalence of less symptomatic patients, with lower FC and, consequently, better QLRH. Therefore, just as in studies developed in national\(^{13,14}\) and international\(^{21}\) ambulatories, the most found FC (NYHA) in the sample were I and II.

The averages obtained showed strong significance between age and QLRH in the physical dimension (p=0.06). Góis has related negatively the number of medications to QL\(^{20}\), while this research has demonstrated a weak correlation only for the physical dimension (p=0.06).

**Study limitations**

It is recommended to perform studies approaching the hypothesis that the time being cared for in the ambulatory positively affects the QLRH, and that CD negatively affects the QLRH for HF patients, since the low number of patients with this pathology is set as a limitation of this study.

**Contributions to the Nursing, Health, and Public Policy areas**

It is important to highlight that the ways of facing the disease developed by the patients are subjective and that the health team has an essential role on the process of health education and empowering for self-care. To teach HF patients is to help them understand the pathology, the changes needed for better adaptation, for the correct use of therapy, the reduction of complications, decompensation, and hospitalization. To capacitate patients to be the leading role in their health-illness processes is essential to improve their QLRH perceptions.

**CONCLUSION**

HF patients’ QLRH was considered moderate, with significant relation to age, functional class, and the group of patients with HF secondary to Chagas disease. The averages were higher for the physical dimension, which reflects the symptoms and limitations caused by the disease, when compared to the emotional dimension.
The physical dimension was strongly affected by age, and it presented relation to income and occupation. The group of patients with CD presented significant values for the emotional disease, demonstrating the disease's negative influence on the total QLRH score. The FC variable was the only one to present strong significance for all three analyzed dimensions.

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