Original Article

Quality of life in older adults with heart failure: assessment with a specific instrument*

Qualidade de vida relacionada à Saúde em Idosos com Insuficiência cardíaca: avaliação com instrumento específico

Calidad de vida relacionada a la Salud en ancianos con Insuficiencia cardíaca: evaluación con instrumento específico

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ABSTRACT

Objective: To assess the quality of life in elderly patients with heart failure. **Methods:** Cross-sectional study conducted in two university hospitals. Interviews were conducted with 170 elderly patients with heart failure in an outpatient setting. To assess the quality of life, the Minnesota Living With Heart Failure Questionnaire was used. **Results**: The results showed a minor impact of illness on the emotional dimension of quality of life. However, indicators related to the physical dimension, including fatigue and breathlessness, showed a greater impact on quality of life for elderly patients. The internal consistency of the instrument-specific to quality of life was high, indicating satisfactory reliability (α> 0.80). **Conclusion:** This study enabled the assessment of quality of life of elderly patients living with heart failure, demonstrating that the physical dimension was the most compromised. It is essential to implement strategies to improve physical functioning in these patients.

Keywords: Elderly; Heart failure; Quality of life

RESUMO

Objetivo: Avaliar a qualidade de vida relacionada à Saúde em idosos com insuficiência cardíaca. **Métodos**: Estudo transversal realizado em dois hospitais universitários. Foram entrevistados 170 idosos com insuficiência cardíaca em seguimento ambulatorial. Para avaliar a qualidade de vida, foi utilizado o instrumento *Minnesota Living With Heart Failure Questionnaire*. **Resultados:** Os resultados do estudo apontaram menor influência da doença sobre a dimensão emocional da qualidade de vida. Entretanto, as questões vinculadas à dimensão física, que avaliam fadiga e dispneia, apresentaram maior impacto na qualidade de vida dos idosos. A consistência interna do instrumento específico de qualidade de vida foi alta, indicando confiabilidade satisfatória (α >0,80). **Conclusão**: Este estudo possibilitou a avaliação da qualidade de vida dos idosos com insuficiência cardíaca e mostrou a dimensão física, como o aspecto mais comprometido. É essencial a implementação de estratégias que melhorem a função física desses pacientes.

Descritores: Idoso; Insuficiência cardíaca; Qualidade de vida

RESUMEN

Objetivo: Evaluar la calidad de vida relacionada a la Salud en ancianos con insuficiencia cardíaca. **Métodos**: Estudio transversal realizado en dos hospitales universitarios. Fueron entrevistados 170 ancianos con insuficiencia cardíaca en seguimiento ambulatorio. Para evaluar la calidad de vida, fue utilizado el instrumento *Minnesota Living With Heart Failure Questionnaire*. **Resultados:** Los resultados del estudio apuntaron menor influencia de la enfermedad sobre la dimensión emocional de la calidad de vida. Mientras que, las preguntas vinculadas a la dimensión física, que evalúan fatiga y disnea, presentaron mayor impacto en la calidad de vida de los ancianos. La consistencia interna del instrumento específico de calidad de vida fue alta, indicando confiabilidad satisfactoria (α >0,80). **Conclusión**: Este estudio permitió la evaluación de la calidad de vida de los ancianos con insuficiencia cardíaca y mostró la dimensión física, como el aspecto más comprometido. Es esencial la implementación de estrategias que mejoren la función física de esos pacientes.

Descriptores: Anciano; Insuficiencia cardíaca; Calidad de vida

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INTRODUCTION

Due to population ageing, there is an increase in the prevalence of chronic diseases. Heart Failure (HF) is among them, whose incidence tends to increase in the coming years, especially among the elderly[1-4]. In Brazil, the biggest country in South America, HF is the third cause for hospital admissions[5]. Additionally, studies show that HF is the most common cardiovascular disease among the elderly and the most frequent reason for hospital admission[6-7].

HF is one of the main causes for disability regarding the self-limitation of physical activity. This limitation is closely connected to the activities of daily living of the elderly, to quality of life (QL), and to changes in the lifestyle imposed by the disease. Patients with HF have their lives affected by the disease and even optimized care seems to have impacts on their quality of life[8].

The World Health Organization (WHO) defines quality of life "as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns"[9]. Another broader concept is health-related quality of life (HRQOL) which includes, in addition to the perception of physical and mental health, other aspects related to the health-disease process[10]. Thus, the HRQOL of HF patients enables to assess disease perception and its impact on the lives of these individuals. However, a few studies consider patients' perception of the disease, taking into account that this population has the quality of life extremely affected by it[11-12].

Several HRQOL instruments have been used with HF patients, especially the Minnesota Living With Heart Failure Questionnaire (LHFQ) and the Short Form-36 Questionnaire (SF-36)[13], although this one is not specific to assess the impact of HF in the lives' of people. Due to the specificity of the disease, when HRQOL is assessed through generic instruments, it can be more influenced by associated comorbidities than by the disease itself, making more specific instruments more useful, especially for elderly patients[14]. Furthermore, the instruments are not developed or tested specifically for the elderly population with HF[12].

To assess HRQOL in HF patients, researchers[15] have developed a specific instrument, the LHFQ, which is based on patients' perception of their cardiac disability and how much it interferes in the quality of life. In Brazil and in other countries, this instrument has been chosen for HF patients[13,16]. Additionally, it has demonstrated discriminant validity among different magnitudes of changes in HRQOL in patients with HF[17].

HRQOL encompasses two large domains: the physical and emotional dimensions of human beings[18]. Studies with the elderly population, with ages ranging from 60 and 93 years old, have demonstrated that their psychometric properties are reliable and validated[7,12].

According to what has been mentioned, considering that the HRQOL instrument focuses patients' perception of the HF effects in their lives, and taking into account that the Brazilian version has been already validated and culturally adjusted[19], we want to assess the HRQOL in elderly patients with HF through the specific instrument LHFQ.

METHODS

Cross-sectional study carried out in two university hospitals of the State of São Paulo. One hundred and seventy elderly patients* with HF diagnosis took part in the study, they were being followed-up in the outpatient clinic, could understand and communicate, and agreed to take part in the study through the Statement of Consent. Patients that had undergone transplant or heart surgery have been excluded because these were events that could influence the QOL of the interviewed subject.

The sample size was determined based on Spearman's correlation values, observed in the pilot study, considering as minimal significant correlation, $\pi \geq 0.30$, $\alpha = 0{,}05$ and $\beta = 0.20$(20). Thus, a minimum value of 164 individuals has been considered. The study has been approved by the Ethics Committee of each institution.

Patients were enrolled for the study on the day of the routine medical appointment, previously scheduled before and after the medical appointment, when they gave their written consent. Patients in outpatient follow-up for at least 3 months** that could understand and communicate verbally were included in the study, those that had undergone cardiac transplantation or with history of previous heart surgery were excluded to eliminate the possibility of the influence of the surgical interventions in their perception of the HRQOL.

Data collection was carried out from June to November 2005, by assessing the charts to obtain data regarding patients' clinical condition and individual interview for sociodemographic characterization and quality of life assessment.

Instruments

Sociodemographic and clinical data: it contains the information regarding individuals' demographic

* Criterion adopted by the WHO to define elderly people from the chronological standpoint of developing countries as well as by the National Policy of Elderly Health, according to the Law # 8.842/9.
** The criterion of minimum 3 months of follow-up was adopted based on the previous analysis of the fields in which it was seen that this period corresponds to the minimum necessary to carry out clinical characterization tests.

profile: name, gender, age, race, birth place, marital status, education, work situation, who they lived with, presence of escort during the appointment, who took care of the house, monthly income, as well as information regarding the following clinical characterization: HF etiology, comorbidities, time of HF diagnosis, left ventricle ejection fraction (LVEF), functional class (FC), according to the New York Heart Association (NYHA), the symptoms (dyspnea, fatigue, angina and palpitation).

Adjusted Brazilian version of the Minnesota Living With Heart Failure Questionnaire (LHFQ)[20]. The LHFQ measures patients' perception of the effects of HF in their lives. It is a questionnaire initially prepared to be self-administered, formed by 21 items that contemplate the physical, socioeconomic and psychological limitations that patients frequently reported connected with their heart failure. Patients' self-assessment is quantified by the sum of answers of the 21 items. It is important to explain previously to patients that they should consider the last month to answer the questionnaires. The scale of answers for each question ranges from zero (no) to five (too many), in which zero represents "no limitations" and five "maximum limitation". Higher scores indicate worse HRQOL. The score of physical dimension corresponds to the sum of eight questions (# 2, 3, 4, 5, 6, 7, 12 and 13) related to dyspnea and fatigue. The score of the emotional dimension is formed by five questions (# 17, 18, 19, 20 and 21). The remaining questions (# 1, 8, 9, 10, 11, 14, 15 and 16) plus the physical and emotional dimensions determined the total score. This subgroup of questions, because there is no usual standard of response, was not grouped as a dimension separated from the questionnaire[19,21].

Statistical Analysis

Initially, data were put on an Excel for Windows 98 spreadsheet and they were later inserted in the SAS System for Windows (Statistical Analyses System) program, version 8.02. Descriptive statistic was used for frequency distribution and to calculate the mean, the standard deviation, the median, and the variation of the instrument. Reliability was assessed through internal consistency with the calculation of the Cronbach's alpha coefficient, considering $\alpha > 0.70$ as a satisfactory criteria[22].

RESULTS

Clinical and sociodemographic characteristics of the 170 individuals are described in the data of Table 1. Male gender was predominant 58.2% (99), with mean age of 67.5 (± 6.2) years, they were not working 83.0% (141), and mean time of HF diagnosis was 65.9 (± 42.4; median= 60.0) months.

The most frequent etiological factor was heart disease 46.5% (79), and hypertension 32.4% (55). LVEF observed was below the value considered borderline for normality in 51.2% (84) of the cases. Most elderly

Table 1 – Sociodemographic and clinical variables of the 170 elderly patients. Campinas - SP, 2005.

Variable	Mean (± SD*)	Median	Variation observed	n	%
Age	67.5 (± 6.2)	66.0	60 - 83	-	-
Schooling (years of study)	3.6 (± 3.4)	4.0	0 - 20	-	-
Family income (minimum wage)	3.2 (± 2.4)	2.4	0 - 14	-	-
Work situation					
Active					
Employed				5	2.9
Retired but working				7	4.1
Sub-total				12	7.0
Inactive					
Unemployed				1	0.6
Worker's compensation				1	0.6
Disability retirement				89	52.4
Compulsory retirement				50	29.4
Sub-total				141	83.0
Housewife				17	10.0
Gender					
Male				99	58.2
Female				71	41.8
Race					
White				145	85.3
Non-white				25	14.7

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Variable	Mean (± SD*)	Median	Variation observed	n	%
Marital Status	-	-	-		
With a partner					
Married				105	61.8
In consensual union				1	0.6
Sub-total				106	62.4
No partner					
Widow				47	27.6
Divorced				9	5.3
Single				8	4.7
Sub-total				64	37.6
Time/HF diagnosis (months)	65.9 (±42.4)	60.0	5-180	-	-
LVEF **	0.58 (±0.13)	0.60	0.29-0.83		
Echocardiogram (Teicholtz) (n=98)	0.33 (±0.11)	0.31	0.17-0.68		
Decreased				44	26.9
Normal				54	32.9
Scintigraphy (Gated) (n=66)					
Decreased				40	24.4
Normal				26	15.8
Etiology	1.1 (α 0.29)	1.0	1.0 – 2.0		
Ischemic heart disease				79	46.5
Hypertension				55	32.4
Chagas' disease				25	14.7
Dilated cardiomyopathy				15	8.8
Comorbidities	4.7 (α 1.86)	4.0	1-10		
Hypertension				132	77.6
Artery disease				75	44.1
Dyslipidemia				61	35.9
Diabetes *mellitus* 2				59	34.7

SD: standard deviation
** LVEF: left ventricle ejection fraction

Table 2 – Scores of the LHFQ dimensions for the 170 elderly with HF. Campinas, SP, 2005

Dimensions	Mean	SD*	Median	Variation observed	Possible variation	α Cronbach**
Physical	17.0	9.3	17.0	0-37	0-40	0.85
Emotional	6.8	5.0	6.0	0-24	0-25	0.64
Total	35.3	17.2	36.5	2-85	0-105	0.85

* SD: standard deviation
** Satisfactory criterion α > 0.70

were FC I (38.8%, 66) or II (42.9%, 73), according to the New York Heart Association (NYHA). The most prevalent comorbidities were: hypertension, 77.6% (132); artery disease, 44.1% (75); dyslipidemia, 35.9% (61); and type 2 Diabetes *Mellitus*, 34.7 % (59).

In the HRQOL assessment through the LHFQ, elderly presented low means in the physical and emotional dimensions and in the total score. However, in the comparison between the mean of these scores with the variation observed , the questions that form the physical dimension presented higher means compared to those of emotional dimension and total score (Table 2).

The reliability of the LHFQ instrument was assessed through internal consistency, with the calculation of the Cronbach's alpha coefficient. The values obtained were higher than 0.80 in the physical dimension and in the total score, and equal to 0.64 in the emotional dimension, indicating satisfactory reliability. Although the alpha value in the emotional dimension has a record below 0.70, it was close to the satisfactory criterion established (a >0.70) (Table 2).

DISCUSSION

In the HRQOL assessment through the LHFQ, the mean of the scores was low, both for physical and emotional dimensions and for total score, which pointed out a smaller influence of the disease in the quality of life. However, the questions regarding the physical

dimension that assessed fatigue and dyspnea showed mean score higher than the others, indicating that the restriction in quality of life of these elderly patients is more connected to the impact of these symptoms in the every day life. Indeed, these symptoms characterize the progressive worsening of HF, leading to limitations to the lives of patients. Additionally, HF is also associated to the limitations in the activities of daily living, inability to work and loss of the independence[23]. This loss of functions is associated with physical symptoms and the adverse effects of drugs, to comorbidities, loss of cognitive and role functions. Some studies suggest there is a strong association between physical dimension of the HRQOL and depression[7,24].

The results of the present study were similar to those found by other investigations, whose individuals presented higher scores in the physical dimension compared to the emotional one[7,12]. A study carried out with the elderly population, using the generic instrument SF-36, observed that the dimensions that assessed the physical aspects were more affected[25]. Patients with HF change their lifestyle because they cannot do some tasks due to dyspnea, fatigue and edema[26]. Indeed, the difficulty HF imposes in the everyday life of the elderly, reflect on their HRQOL and it has been demonstrated that elderly with HF presented high scores in all dimensions of the LHFQ, that is worse HRQOL compared to healthy individuals[7]. Additionally, it is important to implement strategies to improve HRQOL, because poor quality of life is associated with clinical worsening, including the increase in hospital admission and mortality rate[27].

An important remark refers to the increase of LHFQ scores connected with HF severity. That is, patients with higher functional class presented greater commitment in HRQOL than those at a lower functional class in the three HRQOL than those with lower functional class in the three dimensions of the LHFQ: physical ($p<0.0001$), emotional ($p=0.0034$) and total ($p<0.0001$). This correlation should be highlighted since the tolerance to usual efforts have been used to estimate the severity of HF. In the literature, authors have demonstrated similar outcomes[6,12].

In the present study, the items that have not been answered (responses missing) had to do with work and sexual activities. This may be explained by the characteristic of this sample whose most individuals were retired and/or did not have sex. Patients with HF have a limited life expectancy and many of them retire, which contributes for them not worrying about work to support themselves[21]. Previous studies have also reported that these questions had not been answered by elderly patients, because they did not realize these factors affected their daily activities[28-29]. Authors recommend the review of this type of questions because sexuality can be seen as a taboo, and it also puts elderly in an embarrassing situation to answer questions about it[12,30]. Thus, it is believed that these questions are not appropriate for this population, and a review of these items is suggested[30,31].

Cronbach's alpha values were above 0.80 in the physical dimension and in the total score of the LHFQ. These outcomes are similar to those described by other authors that have used LHFQ in the elderly population[7,12]. A systematic review study identified values of this coefficient above 0.9 in the LHFQ[13]. These values indicate the higher standard of reliability coefficient recommended.

Cronbach's alpha value is important, since it measures the level of coherence of the instrument and values above 0.70 are considered satisfactory[22]. Thus, the LHFQ was proven to be a reliable instrument. Event though in the emotional dimension a coefficient that was very close to the minimum recommended has been observed, a careful analysis of the items that form this dimension is useful for later investigations.

CONCLUSION

The present study enabled to assess the HRQOL of elderly with HF and it showed the physical dimension as the most affected aspect. The strong point is the high level of reliability of the LHFQ in this sample, although the coefficient observed in the emotional dimension was very close to the minimum recommended. The limitation presented by this study refers to the fact that the instrument presented items that do not apply to elderly.

The assessment of HRQOL in patients with HF is essential in the clinical practice, because its management involves the participation of a multiprofessional team in which nurses have an important role in the introduction of health education actions that minimize the effect of the symptoms on QL and improve self-care.

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