



## QUALITY OF LIFE AMONG PATIENTS WITH HEART FAILURE: A REVIEW ARTICLE

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### Abstract:

Heart failure is a major and growing public health problem that leads to considerable morbidity and mortality. It is characterized by progressive debilitating symptoms that negatively impact physical, mental and socioeconomic dimensions of quality of life of patients. Poor health-related quality of life is associated with low treatment adherence, re-hospitalization and increased financial burden for the patients and healthcare system. Quality of life was introduced as an outcome measure as well as a prognostic variable as many patients prefer improvement in quality of life at the expense of prolonged survival. Identifying meaningful factors influencing quality of life is critical to develop effective interventions to improve prognosis. The aim of this paper is to review the evidence-based information about quality of life in chronic heart failure.

**Key words:** Heart failure, Quality of life.

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### Introduction:

World health organization <sup>(1)</sup> 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". Quality of life considered as a more holistic view of medicine, a decisive factor to understand the impact of diseases and improve the quality of medical care <sup>(2)</sup>.

Heart failure is major and growing public health problem that leads to considerable morbidity and mortality, and the battle against heart failure is imposing an unprecedented cost burden on the health care system. Despite widespread deployment of evidence-based pharmacologic and device therapies, an unacceptable number of patients suffer impaired functional capacity, poor quality of life, and early death due to heart failure <sup>(3)</sup>. The prevalence of heart failure tends to increase, reducing the quality of life of patients and increasing the economic burden for both individuals and public health <sup>(4)</sup>.

Recently, quality of life was introduced as an outcome measure as well as a prognostic variable as many patients prefer improvement in quality of life at the expense of prolonged

survival. Meaningful survival indicates satisfactory quality of life to the patient <sup>(5)</sup>. Moreover, the importance of quality of life in determining the success of a therapy is becoming increasingly recognized. Clinical trials incorporating quality of life as primary and/or secondary end-point show improved quality of life with the use of angiotensin receptor blockers, angiotensin-converting enzyme inhibitors, beta blockers, device therapies, such as implantable cardiac defibrillator, and exercise-based rehabilitation <sup>(6)</sup>. American college of cardiology <sup>(7)</sup> and American heart association <sup>(8)</sup> recommend considering the multidimensional concept of quality of life, it is necessary to pay attention to the physical and psychological dimensions of patients. The goal of all physical and mental treatments is to improve the health-related quality of life for patients with heart failure. Hence, monitoring health-related quality of life is an important goal <sup>(9)</sup>. Measuring quality of life gives information useful in shaping clinical and health policy <sup>(6)</sup>.

Changes in echocardiographic or laboratory parameters indeed represent quantifiable outcomes, but they do not necessarily improve the daily life of the study participants, which is related to variables less

easy to be quantified, such as quality of life that is by itself frequently variable in heart failure patients experience sometimes for reasons independent from the clinical conditions of the patient<sup>(10)</sup>. The structured assessment of quality of life is considered important in promoting patient-centric care. It puts the patient's perspective at the forefront and can identify areas of specific need that helping to facilitate shared decision-making and ensure that the preferences of the patient are used to guide management<sup>(11)</sup>.

### **Impact of heart failure on patients and community:**

Heart failure is a complex clinical syndrome characterized by progressive debilitating symptoms as breathlessness, ankle swelling and fatigue at rest and/or during activity<sup>(7)</sup>. These symptoms cause different physical and mental complications which can include insomnia, depression, anxiety, low self-confidence, diminished activity resulting in poor adaptation with the disease and eventually negative effect on different dimensions of the quality of life compared with healthy individuals and other patients with chronic illnesses<sup>(12)(13)(14)(15)</sup>. Patients with heart failure often experience a cognitive decline following impairment of their hemodynamics, and cerebral hypo-perfusion<sup>(16)</sup>. Lower quality of life predicts early and more frequent heart failure hospitalization, depression, higher New York Heart Association functional class, poor 6-minutes walk test, lower estimated glomerular filtration rate, and lower left ventricular ejection fraction<sup>(6)</sup>.

Poor health-related quality of life is associated with low treatment adherence, re-hospitalization and increased financial burden for the family and healthcare system<sup>(17)(18)</sup>. Heart failure poses a high financial burden on healthcare systems and patients. At least two thirds of its overall costs are derived from inpatient hospitalization, and patients with heart failure were found to spend four times the cost spent by peers without heart failure<sup>(19)</sup>.

### **Factors affecting quality of life in heart failure:**

Establishing factors associated with changes in the health-related quality of life among patients with heart failure is essential to early identify patients in need of long-term health services and develop appropriate

strategies to improve the quality of their lives<sup>(20)(11)</sup>. Several factors can be held responsible for diminished quality of life in this vulnerable group such as heart failure exacerbations, coexisting symptoms, frequent readmissions, gloomy prognosis, poor self-care, low-socio-economic status, limited family or social support and knowledge deficits about disease management<sup>(21)(22)(23)</sup>.

A systemic review<sup>(24)</sup> concluded that age, gender, New York Heart Association functional class and depressive symptoms are the most consistent variables explaining the variance in quality of life in patients with heart failure. Females found in the majority of studies to have significantly worse quality of life compared to males due to sociocultural and socioeconomic factors<sup>(24)</sup>. Age of patients with heart failure had shown different effect on their quality of lives where multiple studies demonstrated that older age had a negative significant relationship between age and quality of life<sup>(25)(26)</sup>. On the other hand, Baert and colleagues<sup>(24)</sup> concluded that compared to old patients, young patients were found to have worse quality of life.

Health-related quality of life of heart failure may improve if patients perform self-care, which has been defined as a set of behaviors to maintain physiological and emotional stability known as self-care maintenance, detect and interpret symptoms and respond to symptoms when they occur known as self-care management<sup>(27)</sup>. Also, disease confidence indicates a person's sense of illness that is higher than the individual's dimensions of illness. This feeling improves through self-care<sup>(15)</sup>. Also, Family and social support had a crucial role in the maintenance of a good quality of life, for instance, patients with heart failure who were not currently married either single, divorced or widow had a worse quality of life compared to those who are married<sup>(26)</sup>.

Identifying meaningful factors influencing quality of life is critical to develop effective interventions to improve prognosis in this cohort<sup>(28)</sup>.

### **Instruments for measuring:**

Quality of life measurement using domains such as social interaction, emotion, environmental interaction, sexual activity, and demographic characteristics<sup>(29)</sup>. Instruments used in measuring quality of life must possess

the following psychometric properties-validity (if it is really measuring what it is supposed to measure), reliability (if it gives the same measurement after repeated administration in stable patients), sensitivity (if it can detect clinically meaningful differences in quality of life across the broad spectrum of the clinical conditions), and responsiveness (if it detects changes when the patients' conditions change). These instruments are basically divided into two categories; generic instrument and disease-specific instruments<sup>(30)</sup>.

Generic instruments are general health measures applicable to a wide range of groups, age, diseases, and cover a wide range of quality-of-life domains. The generic measures include sickness impact profile (SIP), the 36-item Short Form Health Survey (SF-36) and WHO-health related quality of life questionnaire. SF-36 is the most widely and extensively used generic instrument. SF-36 is suitable for use in heart failure trials and can be used in conjunction with disease-specific questionnaires. It has been found to be more sensitive to small degree of impairment in quality of life. SF-36 consists of eight scaled scores, which are the weighted sums of the questions in their section. Each scale is directly transformed into a 0–100 scale on the assumption that each question carries equal weight<sup>(30)(31)</sup>.

The disease-specific instruments for heart failure which are more sensitive to clinical changes and include the following questionnaires<sup>(32)</sup>; Quality of Life Questionnaire in Severe Heart Failure (QLQ-SHF), Chronic Heart Failure Questionnaire (CHFQ), Left Ventricular Disease Questionnaire (LVDQ), the Kansas City Cardiomyopathy Questionnaire (KCCQ), the Minnesota Living with Heart Failure Questionnaire (MLHFQ) and the Chronic Heart Failure Assessment Tool (CHAT). The Minnesota Living with Health Failure Questionnaire (MLHFQ) is the most frequently used disease-specific instrument. It is a 21-item questionnaire using a six-point Likert scale (0–5) with score 0 (no impairment) and score 105 (maximum impairment) as a result of HF. It is the most frequently and extensively studied disease-specific instrument. MLHFQ assesses the patient's perception of the effects of HF on the physical, socioeconomic, and psychological aspects of life. It is, short, easy to understand, and easy to administer. It can be self- or

interviewer-administered and could be completed within 5–10 min. It has high internal consistency reliability with Cronbach's alpha of 0.86<sup>(33)(32)</sup>.

In quality of life research, it is recommended that both a generic and a disease-specific instrument be combined so as to synergize the advantages inherent in each of the instruments<sup>(34)</sup>.

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