International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Assessment of Quality of Life of Patients Diagnosed with Heart Failure on the basis of Severity of Clinical Features

Priya Kumari[1], Arun Chandran Ramachandran[2]

[1]PharmD intern, Department of Pharmacy Practice, Acharya & BM Reddy College of Pharmacy, Bengaluru, Karnataka
[2]Assistant Professor, Department of Pharmacy Practice Acharya & BM Reddy College of Pharmacy, Bengaluru, Karnataka

Abstract
The Heart Failure Society of America (HFSA) and the American College of Cardiology Foundation (ACCF/AHA) define Heart Failure as a complex clinical syndrome caused by any structural or functional impairment of ventricular filling or blood ejection, which results in the cardinal manifestations of dyspnoea, fatigue, and fluid retention. In mild to moderate heart failure, cardiac output is sufficient at rest but only becomes insufficient when the metabolic requirement rises during physical activity or another stressful situation. When a patient with severe heart disease exhibits the telltale signs or symptoms of insufficient cardiac output, pulmonary congestion, or systemic venous congestion, heart failure may be diagnosed. Most chronic cardiovascular disorders, such as hypertension, coronary artery disease (CAD), and valvular heart disease. The goal of the study was to assess the quality of life of patients diagnosed with heart failure based on severity of clinical features. It also aimed to assess the proportion of clinical features with different stages of heart failure. This was an observational study. The study was conducted in Department of General Medicine, ESIC MC- PGIMSR & Model Hospital, Rajajinagar. All the patients (n=51) meeting the inclusion and exclusion criteria were briefed about the purpose of the study and informed consent was obtained. The subject's demographic details and responses were collected with the help of a standardized questionnaire. The collected data were entered in Microsoft Excel and appropriate descriptive and inferential statistical analysis was performed. It was observed that most of the patients were diagnosed with stage III (43.14%). From this study, it is evident that there is a need for QOL of patients with HF are impacted by a wide variety of physical and psychological problems. In HF patients, palliative care (PC) requirements are much more common in older patients and individuals with more severe NYHA stages.

Keywords: Quality of Life, Clinical features, Palliative care.

1. Introduction

In mild to moderate heart failure, cardiac output is sufficient at rest but only becomes insufficient when the metabolic requirement rises during physical activity or another stressful situation [1,2]. When a patient with severe heart disease exhibits the telltale signs or symptoms of insufficient cardiac output, pulmonary congestion, or systemic venous congestion, heart failure may be diagnosed [3]. Most chronic

cardiovascular disorders, such as hypertension, coronary artery disease (CAD), and valvular heart disease [4,5]. The prevalence rate of HF affects worldwide more than 64 million people so, efforts to reduce the impact on society and the economy have become a significant worldwide public health focus which has been labelled a global pandemic, with around 64.3 million people estimated to have experienced it worldwide in 2017 and 6.2 million adults in the United States are undergoing treatment for heart failure, and more than 600,000 new cases are diagnosed annually[6].

Quality of life in HF patients: HF significantly affects a person's quality of life, encompassing physical symptoms, emotional well-being, and social life which should be patient-centered, focusing on improving Quality of Life (QOL), and some patients prioritize this over longevity, multidisciplinary care, education, and support is crucial for addressing these aspects of hf management [7,8]. There are various medical, surgical, and non-pharmacological interventions available that can help to maintain or even improve their QOL in which self-care is indeed associated with the prevention or early detection of health problems and can lead to better overall health relaissues [in self -care practices, such as maintaining a healthy diet, regular exercise, managing stress, getting adequate sleep and adhering to medical treatments can contribute to a person's well-being, reduce the risk of developing health issues [9]. Engaging in yoga has been shown to have positive effects on the health and quality of life of individuals with heart failure it combines physical postures, breathing exercises, and meditation techniques that can help improve flexibility, reduce stress, and enhance overall well-being for heart failure patients, this complementary approach can contribute to better physical fitness, emotional balance, and an improved sense of quality of life. However, it's important for individuals with heart failure to consult their healthcare providers before starting any new exercise or wellness program, including yoga, to ensure it's safe and appropriate for their specific condition [10,11].

Factors affecting QOL in HF: Multiple factors on the quality of life of HF patients, while controlling for potential confounding variables[12,13].HF patients, including age (indicating that age plays a role in quality of life), residence (likely related to access to healthcare and support), marital status (social support may influence quality of life), income (financial status impacting well-being), and the duration of HF (suggesting that the longer someone has HF, the more it may affect their quality of life) [14]. Factors that may influence the quality of life of family caregivers, which can include patient health status, caregiving responsibilities, and other sociodemographic factors [15,16].

2. Materials and Methods

This is a cross-sectional study, The study was carried out in the Department of General Medicine, ESIC MC- PGIMSR & Model Hospital, Rajajinagar. The study was conducted in subjects drawn from the population at the Department of General Medicine, ESIC MC- PGIMSR & Model Hospital, Rajajinagar who had given informed consent form for a period of 6 months and by enrolling 59 patients, out of which 8 patients were dropped out because of inappropriate data. The final sample size was 51.

Study tools:

The following tools were employed to obtain information pertaining to the study:

- KCCQ-12: The questionnaire relies on patient self-report, all responses should be verified by the physician and a definite diagnosis is made on clinical grounds considering how well the patient understood.
- Patient profile form: Data were collected using self – designed Proforma from which contains details like demography, chief complaints, history of present illness, co morbidities, clinical data.

Inclusion criteria:

1. Patients who had been confirmed diagnosed with staging of heart failure.
2. Patients above 18 years of age.

Exclusion criteria:

1. Pregnant women.
2. Patients with congenital heart disease.
3. Patient who was not willing to participate in the study.
4. Comatose and unconscious patients

Statistical Analysis:

All recorded data were entered using MS Excel software and analyzed using SPSS 22 version. software for determining statistical significance. Descriptive statistics such as mean and standard deviation were computed for quantitative variables and frequencies and percentages were calculated for categorical variables. Histogram and pie charts were applied to find the nature of data distribution.

3. Results

Enrolling 59 patients, out of which 8 patients were dropped out from the study and the statistical analysis was performed in 51 patients data.

Age in years	Number of patients	Percentage %
18-25	0	0.00%
26-35	2	3.92%
36-45	10	19.61%
46-55	18	35.29%
56-65	12	23.53%
>65	9	17.65%
Total	51	100.00%

Table 1: Distribution of patients based on age

Out of 51 patients enrolled for the study, most of them (35.29%) fall under the age group between 46 -55. Out of 51 patients enrolled in the study, majority of patients were males (50.98%) compared to females (49.02%).

Co-morbidities	Number of patients	Percentage%
Cardiovascular	15	29.41%
Metabolic	7	13.73%
Nephrological	6	11.76%
None	23	45.10%
Total	51	100.00%

Table 2: Distribution of patients based on co-morbidities.

Out of 51 patients enrolled in the study, most of them (45.10%) were devoid of any comorbidities.

Stages of HF	Number of patients	Percentage%
Stage I	1	1.96%
Stage II	10	19.61%
Stage III	22	43.14%
Stage IV	18	35.29%
Total	51	100.00%

Table 3: Distribution of patients based on stages of heart failure

Out of 51 patients enrolled in the study, most of them were diagnosed with stage III (43.14%).

Response	Number of patients	Percentage%
Extremely limited	19	37.25%
Quite a bit	16	31.27%
Moderately limited	6	11.76%
Slightly limited	5	9.80%
Not limited	5	9.80%
Total	51	100.00%

Table 4: Response to the question 'Over the past 2 weeks, how much has your heart failure limited your enjoyment of life?'

Response to the question 'Over the past 2 weeks, how much has your heart failure limited your enjoyment of life?' Out of 51 patients enrolled in the study, responded that their enjoyment of life was extremely limited (37.25%) in the past 2 weeks, whereas 9.80 % of respondents were unaffected by HF when it comes to their life enjoyment.

Response	Number of patients	Percentage%
Not at all satisfied	20	39.22%
Mostly dissatisfied	18	35.29%
Somewhat satisfied	5	9.80%
Mostly satisfied	4	7.84%
Completely satisfied	4	7.84%
Total	51	100.00%

Table 5: Response to the question 'If you had to spend the rest of your life with your heart failure the way it is right now, how would you feel about this?'

Response to the question 'If you had to spend the rest of your life with your heart failure the way it is right now, how would you feel about this?' Out of 51 patients enrolled in the study, responded not at all satisfied (39.22%) to spend the rest of their life with HF, whereas (7.84%) responded that they are okay to live with HF, the way it is right now.

Age	Number of patients
26-35	3
36-45	9
46-55	18
56-65	12
>65	9
Total	51

Table 6: Comparison between QOL and Age categories

As $p < 0.001$ by Kolmogorov-Smirnov test the data is found non-normal hence instead of unpaired T-test, the Mann-Witney U test was applied to test the difference in QOL between male and female. The application of one-way ANOVA for testing the equality of means QOL between the 6-age category had found to be non-normal and hence the Kruskal-wallis test is applied which shows $p< 0.001$ indicating the QOL differs between 6 age categories.

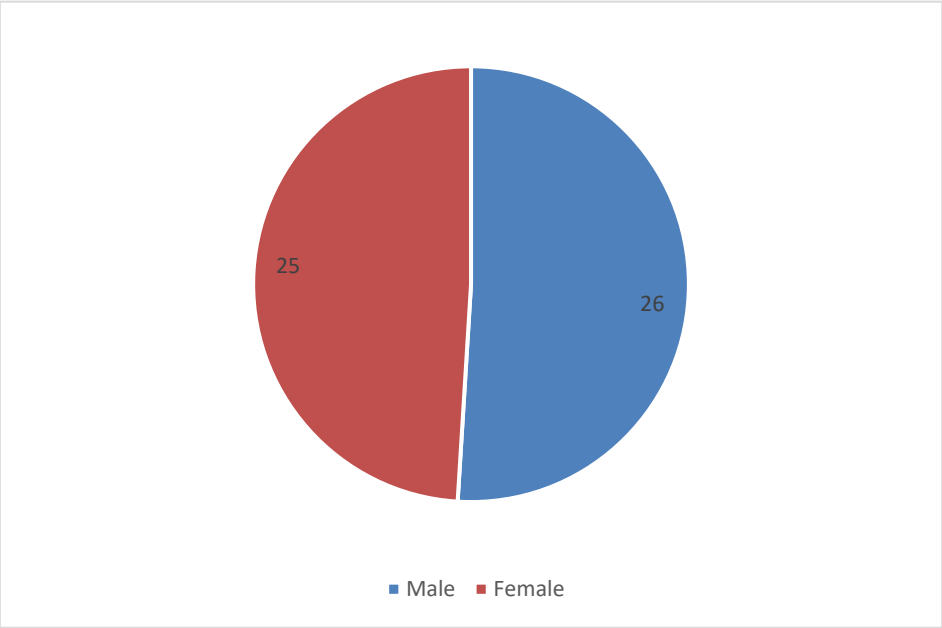
The application of one-way ANOVA for testing the equality of means QOL between the 6-age category had found to be non-normal and hence the Kruskal-wallis test is applied which shows $p< 0.001$ indicating the QOL differs between 6 age categories.

Clinical Features	Number of patients
Stage I	1
Stage II	10
Stage III	22
Stage IV	18
Total	51

Table 7: Comparison between QOL and Clinical Features

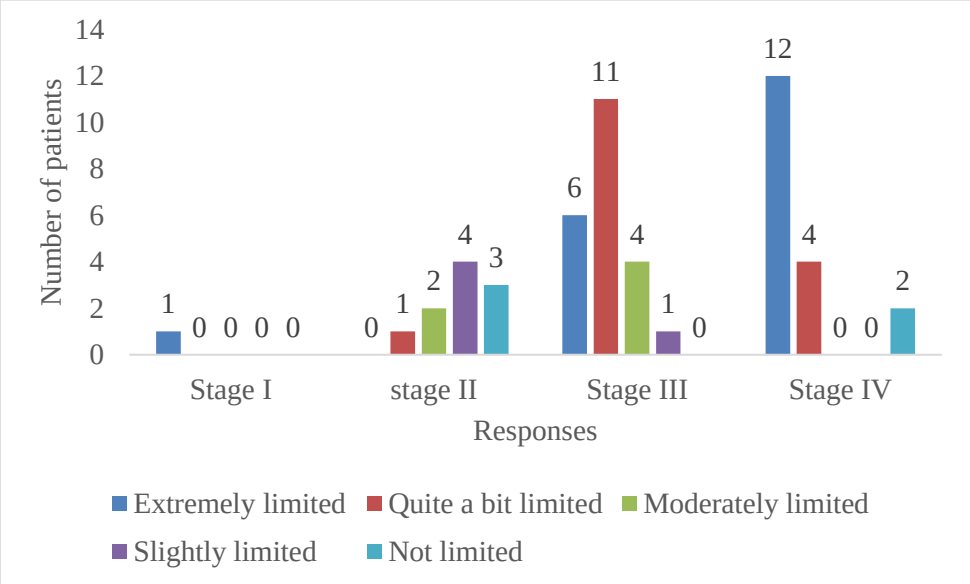
As a sample size is more than 13 the Z states computed which is equal 0.473 with $p= 0.636$ and hence the shows that the QOL between male and female may be same. The application of one-way ANOVA for testing the equality of means QOL between the 4 clinical features had found to be non-normal and hence the Kruskal-wallis test is applied which shows $p< 0.001$ indicating the QOL differs between 4 clinical features.

Figure1: Distribution of patients based on gender



Out of 51 patients enrolled in the study, majority of patients were males (50.98%) compared to females (49.02%).

Figure 2: Distribution of clinical features and QOL



Out of 51 patients enrolled in the study, responded that their enjoyment of life was **Stage III** (22) in the past 2 weeks, whereas 1 of respondents were unaffected by **Stage I** when it comes to their life enjoyment.

4. Discussion

The study was conducted in the Department of General Medicine, ESIC MC- PGIMSR & Model Hospital, Bengaluru for a period of 6 months and by enrolling 59 patients, out of which 8 patients were dropped out because of inappropriate data. The final sample size was 51. The objective includes in the study to assess quality of life of patients diagnosed with heart failure and to find out the proportion of clinical features with different stages of heart failure. The patients were categorized according to their gender identity, age

group, co-morbidities, stages of heart failure and QOL questionnaire. Out of 51 patients enrolled in the study slightly increase in percentage of patients were males (50.98%) compared to females (49.02%). This was evident in the study conducted by Garay A. et al., [17] who discussed gender differences in Health-Related Quality of Life in Patients with HF. This relates to the study which is like our study.

The study showed that out of 51 patients enrolled for the study, the majority of them (35.29%) fall under the age group between 46 -55 which is similar to the study Masoudi FA. et al., [18] in their study regarding the Age, functional capacity, and health-related quality of life in patients with heart failure study found that comparing older (age >55 years, n = 218) and younger patients (n = 328), we assessed baseline HRQL across strata of functional status.

In our study, out of 51 patients enrolled in the study, most of them were diagnosed with stage III (43.14%) which enlightens Johansson I.et al.,[19]. Health-Related Quality of Life and Mortality in Heart Failure which shows that the mean age of participants was 65 years; 61% were men; 40% had New York Heart Association class III or IV symptoms; and 46% had left ventricular ejection fraction ≥40%. This relates to the study at hand, where most of the patients were diagnosed with stage III and Stage IV which is like our study. In present study Out of 51 patients enrolled in the study, responded that their enjoyment of life was Stage III [20] in the past 2 weeks, whereas 1 of respondents were unaffected by Stage I when it comes to their life enjoyment which can be comparable with Seongkum H. et al., (21) the QOL of the patients with heart failures and it concluded that the study explored how patients with HF define and perceive QOL.

5. Conclusion

The QOL of patients with HF are impacted by a wide variety of physical and psychological problems. In HF patients, PC requirements are common, and they are much more common in older patients and individuals with more severe NYHA stages. Patients who are classified as having severe clinical features have worse QOL, more severe symptoms, and more psychosocial issues than patients who are classified as not having PC needs. We advise routinely assessing the needs of HF patients and including a PC specialist. Patients with mild to severe HF symptoms, and both retained and diminished, HF is a potent and independent predictor of death and HF hospitalizations. In addition to other clinical markers, measuring HRQL will be helpful in defining patients with HF. Patients with heart failure have distinct characteristics and clinical outcomes. The KCCQ looks to be a dependable and accurate way to gauge one's health condition and has great predictive power.

6. Conflict of Interest

The authors declare that no conflict of interest.

7. Acknowledgement

I express my sincere to all the people who have been associated with this project. I take this opportunity to thank everyone who helped and supported me directly or indirectly to make this a success.

8. References

1. Mayoclinic.org. [cited 2023 Oct 24]. https://www.mayoclinic.org/diseases-conditions
2. Takeda A, Martin N, Taylor RS, Taylor SJC. Disease management interventions for heart failure. Cochrane Libr [Internet]. 2019 [cited 2023 Oct 24]; https://pubmed.ncbi.nlm.nih.gov/30620776/
3. De Marzo, V., Savarese, G., Tricarico, L., Hassan, S., Iacoviello, M., Porto, I., & Ameri, P. (2022).

Network meta-analysis of medical therapy efficacy in more than 90,000 patients with heart failure and reduced ejection fraction. Nih.gov. [cited 2023 Oct 24]. https://pubmed.ncbi.nlm.nih.gov/35332595/

4. Heart failure. (2023, April 20). Mayo Clinic. https://www.mayoclinic.org/diseases-conditions/heart-failure/symptoms-causes/syc-20373142.
5. Heart.org. [cited 2023 Oct 24].
6. Nhsinform.scot. [cited 2023 Oct 24].
7. Segovia C., J., Alonso-Pulpón Rivera, L., Peraira Moral, R., & Silva Melchor, L. (2004). Heart failure: Etiology and approach to diagnosis. Revista Espanola de Cardiologia (English Ed.), 57(3), 250–259. https://pubmed.ncbi.nlm.nih.gov/15056429/
8. Savarese G, Becher PM, Lund LH, Seferovic P, Rosano GMC, Coats AJS. Global burden of heart failure: a comprehensive and updated review of epidemiology. Cardiovasc Res [Internet]. 2023 [cited 2023 Oct 25];118(17):3272–87. https://academic.oup.com/cardiovascres/article/118/17/3272/6527627
9. Moradi M, Daneshi F, Behzadmehr R, Rafiemanesh H, Bouya S, Raeisi M. Quality of life of chronic heart failure patients: a systematic review and meta-analysis. Heart Fail Rev [Internet]. 2020;25(6):993–1006. https://pubmed.ncbi.nlm.nih.gov/31745839/
10. Costa LL, Islam MS, Anowar MN, Latif MA. Quality of life for chronic heart failure patients. Open J Nurs [Internet]. 2020 [cited 2023 Oct 25];10(09):831–57. https://academic.oup.com/cardiovascres/article/118/17/3272/6527627
11. Johansson I, Joseph P, Balasubramanian K, McMurray JJV, Lund LH, Ezekowitz JA, et al. Health-related quality of life and mortality in heart failure: The Global Congestive Heart Failure study of 23 000 patients from 40 countries. Circulation [Internet]. 2021;143(22):2129–42. https://pubmed.ncbi.nlm.nih.gov/33906372/
12. Audi G, Korologou A, Koutelekos I, Vasilopoulos G, Karakostas K, Makrygianaki K, et al. Factors affecting health related quality of life in hospitalized patients with heart failure. Cardiol Res Pract [Internet]. 2017 [cited 2023 Oct 25]; 2017:1–12. http://dx.doi.org/10.1186/s12955-023-02142-w
13. Guyatt GH. Measurement of health-related quality of life in heart failure. J Am Coll Cardiol [Internet]. 1993;22(4): A185–91. https://www.sciencedirect.com/science/article/pii/073510979390488M
14. Ewnetu Tarekegn G, Derseh Gezie L, Yemanu Birhan T, Ewnetu F. Health-related quality of life among heart failure patients attending an outpatient clinic in the university of Gondar comprehensive specialized hospital northwest, Ethiopia, 2020: Using structural equation modeling approach. Patient Relat Outcome Meas [Internet]. 2021 [cited 2023 Oct 25]; 12:279–90. http://dx.doi.org/10.2147/prom.s322421
15. Kim K-A, Park J-S, Seo K-W, Choi E-Y, Ahn J-A. Factors affecting the quality of life of family caregivers of patients with heart failure: A cross-sectional study. Medicine (Baltimore) [Internet]. 2022 [cited 2023 Oct 25];101(35): e30042. https://journals.lww.com/md-journal/Fulltext/2022/09020/
16. Iacoviello M, Palazzuoli A, Gronda E. Recent advances in pharmacological treatment of heart failure. Eur J Clin Invest [Internet]. 2021 [cited 2023 Oct 25];51(11). https://pubmed.ncbi.nlm.nih.gov/34043809/
17. Garay A, Tapia J, Anguita M, Formiga F, Almenar L, Crespo-Leiro M, et al. Gender differences in health-related quality of life in patients with systolic heart failure: Results of the VIDA multicenter

study. J Clin Med [Internet]. 2020 [cited 2023 Oct 28];9(9):2825. https://www.mdpi.com/2077-0383/9/9/2825

18. Masoudi FA, Rumsfeld JS, Havranek EP, House JA, Peterson ED, Krumholz HM, et al. Age, functional capacity, and health-related quality of life in patients with heart failure. J Card Fail [Internet]. 2004;10(5):368–73. http://dx.doi.org/10.1161/cir.0b013e31829e8776
19. Johansson I, Joseph P, Balasubramanian K, McMurray JJV, Lund LH, Ezekowitz JA, et al. Health-related quality of life and mortality in heart failure: The Global Congestive Heart Failure study of 23 000 patients from 40 countries. Circulation [Internet]. 2021;143(22):2129–42. https://pubmed.ncbi.nlm.nih.gov/33906372/
20. Heo S, Lennie TA, Okoli C, Moser DK. Quality of life in patients with heart failure: Ask the patients. Heart Lung [Internet]. 2009;38(2):100–8. http://dx.doi.org/10.1016/j.hrtlng.2008.04.002
21. Garay A, Tapia J, Anguita M, Formiga F, Almenar L, Crespo-Leiro M, et al. Gender differences in health-related quality of life in patients with systolic heart failure: Results of the VIDA multicenter study. J Clin Med [Internet]. 2020 [cited 2023 Oct 28];9(9):2825. https://www.mdpi.com/2077-0383/9/9/2825
22. Arenas Ochoa LF, González-Jaramillo V, Saldarriaga C, Lemos M, Krikorian A, Vargas JJ, et al. Prevalence and characteristics of patients with heart failure needing palliative care. BMC Palliat Care [Internet]. 2021;20(1). http://dx.doi.org/10.1186/s12904-021-00850-y
23. Chen X, Xin Y, Hu W, Zhao Y, Zhang Z, Zhou Y. Quality of life and outcomes in heart failure patients with ejection fractions in different ranges. PLoS One [Internet]. 2019 [cited 2023 Oct 28];14(6): e0218983. http://dx.doi.org/10.47487/apcyccv.v4i4.328