



Health Related Quality of Life in Systolic Heart Failure Patients at Tertiary Care Unit Cardiology OPD Hayatabad Medical Complex Peshawar Pakistan

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Abstract

Background: Heart failure is a leading cardiac morbidity prevalent across the globe. Its incidence is rising in direct proportion to increasing longevity all over the world. Demographic variables are important predictors of quality of life, morbidity, rehospitalization, and mortality due to systolic heart failure. The objective of our study was to assess the association of demographic variables with quality of life of systolic heart failure in patients presenting at Cardiology Out Patient Department, Hayatabad Medical Complex, Peshawar. Our study aims to inform policy making as it highlights some important demographics factors associated with quality of life.

Methods: A cross sectional method was employed in the study to examine systolic heart failure and its prevalence across various demographic variables such as age, gender, marital status, activity, number of children, education, employment status, and BMI at cardiology OPD of a medical teaching institution in Peshawar. Consecutive sampling was used and data were collected through a structured questionnaire from 368 Systolic Heart Failure patients. Data were analyzed using SPSS version 22.

Results: We had 368 participants, a majority of whom (n=290; 78.8%), were in NYHA class III. The rest (n=78; 21.2%) were in class IV. Minnesota Living with Heart Failure Questionnaire (MLHFQ) was used to categorize quality of life into 'Good', 'Moderate' and 'Poor'. Most participants were in the 'poor' category with MLHFQ scores >45 (n=193; 52.4%). Those who had scores between 25 -45 were categorized as 'moderate' (n=116; 31.5%), and participants who scored < 24 were categorized as having a 'good' quality of life (n=59; 16%). Reliability of tools was checked by Cronbach alpha which was 0.86

Conclusion: It was concluded that demographic variables have a significant effect on the overall morbidity of heart failure patients and heart failure related quality of life.

Keywords: Heart failure, systolic heart failure, quality of life; Minnesota living with heart failure questionnaire; coronary artery disease; New York heart association

Introduction

Hear failure (HF) is a condition that can affect the quality of life (QOL) of patients. (1) Not only does it affect the health and wellbeing of the —subject but also adversely impacts families and communities, also increasing disability, burden of disease, hospital admissions, and expenditure, causing a considerable strain on a society with scarce resources. (2,3) There is an increasing trend in the incidence and prevalence of HF (1,4) with increasing life span (21). Poor health related quality of life due to HF is one of the factors for high rates of recurrent prolonged hospitalization and markedly increased burden on hospital services due to this condition. (7-10) CAD is the major risk factor for Systolic heart failure in industrialized world. (12-16) Other physiological conditions include nonischemic cardiomyopathy- probably idiopathic, valvular heart disease, myocarditis, alcohol and drug abuse. (17,18) Based on Framingham heart study 30-day mortality of heart failure is 10%, one-year mortality is 20-30%, and 5-year mortality is 45-60% (25) The incidence of HF in people of ≥ 65 years is 6-10% in the world according to AHA. About 0.287 million people die from HF each year. (1,26,27) In European countries the incidence per year is 1 million: (11) Whereas in USA, in 2017, it was shown to be 5.1 million. (11-28) The situation in Asian countries is much worse: it ranges from 1.3 % to 6.7% (29). In china the prevalence is 1.3% (30,31). In Malaysia the highest trend 6.7% (31), Singapore 4.5% (32), and in Turkey 2.9 % (33). According to Indian statistics its 0.12% to 1.44 % in India (34). While last report from Pakistan in 2007, estimates it at about 2.8 million people affected with HF (35) Demographic characteristics have an impact in the Health-Related Quality of Life (HRQOL) in HF patients. To reduce the burden and improve HF care, we need to identify and address these demographic factors. Lastly, we need a structured program for rehabilitation as already exists in European countries (47) which will also decrease burden on hospitals. (48)

Methodology

A descriptive, cross-sectional study was conducted from 05 Jan 2019 to 25 November 2019, at Hayatabad Medical Complex's (HMC) Cardiology OPD in Peshawar, Pakistan. A total of 368 patients were enrolled in the study using non probability consecutive sample technique. The sample was

calculated through a statistical formula with 0.06 critical value. Inclusion criteria were defined to include: 1) all adult patients > 18 years, 2) patients presenting to Outpatient Department (OPD) with systolic heart failure who are treated in HMC cardiology department, 3) Ejection fraction < 35 % , 4) NYHA (New York Heart Association) III & IV , 5) Under 6 months of follow up in OPD, 6) Ability to communicate with the interviewer, and 7) willing to participate in the study whereas emergency patients, NYHA I & II, those with diastolic heart failure, and those who had a cognitive disorder were excluded from the study.

This Minnesota Living with Heart Failure Questionnaire (MLHFQ) was used for measurement of quality of life. MLHFQ has 21 questions comprised of the socioeconomic, physical and psychological aspects that could be affected. The self-assessment questionnaire is filled on a Likert scale of 0-5. Zero indicates good and 5 indicates poorest quality of life. (2)

The study was approved by the ethical committee of Khyber Medical University Peshawar KPK Pakistan. Informed consent was taken from the patients. All the data from the patient were collected on a preformed Proforma.

The data were collected via a printed questionnaire. The data so collected were then analyzed on SPSS version 22.0. Chi square test was used to estimate the significance of impact on Quality of Life of participants of living with HF. Demographic factors assessed in the study include 1) Age, 2) Gender, 3) Marital Status, 4) Care giver 5) Restricted daily activity, 7) Employment status, 8) Urban/Rural residence 9) Obesity. P value of 0.05 was considered statistically significant in our study.

Results

The age ranges from 18 years to 79.9 years, with a mean of (58.10 \pm 12.93). Patients in poor category were n=104 (67.1%) with p value 0.000. Female in poor category were n=96(60.8%) with a p value 0.03, where the male participants were n=97 (46.2%) with p value 0.04. Obesity was also a major risk factor in the study having poor category n=198(52.4%). Majority of patients were jobless about n=148 (65.2%). The education status of patients is tabulated in table 2. In our study uneducated were 62.3%, participants educated up to primary level were 46.4% up to secondary level 42.9% participants and above

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secondary level were 19.4% participants. A large number of people who have >5 children were dominant in our study. The multiparty which is by itself a high-risk factor in female gender is explained in detail in table 2. Mostly patients were independent but still there was a large group of patients who were still dependent on their relatives. We categorized them on MLHFQ score and presented detailed in table 2. In our study we explained the activity of the patients on MLHFQ score and divided them into more than ordinary activity, ordinary activity, less than ordinary activity and restriction to bed. Those who are put in more than ordinary activity were labeled as uphill walk. Patients with ordinary activity were taken as those who can run of to some distance and those who were able to go upstairs with or without support for a flight or less were labeled as less than ordinary activity. Patients who were unable to this activity were labeled as an active. Mostly our patients, about 61.7%, were having disability for more than 3 Years. This figure not only exacerbating their morbidity but also was responsible for increasing burden on society in figure of finance and resources. The number of patients with short duration of disease and severity of symptoms were very less which is another indicator in our study which point out the situation, if the disease is control at this point it will minimize the burden on society in all its forms and manifestation.

Table 1. Participants Characteristics with Systolic Heart Failure Patients (n=368)

Variable	Good	Moderate	Poor	P -Value
Age				
18-39.99	13 40.6%	10 (31.30)	09 (28.1%)	0.000
40-59.99	34 (20.9%)	63 (38.7%)	66 (40.5%)	0.000
60-79.9	12 (7.7%)	39 (25.2%)	104 (67.1%)	0.000
>80	0 (0.0%)	4 (22.2%)	14 (77.8%)	0.000
Gender				
Male	44 (21.0%)	69 (23.9%)	97 (46.2%)	0.04
Female	15 (9.5%)	47 (29.7%)	96 (60.8%)	0.03
Marital status				
Single	6 (33.3%)	7 (38.9%)	5 (27.8%)	0.014

Married	53 (15.1%)	109 (31.1%)	188 (53.7%)	0.16
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Obese Scale

Normal	42 (31.3%)	54 (40.3%)	38 (28.4%)	0.000
Overweight	14 (12%)	39 (33.3%)	64 (54.7%)	0.000
Obese	59 (16%)	116 (31.5%)	193 (52.4%)	0.000

Employment status

Govt	16 (32%)	19 (38%)	15 (30%)	0.000
Labor	23 (25.3%)	38 (41.8%)	30 (33%)	0.000
Jobless	20 (8.8%)	59 (26.0%)	148 (65.2%)	0.000

Education

Non	19 (9.3%)	58 (28.4%)	127 (62.3%)	0.000
Primary	15 (17.9%)	30 (35.7%)	39 (46.4%)	0.000
Secondary	14 (28.6%)	14 (28.6%)	21 (42.9%)	0.000
Tertiary (above secondary)	11 (35.5%)	14 (45.2%)	06 (19.4%)	0.000

Area of Residency

Urban	22 (24.2%)	29 (31.9%)	40 (44.0%)	0.014
Rural	37 (13.4%)	87 (31.4%)	153 (55.2%)	0.021

No # children

Nil	6 (33.3%)	8 (44.4%)	4 (22.2%)	0.000
1	6 (50.0%)	2 (16.7%)	4 (33.3%)	0.000
2	3 (27.3%)	4 (36.4%)	4 (36.4%)	0.000
3	6 (21.4%)	12 (42.9%)	10 (35.7%)	0.000
4	14 (22.6%)	26 41.9%	22 (35.5%)	0.000
5	14 18.2%	24 31.2%	39 50.6%	0.000
More then 5	10 6.3%	49 25.0%	110 68.8%	0.000

Care giver

Self	54 18.3%	98 33.2%	14 48.5%	0.008
Spouse	1 10%	1 10%	8 80%	0.003
Child	1 2.3%	9 20.9%	33 76.7%	0.012
Other	3 15%	8 40%	9 45%	0.012

Restricted daily activities:

Hills	32 17.6%	67 36.8%	83 45.6%	0.000
Stairs	3 50%	3 50%	0 0%	0.000
Running	2 100%	0 0%	0 0%	0.000
Hills, stairs, running	4 4.5%	19 21.3%	66 74.2%	0.000
Hills, Stairs	0 0%	10 20%	40 80%	0.000
Nil	18 46.2%	17 43.6%	04 10.3%	0.000

Duration of HF

<12 year	9 22.0%	13 31.7%	19 46.3%	0.034
12 months to 23 months	15 19.2%	24 30.8%	39 50.0%	0.034
24 months to 35 months	23 16.2%	50 35.2%	69 48.6%	0.033
More than 35 months	12 11.2%	29 27.1%	66 61.7%	0.003

Discussion

Our Demographic presentation of current study is consistent with the report of American Heart Association's statistical updates of 2011 which present prevalence of heart failure is 56% in male population and 44% in female population.(59) This demographic presentation is similar to previous study conducted in Lahore Pakistan. (60)

Our study had 78.8% participants with NYHA class III and 21.2% NYHA class IV. These ratios are similar to the study conducted in Nairobi, Kenya by Oyoo Go. There were 62% in class III and 31.9% in NYHA class IV in their study. (23) Our sampling technique may be responsible for the difference. 95% of our participants were married and only 4.9% patients were unmarried, whereas in a recent study conducted in Taiwan in May 2018, married participants constituted 55.1% and unmarried participants 44.8%, of the study sample. (2) 55.4% of participants had had any education. Out of this primary education was the commonest at 22.8%, secondary level of education was achieved by 13.3%, and tertiary education by 8.4%. These findings contrast sharply with findings in more advanced Asian countries such as Singapore, where a study found that patients with HF who had only achieved a primary level education were 8.3% of the sample. Secondary education 20.7% and tertiary education was commonest at 54.5%. (6) Literacy places an important

role in a HF patient's quality of life.

Poverty has a direct relationship with the quality of life. (2) Directly related with poverty are the number of members in the household and number of children the patient has. In this study, 43.5% of our participants have more than 5 children, 20.9% have 4, 16.8% have 3, and only 10% have less than 3 children.

Urban participants constituted 24.7% and those from rural areas 75.3% of our study. Residential location is important as it can affect employment, socioeconomic status, awareness of health-related issues, access to medical care and family planning etc. (17)

Employments status of participants in our study was varied with 61.7% unemployed. Government servants' ratio was 13.6% and of Laborers, 24.7%. The same figures were reported from Taiwan: 5.6% were from govt sector, skilled people or self-employment was 20.2%, while those who were unemployed were 74.16%. (2)

Body Weight has a profound effect on heart failure, incidence, prevalence, management and outcome Obesity is a well-known factor in heart disease outcomes in general and on HF outcomes in particular. (2,3) Among our study participants 36.4% had normal weight, 31.8% were overweight, 31.8% were obese. The recent study from India, the incidence of heart failure was 0.3% in male and 0.5% in female participants those who were obese. (34)

Living with heart failure in developing countries is a challenge. The management of systolic heart failure puts a strain on the financial conditions of families. This is evident in the current study and evidenced in the results of a study from west Africa in Jan 2018 (5) In that study the figure was similar: 13.7% in first year and more than 28.9% in five years. Almost the same results were replicated in our study where was 11.1% in first year 21.2% in 1-2 years and 2-4 years it was 38.6%. However, the figure drops to 29.1% above four years. The possible cause of this drop is the mortality in this cohort of patients.

If we observe the activity of the patients, we see that, there is inability to climb uphill in 49.5%, inability to climb stairs and running in 24.2%, difficulty in doing house work in 37.2%, and difficulty in running in 24%. Only 10.7% participants were not restricted from physical activity. The figures reported in a study from Turkey, the figure: are incapability to climb hills in 26.2%, difficulty in running in 17%, and difficulty doing house work in 13.9%. (11) If we look this data closely, there is a difference in the two studies. The

possible reason observed in our study was.

1. Late presentation of patients
2. Poor compliance
3. Poor system of follow-up
4. Poor system of rehabilitation
5. Lack of rehabilitation centers
6. Dedicated staff for heart failure
7. Few centers for cardiac intervention and HF
8. Non Affordability of cardiac assess devices
9. Lack of insurance for treatment

In summary, HF is one of the demanding disabilities in cardiac patients, which not only expose the index patient to crippling disability but also increase the financial burden on society and quality of life of the index patient and society on large.

Conclusion

The current study shows that HF has direct effect on health-related quality of life. In addition to this, other demographic factors have profound effect on QOL. We observed that it is a multifactorial phenomenon which includes age, gender, marital status, and employment, education, ethnicity, and living circumstance. We divide the social status of the patients on the basis of Rural and Urban life styles. Patients from rural area were the mostly affected with SHF. Similarly, lower education status more affected rehabilitation, duration of disease and previous health status and co morbidity has adverse effect on health-related quality of life.

To sum up QOL is a multifactorial condition which is affected not only by severity of disease but by other demographic factors as well.

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