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Original Article

Assessment of self-care in heart failure patients at a cardiac hospice in Peshawar, Pakistan.

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Abstract

Background: The significance of self-care in heart failure is yet to be demonstrated empirically; however, it's commonly believed that effective self-care delays the development of heart failure. This study aimed to assess the level of self-care among patients with heart failure attending a cardiac hospice center in Peshawar, Pakistan.

Methodology: A cross-sectional study design was used to examine self-care maintenance, self-care management, and self-care confidence in heart failure patients at Heart Hospice Center, Hayat Abad Medical Complex. A total of 195 heart failure patients were recruited using convenient sampling method. Data were collected using the Self Care Heart Failure Index (SCHFI) version 6.2.

Results: The mean SCHFI score (comprising 22 items) across n=195 participants was 50 ± 28.9. A very low percentage (31.28%, n=61) scored an accepted level (≥70) of self-care. On the subscales of self-management, self-confidence, and self-maintenance, the mean scores were 50.0 ± 28.8, 46±26.6, and 50.0 ± 28.7, respectively. One hundred eighty symptomatic patients completed the self-care management subscale who was experiencing shortness of breath and ankle swelling.

Conclusion: Heart failure patients attending the Heart Hospice Center in Peshawar, Pakistan, did not portray a satisfactory level of self-care behavior. More effective nursing interventions are needed to manage heart failure patients in this center.

Keywords

Heart Failure, Hospice Center, Self-Care, Self-Care Heart Failure Index.

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Introduction

Heart failure is a serious health issue, placing a significant burden on the healthcare industry[1]. The estimated cost of heart failure across 197 countries for 2012 was $108 billion[2]. It consumes 1.1% to 1.9% of healthcare budgets in developed countries, where 50% to 74% of this expenditure is spent on hospitalization and patient care[3]. Heart failure is a progressive disease that weakens physical function, social activity, and declining energy levels[1]. Frequent hospitalization is required to manage manifestations such as shortness of breath and edema.

In Peshawar, Pakistan, heart failure admissions constituted more than 20% of total inpatient admissions in cardiology units with an average stay of more than three days from 2008 to 2010[4]. In Pakistan in 2012, the overall annual financial cost of heart failure was estimated to be $145 million[5]. The significance of self-care in heart failure is yet to be demonstrated empirically; however, it's commonly believed that effective self-care delays the development of heart failure[6], and the American Heart Association (AHA) included it in their clinical guidelines for heart failure management[7].

Self-care refers to maintaining good health through deliberate healthful interventions, monitoring, and effective management of disease symptoms by oneself[8]. Orem's self-care theory postulates that humans have a natural capability for self-care and a sense of responsibility. Self-care ability is, in essence, a learned behavior acquired in childhood and continued through adulthood and comprises practices carried out to maintain a healthy life[9]. Self-care behaviors specific to heart failure include activities anticipated to maintain self-care (e.g., adherence with exercise and medications), monitoring of associated symptoms (e.g., observation of weight changes), and proper symptom management (e.g., seeking help or adjusting medication dosage)[10]. Unfortunately, these are not easy tasks, and heart failure patients are often not confident in their self-care[11].

A study analyzed data regarding self-care in heart failure patients from developed countries such as the United States, Europe, and Australia and found that more than half of patients were performing a low level of exercise, and less than 50% were regularly monitoring their weight[12]. Literature on the self-care level in heart failure patients is very limited in Pakistan. Only one published study is available from Karachi, highlighting only the prevalence of self-care and finding that more than 63% of patients were non-compliant with self-care[13].

This study aimed to assess self-care levels among heart failure patients registered at a hospice center at a teaching hospital. Study findings in this population may help refine study design in this area and contribute to the wider body of knowledge about nursing care management of patients with heart failure.

Methodology

This study was conducted using a cross-sectional design to identify the self-care level, i.e., the level of self-care confidence, self-care maintenance, and self-care management exhibited by heart failure patients in the Heart Hospice Center at Medical Teaching Institution (MTI), Peshawar, Pakistan. Inclusion criteria for this study were: a) Patients diagnosed with congestive heart failure (CHF; New York Heart Association functional classification I, II, III, or IV) with an ejection fraction of 40% or below spanning the previous three months. Ejection fraction was determined from the Echocardiogram report, b) aged between 18 and 75 years able to read and understand the Urdu language, and c) who were willing and able to participate in the study. Patients with no cognitive impairment (who are not oriented) upon asking patient relatives and patients with severe illness who were unable to participate were excluded from the study. A total of 210 patients were approached, and of these, n=195 agreed to participate and completed the study questionnaires.

The self-care management subscale covered questions related to control of symptoms and, as such, asymptomatic (who did not experience shortness of breath). Participants were not asked to complete this section of the study instrument.

N=180 of the enrolled 195 participants were symptomatic and thus completed the self-care management subscale.

The instrument used was the heart failure self-care index (SCHFI) version 6.2[14]. As shown in Table 2, the SCHFI comprises 22 items divided into three subscales: the number of items on the self-care maintenance subscale is 10, on the self-care management subscale, items are 6, and on the self-care confidence subscale, the number of items is 6. Each item is scored using the range from 1 to 4. For analysis, total SCHFI scores, as well as those for each subscale, are standardized to a scale ranging from zero to 100, in which scores of above 70 represent higher levels of self-care, and a score of ≥ 70 on the overall scale and all subscales represents an acceptable level of self-care. Participants' general information, including their age, marital status, comorbidities, literacy level, monthly income, and level of social support received, were noted.

The advanced studies and research board and the ethical review committee of the host institution approved the current study. Written approval was obtained from the head of the Heart Hospice Center. Participants were given a booklet explaining the study purpose, benefits, and risks to study participants and outlining their right to refuse or withdraw participation before signing a written consent form.

Data were analyzed using SPSS version 20.0. The data were analyzed for both descriptive and inferential statistics. The independent samples t-test was used to test for significant associations between categorical variables with two categories and the continuous data, while a one-way ANOVA was used to test for differences in mean scores with more than two categories, $p < 0.05$ was considered significant.

Results

One hundred ninety-five patients with CHF participated in the study, comprising n=108 (55.4%) male and n=87 (44.6%) female patients. Most study participants (n=178; 91%) were married and were predominantly (72%) literate (Table 1).

Table 1: Demographic characteristics of study participants (N=195).

Variable		N(%)
Gender	Male	108(55.4)
	Female	87(44.6)
Age Group	18-40 years	21 (10.8)
	41-60 years	132(67.7)
	63-75 years	42(21.5)
Marital Status	Single	12(6.1)
	Married	178(91.3)
	Widow	5(2.6)
Literacy Level	Illiterate	141(72.3)
	Primary	29(14.9)
	Secondary	18(9.2)
	Higher Secondary	7(3.6)
Socioeconomic Status (SES)	Low SES	72(36.9)
	Middle SES	110(56.4)
	High SES	13(6.7)
Comorbidity	DM	19(9.7)
	CVA	4(2.1)
	HTN	62(31.8)
	DM+HTN	63(32.3)

Social Support	Family	169(86.7)
	Friends	2(1.0)
	Organization	16(8.2)
	Government	8(4.1)
NYHA Classification	Class I	15(7.7)
	Class II	107(54.9)
	Class III	61(31.3)
	Class IV	12(6.2)

DM-Diabetes Mellitus; HTN-Hypertension; CVA-Cerebrovascular Accident

A very low percentage of participants (25.5%) scored ≥70, the threshold considered to represent an acceptable level on the self-care maintenance subscale. A satisfactory level of self-care confidence (score ≥70) was attained by only 32.4% of study participants. The self-care management scale was completed by the 180 participants who were experiencing symptoms such as shortness of breath and ankle swelling. This group had a mean score of 46.15 ± 26.6 on the self-care management subscale, and only 21% of participants had an adequate level of self-care management (score ≥70).

Table 2: Mean scores by heart failure patients on the SCHFI scale and subscales.

Scale	N	Score (Mean±SD)	Scores ≥70 n(%)	Cronbach's Alpha
Self-care maintenance subscale	195	50.0±28.7	50(25.5)	0.753
Self-care management subscale	180	46.15±26.6	42(21.0)	0.781
Self-care confidence subscale	195	50.0±28.8	62(32.4)	0.827
Total score	195	50.0±28.9	61(31.28)	0.845

As shown in table 5, the association between gender and self-care-confidence score was found to be significant (p=0.021), where self-care score was lesser in females. A significant association was found between age and self-care-maintenance scores, whereby older patients' scores were lower on the self-care maintenance subscale than younger participants (p=0.016). However, this association was not found with self-care management (p=0.111) or self-care confidence (p=0.384). There were no statistically significant associations found between SCHFI scores and either comorbidity or marital status (p>0.05). Participant literacy was also found to be associated with SCHFI scores with significance levels of p=0.001, p=0.040, and p=0.001 for the self-care maintenance, self-care management, and self-care confidence subscales, respectively. A statistically significant association was found between social support and self-care maintenance score (p=0.001), self-care confidence score (p=0.002), and self-care management score (p=0.002). NHYA functional classification was also found to be significantly associated with self-care maintenance score (p=0.001), self-care management score (p=0.001), and self-care confidence score (p=0.001). Self-care was poorer in patients with NYHA; functional classes I and II scored more than classes III and IV.

Table 3: Differences between self-care maintenance scores based on participants' characteristics.

Self-care maintenance Subscale				
Variables		**Mean**	**SD**	**p-value**
Gender	Male	51.28	30.0	0.489
	Female	48.41	27.2	
Age	18-40	59.73	27.2	0.016*
	41-60 years	53.35	28.9	
	61-75 years	37.34	25.0	
Literacy Level	Illiterate	45.9	26.9	0.000*

	Primary	50.2	27.4	
	Secondary	67.2	34	
	Higher Secondary	86.3	14.1	
Socioeconomic Status (SES)	Low SES	41.8	27.6	0.000*
	Middle SES	52.5	28.0	
	High SES	73.6	25.7	
Social Support	Family	46.1	27.7	0.000*
	Friends	68.7	0.0	
	Organization	74.3	25.3	
	Government	78.1	19.0	
NYHA Classification	Class I	61.2	33.8	0.000*
	Class II	59.4	26.1	
	Class III	36.4	24.4	
	Class IV	20.9	17.6	
Marital Status	Single	60.4	30.9	0.089
	Married	49.9	28.5	
	Widow	26.8	22.2	
Comorbidity	DM	47.8	32.4	0.931
	CVA	40.2	38.6	
	HTN	49.6	28.2	
	DM+HTN	49.3	27.3	

DM-Diabetes Mellitus; HTN-Hypertension; CVA-Cerebrovascular Accident
*p<0.05 is considered statistically significant.

Table 4: Differences between self-care management scores based on participants' characteristics.

Self-care Management Subscale				
Variables		**Mean**	**SD**	**p-value**
Gender	Male	48.14	27.8	0.489
	Female	43.78	25.1	
Age	18-40 years	42.74	22.8	0.111
	41-60 years	49.54	25.6	
	61-75 years	37.82	28.5	
Literacy Level	Illiterate	43.3	26.1	0.040*
	Primary	50.8	21.5	
	Secondary	62.3	33.1	
	Higher Secondary	57.5	30.6	
Socioeconomic Status (SES)	Low SES	40.4	24.3	0.073
	Middle SES	49.3	27.0	
	High SES	52.4	32.4	
Social Support	Family	43.5	25.5	0.002*
	Friends	46.9	0.0	
	Organization	71.3	24.1	
	Government	58.1	34.1	
NYHA Classification	Class I	-	-	0.000*
	Class II	63.26	18.7	
	Class III	23.7	12.7	
	Class IV	7.69	6.1	

Marital Status	Single	58.4	27.5	0.227
	Married	45.8	26.3	
	Widow	34	31.1	
Comorbidity	DM	45.5	25.9	0.141
	CVA	39.7	35.1	
	HTN	40.4	26.0	
	DM+HTN	51.4	24.9	

DM-Diabetes Mellitus; HTN-Hypertension; CVA-Cerebrovascular Accident
*p<0.05 is considered statistically significant.

Table 5: Differences between self-care management scores based on participants' characteristics.

Self-care Confidence Subscale				
Variables		**Mean**	**SD**	**p-value**
Gender	Male	54.27	28.6	0.021*
	Female	44.7	28.3	
Age	18-40 years	54.30	17.9	0.384
	41-60 years	50.56	29.5	
	61-75 years	45.13	28.7	
Literacy Level	Illiterate	45.8	28.1	0.001*
	Primary	52.8	27.1	
	Secondary	68.2	30.0	
	Higher Secondary	74.7	15.4	
Socioeconomic Status (SES)	Low SES	39.7	26.7	0.000*
	Middle SES	55.1	28.5	
	High SES	63.5	26.8	
Social Support	Family	46.9	27.9	0.002*
	Friends	53.3	0.0	
	Organization	70.9	30.0	
	Government	70.9	22.9	
NYHA Classification	Class I	63.1	29.8	0.000*
	Class II	62.2	25.7	
	Class III	31.4	19.1	
	Class IV	18.7	21.6	
Marital Status	Single	57.6	22	0.172
	Married	50	29.1	
	Widow	28.92	23.8	
Comorbidity	DM	51	27.0	0.686
	CVA	31.9	44.2	
	HTN	46.5	28.2	
	DM+HTN	47.9	30.0	

DM-Diabetes Mellitus; HTN-Hypertension; CVA-Cerebrovascular Accident
*p<0.05 is considered statistically significant.

Discussion

A poor level of self-care was found in this study among patients with congestive heart failure. A very low percentage of participants' scores indicated an adequate level of self-care, similarly to what was reported in previous studies[14,15]. Low levels of literacy, old age, comorbidities, and a lack of social support may be associated with poorer levels of self-care. However, younger male

participants showed a better level of self-care, and these findings were inconsistent with some previous studies[16,17]. In this study, male patients scored higher than female patients and were found to be consistent with the results of a study conducted by Chriss et al., where male participants had higher levels of self-care. The authors suggested that the finding was attributable to the traditional female socialization traits whereby women tend to care for others more than themselves[18]. Furthermore, the present study concluded that patients with lower severity of heart failure showed better levels of self-care. This may be due to the severity of symptoms associated with NYHA functional classes III and VI decreasing participants' activity levels and hindering self-care. These findings agreed with a study in which patients in NYHA functional classes I and II scored better than those in classes III and IV[19]. Therefore, patients with NYHA functional classes III and IV should pay better care and attention, as poor self-care is common in this group[20].

Self-care management was measured in symptomatic heart failure patients who had suffered from shortness of breath in the past month to evaluate the effectiveness with which they treated their symptoms. The most frequent self-care management behaviors reported were calling the doctor/ nurse for guidance, taking an extra dose of water pills (diuretics), and reducing their dietary salt and fluid intakes, correspondingly. A possible reason for few patients taking these later measures in our study population may be their unawareness of the importance of salt and fluid restriction in managing HF symptoms. These findings differ from previous studies that found salt restriction to be the most frequent self-care behavior after seeking a doctor/nurse appointment for symptomatic control in patients with heart failure[20,21].

Self-care confidence behavior indicates patient understanding and control over their diagnosis and treatment plan. The most common behavior in connection with self-care confidence was adhering to their prescribed treatment, evaluating the importance of their symptoms, recognizing changes to their health, and having the ability to do something to relieve their symptoms. Our findings are congruent with the results of previous research, where complying with prescribed treatment was the behavior with the strongest association with self-care confidence, followed by evaluating the importance of their symptoms[22]. Demographic factors such as gender, age, comorbidity, and literacy are all associated with self-care among patients with heart failure. Nurses and other healthcare professionals should be aware of these factors to assess and strengthen individuals' self-care behaviors and formulate a comprehensive care plan for enhancing self-care behavior in heart failure patients.

This study has some methodological limitations, such as a non-probability sample, lack of control on confounding factors, unequal groups based on demographics, one-point data collection, and a single site for data collection. Further investigation of the problem is recommended while addressing these limitations and using more rigorous methods to get a clearer understanding of factors responsible for the poor level of self-care in heart failure and address them more comprehensively.

Conclusion

Although the role of self-care is established in managing heart failure patients, it is affected by many factors. In older and female patients' a poor level of self-care was found, and in patients with low levels of education. Therefore, effective nursing interventions, including education on self-care, are needed to improve the management of heart failure patients, particularly those with low literacy, female patients, and older patients.

Conflicts of Interest

The authors have declared that no competing interests exist.

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