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Correlation Between Acceptance of Illness and Comfort Level in Patients With Heart Failure: A Descriptive Study

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Abstract

Background: Acceptance of illness is crucial in chronic diseases such as heart failure (HF), which persists throughout a patient's lifetime, significantly affecting adaptation to treatment and lifestyle modifications. While the relationship between the acceptance of illness and the quality of life in HF patients is well-documented, its correlation with comfort levels remains unexplored.

Aim: This study aimed to explore the correlation between acceptance of illness and comfort levels among HF patients.

Methods: This descriptive study included 106 HF patients from the cardiology service of a university hospital. The study data was collected between November 2019 and February 2020 through face-to-face interviews using a personal information form, the Acceptance of Illness Scale, and the General Comfort Questionnaire. In the analysis of descriptive statistics, various statistical tests were employed, including Student's t-test, One-Way Analysis of Variance (ANOVA), Welch's test for assessing group variances, Bonferroni test, Games-Howell test, and Pearson's correlation coefficient for analyzing pairwise comparisons.

Results: The study found the average age of the patients to be 67.9 ± 11.6 years. Among these patients, 55.7% were male, the majority (68.9%) were married, nearly half (44.3%) had completed primary education, and a significant majority (73.6%) were not employed. The mean scores for the Acceptance of Illness Scale and the General Comfort Questionnaire were 18.8 ± 7.75 and 2.6 ± 0.40, respectively. Patients who were non-literate, those belonging to low-income and high-income groups, and those who had been diagnosed with HF for four years or longer, exhibited lower mean scores on the Acceptance of Illness Scale compared to other groups ($P<0.05$). A moderate positive correlation was observed between the total scores of the Acceptance of Illness Scale and the General Comfort Questionnaire ($r=0.517$, $P<0.001$).

Conclusion: The study concluded that an increase in the level of illness acceptance among HF patients was associated with an increase in their comfort levels. Consequently, it is recommended that the acceptance of disease in HF patients and their needs concerning environmental, physical, sociocultural, and psychospiritual comfort be regularly assessed in hospital settings. This assessment should inform the planning and implementation of tailored nursing interventions, taking into account the factors that influence these needs.

Keywords: Acceptance of illness, comfort, heart failure

Introduction

Heart failure (HF) represents a significant public health issue due to its increasing prevalence, high mortality rates, and substantial economic burden on healthcare systems. It is estimated that over 37.7 million individuals are diagnosed with HF globally.[1,2] According to 2022 data from the American Heart Association, the incidence of HF is expected to rise by approximately 46% by 2030, predicting that over 8 million Americans aged 18 and older will be living with HF by that year.[3] HF is also a pressing health concern in Türkiye, as it is in other countries, with nearly three million reported cases.[4]

Managing HF is a challenging and prolonged journey, as the condition requires complex and intensive treatment regimens and often leads to symptoms that severely impact daily activities.[5] The most important factor in managing and coping with disease is the patient's acceptance of their illness. This acceptance signifies readiness to confront

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disease-related challenges, facilitating disease control through adjustments in self-care practices and lifestyle.[6-8] Acceptance of illness reflects the patient's awareness of their condition and represents a form of concord between the patient and their illness.[9] As patients develop greater self-esteem and independence alongside higher levels of illness acceptance, negative emotions and situations associated with the disease diminish. Consequently, disease-related issues become more manageable, and the implementation of lifestyle changes and treatments more effective.[7,8,10] Conversely, those who do not accept their disease often experience a decline in quality of life, social isolation, difficulties in daily activities, and negative attitudes towards their condition.[11,12]

Symptoms such as respiratory distress, weakness, tiredness, peripheral edema, insomnia, depression, and anxiety are commonly seen in patients with HF. These symptoms interfere with various aspects of life, leading to functional impairments in daily activities.[13] The presence of symptoms and the adverse effects of treatment can detrimentally impact the mental, social, and economic well-being of patients, thus diminishing their quality of life.[14] This reduction in quality of life leads to discomfort in the lives of patients. Comfort, a subjective and holistic concept, is defined as a state of ease that facilitates daily living and is integral to the art of caregiving. Nursing care prioritizes the provision and maintenance of the comfort that patients require.[15] Patients whose comfort needs are met tend to feel more relaxed, calm, and secure. Therefore, nursing interventions should be strategically planned and executed in alignment with the comfort needs of patients.[16]

Nurses play a crucial role in supporting patients through their adaptation to illness and lifestyle modifications. They also need to plan and execute nursing interventions aimed at enhancing the physical, psychospiritual, sociocultural, and environmental comfort of patients, taking into account their comfort levels.[17,18] Currently, the literature lacks recent studies exploring the comfort level in patients with HF and examining the relationship between illness acceptance and comfort level. Understanding the connection between illness acceptance and comfort level is vital for both patients and healthcare professionals. It aids in the development of new treatments and care practices. Furthermore, by identifying the factors influencing disease acceptance and acceptance levels, nurses can provide targeted information, education, and counseling to HF patients based on the findings from this study. Consequently, this can improve patients' autonomy, well-being, quality of life, and comfort levels. The aim of this study was to explore the correlation between acceptance of illness and comfort level among HF patients.

Materials and Methods

Study Design and Participants

This descriptive study involved patients diagnosed with HF at the cardiology department of a university hospital between November 1, 2019, and February 28, 2020. A total of 353 HF patients were admitted the department of cardiology November 1, 2018, and February 28, 2019. Based on these parameters, the minimum sample size needed to achieve an effect size of 0.10, with a Type I error rate of 0.05 and a power of 0.80, was calculated to be 99.[19] The inclusion criteria were as follows: having been diagnosed with HF for at least six months; being classified as New York Heart Association (NYHA) class II or III; possessing the physical and cognitive health status necessary to complete the forms used in the study; not having any communication problems; and volunteering to participate in the study. The exclusion criteria included experiencing symptoms such as chest pain, shortness of breath, and palpitation. Additionally, patients who had undergone coronary artery bypass graft surgery, percutaneous transluminal coronary angioplasty, or valve replacement within the last six months were not included in the study. Out of the patients reached within the specified time period, 119 patients were initially considered. However, those who did not agree to participate and submitted incompletely filled forms were excluded, resulting in a final participation of 106 patients.

Data Collection Tools

The data for the study were collected using a "Personal Information Form" that included introductory data on the HF patients hospitalized in the cardiology service, the Acceptance of Illness Scale (AIS) that measures the patients' level of acceptance of their disease, and the General Comfort Questionnaire (GCQ) that specifies the patients' level of comfort.

The Personal Information Form

This form was developed following a literature review to investigate the impact of illness acceptance on comfort levels in HF patients.[1,12,20,21] It includes a total of 15 questions pertaining to specific socio-demographic characteristics (such as age, gender, marital status), clinical characteristics (such as additional chronic diseases, duration of diagnosis, frequency of rehospitalizations), and health behaviors (including smoking and alcohol consumption) that may influence HF patients' acceptance of illness and comfort levels.

The Acceptance of Illness Scale

The Acceptance of Illness Scale is a Likert-type, unidimensional scale consisting of eight statements, developed by Felton and Revenson in 1984.[22] It assesses agreement with these statements on a 5-point scale, total scores ranging from 8 to 40. A lower total score indicates lower acceptance of illness, while a higher score indicates greater acceptance. The scale's Cronbach's alpha coefficient is 0.83. The Turkish version's validity and reliability were assessed by Besen and Esen[9] in 2009, with a Cronbach's alpha coefficient of 0.79. In our study the scale's Cronbach's alpha coefficient was found to be 0.84.

The General Comfort Questionnaire

Developed by Kolcaba in 1992, the General Comfort Questionnaire is utilized to identify comfort needs, evaluate the effectiveness of nursing interventions in providing comfort, and assess the anticipated increase in comfort.[23] This four-point Likert-type scale consists of 48 items. Comfort is evaluated both in terms of level and aspect within the scale. At the level, comfort is measured through relief (17 items), ease (16 items), and transcendence (15 items). Regarding aspect, it addresses physical (12 items), environmental (13 items), psychospiritual (13 items), and sociocultural (10 items) aspects. The scale includes both negative and positive items, with negative items being reverse-coded and summed with the positive items. The highest and lowest total possible scores obtainable from the scale are 192 and 48, respectively. The total score is divided by the number of scale items to determine the mean value, which is then presented in a distribution of 1 to 4. A score of one indicates a lower comfort status, while a score of four signifies a higher comfort status. The validity and reliability of the Turkish version of the scale were evaluated by Kuğuoğlu[24] in 2004, resulting in a Cronbach's alpha coefficient of 0.85. In the study, the scale's Cronbach's alpha coefficient was found to be 0.89.

Data Collection

Data collection was conducted through face-to-face interviews in a comfortable room setting. For illiterate patients, the data were filled out by the researcher. The completion of the data forms took approximately 20-30 minutes, with an average time of 25 minutes.

Statistical Analysis

Normality tests for repeated measures were conducted using the Shapiro-Wilk test. The Student's t-test, One-Way Analysis of Variance (ANOVA), and Welch's test were utilized for group variances, while Levene's test was used to assess the homogeneity of variances. The Bonferroni correction was applied for pairwise comparisons in cases of homogeneous variances, and the Games-Howell test was used for non-homogeneous variances. Descriptive statistics were presented as mean and standard deviation values. The correlation between scale scores was analyzed using Pearson's correlation coefficient. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

Ethics approval for the study was granted by the Clinical Research Ethics Committee of Mersin University (Approval Number: 2019/425, Date: October 2, 2019). Institutional permission was obtained from the university hospital. In accordance with the Declaration of Helsinki, informed written and verbal consent was obtained from participating patients after they were provided with detailed information about the study's objectives, the data collection process, and the estimated duration.

Results

In the study, the mean age of the patients was 67.9 ± 11.6 years. Among these patients, 55.7% were male, the majority (68.9%) were married, nearly half (44.3%) had completed primary school, and a significant majority (73.6%) were not employed. Over half of the patients (63.2%) had hypertension, nearly half (49.1%) had diabetes mellitus, and 32.1% had coronary artery disease (Table 1).

The mean score for the AIS among the patients was 18.8 ± 7.75, and the GCQ mean score was 2.6 ± 0.40. Based on the total mean scores of the scales, the level of illness acceptance was found to be lower, whereas the comfort level was medium. Regarding the general comfort level, patients scored highest in the relief subscale (2.8 ± 0.51) and lowest in the ease subscale (2.6 ± 0.42). In terms of general comfort aspects, the highest scores were observed in the psychospiritual subscale (2.8 ± 0.54), with the lowest scores in the physical subscale (2.3 ± 0.51) (Table 2).

A statistically significant difference was found between the groups in terms of the AIS total mean scores, education level, income level, and duration of HF diagnosis among the study participants (P=0.004; P=0.02; P=0.014, respectively) (Table 3). Further analysis revealed that the AIS mean scores of patients who were non-literate, belonged to low-income and high-income brackets, and those whose duration of HF diagnosis ranged between 4-6 years, and 7 years and above, were lower than those of other groups (Table 3). No statistically significant difference was observed in terms of GCQ and AIS mean scores and other demographic characteristics (P>0.05) (Table 3).

Table 1. Introductory Information of the Patients (n=106)

Characteristics	n	%
Gender		
Female	47	44.3
Male	59	55.7
Marital Status		
Married	73	68.9
Single	33	31.1
Level of Education		
Non-literate	19	17.9
Primary education	47	44.3
High school	26	24.5
University and above	14	13.3
Employment Status		
Working	28	26.4
Not working	78	73.6
Level of Income		
Expense more than income	37	34.9
Income equal to expense	56	52.8
Income more than expense	13	12.3
Home Residents		
Alone	23	21.7
Partner and child	83	78.3
Additional Chronic Diseases		
Yes	95	89.6
No	11	10.4
Additional Chronic Diseases[a]		
Hypertension	67	63.2
Diabetes mellitus	52	49.1
Coronary artery disease	34	32.1
Renal failure	17	16
Chronic obstructive pulmonary disease	13	12.3
Valvular heart disease	9	8.5
Other[b]	10	9.4
Smoking Habit		
Yes	26	24.5
Alcohol Use		
Yes	13	12.3
Continuous Variables	Mean ± SD	
Age	67.9 ± 11.6	

(Continued)

Table 1. Introductory Information of the Patients (n=106) (Continued)

Continuous Variables	Mean ± SD
Body mass index	27.8 ± 6.04
Duration of diagnosis	5.4 ± 4.8
Number of frequent rehospitalizations	4.4 ± 3.26
EF level (%)	38.1 ± 9.48

NYHA, New York Heart Association; EF, ejection fraction; SD, standard deviation.
Note: [a]More than one option was marked; [b]Other (Atrial Fibrillation, Cancer, Alzheimer, Asthma).

The study found a positive correlation of medium magnitude between the level of illness acceptance and the comfort level of HF patients ($P<0.05$). As the illness acceptance level of the HF patients increased, so did their comfort level (Table 4).

Discussion

Recent literature lacks studies examining comfort levels in HF patients and exploring the connection between illness acceptance and comfort levels. Consequently, this discussion includes studies conducted on different sample groups for comparison. The HF patients in our study displayed a low level of illness acceptance. Literature reviews indicate that acceptance levels vary among HF and other chronic diseases. Our findings is somewhat lower than but close to those of Obieglo et al,[20] who investigated illness acceptance levels in people with HF, and are lower compared to studies involving patients with atrial fibrillation,[25] hypertension,[10] chronic obstructive pulmonary disease (COPD),[26] and types 1, 2, and 3 diabetes.[27] For instance, Jankowska-Polańska et al.[26] reported an AIS mean score of 20.6 ± 7.62 in COPD patients, while Starczewska et al.[27] found an AIS mean score of 31.8 ± 7.91 in patients with type 2 diabetes. Furthermore, Jankowska-Polańska et al.[25] observed that 59.6% of patients with

Table 2. Distribution of the Acceptance of Illness Scale Mean Scores and Percentages and the General Comfort Questionnaire Mean Scores of the Patients

Scales		Mean ± SD	Min-Max
AIS		18.8 ± 7.75	8-40
GCQ	GCQ Total	2.6 ± 0.40	1-4
	General Comfort Levels		
	Ease	2.6 ± 0.42	1-4
	Relief	2.8 ± 0.51	1-4
	Transcendence	2.7 ± 0.44	1-4
	General Comfort Aspects		
	Physical	2.3 ± 0.51	1-4
	Psychospiritual	2.8 ± 0.54	1-4
	Environmental	2.7 ± 0.42	1-4
	Sociocultural	2.7 ± 0.40	1-4

AIS, The Acceptance of Illness Scale; GCQ, The General Comfort Questionnaire; SD, standard deviation.

Table 3. Comparison of the Acceptance of Illness Scale and the General Comfort Questionnaire Total Mean Scores According to the Introductory Characteristics of the Patients

Characteristics	Total AIS Mean Score	Total GCQ Mean Score
Age		
Age of 50 and below	17.6 ± 9.7	2.5 ± 0.5
51-60	16.3 ± 6.8	2.6 ± 0.3
61-70	21.0 ± 8.8	2.7 ± 0.5
71 and above	19.1 ± 7.2	2.7 ± 0.4
p-value	.191	.410
Gender		
Female	17.8 ± 7.56	2.6 ± 0.38
Male	19.6 ± 7.88	2.7 ± 0.43
p-value	.226	.242
Marital Status		
Married	19.4 ± 7.66	2.6 ± 0.39
Single	17.3 ± 7.88	2.6 ± 0.44
p-value	.194	.894
Level of Education		
Non-literate	14.4 ± 4.56	2.6 ± 0.37
Primary education	19.6 ± 7.32	2.6 ± 0.38
High school	19.6 ± 8.03	2.6 ± 0.42
University and above	20.4 ± 10.39	2.8 ± 0.43
p-value	.004*	.498
Employment Status		
Working	18.0 ± 6.73	2.5 ± 0.34
Not working	19.1 ± 8.11	2.7 ± 0.42
p-value	.550	.080
Level of Income		
Expense more than income	16.8 ± 7.16	2.6 ± 0.40
Income equal to expense	20.7 ± 7.75	2.7 ± 0.39
Income more than expense	15.9 ± 7.63	2.4 ± 0.43
p-value	.020*	.055
Home Residents		
Alone	19.0 ± 7.36	2.7 ± 0.27
Partner and child	18.7 ± 7.90	2.6 ± 0.43
p-value	.886	.079
Duration of Diagnosis		
Below 1 year	27.0 ± 8.28	2.9 ± 0.18
1-3 years	20.4 ± 7.74	2.7 ± 0.42

(Continued)

Table 3. Comparison of the Acceptance of Illness Scale and the General Comfort Questionnaire Total Mean Scores According to the Introductory Characteristics of the Patients (Continued)

Characteristics	Total AIS Mean Score	Total GCQ Mean Score
4-6 years	17.1 ± 7.83	2.6 ± 0.36
7 years and above	16.5 ± 6.75	2.6 ± 0.42
p-value	.014*	.262
Smoking Habit		
Yes	17.4 ± 7.97	2.6 ± 0.42
No	19.2 ± 7.68	2.6 ± 0.40
p-value	.289	.824
Alcohol Use		
Yes	16.7 ± 8.00	2.6 ± 0.35
No	19.1 ± 7.72	2.7 ± 0.41
p-value	.300	.434

AIS, The Acceptance of Illness Scale; GCQ, The General Comfort Questionnaire.
**P*<.05

atrial fibrillation demonstrated a higher level of illness acceptance, whereas Obieglo et al.[12] noted that 24% of HF patients did not accept their disease. The variation in mean scores across studies could be attributed to differences in socio-demographic and disease-specific characteristics of the patient populations. The extended treatment duration for HF, along with physiological, psychological, and social changes, may have contributed to the lower degree of disease acceptance observed in our study. Assessing patients' level of disease acceptance, which significantly impacts diagnosis, treatment, and care processes, is crucial for nurses to provide holistic care.

Disease acceptance among individuals did not vary significantly with age, gender, or marital status. While some studies suggest that socio-demographic characteristics affect disease acceptance, others find no correlation between these characteristics and disease acceptance. [8,12,20,28] It is hypothesized that symptoms associated with HF, such as shortness of breath, weakness, and fatigue, may influence patients' acceptance of their condition, regardless of age, gender, or marital status, due to the functional and cognitive limitations they impose.

In this study, the level of illness acceptance increased with higher levels of education. This finding aligns with the study conducted by Şireci et al,[29] where the acceptance of illness was higher among patients who had completed university/master's degrees. Kurpas et al.[30] also noted that patients with lower levels of education had lower AIS scores. It appears that higher education levels may encourage individuals to seek information actively, fostering a curious and inquisitive approach to their diseases and treatments, which in turn positively influences disease acceptance.

In our study, patients whose income was equal to their expenses had higher AIS scores. Contrasting with our findings, Czerw et al.[31] discovered that in breast cancer patients, illness acceptance increased as income levels rose. İlaslan et al. (2021), in a study with diabetics, found that economic status positively impacts disease acceptance.[32] However, Şireci et al.[29] found that income levels did not affect illness acceptance in patients with type 2 diabetes. A lower income level may not meet expectations, while a higher income level may exceed them. Thus, a balanced income level likely has a positive effect on illness acceptance. It is also presumed that patients' ability to afford their treatment and care needs positively influences disease acceptance.

Our study indicated that patients with a shorter duration of HF diagnosis had higher AIS scores compared to those with a longer diagnosis duration. This observation is supported by Starczewska et al,[27] who reported a decrease in illness level acceptance as the duration of type 2 diabetes diagnosis increases. In contrast, Uchmanowicz et al[28] and Yılmaz et al[8] found no correlation between the duration of diagnosis and illness acceptance. As the duration of an HF diagnosis lengthens, factors such as physical and cognitive limitations, advancing age, fatigue, increased need for social support, challenges in managing disease complications, and the continuous grappling with the negative emotions associated with chronic illness negatively impact patients. These challenges may lead to a decline in illness acceptance over time.

The HF patients included in our study exhibited a medium comfort level. Currently, there are no studies in the literature specifically analyzing the comfort level of HF patients. However, our findings are lower than the results from studies conducted with different disease groups. For instance, patients receiving inpatient treatment in the coronary intensive care unit had a general comfort score of 3.2 ± 0.33.[21] Similarly, Karabulut et al. reported a general comfort mean score of 3.2 ± 0.2 for their patient group.[33] The lower comfort level observed in our HF patient group could be attributed to the lifelong management required by the disease, dyspnea resulting from functional heart deterioration, and symptoms like fatigue that limit daily activities, all of which negatively impact comfort. Therefore, it is crucial for nurses to identify the physical, mental, and social issues faced by patients, and to plan, implement, and evaluate nursing interventions addressing these problems.

In our study, the general comfort level mean scores among patients were similar across the board. The physical comfort aspect scored

Table 4. Correlation of the Connection between the Acceptance of Illness Scale and the General Comfort Questionnaire Total Scores, Subscale and Level Scores

		General Comfort Levels			General Comfort Aspects			
	GCQ Total	Ease	Relief	Transcendence	Physical	Psychospiritual	Environmental	Sociocultural
AIS	r=.517 *P*<.001	r=.546 *P*<.001	r=.426 P<.001	r=.450 *P*<.001	r=.609 *P*<.001	r=.477 *P*<.001	r=.276 *P*=.004	r=.368 P<.001

AIS, The Acceptance of Illness Scale; GCQ, The General Comfort Questionnaire the lowest. This finding aligns with the study by Cheng and Wang,[34] which analyzed the four aspects of comfort and also found physical comfort to be lower among patients. Conversely, in studies with different disease groups, the environmental aspect often emerged as the lowest scoring comfort aspect.[35-37] Symptoms such as pain, respiratory distress, fatigue, sleep disturbances, and nutritional problems, commonly experienced by HF patients, impair physical well-being, thereby reducing physical comfort.

Furthermore, our study found no significant difference in the GCQ mean scores concerning the socio-demographic and clinical characteristics of HF patients. This parallels findings by Kim and Kwon,[35] who observed that age, gender, and marital status do not influence comfort levels in cancer patients. In contrast, Nural and Alkan[21] reported an association between age, level of education, and comfort in patients in coronary intensive care, diverging from our findings. Melo et al.[38] stated that in hemodialysis patients with chronic renal failure, age and marital status impact comfort levels, yet no correlation exists between gender and comfort. Cheng and Wang[34] reported that socio-demographic and clinical characteristics influence the comfort levels of patients with head and neck neoplasms. The literature presents different findings regarding the correlation between socio-demographic, disease-related characteristics, and comfort levels.[21,34,35,38] Future studies with broader sample groups could provide insight into the socio-demographic and disease-related factors that affect comfort levels.

This study demonstrated an increase in comfort levels among HF patients as their acceptance of illness improved. Özden and Sarıtaş (2021) observed a similar trend in diabetic patients, where an increased acceptance corresponded with higher comfort levels.[18] Another study highlighted that recognizing the severity of one's condition led to improved quality of life for HF patients.[12] Acceptance of illness facilitates treatment adaptation by aiding patients in lifestyles adjustments and the development of effective coping mechanisms. Hence, it can be argued that individuals who accept their illness and actively manage their daily lives have a better interpretation of their health status, enjoy a higher quality of life, and experience increased comfort levels.

Study Limitations

The primary limitation of this study was its small sample size. Additionally, the study may not represent the general HF population, as it only included patients classified under NYHA classes II and III.

Conclusion and Recommendations

This study revealed that the level of illness acceptance among HF patients was low, whereas the comfort level was moderate. Factors such as the level of education, income, and duration of diagnosis significantly influenced illness acceptance. Furthermore, an increase in the level of illness acceptance corresponded with a higher comfort level. Based on these observations, it is essential to regularly evaluate the disease acceptance levels of HF patients. Implementing psychological care interventions designed to enhance illness acceptance is particularly recommended for patients with lower education levels and those who have been living with HF for an extended period. Additionally, organizing in-service training for nurses, grounded in evidence-based care practices, is essential to improve disease acceptance and patient comfort in HF treatment. Future studies should aim to conduct qualitative and quantitative research across various regions and with different patient groups.

Ethics Committee Approval: Ethics approval for the study was granted by the Clinical Research Ethics Committee of Mersin University (Approval Number: 2019/425, Date: October 2, 2019).

Informed Consent: Informed written and verbal consent was obtained from participating patients.

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