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The Relationship of Social Support and Severity of Disease with Quality of Life in Heart Failure Patients

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ABSTRACT

Purpose: This study aimed to evaluate the relationship of social support and severity of disease with quality of life in heart failure patients.
Method: In a descriptive correlational cross-sectional study, the patients with heart failure were evaluated. Minnesota's Living Heart Failure Questionnaire (MLHFQ) was used to evaluate the quality of life. The social support questionnaire developed by Fleming was used too. The severity of the disease was classified according to the guidance of the New York Heart Association (NYHA). A $p < 0.05$ was considered statistically significant.
Results: Different dimensions of quality of life such as physical (29.68), socioeconomic (11.03), emotional (89.6), and total quality of life (46.2) were mostly low to moderate. All dimensions of perceived social support in patients with heart failure were predominantly low. All dimensions of perceived social support were significantly and positively associated with the quality of life ($p<0.001$). Patients with higher social support had a better quality of life despite the severity of their illness. ($p<0.01$).
Conclusion and Suggestions: The results of this study showed that perceived social support and quality of life in heart failure patients were low and there was a positive correlation between social support and quality of life. Also, we found that patients with higher social support had a better quality of life despite the severity of their illness. So, It is suggested that nurses pay special attention to the emotional dimension of these patients, and introduce and provide the appropriate social support for them to improve their quality of life.

Kalp Yetersizliği Hastalarında Sosyal Destek ve Hastalık Şiddetinin Yaşam Kalitesi ile İlişkisi

Makale Bilgileri

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ÖZ

Amaç: Bu çalışmada kalp yetersizliği hastalarında sosyal destek ve hastalık şiddeti ile yaşam kalitesi arasındaki ilişkinin değerlendirilmesi amaçlanmıştır.
Yöntem: Tanımlayıcı korelasyonel kesitsel bir çalışmada kalp yetmezliği olan hastalar değerlendirildi. Yaşam kalitesini değerlendirmek için Minnesota'nın Yaşayan Kalp Yetmezliği Anketi (MLHFQ) kullanıldı. Fleming tarafından geliştirilen sosyal destek anketi de kullanılmıştır. Hastalığın şiddeti New York Kalp Derneği'nin (NYHA) rehberliğine göre sınıflandırıldı. İstatistiksel olarak $p<0.05$ anlamlı kabul edildi.
Bulgular: Yaşam kalitesinin fiziksel (29.68), sosyoekonomik (11.03), duygusal (89.6) ve toplam yaşam kalitesi (46.2) gibi farklı boyutları çoğunlukla düşük ve orta düzeydeydi. Kalp yetersizliği olan hastalarda algılanan sosyal desteğin tüm boyutları ağırlıklı olarak düşüktü. Algılanan sosyal desteğin tüm boyutları yaşam kalitesi ile anlamlı ve pozitif olarak ilişkiliydi ($p<0,001$). Sosyal desteği yüksek olan hastalar, hastalıklarının şiddetine rağmen daha iyi bir yaşam kalitesine sahipti. ($p<0.01$).
Sonuç ve Öneriler: Bu çalışmanın sonuçları kalp yetersizliği hastalarında algılanan sosyal desteğin ve yaşam kalitesinin düşük olduğunu ve sosyal destek ile yaşam kalitesi arasında pozitif bir ilişki olduğunu göstermiştir. Ayrıca, daha yüksek sosyal desteğe sahip hastaların, hastalıklarının ciddiyetine rağmen daha iyi bir yaşam kalitesine sahip olduklarını bulduk. Bu nedenle hemşirelerin bu hastaların duygusal boyutuna özellikle dikkat etmeleri, yaşam kalitelerini artırmaları için uygun sosyal desteği tanıtmaları ve sağlamaları önerilmektedir.

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INTRODUCTION

Cardiovascular diseases account for approximately half of the deaths in developed countries and approximately 25% in developing countries, and it has been estimated that until 2020, cardiovascular diseases will be the first cause of disability. Based on the report of the World Health Organization (WHO), 31% of deaths in the world and 46% of deaths in Iran were caused by cardiovascular problems (Fahimfar et al., 2018; WHO, 2014). Researches have confirmed that heart failure is rising in the world, with more than 20 million people experiencing heart failure worldwide with increasing age. The WHO statistics reports account for 6% to 10% of people with heart failure over 65 years old. The cost of treatment for heart failure is twice the cost of cancer treatment. According to a study, the prevalence of complications of heart failure is 8% in patients over the age of 60. The prevalence of this disease in Asia is between 1.3% to 7.7%, however, the incidence of heart failure in Iran is reported as more than 2 times higher than the mean in Asia. (Braunwald, 2005; van Riet et al., 2016). Ahmadi et al. (2014) in Iran showed that the incidence rate and the 95% confidence interval of HF was 8.1: 95%in study population (per 100 person-year)(Ahmadi et al., 2014).

A review of the literatüre has shown that heart disease can affect the quality of life so that patients with heart failure experience a poor quality of life due to economic, physical, and emotional stresses (Reddy et al., 2020). This disorder affects not only the comfort of the person but also may affect patterns of life, occupation, social communication, as well as income levels. Due to the nature of this disease, care in these people should be considered in all domains of life, especially quality of life, since the quality of life is completely associated with clinical outcomes, recurrence, and mortality (Moradi et al., 2020).

As expressed by the WHO, quality of life is defined as the perception ofa person in their position of life consideringtheir value systems, culture, aims, relationships, expectations, and needs. The quality of life is related to physical and mental health, developed relationships with people, participation in social activities, and having self-actualization (Theofilou, 2013). Quality of life is recently considered an essential challenge in chronic diseases research and cardiac insufficiency can affect patients' quality of life in varying degrees (Moradi et al., 2020).In this regards, the results of a study showed that heart failure disease can harm the quality of life of patients (Giournta et al., 2020). Considering the disabling nature of heart failure, in the care of these patients, all aspects of life, including quality of life, should be considered. Quality of life has a close relationship with clinical outcomes, including recurrence and mortality (Abbasi et al., 2007). Therefore, it is better to evaluate, consider, and improve the quality of life as one of the priorities of the treatment.

Perceived social support is defined as a person's perception of support from their family or friends (Cousin et al., 2021). It has been confirmed that heart failure patients usually need to rely on their social network to adapt to this problematic disease (Kashani et al., 2020; Lyons et al., 2021). A study by Fivecoate et al. (2018) stated that perceived emotional support was associated with better self-care maintenance and management in heart failure patients, which was mediated by self-care confidence. Also, it was associated with better adherence to medication and dietary regimens (Fivecoat et al., 2018).

In general, various studies have been done on the social support and quality of life in patients, but, given the state of social support in heart failure patients and its impact on the quality of life of these patients, the question arises whether those who receive better social support despite the severity of their illness, can they have a better quality of life? Therefore, due to the lack of a similar study in this field, this study aimed to investigate the relationship of social support and severity of disease with quality of life in heart failure patients.

METHOD

Research Design

This wasa descriptive corelationalcross-sectional study that was conducted from June to September 2018 on patients with heart failure referred to Valiasr Hospital in Fasa, Iran.

Participants

Inclusion criteria includedpatients with heart failure diagnosed with echocardiography based on ejection fraction (EF) < 40%, past 6 months from diagnosis, age over 18 years, complete vigilance, and physical status required for correct response. Exclusion criteria weredecreased consciousness, a lack of definitive diagnosis of heart failure, poor physical and mental status for answering questions, history of psychiatric disorders such as depression, chronic anxiety, schizophrenia, and dementia.

Research Instruments and Processes

In this cross-sectional study, the eligible patients with heart failure were evaluated using data collection tools. At first, a checklist containing demographic characteristics such as sex, age, marital status, educational level, and occupation was completed for each patient. Two questionnaires were used to collect information in this study; questionnaire 1 (social support) and questionnaire 2 (quality of life in heart failure patients). The collections were done face to face by researcher and it took approximately 20 minutes to fill the tools.

***Questionnaire No. 1*:** Social support questionnaire was prepared by Fleming et al in 1982 with 25 questions and 5 sub-scales: perceived public support, family support, support from friends, support from classmates, and ultimately believes in the importance of social support. The scale of social support was translated and adapted to the Iranian culture, and the amended form of this questionnaire has the following characteristics: the questionnaire consists of four subscales: 1. The subscale that measures the perceived social support from the family has 7 items (items 1 to 7), 2. The subscale of measurements of perceived support from friends, which consists of 7 items (items 8 to 14), 3. Opinions and beliefs about social support that have 5 items (15 to 20), 4. This subscale is related to measuring the general support that includes 6 items (20, 21 to 25). The method for scoring this scale is zero (0) and one (1), which means that except for the number of points 7, 15, 16, 17, 18, 20, 21, 24, which is inverse to the score (the wrong answer is scored 1 and the correct answer is scored 0). For the rest of the points of questionnaires, the "false" answers received a zero score and the "correct" answers received 1 score (Fleming et al., 1982).The Cronbach’s alphacoeficient was 0.81.

***Questionnaire No. 2*:** Minnesota's Living Heart Failure Questionnaire (MLHFQ) was developed by Rector (1984) to evaluate the quality of life of heart failure patients. This scale is the most common form for assessing the quality of life of heart failure patients in research. This questionnaire assesses patients' perceptions of the effects of congestive heart failure on the emotional, physical, and economic aspects of their lives. The questionnaire has 3 sub-scales and 21 items. Its sub-scales are 1. Physical with 13 items, 2. Emotional with 4 items, and 3. Socio-economic with 4 items. This questionnaire is based on the sixth grading in terms of the severity of the problem caused by the disease (no problem = 0 to very much = 5) . To calculate the total score of the questionnaire, the score of all the questionnaire items is gathered together. The scoring range for this questionnaire will be between 0 and 105. In this questionnaire, a lower score indicates a better quality of life for patients with heart failure and vice versa. The scores obtained from the questionnaire in each dimension of quality of life including physical, socioeconomic, and emotional dimensions were classified into three levels: low, moderate, and high, so that in the physical dimension, the mean level is 22-42, the high level is 43-65, in the socio-economic dimension, the scores 0-6 are low, the mean and the scores 14-20 are high levels, and in the emotional dimension, also scores 0-6 are low, scores 7-13 are the average level and scores 14-20 are considered high (Rector et al., 1987).

Validity and reliability: In the study of Rector (1984) and Gorkin (1993), its reliability was calculated to be 0.94 by Cronbach alpha (Gorkin et al., 1993; Rector et al., 1987). Bennett'study (2002) measure the validityand reported the correlation coefficient of 0.81 (Bennett et al., 2002). In Iran, the internal consistency of both total and subtotal scales was greater than 0.80. Cronbach's alpha was 0.95 for the 3 MLHFQ scores and the ICC was also large 0.8 (Eskandari et al., 2015).

The severity of the disease was assessedusing the guidance of the New York Heart Association (NYHA), which categorized heart failure into four classes; including *Class 1*: Patients who do not have a physical activity limitation, such that physical activity causes fatigue, dyspnea and angina will not occur in them, *Class 2*: Patients with limited physical activity but at rest are comfortable so that ordinary physical activity can cause fatigue, palpitations, dyspnea and angina, *Class 3*: Patients with a clearproblem in physical activity but at rest, they feel comfortable. A small amount of activity will cause fatigue, palpitations, dyspnea, and angina pectoris, *Class 4*: Patients who cannot perform normal activities, symptoms of heart failure and angina occurred even at rest and physical activity may increase patients discomfort (Braunwald, 2005).

Data Analysis

The analysis was done by SPSS statistics software version 24 (IBM Corporation, Armonk, NY, USA). For analysis, the frequency of the studied variables was assessed using mean ± SD and percentage. After assessing the normality, independent t-test, chi-square (χ^2), and ANOVA were used for comparing the values in the groups. To investigate the relationship between different variables (severity of disease, social support, and quality of life), the Pearson correlation coefficient was used. In our analyses, a $p< 0.05$ was considered statistically significant.

Ethic

The Ethics Committee of Fasa University of Medical Sciences approved this study. TheEthic code was R.FUMS.REC.1396.323. Permission was obtained from the institution to which the research was conducted. Verbal or written consent was obtained from the patients and all patients' data will be retained confidentially.

RESULTS

A total of 128 patients with heart failure were investigated in terms of social support and quality of life. The severity of the illness was classified according to NYHA classification that 28 patients (21.8%) were in class 1, 20 patients (15.7%) in class 2, 42 patients (32.8%) in class 3, and 38 patients (29.7%) in class 4. The mean age of patients with heart failure was 61.12 ± 4.9 years. 66 patients (51.5%) were males and 62 cases (48.5%) were females. The mean duration of the disease was 39.4 ± 6.8 months.

Data analysis showed that the quality of life of heart failure patients was significantly different between the subgroups of gender (p= 0.005), age (p= 0.001), and education (p= 0.012), but in terms of marital status (p= 0.27) and occupation (p= 0.095), no significant difference was observed.

The results showed that the different dimensions of quality of life with heart failure were mostly low to moderate levels. Also, All items of perceived social support in heart failure patients were mostly low levels (Table 1).

Table 1. *Distribution of Mean Scores of Quality of Life and Social Support in Heart Failure* Patients.

Variables	**Level Score (Percent)**			**Mean ± sd**
	Low	**Moderate**	**Severe**	
Quality of Life				
Physical	52 (40.6)	43 (33.6)	33 (25.8)	30.56 ± 16.22
Socioeconomic	42 (32.8)	58 (45.3)	52 (21.8)	8.44 ± 4.96
Emotional	56 (43.7)	56 (43.7)	52 (12.5)	7.62 ± 5.78
Social Support				
Family	53 (41.4)	54 (42.2)	21 (16.4)	27.66 ± 8.74
Friend	91 (71.1)	23 (17.9)	14 (10.9)	14.04 ± 5.48
Belief	82 (64.1)	34 (26.6)	12 (9.4)	18.72 ± 6.92
Overall	79 (62.5)	35 (27.3)	14 (10.9)	58.35 ± 18.06

Different dimentions of social support scale were significantly and positively associated with the quality of life of patients with heart failure ($p<0.001$). Also, all aspects of quality of life with perceived social support in heart failure patients were significantly and positively associated ($p<0.001$) (Table 2).

Table 2. *Correlation of Different Dimensions of Social Support with Quality of Life in Heart Failure Patients*

Characteristics	**Dimensions of Social Support**	**Pearson Correlation Coefficient**	***P*-value**
Quality of Life	Family	0.694	< 0.001
	Friends	0.723	< 0.001
	Belief	0.602	< 0.001
	Overall	0.684	< 0.001
Perceived Social Support	Physical	0.660	< 0.001
	Socioeconomic	0.473	< 0.001
	Emotional	0.701	< 0.001

Percieved social support were significantly different in different functional classes of heart failure ($p<0.01$) (Table 3).

Table 3. *Comparing Perceived Social Support in Different Class of Heart Failure Patients*

Perceived Social Support	**Functional Class**				***P*-value**
	Class 1	**Class 2**	**Class 3**	**Class 4**	
Physical	6.23 ± 5.47	9.73 ± 8.29	28.78 ± 26.55	30.86 ± 11.48	0.005
Socioeconomic	4.57 ± 3.89	8.60 ± 6.46	15.86 ± 13.66	14.70 ± 8.37	0.002
Emotional	6.75 ± 5.44	7.75 ± 5.82	18.79 ± 16.95	20.36 ± 13.61	0.014
Overall	18.46 ± 12.39	28.59 ±15.77	68.59 ± 38.09	66.89 ± 22.54	0.001

The quality of life of heart failure patients in functional classes 3 and 4 were significantly different between the levels of social support ($p<0.01$), but there was no significant difference in functional classes 1 and 2 ($p<0.01$). Also, the quality of life of patients in different classes of the severity of heart failure was significantly different ($p= 0.001$) (Table 4).

Table 4. *Comparison of Quality of Life In Heart Failure Patients with Different Levels of Social Support in Different Functional Classes of Disease*

Characteristics	**Functional Class**	**Social Support**	**Mean ± SD**	***P*-value**	
Quality of Life	Class 1	High	16.74 ± 11.08	0.096	0.001
		Moderate	18.67 ± 10.92		
		Low	21.48 ± 13.86		
	Class 2	High	24.07 ± 13.55	0.058	
		Moderate	25.39 ± 15.60		
		Low	28.16 ± 17.27		
	Class 3	High	28.44 ± 18.90	0.002	
		Moderate	38.59 ± 20.26		
		Low	54.83 ± 25.66		
	Class 4	High	33.06 ± 19.74	< 0.001	
		Moderate	55.14 ± 22.96		
		Low	68.30 ± 32.75		

DISCUSSION

In the present study, patients with heart failure were investigated in terms of perceived social support and severity of the disease and its relationship with quality of life. Our question was whether those who receive better social support despite the severity of their illness can have a better quality of life. In summary, our study confirmed that patients with higher social support had a better quality of life despite the severity of their illness.

Our analysis showed that the various dimensions of perceived social support were often low in patients that were more prominent in the dimension of friends' support. Also, the analysis confirmed that their quality of life was mostly low to moderate which was more pronounced in the physical dimension. Regarding the severity of the disease, about one-third of the patients had functional class 3.

Also, data analysis showed that all dimensions of perceived social support had a statistically and positively significant relationship with the quality of life of heart failure patients and conversely, different dimensions of quality of life were also associated with perceived social support in these patients. Also, all dimensions of quality of life in heart failure patients were reduced by increasing the functional class and thus increasing the severity of the disease. In addition, high social support in severe heart failure patients significantly improved the emotional dimension of the quality of lifebut was not significantly affected by other dimensions.

The findings indicated that the quality of life in severe heart failure patients (functional classes 3 and 4) was significantly different at various levels of social support so that the quality of life of patients with severe heart failure declines with decreasing social support and low social support patients have a significantly lower quality of life than those with high social support. On the other hand, in lower disease severity patients (functional classes 1 and 2), there is a significant difference in the various levels of social support in terms of quality of life, that's mean despite the worsening of quality of life by reducing social support, this indicator in patients with high social support did not significantly different from those with low social support. In terms of demographic findings, the majority of patients were over 60 years of age. The frequency of males patients was nearlymore than females patients. Most of the patients were retired and married, and more than one-third had elementary education. The average duration of the disease was about 40 months. Our findings confirmed that the quality of life was significantly lower in females, older people, and people with lower education, but occupation and marital status had no significant effect on the quality of life of these patients.

Other researchers also achieved a variety of results in their studies. Di Mauro et al. (2018) found that among 231 heart failure diseases, the MLHFQ score was good in 99 patients (42%), moderate in 50 (21%) patients, and poor in 88 (37%) patients (Di Mauro et al., 2018), but in the present study, various aspects of quality of life, especially the physical dimension, were found to be in an undesirable level in heart failure patients. Baghaei et al. (2015) investigated the effect of applying a follow-up program on quality of life in heart failure patients, which showed that the mean quality of life in the experimental group significantly improved. There was a significant difference between both groups in all dimensions of quality of life, which indicates an increase in all aspects of quality of life in the experimental group. In conclusion, implementing effective models and education and follow-up in patients can improve their quality of life (Baghaei et al., 2015). Abedi et al. (2011) studied the quality of life of heart failure patients, and their results showed that in both dimensions of physical and emotional, the quality of life of men was higher than women. Their result showed that patients with heart failure did not have a good quality of life, and women had a lower physical function and mental health than men, soconsidering some modifiable variables in these patients seems necessary (Abedi et al., 2011), that this results supported the findings of our study. Shojaei et al. (2008) showed that 76.4% of patients had a moderate or poor quality of life. Therefore, it is better to consider and improve the quality of life of these patients as one of the duties of nurses (Shojaei, 2008), which were consistent with the findings of this study. Among chronic diseases, heart failure has the greatest impact on quality of life, so that these patients have a low quality of life (Carels, 2004). Johansson et al. (2006) showed that patients with heart failure have a lower quality of life than those suffering from other chronic diseases such as chronic obstructive pulmonary disease, unstable angina, and patients with a history of myocardial infarction (Johansson et al., 2006), while Heo et al. (2007) reported that about half of heart failure patients had a high quality of life (Heo et al., 2007), which it contradicted the results of the present study. They also found that patients with heart failure had a low level of social support due to their physical and mental problems. Therefore, their perceived social support is diminished. Moreover, with the prolongation of heart failure, the communication network influence by chronic fatigue and may reduce social support (Heo et al., 2007). However, Manemann et al. (2018) concluded that perceived social support in patients with heart failure was at a moderate to a high level, which contradicts the results of our study (Manemann et al., 2018).

Many researchers reported a positive relationship between social support and quality of life and claimed that social support has positive effects on quality of life (Bakan & Akyol, 2008; Kashani et al., 2020). High social support can increase the pleasure in recreational functions, patients can feel better life and satisfies it, and may increase the quality of life and health of the person through the provision of tangible help (Park et al., 2021; Sanne et al., 2005). Researchers have reported that providing emotional support has a positive effect on health and may promote quality of life (Rambod et al., 2011). Since heart failure is stress for individuals, Helgeson found that people at different stages of stress require a special type of social support so that at the stage of the crisis, people need emotional support, or in the stage of stabilization, they need information support, and in the exhaustion stage,patients need instrumental support (Helgeson, 2003). Researchers state that increasing satisfaction and social support is related to improving the quality of life from the emotional dimension and controlling physical symptoms and feeling good. Social support can decrease the negative effects of chronic illness and help patients to adapt to their illness (Rambod et al., 2011). Årestedt stated that low quality of life in heart failure patients can decrease the social support of patients (Årestedt et al., 2013). Another study also suggested that emotional support seems to increase adherence to the medication regimen follow-up and finally can lead to a reduction in cardiac events (Kashani et al., 2020).

CONCLUSION AND SUGGESTIONS

The results showed that social support and quality of life in heart failure patients were low. All dimensions of perceived social support and severity of disease had a significant relationship with the quality of life in heart failure patients. High social support had a significant effect on the emotional dimension of quality of life of patients suffering from severe heart failure but in other dimensions, there was no significant improvement. In summary, our study showed that patients with higher social support can experience a better quality of life despite the severity of their illness. So, It is suggested that nurses pay special attention to the emotional dimention of these patients, and introduce and provide the appropriate social support for them to improve their quality of life.

LIMITATIONS

This study had some limitations. First, it was done on the patients in one hospital in a province of Iran. So, for generalisation we should pay attention to the study participants characteristics. Also, for gathering data, we used self quide questionares that can be improved by using quided interviews with patients for improving validity.

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Conflict of Interest

No conflict of interest.

Author Contributions

Design: R.S., A.K.J., S.D., Data collection or processing: R.S., A.K.J., S.D., Analysis or interpretation: R.S., A.K.J., S.D., Literature search: R.S., A.K.J., S.D., Writing: R.S., A.K.J., S.D.

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