Physical and Psychosocial Needs Assessment in Patients with Heart Failure in the Yazd Afshar Hospital

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ABSTRACT
Heart failure is a major cause of hospitalization and referring to heart clinics. Studying the needs of patients with heart failure makes better regulation of care programs and appropriate interventions in various aspects of health according to priority of need. The aim of this study is assessment of physical and psychosocial needs in patient with heart failure. This study is cross-sectional. Heart Failure Needs Assessment Questionnaire (HFNAQ) for patients with heart failure in class 3 and 4, EF and IV (left ventricular) systolic dysfunction less than 35% were admitted in hospital, after discharge was completed through interviews. The data was analyzed by SPSS software version 22. The highest score in the area of physical need with an average of 28, followed by psychological need with an average of 26 and social need with an average of 24. Mean scores of social and existential needs were increased with increasing age. Mean score of psychological need, social need and existential need in women was significantly higher than men. Only, mean score of physical need in single patient was significantly higher than the married. Mean score of social and existential needs in patients had under diploma education was significantly higher than patients with a higher diploma. Mean score of social and existential needs in patients employed was significantly higher than unemployed patients. Mean scores of physical and psychological needs were increased with increasing severity of illness. Scores of physical need significantly increased by reducing of ejection fraction (EF) (P<0.05). Most of needs are relevant to the domain of physical, psychological, social and existential. Age, sex, marital status, education, occupation, severity of illness and the rejection fraction of patients affected on the areas of needs assessment.

Key words: Needs Assessment, Heart Failure, HFNAQ Questionnaire physical and psychosocial needs

1. INTRODUCTION
Heart failure is a major cause of hospitalization and referring to the heart clinic (1). It is the only common cardiovascular dysfunction, and its prevalence is increasing. In the United States, there are nearly 1 million hospitalizations and 40,000 deaths per year (2). The incidence of the disease increases with age. At least 5 million people in the United States suffer from this disease, and 550,000 new cases are diagnosed each year, and for this reason, it challenges health care resources (3). Heart failure is the most common causes of hospitalization over 65 years, and is the second most common reason for visits to a cardiologist. Economic burden that the disease causes (directly and indirectly) is more than $ 25 billion, which is expected to rise (4). Despite the different methods of treatment, the disease is still increasing. Heart failure is a major cause of death and is vulnerable in the society. Patients are encountered with different mental health, economic, social cognitive problems, in many cases and it is considered as a disease similar to cancer in terms of complexity of the problems in the course of the disease (5). The impact of this disease on the deteriorating quality of life is more intense than other chronic diseases. Anxiety and depression is one of the most common mental distress in these patients. Research has shown that almost 25% of outpatients, and 35 to 50% of hospitalized patients are depressed, and the risk of death in patients with heart
failure and depression is higher than non-depressed patients (3). Many studies have been done on quality of life, sleep disorder and depression in patients with heart failure, and yet, less research has been done in terms of actual and unfulfilled needs of patients of different aspects of physical and psychosocial (6). According to Fisher et al., examination of patients' needs leads to adjust the care plan, and appropriate interventions in different aspects of health according to need priority (7). Because, less research has been done on heart failure and assess their needs, the researchers decided to do a research entitled "Evaluation of patients need with heart failure". Aimed to determine the psychosocial and physical needs, so using their results, appropriate planning and action can be taken in order to reduce or meet the needs of patients.

2. MATERIALS AND METHODS

After confirming the plan to collect samples, we referred to the Heart wards in the Yazd Afshar hospital. (At the time of hospital discharge), and 150 heart failure patients were enrolled that have inclusion criteria in class 3 and 4 and heart failure, lv systolic dysfunction According to the Association of Flb America NYHA with EF less than 35 percent based on the results of echocardiography were selected as samples in the study period using census method. After consent of patient to participate in research, demographic data questionnaire (age, sex, occupation, disease duration, education) and HFNAQ (heart failure needs assessment questionnaire), (the needs of patients with heart failure in physical-psychological-social and biological aspects) and questionnaireSF36 of quality of life were completed by an interview with the patient. The questionnaire HFNAQ (study of the physical and psychosocial needs of patients with heart failure), which its validity and reliability was confirmed (Cronbach's alpha coefficient of all areas of the questionnaire was 0.833) had 30 questions, which is based on the Likert scale (Not at all-rarely-sometimes-often-always) was graded from 1 to 5. Less importance has score of 1, and the most important option has score of 5. These needs are related to physical dimensions (10 questions), psychological dimensions (9 items), and social-biological dimensions (8 questions), existential (3 questions) (1). SF-36 questionnaire is about quality of life, and there is an open question at the end of the questionnaire. Results are reported as mean ± SD. Continuous variables were compared between groups using independent test and U_MannWhitney test. Categorical were compared between groups using chi square test and Fisher’s exact test. Data analyzed by using SPSS v. 22. P values less than 0.05 were considered statistically significant.

3. RESULTS AND DISCUSSION

In this study, 150 heart failure patients which have inclusion criteria were enrolled .The mean age was 62.88±12.36 years and 97 (64.7%) of patients were men. 132 (88%) of patients were married. Based on the educational level, 80 (53.3%) patients were illiterate, 55 (36.7%) less than diplomas, 6 (4%) diploma, 9 (4%) higher than diploma.36 (24%) of patients were housewives, 39 (26%) self-employed and farmer, 7 (4.7%) laborer, 3 (2%) employees and 65 (43.3%) retired and unemployed. The mean Duration of disease was 4.74±4.18 years. The class of NYHA in 111 (74%) of patients were 3 and 39 (26%) equal to 4. The mean ejection fraction (EF) was 27.59±6.18. The HFNAQ overall mean ± SD score was 84.21 ± 14.93, with mean ± SD scores of each subscale being psychological 26.04 ± 5.93, social 24.18 ± 2.96, existential 8.78 ± 16.92, and physical 28.06 ± 6.36 (Figure 1). The Quality of Life overall mean ± SD score was 60.98 ± 16.92.

![Figure 1. Distribution for items of needs assessment in patients with heart failure](https://example.com/figure1.png)

There was no significant difference between HFNAQ physical subscale score in two group of age, sex, level of education, job status and duration of disease (P>0.05). There was significant difference between HFNAQ physical subscale score in two group of marital, severity of disease and ejection fraction (P<0.05). There was no significant difference between HFNAQ psychological subscale score in two group of age, marital, level of education duration of disease and ejection fraction (P>0.05). There was significant difference between HFNAQ psychological subscale score in two group of sex, job status and severity of disease (P<0.05). There was no significant difference...
between HFNAQ social subscale score in two group of marital, job status, duration of disease, severity of disease and ejection fraction (P>0.05). There was significant difference between HFNAQ social subscale score in two group of age, sex and level of education (P>0.05). There was no significant difference between HFNAQ existential subscale score in two group of marital, duration of disease, severity of disease and ejection fraction (P>0.05). There was significant difference between HFNAQ existential subscale score in two group of age, sex, level of education and job status (P>0.05). There was no significant difference between HFNAQ overall score in two group of age, marital, level of education, job status, duration of disease, severity of disease and ejection fraction (P>0.05). There was significant difference between HFNAQ overall score in two group of sex (P>0.05) (Table 1). There was no significant difference between QoL (Quality of life) overall score in two group of age, sex, marital, level of education, job status, duration of disease, severity of disease and ejection fraction (P>0.05) (Table 2).

Table 1. Comparison Needs Assessment for Heart Failure Patient in two group of age, sex, marital, level of education, job status, duration of disease, severity of disease and ejection fraction

| Variable   | Group            | Needs Assessment                          | P-Value |
|------------|------------------|-------------------------------------------|---------|
|            |                  | Physical | Psychological | Social | Existential | overall |
| Age        | <65              | 6.72±27.66 | 5.91±25.33 | 4.05±23.43 | 3.03±8.12 | 3.03±8.12 | 16.04±2.69 | 0.176 |
|            | >65 years        | 5.86±26.52 | 5.91±26.79 | 3.71±26.75 | 2.73±9.52 | 2.73±9.52 | 13.25±6.06 | 0.281 |
| Sex        | Male             | 6.11±27.23 | 6.01±24.94 | 3.89±23.75 | 2.76±8.16 | 2.76±8.16 | 13.79±1.07 | 0.386 |
|            | Female           | 6.67±29.44 | 5.25±28.11 | 3.96±24.91 | 3.04±9.88 | 3.04±9.88 | 15.38±9.30 | 0.116 |
| marital    | single           | 4.26±31.06 | 4.73±27.24 | 3.87±24.12 | 2.94±9.11 | 2.94±9.11 | 11.46±9.14 | 0.031 |
|            | married          | 6.54±27.51 | 6.07±25.95 | 3.96±24.2 | 2.97±8.74 | 2.97±8.74 | 15.19±8.04 | 0.031 |
| P-value    | 0.005            | 0.001    | 0.031        | 0.001   | 0.001     | 0.001    | 0.003       | 0.06   |
| Level of Education | <diploma | 6.37±28.21 | 5.82±26.34 | 4.2±24.36 | 2.98±9.8 | 2.98±9.8 | 14.97±8.95 | 0.003 |
|            | >=diploma        | 6.45±27   | 6.52±23.66 | 3.12±22.66 | 3±7     | 3±7     | 41.16±7.9 | 0.198 |
| P-value    | 0.538            | 0.145    | 0.048        | 0.01    | 0.01     | 0.01    | 0.198       | 0.06   |
| Job Status | unemployed       | 6.29±28.66 | 6.22±26.83 | 3.76±24.34 | 2.89±9.12 | 2.89±9.12 | 15.21±8.25 | 0.031 |
|            | employed         | 6.43±26.88 | 4.53±24.43 | 4.32±23.85 | 3±8.08 | 3±8.08 | 13.76±8.27 | 0.038 |
| P-value    | 0.184            | 0.01     | 0.34        | 0.038   | 0.038   | 0.038   | 0.568       | 0.06   |
| Duration of Disease | <=3 | 6.71±27.71 | 5.55±26.1 | 3.84±24.3 | 2.66±8.8 | 2.66±8.8 | 15.38±8.17 | 0.089 |
|            | >3 years         | 6.05±28.39 | 6.36±26.02 | 4.07±24.04 | 3.27±8.76 | 3.27±8.76 | 4.73±8.26 | 0.237 |
| P-value    | 0.591            | 0.847    | 0.627       | 0.974   | 0.974   | 0.974   | 0.568       | 0.089 |
| Class NYHA | 1                | 5.6±30.88 | 5.05±27.84 | 3.89±24.27 | 2.81±9.35 | 2.81±9.35 | 12.18±9.08 | 0.031 |
|            | 4                | 5.6±30.88 | 5.05±27.84 | 3.89±24.27 | 2.81±9.35 | 2.81±9.35 | 12.18±9.08 | 0.031 |
| P-value    | 0.007            | 0.025    | 0.609       | 0.121   | 0.121   | 0.121   | 0.058       | 0.058 |
| Ejection Fraction | <30% | 6.72±29.73 | 5.78±26.81 | 4.39±23.95 | 2.98±8.78 | 2.98±8.78 | 16.17±8.09 | 0.003 |
|            | 30-35%           | 5.75±26.69 | 6.02±25.47 | 3.56±24.36 | 2.96±8.78 | 2.96±8.78 | 13.52±8.83 | 0.058 |
| P-value    | 0.015            | 0.178    | 0.529       | 0.91    | 0.91    | 0.91    | 0.058       | 0.058 |

Table 2. Comparison QOL for Heart Failure Patient in two group of age, sex, marital, level of education, job status, duration of disease, severity of disease and ejection fraction

| Variable   | Group     | Quality of Life | P-Value |
|------------|-----------|-----------------|---------|
| Age        | <65       | 16.6±60.85      | 1       |
|            | >65 years | 17.1±60.75      | 0.813   |
| Sex        | Male      | 16.8±61.15      | 0.813   |
|            | Female    | 17.3±60.54      | 0.813   |
| marital    | single    | 19.9±62.03      | 0.609   |
|            | Married   | 16.5±60.84      | 0.813   |
| Level of Education | <diploma | 16.98±86.06 | 0.046 |
|            | >=diploma | 14.29±69.3      | 0.046   |
| Job Status | unemployed | 16.8±61.09      | 0.893   |
|            | employed  | 17.1±60.77      | 0.893   |
| Duration of Disease | <=3 | 16.6±62.76      | 0.237   |
|            | >3 years  | 17.1±59.06      | 0.237   |
| Class NYHA | 3         | 16.6±60.72      | 0.825   |
|            | 4         | 17.8±61.74      | 0.825   |
| Ejection Fraction | <30% | 17.8±61.58      | 0.779   |
|            | 30-35%    | 16.2±60.53      | 0.779   |

In evaluating the quality of life based on questionnaire HFNAQ, the final score is between 30 and 150, the cut-off point 75 (average score) is considered for determining the upper and lower level of the 4 areas of assessment. So that score less than 75 is considered as low level of need, and score more than 75 is considered as high level of need (1).
Accordingly, in this study, the average assessment score is equal to 84.21, then, the needs level of patients with heart failure is high. In a study by Davidson in 2008, the average assessment score of patients with heart failure, based on questionnaires HFNAQ, who have recently been discharged from the hospital, is equal to 67.3, which is lower than our study (1). Waller and colleagues in a study in 2013, the average score of patients with heart failure assessment, based on questionnaires HFNAQ, who has recently been discharged from hospital, to 61.2, which is lower than our study (8). This difference could be due to cultural differences, age differences and duration of disease of the participants in two studies. Evaluation of assessment score of patients with heart disease showed that, among the four assessment aspects of participants, physical needs averaging 28 had the highest score, followed by psychological needs averaging 26, and social needs having the highest score. So, most of the needs of patients with heart failure in the study is related to the physical domain, and then, the psychological and social domains, which is comparable with the results of other studies. In a study carried out by Waller, it is shown that the greatest unmet needs of patients with heart failure, based on questionnaires HFNAQ is related to the physical domain which is similar to our study, and then, respectively, it is related to the emotional, social and biological (8). Chirnside et al., In 2013, studying 52 patients with heart failure, using questionnaires HFNAQ, with Cronbach's alpha coefficient 0.8 for the entire questionnaire, found that scores more of social needs areas are greater than other areas of physical, biological and psychological needs (9). In study done by Davidson, the greatest unmet needs are related to emotional and social, then the physical domain (1). In study of the effect of age variable on heart failure patient assessment, a significant difference was observed in the two groups between the area of social and biological needs, so that, with increasing age, the score of relevant areas is increased. In study of relationship between needs assessment with gender of heart failure patients, in terms of psychological needs, social, and environmental needs, women's mean score was significantly higher than the men. The findings suggest that, just in terms of physical needs, the average score in heart failure patients without the spouse was significantly higher than married patients. Based on our results, social and environmental needs of heart failure patients under diploma significantly are more than patients with a higher diploma. The results suggest that, scores of biological and psychological needs domains of patients with heart failure was significantly higher than unemployed patients. In study of relationship between need assessment and duration of disease in patients with heart failure, scores of all patients with disease duration of under 3 years over 3 years didn't have significantly different from each other. The results of this study, with increasing severity of illness, both physical and mental scores required fields significantly increased. According to the results of this study, with increasing severity of disease, the scores of physical and mental needs fields were significantly increased. Our results indicate that, with reduced ejection fraction (EF), the domain of physical need significantly increases. The limitations of this study are that, until now, few studies have been done based on questionnaire assessment in heart failure patients HFNAQ. On the other hand, none of these studies has examined the impact of age, sex, marital status, education, occupation, disease duration, disease severity, and ejection fraction in heart failure patients, and lack of comparison of studies in this field. Therefore, in order to investigate further, it is suggested to do cross-sectional and prospective studies on the impact of age, gender, marital status, education, occupation, disease duration, disease severity and ejection fraction on the needs assessment of heart failure patients. Results of this study showed that patients with heart failure do not have a high quality of life, but it is desirable (average score 60). Our result is consistent with some studies (10, 11), and also inconsistent with some studies, which found that quality of life in patients with heart failure is undesirable (12, 13). Also, study of our study results showed that, in the factors affecting the quality of life for heart failure patients based on the questionnaire SF-36, just there was a significant relationship between the education and quality of life in patients with heart failure and there was no significant relationship between other variables (age, sex, marital status, occupation, disease duration, disease severity and EF) and quality of life in patients with heart failure. The results of our study are comparable with the results of other studies and controversial. According to the Gomez et al in 2011, and Antônio et al in 2010, similar to our study, there was no association between quality of life and age of patients (14, 15). In studies of Barros et al and Borges et al, which the results were incompatible with our study, it was found that only there is a significant reversal relationship between the physical function of questionnaire SF-36, and age of heart patients. So that, with increasing age, the score of physical function domain score is reduced (16, 17). Santomé et al and Cesarino et al, in contrast to our study found that, there is no significant relationship between age and the fields of life quality based on the SF-36 questionnaire (18, 19). Brasil et al in 2001, similar to our study, observed no significant difference between the quality of life of women and men before and after pacemaker (20). Cesaro et al, in line with our study found that there is no significant difference between the quality of life of women and men and different marital status of heart defibrillator patients (19). In a study of Siam et al in 2012, in study of the quality of life of heart patients after surgery found that there is a significant relationship between the quality of life of patients and age, education level, occupation, marital status and duration of disease, but there is no significant relationship with gender (12). Abedi et al in 2011 in the study of quality of life in patients with heart failure found that there is a significant relationship between life quality
of patients and their age, but here is no significant between life quality of patients and gender. Low quality of life in illiterate patients in the present study could be because these patients are often economically and socially at a lower level, and insufficient access to resources leads to their exclusion from tracking specialized health and medical care. In general, education is considered as a positive point in having a healthy, which leads to better health, life satisfaction, and ultimately enhance the quality of life (13). Yousefi et al in 2011, using a questionnaire SF-36, like our study found that, there is no significant relationship between quality of life and education (21). In general, we can say that, since the nurses play essential role in patient care, attention to the physical, mental and social needs of heart failure patients is important. Given that, the results showed that, the needs level of the patients was high and individual and disease factors are effective on its effective fields, recognition of these factors can help health care employees to organize their activities in order to improve the health needs of the patients. The results could be effective to assess health and clinical nurses of community in relation with the success of current therapies, determining the need and type of services needed. Therefore, it is suggested that health officials pay more attention to follow-up and implementation of appointments at patients' homes. Awareness raising and attitudes of nurses towards patients' needs reducing agents is another point that should be considered. In addition, knowing the views of patients and awareness of their living conditions, and this issue is very important that nurses based on patients' satisfaction can select effective and appropriate therapies to improve the lives of patients. Nurses can change the modifiable factors among factors influencing patients' needs, and also review these factors in the patients, and benefit from their effective interventions in the planning of care at home and community level, and in as a result, they can plan and implement plans in the family and community to reduce the needs of the patients. One of the limitations of this study is that the study relies on self-reporting, so it may be prone to reporting bias. So because of the subjective nature of the needs assessment, each interviewee may have different understandings of the concept of quality of life, and consequently, give different answers.

4. CONCLUSION

According to the results of this study, it seems that most patients needs with heart failure are related to the field of physical, psychological, social and existential, and Age, sex, marital status, education, occupation, severity of disease and ejection fraction are effected on the needs assessment fields of these patients.

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AUTHORS CONTRIBUTION

This work was carried out in collaboration among all authors.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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