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# Evaluation of self care behaviours, medication and dietary compliance of patients with heart failure

**Sengul Akdeniz** [a*], Department of Nursing, Faculty of Health Sciences, Akdeniz University, 07058, Antalya, Turkey.
**Zeynep Ozer** [b], Department of Nursing, Faculty of Health Sciences, Akdeniz University, 07058, Antalya, Turkey.
**Guldane Ayaz** [c], Department of Nursing, Faculty of Health Sciences, Akdeniz University, 07058, Antalya, Turkey.

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**Abstract**

In this study, it was aimed to evaluate the self-care behaviors, dietary and medication compliance of patients with heart failure.The study was conducted as a cross-sectional sampling study between April and August 2016. After identifying the clinical diagnosis and treatment, 120 patients who were diagnosed with HF were included in the study. Data were obtained by using personal information form, Turkish versions of the European Heart Failure Self-care Behavior Scale (EHFScBS), Beliefs about Medication Compliance Scale and Beliefs about Dietary Compliance Scale for patients with HF. The mean score on EHFSc BS was found to be 31.20± 8.05. Benefit and barrier subscale mean scores were found to be 26.11 ± 4.23 and 13.09 ± 3.5 for dietary compliance and 20.44 ± 2.7 and 22.36 ± 3.8 for medication compliance, respectively. According to the results of the study ıt was found that there was a moderate relationship between self-care behaviors and dietary compliance (r=0,538,p<0,05) benefits and medication compliance (r=0,420, p<0,05 ) benefits.

Keywords: The European Heart Failure self care scale; medication compliance; dietary compliance; heart failure.

* ADDRESS FOR CORRESPONDENCE: **Sengul Akdeniz**, Department of Nursing, Faculty of Health Sciences, Akdeniz University, 07058, Antalya, Turkey.
*E-mail address*: sengulakdeniz@akdeniz.edu.tr / Tel.: +90 242 2274400

## 1. Introduction

Among chronic illnesses, heart failure, which has an important place in terms of incidence and prevalence rates, is a major health problem, especially in industrial societies. In recent years, the frequency, the prevalence and the mortality are increasing. With the aging population, the incidence of heart failure is expected to increase further in the coming years (Aktoz, 2010).

The incidence of heart failure in the world and in our country is increasing every year. According to the AHA Heart Disease and Stroke 2015 Statistics, there are 5.7 million heart failure patients in the United States over the age of 20 and 870,000 new diagnoses are added each year (Mozaffarian et al., 2015).

Heart failure is also seen as an important health problem in Turkey, with about 3 million heart failure patients. The results of the 'Heart Failure Prevalence and Predictors in Turkey (HAPPY) study conducted by the Turkish Society of Cardiology, which is a prevalence study, showed that the prevalence of apparent HF is 2.9% in the adult population over 35 years in Turkey. Although we do not have a population, it is higher than Western societies. The mean age of the KY in our country is 60 years old, and we can say that we are confronted with KY almost 10 years earlier than Western populations (Degertekin, Erol & Ergene, 2012).

Self care; is to take responsibilities in order to protect the health of the individual and this skill is realized through communication, culture, education and interaction over time.

The self-care regimen for heart failure patients is complex and multifaceted. There are requirements for how patients should manage their symptoms, weight imbalance, sodium intake-restriction, the use of medicines and how to be physically active (Kavradim & Ozer, 2015).

By adapting to the management of the diseases of HF individuals; they can live their lives in good quality with their illnesses by learning about exercise, changes in eating habits, regular drug use, individual monitoring and lifestyle changes, and controlling symptoms. Therefore, self-care needs, beliefs and adaptations related to disease management of patients should be determined with individual approaches. Determination of self-care behaviors and implementation of self-care education programs in individuals with heart failure are thought to affect the quality of life of individuals positively (Akbiyik, Kocak & Oksel, 2016).

In the light of these considerations, nurses and other health professionals who are responsible for improving the primary care and self care skills of patient individuals should be able to know the self care, diet and compliance behaviors and affecting factors of the patients, plan necessary applications and precautions.

In this study, it was aimed to investigate self-care, diet, and compliance behaviors and factors affecting these behaviors in patients with heart failure.

## 2. Method

### *2.1. Type of study*

This study was planned as a descriptive study.

### *2.2. The universe and sampling of the study*

Participants of the study consisted of 120 individuals who were diagnosed with heart failure in Akdeniz University Medical Faculty Hospital Cardiology Clinic in Antalya / Turkey.

### *2.3. Inclusion and exclusion criteria*

The patients age 18 years or over, conscious and capable to answering the questions, with non-critical illness, speaking in Turkish, with a diagnosis of heart disease, and who agreed to participate in the study.

### *2.4. Data collection*

Data were obtained by using patient information form, the European Heart Failure Self Care Behaviour Scale, Beliefs About Medication Compliance Scale and Belief About Dietary compliance scale.

### *2.5. Patient information form*

The questionnaire includes the information on the age, gender, marital status, educational status the time elapsed from the diagnosis of HF, etiology of HF the New York Heart Association functional class and the treatments administered.

### *2.6. The European Heart Failure Self-care Behavior Scale (EHFScBS)*

The scale consists of 12 questions measuring self-care activities.The 12 items included in the EHFScBS are rated on a 5-point Likert scale, with 1=totally agreeing, 2=partially agreeing, 3=neither agreeing nor disagreeing, 4=partially disagreeing, and 5=totally disagreeing. Total score is calculated by summing the scores of each item and ranges from 12 to 60. 12-36 points indicate that self-care behavior is appropriate and 37-60 points indicate that self-care behavior is inadequate. Turkish validity and reliability scale Baydemir et al.(Baydemir, Özdamar & Ünalır, 2013) and the internal consistency Cronbach alpha coefficient was found to be 0.69.

### *2.7. The Beliefs on the Medication Compliance Questionnaire (BMCS)*

The *Beliefs about Medication Compliance Scale* is a five-point Likert-type scale and measures the belief that the individual is about m*edication compliance* . The scale of twelve items has two subscales: benefit and barrier; The first subscales measures the benefit perception of the person(1,2,7,10,11) and the second subscales ( 3, 4, 5, 6, 8, 9, 12) measures the perception of the barrier. The total score on the subscale of benefit is the lowest of 6, the highest of 30; The higher the score, the more the perceived benefit is perceived. The high score on the subscale of the obstacle shows that you perceive more obstacles as you try to behave. The 9th item of the scale should be reverse coded. Turkish validity and reliability of the scale Oğuz et al. (Oğuz, Enç & Yiğit, 2010) and internal consistency was found to be 0.74 for the Cronbach alpha coefficient of benefit perception and 0.59 for the barrier perception subscale.

### *2.8. Beliefs about Dietary Compliance Scale (BDCS)*

Beliefs about Dietary Compliance the scale is a five-point Likert-type scale and consists of 12 items. There are two subscales of benefit and barrier. The first subscales measures the benefit perception of the person (1-5, 11, 12 items) and the second subscales measures the **barrier** perception of the obstacles (6-10 items). Benefit subscale shows higher perceived benefit with higher score behavior. The second item of scale should be reverse coded. Turkish validity and reliability of the scale Oğuz et al. (Oğuz, Enç & Yiğit, 2010) and internal consistency was found to be 0.71 for the Cronbach alpha coefficient of benefit perception and 0.58 for the barrier perception subscale.

### *2.9. The ethical dimension of the study*

In order to be able to conduct the research, a written permission has been obtained from the Ethics Committee of the University Medical Faculty, from the Head of the University Medical Faculty Hospital and from the Cardiology Department. Verbal and written permission was obtained after the required explanations were made before the research.

### *2.10. Statistical analysis*

In the analysis of the data obtained in the study, SPSS 22.0 package program was used. Percentage and mean analysis test was used to evaluate the sociodemographic characteristics and other factors of the patients. Student t test and one-way analysis of variance were used in statistical comparisons and the level of significance was taken as $p < .05$.

## 3. Results

### *3.1. General information and patient characteristics*

Of the patients; 55.8% were male, 44.2% were female and 85.8% were married. Regarding educational status, the majority of the patients (68.3%) were primary school graduates. Patients prescribed an average of eight different medications. Systemic arterial hypertension and diabetes mellitus were present in 55% and 54.2%, respectively. The New York Heart Association Functional Class was class II (49.2%) for patients referred to inpatient clinics (Table 1)

According to the results of the study ıt was found that there was a moderate relationship between self-care behaviors and dietary compliance ($r=0,538$, $p<0,05$) benefits and medication compliance ($r=0,420$, $p<0,05$ ) benefits.

Self-care behaviors have been found to be sufficient in patients' behavior of drug use, management of respiratory distress and salt restriction (Table 2).

There was no correlation between global score and sex, age, NYHA functional class, economic level (Table 3).

The mean score on EHFSc BS was found to be 31.20± 8.05. Benefit and barrier subscale mean scores were found to be 26.11 ± 4.23 and 13.09 ± 3.5 for dietary compliance and 20.44 ± 2.7 and 22.36 ± 3.8 for medication compliance, respectively (Table 4).

**Table 1. Demographic and clinical characteristics of the patients (n = 120)**

| Characteristics | Mean±Standart Deviance/ n (%) |
|---|---|
| Gender | |
| Women | 53 (44,2) |
| Men | 67 (55,8) |
| Age | |
| Age Mean (Range age) | 66,78±13,47 years (30-92 years) |
| 59 age and below n (%) | 32 (26,7) |
| 60 – 69 age n (%) | 31 (25,8) |
| 70 years and over n (%) | 57 (47,5) |
| Marital status, n (%) | |
| Single | 16 (13,3) |
| Married | 103 (85,8) |
| Living alone or Living with family n (%) | |
| Living alone | 12 (10) |
| Living with family | 108 (90) |
| Education level, n (%) | |
| No formal education | 13 (10,8) |
| Primary school | 82 (68,3) |
| High school | 12 (10,0) |
| University | 13 (10,8) |
| Economic level n (%) | |
| Low | 33 (27.5) |
| Middle | 84 (70) |
| High | 3 (2.5) |
| NYHA n (%) | |
| I | 4 (3.3) |
| II | 59 (49.2) |
| III | 47 (39.2) |
| IV | 10 (8.3) |
| Comorbidities, n (%) | |
| Hypertension | 55 |
| Diabetes | 54.2 |
| Valvular heart disease | 11,7 |
| KAH | 9,2 |
| HF-Related medications, n (%) | |
| Diuretics | 83.3 |
| Anti-coagulant | 63.3 |
| Antihipertansif Antihypertensive | 49.2 |
| Antidiyabetik Antidiabetic | 48.3 |
| Bronchodilator | 32.5 |
| Beta-blocker | 25.8 |
| ACE-inhibitor | 20 |
| Digoxin | 15 |
| Diet and Exercise Levels, % | |
| Patients at home with dietary advice | 85.8 |
| Patients using salt-free diet | 82.5 |
| Patients who exercise regularly | 12.5 |

**Table 2. Average scores of all ıtems of the scale**

| Items (Self-care Behaviour Scale) | Mean±Standart Deviance |
|---|---|
| I weigh myself daily | 3,20±1,36 |
| If I get short of breath, I take it easy | 1,92±,82 |
| If my shortness of breath increases, I contact my doctor or nurse | 2,15±1,02 |
| If my feet/legs become more swollen than usual, I contact my doctor or nurse | 2,14±1,05 |
| If I gain 2 kg in one week, I contact my doctor or nurse | 3,16±1,25 |
| I limit the amount of fluids I drink | 2,65±1,29 |
| I take a rest during the day | 2,15±4,93 |
| If I experience increased fatigue, I contact my doctor or nurse | 2,71±1,16 |
| I eat a low salt diet | 2,05±1,10 |
| I take my medication as prescribed | 1,66±0,70 |
| I get a flu shot every year | 3,47±1,51 |
| I exercise regularly | 3,88±1,07 |
| Mean score in EHFScBS (possible range: 12-60) | 31,20±8 |

**Table 3. Relation between variables and self-care behaviors**

| Patient Characteristics | n (%) | The mean score on EHFScBS | F/ p | |
|---|---|---|---|---|
| Gender | | | | |
| Women | 53 (44,2) | 30,41±6,74 | p=,319 | t=-0,957 |
| Men | 67 (55,8) | 31,83±8,96 | | |
| Age area | | | | |
| 59 age and below | 32 | 29,90 | | |
| 60 - 69 age | 31 | 29,77 | F=1,890 | p=0,156 |
| 70 years and over | 57 | 32,68 | | |
| NYHA Class | | | | |
| I | 4 (3,3) | 31,00±10,9 | | |
| II | 59 (49,2) | 29,65±6,79 | F= 1,540 | p=0,208 |
| III | 47(39,2) | 32,58±9,15 | | |
| IV | 10 (8,3) | 33,80±7,52 | | |
| Economic level | | | | |
| Low | 33 (27,5) | 29,81±7,18 | p=,650 | t=-1,124 |
| Middle | 84 (70) | 31,68±8,40 | | |

**Table 4. Standard deviations and ranges of belief complements**

| | **Mean±Standart Deviance** |
|---|---|
| **Self-care Behaviour Scale** | **31,20 ± 8,05** |
| **BMCS** | |
| **Benefits subscale** | **26,11±4,23** |
| **Barriers subscale** | **13,09±3,52** |
| **BDCS** | |
| **Benefits subscale** | **20,44±2,73** |
| **Barriers subscale** | **22,36±3,85** |

## 4. Discussion

Controlling diet, controlling fluid, exercising, reducing salt intake, improving compliance with drug treatment are important skills in terms of enhancing self-care behaviors (Sezgin & Mert, 2015).

The answers of patients to the questions were found to be similar to that of patients from other studies the scale was used. Our study the total score of EHFScBS was 31,20±8, which was found to be 24.8±7.6, 33.3±7.8, 32.6±9.1, 34.0±7.99 and 43,00±5,7 in the studies of Lupon et al. (2008), Jaarsma et al. (2003), Kato et al. (2008), Baydemir et al. (2013)and Asgar-Pour et al. (2016). These differences might be resulted from the differences in the patient characteristics and health conditions.

The majority of patients participating in our research indicated that self-care behaviors include behavioral management of respiratory problems, fluid restriction, daytime rest, low salt diet and regular medication use.

Every day weighing, regular exercise, and influenza vaccination every year were found to be insufficient and partially adequate for other self-care behaviors.

Jaarsma et al. (2003) state that patients are mostly behaving in regular weight training, regular exercise and when they have a problem, they are behaving like doctors / nurses and passing themes. Our society does not have regular weight control and sports habits. It is thought that the difference between the two studies is due to social structure and cultural differences.

According to our study, NYHA class II patients behaviors are better than class III and IV patients. According to a study conducted in Mexico, 81.4% of participants had class III and IV levels and the group with the lowest overall score of self-care in the whole study is the Mexican group (Regel et al, 2009)

Again according to the same research result, NYHA level is a determinant for self-care belief. NYHA classification is used to determine disease severity in heart failure patients according to the literature. According to this international class, as the class level increases, the degree of heart failure increases and symptoms become worse. Patients in NYHA class I levels have problems during their daily life activities, but as the disease level increases, the patient becomes unable to perform their daily life activities. Our research result is compatible with literature knowledge.

Treatment-related compliance behaviors include the planning and decision-making process to regularly receive medications (Riegel et al, 2009). World Health Organization's report states that individuals with chronic illness are below 50% of treatment compliance rates. In the literature, pharmacological and non-pharmacological treatment compliance is suggested to be between 20% and 60% for individuals with heart failure (Evalingesta et al., 2000).

According to our research results, regular diet and drug use beliefs and adaptations related to disease management of patients were found to be adequate. Benefit and barrier subscale mean scores

were found to be 26.11 ± 4.23 and 13.09 ± 3.5 for dietary compliance and 20.44 ± 2.7 and 22.36 ± 3.8 for medication compliance, respectively. According to the results of the study ıt was found that there was a moderate relationship between self-care behaviors and dietary compliance (r=0,538, p<0,05) benefits and medication compliance (r=0,420, p<0,05 ) benefits. The result of our study is; 90% of individuals live with their families and that self-care needs are affected by socio-cultural factors such as family support and social support.

## 5. Conclusion

In the present study, it was determined that self-care behaviors of patients were appropriate in our study. It was found that the perceived benefit perception was high and the benefits were more highly perceived together with the diet.

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