

# Factors Affecting Self-Care Behaviors of Patients with Heart Failure

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## Abstract

A Descriptive Correlational Design is carried out in Al-Najaf City/Al-Najaf Al-Ashraf Health Directorate / Al-Sadder Medical City, from October, 17<sup>th</sup>, 2018 to June, 13<sup>th</sup>, 2019, in order to assess Self-Care Behaviors of Heart Failure Patients, and to assess the factors affecting patients with heart failure. A Non-Probability (Purposive Sample) of (110) patients who had heart failure, those who visit Al-Sadder Medical City for follow up, treatment, or both. Reliability of the questionnaire is determined through a pilot study and the face validity is determined through a panel of experts. The data are collected through the utilization of the developed questionnaire after the validity and reliability are estimated, and by means of interview technique. The data are described statistically and analyzed through use of the descriptive and inferential statistical analysis approaches. The findings of the present study indicate that the overall assessment for the patients' self-care behaviors is fair. In addition, the overall assessment of patients' self-efficacy toward self-care behaviors is fair, and the overall assessment of patients' attitude toward self-care behaviors is good.

**Keywords:** *self-care behaviours, heart failure, factors*

## Introduction

Cardiovascular disease is presently one of most prevailing cause of death within world. In the 19<sup>th</sup> century, poor diet and infection disease were the reasons of most deaths and morbidities. Nowadays, Cardiovascular disease accounts for around 30% of completely deaths in more than 35 years old. concurring to statistical of 2008 mortality, over 2200 Americans die of Cardiovascular disease daily <sup>19</sup>. Cardiovascular diseases is the essential cause of death in different created nations. In 2000, CVD is responsible for over 1.9 million of them within European Union, about 4.35 million deaths in Europe, accountable for 43% of totally deaths in men and 55% of totally deaths in women <sup>(1, 13)</sup>. In addition to CVD is developing to become the biggest killer in the developed countries since the early 1900 <sup>7</sup>. whereas the hazard of cardiovascular mortality was once moderately low in youth, collecting evidence recommends that CVD has its roots in childhood <sup>16</sup>. Furthermore various hazard components have been connecting to the advancement of cardiovascular disease involving: poor dietary habits, weight gain, high blood pressure, diabetic mellitus, alcohol utilization, tobacco use, & impaired physical activity levels. Of relevance, numerous of these risk

factors are linked and reversible through a healthy diet and increased physical movement. <sup>21</sup>. Universally, cardiovascular diseases are the number one cause of death and they are anticipated to stay so. An evaluated 17million individuals died from cardiovascular disease in 2005, representing 30% of all worldwide deaths, of these deaths, 7.2 million were due to heart attacks and 5.7 million due to stroke. Almost 80% of these deaths happened in low- and middle-income nations. If current trends are allowed to proceed, by 2030 an evaluated 23.6 million individuals will die from cardiovascular disease (basically from heart attacks and strokes). Cardiovascular diseases include: Coronary heart disease, valvular heart diseases, hypertension, peripheral artery disease, rheumatic heart disease, congenital heart disease, and heart failure <sup>(9, 2)</sup>. In the middle east, in hospital mortality was 5.3% among acute HF patients, increasing to 7.5% at 30 days. However, the study was based in Riyadh, the capital of Saudia Arabia. A Yemeni study indicated that in hospital mortality was 9% (Al-Shamiri, 2013). Heart failure, frequently referred to as congestive heart failure (CHF), is when the heart is incapable to pump adequately to preserve blood flow to meet the body's needs. Signs and symptoms commonly include shortness of breath, excessive tiredness, and leg swelling. The shortness of

breath is usually worse with exercise, while lying down, and may wake the person at night. A limited ability to exercise is also a common feature. Chest pain, including angina, does not typically occur due to heart failure. HF can be caused by coronary artery disease, heart attack, cardiomyopathy, high blood pressure, atrial fibrillation, valvular heart disease, and infection <sup>20</sup>.

In addition, heart failure can influence the right or left side of the heart, or both at the same time. It can be either an acute (short-term) or chronic (continuous) condition. In acute heart failure, the symptoms appear abruptly but go away reasonably rapidly. This condition frequently happens after a heart attack. It may moreover be a result of a problem with the heart valves that control the flow of blood in the heart. In chronic heart failure, however, symptoms are continuous and don't improve over time. The vast majority of heart failure cases are chronic. HF is a chronic, quickly quickening disease that currently has no cure <sup>20</sup>.

## Methodology

### Design of the Study:

A Descriptive correlational Design is adopted in the current study to achieve the study objectives. The study started from October, 17<sup>th</sup>, 2018 to June, 13<sup>th</sup>, 2019.

### Ethical Considerations and Administrative Agreements:

This is one of the most essential principles before data collection, to preserve the participants' principles and self-esteem. The researcher gets an agreement from the Faculty of Nursing / Kufa University to conduct the study, another agreement is gotten from the Ethical Committee in Faculty of Nursing, Also, an official agreement is taken from the Ministry of Planning/ Central Council for Statistics in order to accept the study questionnaire. Another agreement is gotten from Al-Najaf Al-Ashraf Health Directorate/ Al-Sadder Medical City/ CCU Unit, Medical Emergency Department, and Medical Wards, to interviewing each subject. And lastly, subject's agreement also was gotten from the patient him/herself after the researcher clarified the purpose of the study, seeks informed consent; and offered a respect to participants confidentiality in addition to making the participation voluntary to answer the questionnaire items.

## Setting of the Study

The study is conducted in Al-Najaf Al-Ashraf City/Al-Najaf Al-Ashraf Health Directorate / Al-Sadder Medical City/ CCU Unit, Medical Emergency Department, and Medical Ward.

### Sample of the Study:

A Non-Probability (Purposive Sample) of (110) patients who had heart failure, those who visit Al-Sadder Medical City/ CCU Unit, Medical Emergency Department, and Medical Ward for treatment, follow up, or both.

### Sample Size :

The researcher utilized the power analysis method(Cohen's method) to determine the study sample size. This method can be clarify through its factors which involve: power, effect size, and level of significance. Power is an important factor to determine an adequate sample size for descriptive correlational study. Power is the capability of the study to determine the relationships between causality variables. The less acceptable power level factor for nursing studies is 80%, and the larger the power, the bigger the sample size that is required. The effect size was determined based on three levels of effect size: large effect (0.10), moderate effect (0.30), and small effect (0.50). The significance level or alpha ( $\alpha$ ) for this study was 0.05, because 0.05 means that the accepted chance of being wrong is only 5% of the time or less after infinite frequent sampling <sup>4</sup>. Hence, based on the following factors (power = 90,  $\alpha$  = 0.05, and effect size = 0.30), the adequate sample size that was needed for this study was a minimum of (N =91). Nevertheless, to increase sample size that was wanted increase the power level of the study, and use more than 90% of power level and have become a total of (N = 110).

### The Study Instrument:

An assessment tool is adopted and developed by the researcher to assess the patients' self-care behaviors, and factors affecting self-care behaviors. The complete instrument consists of four parts: demographic data, clinical data, patients' self-care behaviors, and the factors affecting patients' self-care behaviors instrument.

### Validity of the Study Instrument:

The validity of the study instrument is used to determine the study instrument will measure the data that

is intended to measure. The Face Validity is determined through the use of panel of experts to investigate clarity, relevancy, and adequacy of the questionnaire to measure the interested concepts.

A draft of questionnaire is designed and presented to (15) experts, who have years of experiment more than 10 years in field of nursing and medicine (appendix A).

Also, the experts’ suggestions have been taken into consideration. The final copy of the study instrument is accomplished to be valid tool to measure the study phenomena.

Clark and Creswell,(2014) mention that the panel typically comprises of at least three experts, but a more number may be suitable if the construct is complicated.

**Reliability of the Study Instrument:**

Reliability is concerned with the consistency and dependability of a research instrument in order to measure a variable of interest. Determination of reliability of the questionnaire is depending upon the reliability of internal consistency / Alpha Cronbach technique.

**Data Collection**

The collection of data is done by application of the developed questionnaire with aid of structured interview technique with the subjects as they are individually interviewed and the researcher use Arabic version of the questionnaire, by the same questionnaire for all study subjects who are involved in the study sample. The data collection process started from January 8<sup>th</sup> , to 17<sup>th</sup> February. Each subject spends approximately (15-20) minutes to complete the interview.

**Statistical Analysis**

The following statistical data analysis approaches is used in order to analyze the data of the study under application of the statistical package (SPSS) ver. (24), and the Microsoft excel (2010):

**1. Descriptive Data Analysis:**

- a- Tables ( Frequencies and Percentages).
- b- Statistical figures (Pie Charts ).
- c- Statistical mean and standard deviation.
- d- Pearson’s Correlational Coefficient (r).

e- Measures of central tendency: Mean, Mean of scores (MS)And the assessment by cutoff point (0.66) due to the three points likert scales with three levels of assessment, poor (1-1.66), fair (1.67-2.33), and good (2.34-3)for assessment of the levels of the patients’ self-care behaviours.

Determine the range and some of scores for the sample size(110) with four points Likert scale, scored as 1 for(poor), 2 for(fair), and 3 for(good). assessment of the levels of the patients’ self-care

**2. Inferential Data Analysis:**

This approach is used to accept or reject the statistical hypothesis, which includes the following :

- a- Chi-Square test for testing the independency distribution of the observed frequencies, and for measuring the association between the studies variables according to its type.
- b- ANOVA test to find out the variance between variables
- c- Independent t-test to find out the different between variables

**Results**

**Table (1) Overall Assessment of Patients’ Self-Efficacy Toward Self-Care Behaviors**

	Rating	Frequency	Percentage
Assess self-efficacy	Fair	50	45.5
	Good	30	27.3
	Poor	30	27.3
	Total	110	100.0

n (110); M.S 1.67-2.33 (fair))

Shows that the overall assessment of patients’ self-efficacy toward self-care behaviors is fair (45.5%).

**Table (2) Overall Assessment of Patients’ Attitude Toward Self-Care Behaviors**

	Rating	Frequency	Percentage
Assessment patients’ attitude	Fair	18	16.4
	Good	91	82.7
	Poor	1	0.9
	Total	110	100.0

Cut off point (0.66), M.S(mean of scores), poor (mean of score 1-1.66), moderate (mean of score 1.67-2.33), high (mean of score equal or more than 2.34)

Shows that the overall assessment of patients' attitude toward self-care behaviors is good (82.7%).

**Table (3) Correlation Between Patients' Self-Care Behaviors and their Self-Efficacy and Attitude Toward Self-Care Behaviors**

Studied domains	Statistical parameters	Self-care behaviors	Self-efficacy	Patients' attitude
Self-care behaviors	Pearson Correlation	1	.759	.354
	P-value		0.00	0.00
	N	110	110	110
Self-efficacy	Pearson Correlation	.759	1	.416
	P-value	0.00		0.00
	N	110	110	110
Patients' attitude	Pearson Correlation	.354	.416	1
	P-value	0.00	0.00	
	N	110	110	110

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Shows that there is a positive and high significant correlation between the patient's self-care behaviors domains and the patient's self-efficacy and patients' attitude domains at p-value > 0.01 (i.e. when the patient's self-efficacy and attitude increased, the self-care behaviours also increased and vice versa).

**Table (4) Relationship Between Patients' Self-Care Behaviors and their Demographic Data**

Demographic Data	Chi value	Df	P. value
Age	5.988	8	0.64 (NS)
Gender	2.437	2	0.29(NS)
Educational level	16.852	10	0.07(NS)
Monthly income	11.312	4	0.02(S)
Residence	8.093	2	0.01(S)
Marital status	10.354	8	0.24(NS)
Occupation	20.086	10	0.02(S)

n (110); Non-significant at p-value more than 0.05; S, significant at p-value less than 0.05; HS, highly significant at p-value less than 0.01

Shows that there is a significant association between self-care behaviors and monthly income, residency, and occupation at p-value less than 0.05, and there is a non-significant association with the other demographical data at p-value more than 0.05.

## Discussion

Table (1): The study results indicate that the overall assessment of patients' self-efficacy toward self-care behaviors is fair (45.5%). These results are in agreement with (14, 17), that patients with higher self-efficacy feel less obstructions against self-care and have hence more activities of self-care, therefore, agreeing to the evidence gotten in this study and past studies, it can be understood that self-efficacy is an important determinant of self-care behaviors in patients with cardiac disease 3. Table (2): Shows that the overall assessment of patients' attitude toward self-care behaviors is good. These results are in agreement with (14, 17) There is a positive attitude towards self-care in heart failure patients and this will make them consistent 24. Generally, positive attitudes were expected about self-care describing it as vital to controlling symptoms. Individuals who had positive evaluative and experiential attitudes toward self-care employed that tactic to manage their symptoms 12. Table (3) indicates that there is a high significant correlation between the patient's self-care behaviors domains and their self-efficacy and patient's attitude.

## Conclusion

Based on the study results and discussion, the study concludes that there is a deficient in self-care behaviors of patients with heart failure. In addition, the patients self-efficacy, attitudes, occupation, residency, monthly income, and smoking are the common factors affecting their self-care behaviors.

**Financial Disclosure:** There is no financial disclosure.

**Conflict of Interest:** None to declare.

**Ethical Clearance:** All experimental protocols were approved under the University of Kufa. Faculty of Nursing, Iraq and all experiments were carried out in accordance with approved guidelines.

## References

1. Abd A, Diao K, Halima Y. Assessment of Patients' Adherence to Therapeutic Recommendations after Ischemic Heart Diseases in Al-Najaf City. *kufa Journal for Nursing sciences* 2015;5.2: 138-148
2. Diao K, Abd-A. The impact of social and economic factors of patients on their adherence to medications after ischemic heart disease in Al-Najaf city." 2014
3. Alizadeh M, Feizollahzadeh H, Abdollahzadeh F. The Relationship between Self-efficacy and Compliance with Self-care Behaviors in Patients with Acute Coronary Syndrome after Coronary Angioplasty in Shahid Madani Hospital, 2016: A Health Belief Model. *JOURNAL OF RESEARCH IN Medical and Dental Science*, 2018; 6(3):415-420
4. Al-Nassar H. Assessment of Patients' Self-Care and Self-Efficacy after End Stage Renal Disease Undergoing Hemodialysis in Al-Najaf City, Unpublished thesis, College of Nursing, University of Kufa. 2017.
5. Bennett JA, Riegel B, Bittner V, Nichols J. Validity and reliability of the NYHA classes for measuring research outcomes in patients with cardiac disease. *Heart & Lung*, 2002;31(4):262-270
6. Bisognano J, Beck G, Connell R. *Manual of Outpatient Cardiology*, Springer-Verlag London Limited, 2012;150.
7. Branca F, Nikogosian H, Lobstein T. (Eds.). The challenge of obesity in the WHO European Region and the strategies for response: summary. *World Health Organization* 2007.
8. Bui AL, Horwich TB, Fonarow, GC. Epidemiology and risk profile of heart failure. *Nature Reviews Cardiology*, 2011;8(1):30
9. Chaurasia V, Pal S. Performance analysis of data mining algorithms for diagnosis and prediction of heart and breast cancer disease 2017.
10. Clark VLP, Creswell JW. *Understanding Research A Consumer's Guide*. 2th edition. New Jersey. 2014.
11. Conceição APD, Santos MAD, Santos BD, Cruz DDALM. Self-care in heart failure patients. *Revista latino-americana de enfermagem*, 2015;23(4):578-586
12. Dickson VV, Deatrck JA, Riegel B. A typology of heart failure self-care management in non-elders. *European Journal of Cardiovascular Nursing*, 2008;7(3):171-181
13. Erhardt L. 'Cigarette smoking: An undertreated risk factor for cardiovascular disease', Elsevier, 2009;205(1): 23-32.
14. Hamzhepour H, Vatandost S, Vakili R, Bagheri-Saweh M I. Study of the Self-care ability in patients with chronic heart failure. *Journal of Chemical and Pharmaceutical Sciences*, 2016;9(4):3254-3259

15. Heo S , Lennie TA , Okoli C , Moser DK. Quality of life in patients with heart failure: ask the patients. *Heart & Lung*, 2009;38(2):100-108.]
16. Jimenez-Pavon D , Konstabel K , Bergman P . ‘Physical activity and clustered cardiovascular disease risk factors in young children: a cross-sectional study (the IDEFICS study).’, *BMC medicine*, 2013;11(172): 1–11.
17. Kamrani AA , Foroughan M , Taraghi Z . Self care behaviors among elderly with chronic heart failure and related factors. *Pak J Biol Sci* ,2014;17(11):1161-9]
18. LeMone P , Burke K : *Medical–Surgical Nursing Critical Thinking For Person-Centred Care*, Pearson Australia Group Pty Ltd, 2<sup>nd</sup> edition, 2014; 940-946.
19. Maulik N. *Cardiovascular Diseases: Nutritional and Therapeutic Interventions*. CRC Press.]2013.
20. McDonagh TA , Gardner RS , Clark AL. *Oxford textbook of heart failure*. Oxford University Press.] 2011.
21. Ortega FB , Artero EG , Ruiz JR . ‘Physical fitness levels among European adolescents: the Helena study.’, *British journal of sports medicine*, 2011;45(1 ): 20–29.
22. Pack P , Bassett S. *Cliffs Notes® Anatomy & Physiology Quick Review*, Wiley Publishing, Inc., 2<sup>nd</sup> edition, 2011; 206-212.
23. Peters F , Freund T , Kunz CU . Determinants of heart failure self-care behaviour in community-based patients: a cross-sectional study. *European Journal of Cardiovascular Nursing*, 2013;12(2):167-176]
24. Poursharifi H , Mansouriyeh N , Sadeghi MRT. Self-efficacy as a mediator in the relationship between social support and self-care in patients with heart failure. *International Journal of Medical Research & Health Sciences*, 2017;6(6): 157-162]
25. Schweitzer RD , Head K , Dwyer JW. Psychological factors and treatment adherence behavior in patients with chronic heart failure. *Journal of Cardiovascular Nursing*, 2007;22(1):76-83]