

Reducing Anxiety among Heart Failure Patients by Doing the Six-Minute Walk

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Abstract

Heart failure has been one of the emerging diseases in terms of prevalence, morbidity, and mortality, which cause a physical and psychological impact on society. Anxiety was found as the most common issue among them. Inadequate anxiety management leads to the treatment compliance, aggravate functional status, prolong hospitalization and increase mortality rate, thus effective management is essential. The present study was to investigate the impact of a safety exercise of the six-minute walk in reducing anxiety level among heart failure patients. A quasi-experimental study was performed at a cardiovascular outpatient of the acute care setting in Indonesia. The anxiety level of respondents was measured by using the Zung Self-rating Anxiety Scale. A descriptive and paired t-test was performed for data analysis. Fifteen heart failure outpatients enrolled in the study, most were male with the maximum age of 78 years. More than half of respondents experienced anxiety during pre-test in the first week of this program, then their anxiety level reduced after a month implementation of the six-minute walk. This study provides baseline information reflecting the effectiveness of the six-minute walk in reducing anxiety level among heart failure patients.

Keywords: Anxiety, exercise, heart failure, six-minute walk

Introduction

Heart failure has been one of the emerging epidemic health problems in terms of prevalence, morbidity, mortality and use of health services in the world. Based on an updated report of the American Heart Association, the estimation of people with heart failure will increase by 46% from 2012 to 2030.^{8,12} In developing countries, the prevalence of heart failure increases due to population ageing, longer patient survival and the effectiveness of secondary prevention. This problem has a major impact on the lifestyle and prognosis of patients and an increasingly greater challenge for health policymakers.^{5,8}

Heart failure has become among the two top leading causes of death, representing 11.34% of cases in Indonesia, which cause physical, psychological, social, and economical problem impact on society. Uncontrolled hypertension and smoking history are the most dominant factors of this issue.⁵

Furthermore, previous studies found that one of the health-related problems among health failure patients was psychological status.^{2,7} Anxiety was the most widely explored on the psychological issue of heart failure patients, about 23% to 45% among them experience severe anxiety, which affects the treatment compliance, aggravate functional status, prolong hospitalization and increase mortality rate.^{3,9,14} Thus management of anxiety in heart failure patients is essential. The NICE guideline proposed the appropriate care for heart failure patients, one of its an exercise program. The present study sought to investigate the effectiveness of the six-minute walk in reducing the anxiety level among heart failure patients.

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Materials and Method

a. Design, Setting, and Participants of Study:

A quasi-experimental study was conducted at a

cardiovascular outpatient of the acute care setting in Indonesia. The eligible participants were recruited as follows; adult outpatients, patients who confirmed diagnosis of heart failure, and no cognitive impairment. The sample size was estimated based on the results of other studies on heart failure in the literature review, with a significance level of .05 and expected power of .80, the sample size required was 15 patients.

b. Measures and Data Collection Procedure: Patients’ information was collected through medical records and sociodemographic form in an acute care setting. The eligible participants were informed on how to rate the Zung Self-rating Anxiety Scale (SAS). The participants were given the Six-Minute Walk Test within a month. The SAS questionnaire was rated by the participants in the first week and the fourth week of this program.

The Zung Self-rating Anxiety Scale (SAS): The SAS was used to determine the patients’ perceptions of anxiety level that was developed by William W. K. Zung in 1971. The Indonesian version of this tool was conducted by Anggi Setyowati et al (2019) that was performed following the World Health Organization guideline.¹³ Reliability and validity have been supported in this population.¹¹ The SAS is a Likert-scale of 1 (None) to 4 (Most of the time), which consists of 20-item self-report assessment to measure how respondents felt during the last month. Each score is categorized into three levels representing normal, moderate anxiety, and severe anxiety level.

The Six-Minute Walk: The 6-Minute walk procedures in accordance with the American Thoracic Society guideline were implemented to the respondents.¹ This exercise consisted of 6-minute walk on 30 meters in length. Turn around points marked with a cone and indicate starting position. Having the patient seated at rest for at least 10 mins prior to the test by the starting position. Measure blood pressure, pulse rate, oxygen saturation, and borg scale. Patients were not allowed to do exercise if they had blood pressure upper than 180/100 mmHg and pulse rate more than 120 beats per minute. If the patient gets tired while walking, they were allowed to rest. Calculate the distance walked, round to the nearest meter.

c. Statistical Analysis: The statistical analysis package was done by using SPSS program. The sociodemographic data were presented by

descriptive analysis. A paired t-test model was performed to determine the impact of the six-minute walk test on patients’ anxiety before and after the intervention of the 6-minute walk.

Results

a. Sociodemographic of Respondents: Fifteen heart failure patients enrolled in this study had a minimum age of 19 years and a maximum age of 78 years. Most were male (73.3) and living at home with family (96.7%). Majority of respondents had previous surgery (CABG and MVR) and had been diagnosed with heart failure for 1-5 years (Table 1).

Table 1. Demographic data of respondent (n=15)

Characteristics	n	%
Age (Min 19, Max 78)		
18-40	1	6.6
41-60	7	46.7
>60	7	46.7
Gender		
Male	11	73.3
Female	4	26.7
Living arrangement		
Yes	14	96.7
No	1	
Previous surgery		
Yes	8	53.3
No	7	46.7
HF presence duration (years)		
<1	6	40.0
1-5	9	60.0

b. Anxiety levels of heart failure patients: Table 2 shows that most heart failure patients were anxious during pre-test (60%), then the anxiety level decreased significantly during post-test (73.3%) (Table 2).

Table 2. The anxiety level of heart failure patients (n=15)

SAS	Pre-test		Post-test	
	N(%)	M(SD)	N(%)	M(SD)
Anxiety	9 (60.0)	53.56(2.92)	4 (26.7)	51.40(1.14)
Normal	6 (40.0)	39.33(7.63)	11 (73.3)	36.50(5.21)

- c. **The impact of the six-minute walk test on anxiety level of heart failure patients:** This study found that the mean of anxiety level perceived by heart failure patients before participating in the six-minute walk test program was 47.87 (SD 8.81) and 41.47 (SD 8.40) after the intervention. This study indicates that the anxiety level among heart failure patients during pre-test was significantly higher than post-test (t 7.04, $p < .001$) (Table 3).

Table 3. The impact of the six-minute walk on anxiety level of heart failure patients (n=15)

SAS	Mean	SD	t	P Value
Pre-test	47.87	8.814	7.04	0.001
Post-test	41.47	8.408		

Discussion

The present study illustrated that mostly heart failure patients experienced anxiety. This may be related to the presence of anxiety symptoms that was reported by the patients during the previous month. This finding in line to previous studies which stated that anxiety was the most psychological issue reported by the heart failure patients. Anxiety as a negative emotion appears to be more common among cardiac patients than among healthy individuals.^{3,7,9,14}

According to the completed questionnaires, a young female patient had the highest SAS score (56 out of 80). She is 19th years. Most of the time she gets tired and upset easily, she was bothered by stomach aches, she also had a little of the time for night's rest due to she had to empty her bladder so often. These clinical symptoms were also reported by other respondents who had a high SAS score in this study. This phenomenon is congruent with the psychological distress of individuals. Younger age and women are more likely to suffer anxiety than older age and man.^{3,7}

Furthermore, this study describes that majority heart failure patients experienced anxiety before implementing the six-minute walk test at the first week of this program, then their anxiety level decreased rapidly after implementing the six-minute within four weeks. This indicates that the six-minute walk test program effectively reduced the anxiety level among heart failure patients. This finding in line to Millani study (2011) which stated that exercise training effect in reducing depression and anxiety level on heart failure patients. Psychou study (2020) illustrated that the exercise

program is beneficial on mood profile which can reduce the anxiety and stress level.^{6,10}

In addition, some important findings were found in this study. Our findings illustrated that heart failure patients face harsh emotional challenges, particularly anxiety which may have led to negative health outcomes. Several researchers have found that the presence of anxiety affected worsening functional status, reducing the health-related quality of life, and more frequent hospital revisit in heart failure patients.^{2,4,14} This indicates that nurses and clinicians need to utilize interventions that can simultaneously treat anxiety. However, in the current clinical setting, the psychological distress, particularly anxiety, are under-recognition and untreated well. This may be due to the clinicians think that emotional distress after a cardiac event is a normal response to an illness that will diminish without treatment. Others fail to appreciate the extent of the problem or believe that they will easily recognize serious emotional distress in their patients when it is present.

Conclusion

The present study has shown that patients with heart failure frequently report anxiety symptoms. Our findings indicate that well-designed a safety exercise of the six-minute walk distance affect the anxiety level in heart failure patients. This study provides baseline information reflecting the effectiveness of the six-minute walk test in reducing anxiety level among heart failure patients.

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Conflict of Interest: Nil

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