

## ARTICLE INFORMATION

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## Fatigue and mental health among patients with heart failure in an outpatient setting

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### Abstract

**Background:** Heart failure is a health problem that occurs in the cardiovascular system which globally is the highest cause of death in the world. Heart Failure is a complex clinical syndrome in which the heart cannot pump blood to meet the body's blood circulation needs for tissue metabolism in certain conditions, due to structural or functional damage to the heart chambers. It is usually characterized by excessive blood volume, inadequate tissue perfusion, poor activity tolerance, and usually easily feels tired, orthopnea and edema. The emergence of various clinical symptoms in heart failure patients will cause nursing problems and interfere with basic human needs, one of which is fatigue. Heart failure sufferers have problems with the heart system which results in a lack of blood and oxygen supply to the brain and muscles, so sufferers often experience fatigue to the point of fainting.

**Purpose:** To determine the relationship between the level of fatigue and the mental health of heart failure patients.

**Method:** This type of quantitative research with a design using a cross sectional approach. Carried out at the heart clinic dr. Moewardi Surakarta, Central Java of the regional general hospital from October to December 2023. The population of heart failure sufferers in this study was 186 people, however by using a purposive sampling technique in sampling, a sample of 148 patients was obtained. The inclusion criteria in this study were patients aged >18 years, New York Heart Association (NYHA) class II and class III heart failure patients, while the exclusion criteria were heart failure patients who were unwilling or unable to take part in this study. The instruments used were the fatigue assessment scale (FAS) and depression anxiety and stress scale 21 (DASS-21) questionnaires. Data analysis used univariate and bivariate with the chi square test.

**Results:** The majority of respondents experienced mild fatigue with anxious conditions, 53 people (53.0%). Meanwhile, 47 patients (47.0%) who complained of severe fatigue showed anxiety, 24 people (85.7%), and 12 people (60.0%) felt stressed. The results of the analysis obtained a significant value with a p-value of 0.001 (<0.05) which indicates that  $H_0$  was rejected. So there is a relationship between the level of fatigue and mental health conditions in heart failure sufferers.

**Conclusion:** There is a relationship between the level of fatigue and mental health in heart failure patients. The nursing implication that can be implemented is providing education about fatigue so that patients understand the impact it has on heart failure sufferers so that it does not cause mental health problems.

**Keywords:** Fatigue Level; Heart Failure; Mental Health.

### INTRODUCTION

Heart failure is a health problem that occurs in the cardiovascular system which globally is the highest cause of death in the world. Heart Failure is a complex clinical syndrome in which the heart

cannot pump blood to meet the body's blood circulation needs for tissue metabolism in certain conditions, due to structural or functional damage to the heart chambers (Nurkhalis, & Adista, 2020). It is

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usually characterized by excessive blood volume, inadequate tissue perfusion, poor activity tolerance, and usually easily feels tired, orthopnea and edema (Hendrawan, & Noeraini, 2019).

The incidence of heart failure increased by 1.67% in 2018 compared to 2013. Based on Basic Health Research data, the prevalence of heart failure in Indonesia is 1.017.290 (1.5%). In Central Java Province, an estimated 132.565 (1.6%) people suffer from heart failure (Ministry of Health of the Republic of Indonesia, 2018). This shows that heart failure is one of the diseases that many people suffer from in Indonesia and requires more attention to reduce the incidence of heart failure.

The emergence of various clinical symptoms in heart failure patients will cause nursing problems and interfere with basic human needs, one of which is fatigue. Heart failure sufferers have problems with the heart system which results in a lack of blood and oxygen supply to the brain and muscles, so sufferers often experience fatigue to the point of fainting (Wahyudi, & Romiko, 2023). Patients who complain of getting tired easily will generally feel weak, this occurs due to a lack of strategic energy in the body due to decreased blood flow to the tissues. This condition results in physical limitations in carrying out daily activities and disturbances during rest which can affect productivity and quality of life (Latifardani, & Hudiawati, 2023; Hajj, Mathelier, Drachman, & Laudanski, 2020).

Fatigue is also a symptom of heart failure which poses physical and psychological risks such as psychological stress (depression and anxiety) (Putra, & Darliana, 2021). The results of research conducted at the internal medicine clinic at Goeteng Taroenadibrata Hospital showed that 85% of respondents experienced heart failure within one month, the majority experienced moderate fatigue. This fatigue occurs due to psychological disorders (anxiety) and interferes with the patient's physical activity with symptoms of a faster heart rate, increased fatigue, respiratory and muscle tension, and changes in mood (crying) (Setianingsih, & Hastuti, 2022). Meanwhile, another study revealed that of 130 heart failure patients undergoing outpatient treatment, 50% of them had high levels of fatigue which included physical and mental fatigue. In mental fatigue, patients experience feelings of insecurity realizing that their health condition is

declining, limited daily activities are disrupted, and have financial worries (Polikandrioti, Kalafatakis, Koutelekos, & Kokoularis, 2019).

The emergence of psychological problems can lead to mental health disorders. Mental health is a condition where a person feels healthy, does not experience psychological disorders and can behave normally or there are no deviations (Aburuz, 2018). Based on the results of previous research, it is revealed that the prevalence of depression in heart failure is quite high, namely around 19-63%. Sufferers of depressive mental disorders experience problems such as drug withdrawal and feeling helpless, decreased passion for life and compliance with taking medication (Rachmat, & Kariasa, 2021). Factors that influence the mental health of heart failure patients are negative emotions such as adjustment disorders involving feelings of fear, weakness, helplessness, hopelessness, anxiety, stress, and even depression (Ryandini, 2020). When the disease increases and its manifestations worsen, stress (tension) occurs, causing severe anxiety and if left untreated, this will disrupt a person's mental status (Wati, Oktarina, & Rudini, 2020). Psychologically, people with heart disease will experience fear of death and also financial anxiety (Rohayati, & Widani, 2022).

## RESEARCH METHOD

This type of quantitative research with a design using a cross sectional approach. This research was carried out at the heart clinic dr. Moewardi Surakarta Central Java of the regional general hospital from October to December 2023. The population of heart failure sufferers in this study was 186 people, but by using a purposive sampling technique in sampling, a sample of 148 patients was obtained. The inclusion criteria in this study were patients aged >18 years, New York Heart Association (NYHA) class II and class III heart failure patients, while the exclusion criteria were heart failure patients who were unwilling or unable to take part in this study. Data collection was carried out by providing informed consent as approval to become a research respondent.

The instruments used were the Fatigue Assessment Scale (FAS) questionnaire and the depression anxiety and stress scale 21 (DASS-21) with an interpretation of the FAS questionnaire with a total score of 50 if the score was <22 (10-21)

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indicating mild fatigue, while a score  $\geq 22$  (22-50) indicates severe fatigue. Meanwhile, for the DASS-21 questionnaire with a total score of 63, a score of 0-21 was obtained for anxiety, a score of 22-42 for depression, and a score of 43-63 for stress. The instrument has been tested for validity and reliability by researchers on 30 respondents suffering from heart failure and was declared valid and reliable with a Cronbach's alpha value obtained with a FAS value

of 0.812. Meanwhile, the DASS questionnaire obtained a Cronbach's Alpha score of 0.905.

Data analysis used univariate and bivariate with the chi square test to see the relationship between the two variables. This research has received ethical qualifications from dr. Moewardi Surakarta of the regional general hospital number: 1.879/X/HREC/2023.

## RESEARCH RESULTS

Table 1. Frequency Distribution of Respondent Characteristics (N=148)

| Variables  | Results                    |
|--|----------------------------|
| <b>Age (Mean<math>\pm</math>SD)(Range)(Year)</b> | (52.12 $\pm$ 8.631)(30-76) |
| 30-40 year                                       | 10/6.8                     |
| 41-50 year                                       | 49/33.1                    |
| 51-60 year                                       | 73/49.3                    |
| > 60 year  | 16/10.8                    |
| <b>Gender (n/%)</b>                              |                            |
| Male   | 98/66.2                    |
| Female   | 50/33.8                    |
| <b>Education (n/%)</b>                           |                            |
| Elementary School                                | 39/26.3                    |
| Junior High School                               | 33/22.3                    |
| Senior High School                               | 55/37.2                    |
| University                                       | 21/14.2                    |
| <b>Employment (n/%)</b>                          |                            |
| Housewives                                       | 39/26.4                    |
| Entrepreneur                                     | 12/8.1                     |
| Self-employed                                    | 31/20.9                    |
| Others   | 66/44.6                    |
| <b>Heart Functional Class (n/%)</b>              |                            |
| NYHA II  | 95/65.6                    |
| NYHA III   | 53/34.4                    |
| <b>Fatigue Level (n/%)</b>                       |                            |
| Mild fatigue                                     | 65/43.9                    |
| Severe fatigue                                   | 83/56.1                    |
| <b>Mental Health Status (n/%)</b>                |                            |
| Anxiety  | 100/67.6                   |
| Depression                                       | 28/18.9                    |
| Stress   | 20/13.5                    |

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Based on Table 1, it is known that the majority of respondents aged 51-60 years were 73 (49%) with a mean value and standard deviation ( $52.12 \pm 8.631$ ). The majority of respondents in this study were male, namely 98 (66.2%) with the highest education at high school level being 55 (37.2%). The majority of respondents work as farmers or traders, 66 (44.6%). Most respondents fell into the NYHA class II category at 95 (65.6%). Respondents' fatigue levels were mostly in the severe fatigue category at 83 (56.1%) and mental health status was in the anxiety category 100 (67.6%).

**Table 2. Relationship between Fatigue and Mental Health (N=148)**

| Fatigue Level | Mental Health   |                   |               | p-value |
|---------------|-----------------|-------------------|---------------|---------|
|               | Anxiety (n=100) | Depression (n=28) | Stress (n=20) |         |
| Mild          | 53/53.0         | 4/14.3            | 8/40.0        | 0.001   |
| Severe        | 47/47.0         | 24/85.7           | 12/60.0       |         |

The results of bivariate analysis showed that there was a relationship between fatigue and the mental condition of respondents with heart failure. The results showed that the majority of respondents experienced mild fatigue and anxiety, 53 people (53.0%). Meanwhile, 47 patients (47.0%) who complained of severe fatigue showed anxiety, 24 people (85.7%), and 12 people (60.0%) felt stressed. The results of the analysis obtained a significant value with a p-value of 0.001 ( $<0.05$ ) which indicates that  $H_0$  was rejected. So there is a relationship between the level of fatigue and mental health conditions in heart failure sufferers.

## DISCUSSION

The results of the analysis of respondent characteristics in this study showed that the majority of respondents suffered from genital heart failure in men. This shows that men are more at risk of experiencing heart failure due to unhealthy lifestyles, such as smoking habits and alcohol consumption (Donsu, Rampengan, & Polii, 2020). In line with previous research which stated that the majority of heart failure sufferers were male 18 people (52.94%) (Anindia, & Rizkifani, 2019).

The majority of respondents who suffer from heart failure are aged 51-60 years, namely elderly people, supported by other research which shows that the majority of respondents who suffer from heart failure are around 50 years old. This is because at that age they have unhealthy lifestyles such as lack of physical activity and exercise (Putra, & Darliana, 2021; Anindia, & Rizkifani, 2019).

This research shows that the respondent's highest education is in the senior high school category. These results are in line with previous research which shows that many heart failure sufferers have high school education (Tiffany, & Hudiawati, 2022; Sugiyanti, Agustina, & Rahayu, 2020). This explains that low education will have an

impact on knowledge in receiving information about preventing and curing disease.

The majority of respondents' occupations were farming or trading. This is different from previous research which stated that most heart failure sufferers work as entrepreneurs (33.7%) (Sugiyanti, Agustina, & Rahayu, 2020). This shows that NYHA class II and III heart failure sufferers can still carry out their activities and work as usual.

The functional level characteristics of heart failure respondents according to NYHA are mostly class II. This is in line with other research which states that most heart failure sufferers are in class II. Class II heart failure is a client with a heart defect that causes slight activity limitations and causes fatigue, with the term mild heart failure (Putri, & Hudiawati, 2019). This is in accordance with the findings in this study that the majority of patients came independently to the hospital.

The mental health of heart failure sufferers was found to be the majority experiencing anxiety. Anxiety can occur in heart failure patients due to physical health problems such as disturbed sleep patterns, activity intolerance, hypertension, shortness of breath and cold feet and hands (Ardhiansyah, & Hudiawati, 2023). The results in

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this study are in line with previous research which found that the majority of heart failure sufferers experienced severe anxiety (Abilowo, & Lubis, 2021).

The majority of respondents in this study had severe levels of fatigue. This is in line with previous research which shows that heart failure patients often experience high levels of fatigue. Fatigue is a common symptom in heart failure patients and can significantly affect their quality of life (Pavlovic, Gilotra, Lee, Ndumele, Mammos, Dennisonhimmelfarb, & AbshireSaylor, 2022). Additionally, constant fatigue can also cause anxiety and depression. Studies conducted on heart failure patients show a significant relationship between fatigue levels and anxiety and depression. Patients who experience higher fatigue tend to have higher levels of anxiety and depression (Angermann, & Ertl, 2018; Polikandrioti et al., 2019).

The results of this study show a relationship between fatigue and mental health in heart failure patients. These results are in line with previous research which shows that fatigue can be closely related to conditions that cause anxiety and depression in heart disease patients (Aggelopoulou, Fotos, Chatziefstratiou, Giakoumidakis, Elefsiniotis, & Brokalaki, 2017; Pavlovic et al., 2022). Disease failures that impact patients' quality of life such as fatigue, anxiety and depression are often overlooked symptoms that can increase hospitalization rates and the risk of death. Other research shows that half of the patients who were research respondents showed moderate to severe levels of anxiety, especially in aspects of anxiety that result in feelings of physical fatigue and mental exhaustion (Chauvet-Gelinier, & Bonin, 2017). These results show the influence of moderate to severe heart failure on fatigue.

One explanation for this relationship is that chronic fatigue can disrupt the physical and mental function of heart failure patients. Prolonged fatigue can lead to decreased physical activity, sleep disturbances, and feelings of helplessness. This can trigger or worsen symptoms of anxiety and depression in heart failure patients (Pavlovic et al., 2022). Other research also shows that there is a reciprocal relationship between anxiety, depression, and fatigue in heart failure patients (Hiriscou, & Bodolea, 2019). High levels of anxiety and depression can worsen fatigue, while high levels of

fatigue can also increase levels of anxiety and depression. Thus, these conditions can form a cycle that influences each other and worsens each other's symptoms (Polikandrioti et al., 2019). It is important to remember that each individual may have different experiences and symptoms. Some patients may be more prone to anxiety, while others are more prone to depression. Therefore, management of fatigue, anxiety and depression in heart failure patients must be carried out holistically by considering the individual needs and characteristics of the patient (Aburuz, 2018).

The limitation of this study is that researchers did not consider other factors that could influence the level of fatigue, anxiety and depression in heart failure patients. For example, factors such as social support, education level, employment status, or use of certain medications may influence research results.

## CONCLUSION

There is a relationship between the level of fatigue and mental health in heart failure patients. The nursing implication that can be implemented is providing education about fatigue so that patients understand the impact it has on heart failure sufferers so that it does not cause mental health problems.

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