

Identifying the Presence of Anxiety in Heart Failure Patients

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ABSTRACT

Background: Heart failure is an emerging disease associated with morbidity and mortality. The prevalence of heart failure is expected to expand largely due to population ageing and rising risk factors of heart failure incidence.

Purpose: This study aimed to examine the presence of anxiety and its contributing factors among heart failure patients.

Methods: A descriptive cross-sectional study was performed at a cardiovascular outpatient of a public hospital in Indonesia. The Zung Self-rating Anxiety Scale (SAS) was used to determine the anxiety level of respondents.

Results: Thirty heart failure outpatients enrolled in this study, 76.7% were male with the mean age of 50.0 years (SD 12.8). Regarding the SAS score, 60% of respondents experienced anxiety. Age, gender, educational level, NYHA classification, comorbidities, and body mass index were associated with the presence of anxiety.

Conclusion: This study indicated that coexisting anxiety was found in heart failure patients. The intervention on anxiety which focuses on individuals might be needed to improve health and decrease the anxiety level.

Keywords: Anxiety, Factors, Heart Failure.

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BACKGROUND

The prevalence of heart failure is steadily increase that leads in rising the morbidity and mortality rate in the world ([Polikandrioti et al, 2010](#)). In Indonesia, the heart failure has become one of the two top leading causes of death, which cause physical and psychological impact on the society. This prevalence is significantly increases due to population ageing. Obesity, hypertension, smoking history, and unhealthy life style are the most dominant factors of this issue ([Bilbao et al, 2016](#); [Kusuma et al, 2019](#)).

Furthermore, anxiety was the most common issue reported by the heart failure patients, and there is a high incidence of moderate to severe anxiety ([Dekker et al, 2014](#); [Hallas et al, 2011](#); [Mozaffarian et al, 2015](#)). This affects the quality of life among heart failure patients ([Moser et al, 2010](#); [Mozaffarian et al, 2015](#)).

As improved treatment continues to extend patients' lives, more study has started exploring the relevance of emotional factors that may affect the quality of life among them. Most existing studies have observed that anxiety is relatively correlated with poor health-related quality of life in heart failure patients ([Milani et al, 2011](#); [Shen et al, 2011](#)). Thus identifying contributing factors of anxiety in heart failure patients is essential to reduce the mortality rate and to improve the quality of life among heart failure patients.

OBJECTIVE

The present study sought to identify the presence of anxiety level and its contributing factors among heart failure patients.

METHODS**Study Design, Setting, and Research Subject**

This study was a descriptive cross-sectional research that was conducted at a cardiovascular outpatient of a public hospital in Indonesia. Patients who confirmed diagnosis of heart failure were recruited as participants. The sample size was estimated based on the results of other studies on heart failure in the literature review, with a total sample was 30 patients.

Measures

The approval of the Research Ethics Committee of Poltekkes Kemenkes Bengkulu and the selected hospital was obtained before conducting the study. The sociodemographic form included the patients' data such as age, gender, level of education, occupation, living system, and health assurance was given to the respondents. Health characteristics included BMI, NYHA classification, duration of heart failure presence, comorbidities, routine control, and previous substances abuse and heart surgery was collected through medical records of hospital.

The Zung Self-rating Anxiety Scale (SAS) was used to determine the patients' perceptions on their anxiety level. This tool was developed by William W. K. Zung ([Zung, 1971](#)). The SAS is a Likert-scale of 1 to 4 (None to Most of the time), which consists of 20-item self-report assessment. Each score is categorized into three levels representing a normal level (<37) and anxiety level (≥37) ([Setyowati et al, 2019](#)). The more higher score the more anxiety level reported by the patients.

Data Analysis

The sociodemographic data and health characteristics were presented by descriptive analysis. The logistic regression model was performed to determine the impact of sociodemographic and health characteristics on patients' anxiety.

RESULTS**Anxiety levels of heart failure patients**

This study shows that the mean anxiety level of heart failure patients was 45.53 (SD 9.41). The minimum score was 30 and the maximum score was 59 ([Table 1](#)).

The Relationship of Sociodemographic with Anxiety Levels

Thirty heart failure patients enrolled in this study had a mean age of 50.0 years (SD 12.8). Most were male (76.7%), living at home with family (96.7%), and had completed school level. They had been worked as a private employee and all of the participants had health insurance. This study found that age, gender, and educational level affected the anxiety levels of heart failure patients ($p = .55$, $p = .39$, $p = .95$, respectively) ([Table 2](#)).

The Relationship of Health Characteristics with Anxiety Levels

The mean body mass index of patients was 25.00 kilogramme (SD 4.06). Most had comorbidities (hypertension, cholesterol, and diabetes mellitus), had previous surgery (CABG and MVR), and had previous substance abuse (smoking and caffeine). They had been diagnosed with heart failure for about 1-5 years (63.3%), ejection fraction $>40\%$ with NYHA class II (36.7%). This study showed that all of the health characteristics associated with the anxiety levels of heart failure patients. NYHA classification was the most affected factors ($p=.94$) followed by comorbidities and body mass index ($p=.92$ and $p=.84$, respectively) ([Table 3](#)).

DISCUSSION

The present study illustrated that majority heart failure patients felt anxious in daily life. Some demographic factors were strongly associated with the existence of anxiety in heart failure patients such as age, gender, and educational level. In this study, the patients who were under sixty years, female, with less education expressed significantly greater levels of anxiety. This phenomenon is congruent with the psychological distress of individuals ([Dekker et al, 2014](#); [Hallas et al, 2011](#); [Mozaffarian et al, 2015](#)). Younger age and women are more likely to suffer anxiety than older age and man. An individual with lower educational attainment is often considered a surrogate for poor health habits which can improve the cardiac risk.

However, no association between living arrangement and patients' anxiety. This may be due to almost all of the respondents in this study were living with family. This finding indicates that patients with high social support may have been able to manage their illnesses, which resulted in lower anxiety ([Polikandrioti et al, 2010](#); [Shen et al, 2011](#); [Nurhayati et al, 2021](#)).

Furthermore, the correlation of health characteristics and anxiety was found in heart failure patients. NYHA classification, comorbidities, and previous substances abuse (smoking and caffeine) were the strongest predictors of anxiety in this study, followed by the body mass index, duration of heart failure, and ejection fraction. In this study, patients who were classified as NYHA class III and had comorbidities such as hypertension, cholesterol, diabetes mellitus expressed more anxious than others.

These results align with past findings which stated that worse functional status and anxiety were reported by the heart failure patients with NYHA class III and IV ([De et al, 2011](#); [Dekker et al, 2014](#)). Uncontrolled hypertension and smoking history were also the most dominant factors of cardiac risk, which resulted in increasing anxiety and reducing the health-related life quality of heart failure ([Milani et al, 2011](#); [De et al, 2011](#))

CONCLUSION

The present study has shown that patients with heart failure frequently report anxiety symptoms. There are some factors contribute to the patients' anxiety such as age, gender, educational level, NYHA classification, comorbidities (hypertension, cholesterol, diabetes mellitus), previous substances abuse (smoking and caffeine), body mass index, duration of heart failure, and ejection fraction. Our findings indicate that well-designed investigations into the effects of anxiety and study features about exercise stimulus are needed in reducing anxiety in heart failure patients.

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CONFLICTS OF INTEREST

There is no conflict of interest

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Table 1. The anxiety level of heart failure patients (n=30)

SAS	N (f)	Min – Max	M±SD
Anxiety	18 (60)	30-59	45.53±9.41
Normal	12 (40)	33-48	37.00±5.47

Table 2. Sociodemographic associated with anxiety (n=30)

Characteristics	n	%	p-value
Age (<i>M 50.0, SD 12.8</i>)			0.553
<60	18	60.0	
≥60	12	40.0	
Gender			0.396
Male	23	76.7	
Female	7	23.3	
Living with			0.135
Family	29	96.7	
Alone	1	3.3	
Education level			0.955
School	5	16.7	
University	25	83.3	
Occupation			0.296
Government employee	5	16.7	
Private employee	12	40.0	
Police/Army	2	6.7	
Others	11	36.6	

Table 3. Health characteristics associated with anxiety (n=30)

Characteristics	n	%	p-value
BMI			0.847
Underweight	1	3.3	
Normal	16	53.3	
Overweight	13	43.3	
Comorbidities			0.926
Yes	22	73.3	
No	8	26.7	
Previous surgery			0.354
Yes	18	60.0	
No	12	40.0	
Previous abuse			0.898
Yes	15	50.0	
None	15	50.0	
Medical check-up			0.327
Yes	22	73.3	
No	8	26.7	
HF presence (Years)			0.717
<1	10	33.3	
1-5	19	63.3	
>5	1	3.3	

EF (%)			0.665
≤40	9	30.0	
>40	21	70.0	
<hr/>			0.941
NYHA			
I	10	33.3	
II	12	40.0	
III	8	26.7	
