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PSYCHOSOCIAL DETERMINANTS CONTRIBUTING TO THE EXACERBATION OF SYMPTOMS IN HEART FAILURE PATIENTS

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ABSTRACT
Heart failure is a chronic disease characterized by a decline in heart function, causing physical symptoms such as shortness of breath, edema, and fatigue, as well as psychological symptoms such as anxiety and depression. It is more common in low-income countries and is closely related to psychosocial factors such as anxiety, depression, social support, and economic status, which affect the severity of symptoms and treatment adherence. Although mental health and social support can improve patients' quality of life, previous studies have not provided significant evidence regarding psychosocial determinants that exacerbate heart failure symptoms. Therefore, this study aims to identify psychosocial factors contributing to worsening symptoms in heart failure patients. This study used a descriptive quantitative design with purposive sampling of 317 respondents from a total population of 1,528 heart failure patients at the Sebelas Maret University Hospital Heart Clinic from February to April 2025, using the HADS (α=0,85 for anxiety; α=0,80 for depression), MS-PSS (α=0,85), and ESAS (α=0,78) instruments with logistic regression analysis. The results showed that the majority of respondents were aged 40–59 years, male, and had hypertension as a comorbidity, with 51.4% experiencing worsening symptoms, and anxiety was found to be the most significant determinant (p = 0.0001; OR = 3.043). These findings confirm that psychosocial factors play an essential role in the worsening of heart failure symptoms, with anxiety being the main factor that significantly increases risk compared to depression or low social support.

Keywords: determinants; heart failure; psychosocial

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INTRODUCTION

Heart failure reduces the heart's ability to function correctly, affecting the circulation of oxygen and nutrients throughout the body. Some common triggers for this condition include coronary heart disease, cerebrovascular disease, rheumatic heart disease, and other heart-related issues. (Alaa et al., 2019). Heart failure is significantly influenced by factors such as hypertension, diabetes, high cholesterol, and an unhealthy lifestyle (Naryanti et al., 2024). This condition causes changes in the body, including shortness of breath, edema, high blood pressure, weight fluctuations, and symptoms like anxiety and confusion (*American Heart Association/AHA*, 2023).

Heart failure is increasingly common worldwide, affecting over 75% of cases in middle- and low-income countries. In 2019, about 17.9 million people died from heart disease (WHO, 2021). During the period from 2013 to 2018, the prevalence of heart failure in Indonesia was 1.5%. The highest rates were observed in North Kalimantan province (2.2%), the Special Region of Yogyakarta (2%), and Gorontalo (2%). Central Java province had a prevalence of approximately 1.6%, placing it in the middle range (Kemenkes, 2021). Heart failure patients often experience a decline in quality of life due to poor self-management skills, which can worsen their condition and trigger anxiety that hinders their physical activity (Siallagan, 2021); (Zhang et al., 2023). Symptoms like pain, fatigue, loss of appetite, and depression can harm physical health and reduce overall quality of life, worsening the condition (Al-Sutari & Abdalrahim, 2024).

Patients with heart failure need support that addresses biological, psychological, and psychosocial factors to improve their quality of life (Jiakponna et al., 2024). Psychosocial factors encompass psychological and social environmental elements, including social support, emotional stress, anxiety, depression, and economic status (Mesa-Vieira et al., 2021). Psychosocial factors influence readmission and hospitalization rates in heart failure patients (Killien et al., 2021). Psychosocial factors not only affect individual patients but also influence family functioning and economic status (Ardianto et al., 2020). Patients with high psychosocial support and low levels of depression have a better quality of life (Febby et al., 2023).

Heart failure patients with high levels of emotional stress can worsen their condition through increased anxiety, which can exacerbate heart failure (Zhang et al., 2023). Social support from family plays a vital role in patient compliance with treatment. Low treatment compliance harms patients' heart health (Carrillo et al., 2024). Mental health factors such as depression and anxiety affect patients' physical and psychological conditions, thereby reducing physical health and the effectiveness of therapy (Hardianti et al., 2024). Low economic status affects treatment in heart failure patients, thereby worsening their condition (Miftode et al., 2021).

Psychological factors such as depression and low social support can significantly worsen heart failure (Yang et al., 2023). Low social status can lead to emotional stress, such as anxiety and depression, which can worsen heart failure (Zhang et al., 2023). Stress and poor social interaction are also common factors in heart failure patients, contributing to the severity of the patient's condition (Mesa-Vieira et al., 2021). Low self-confidence is often found in heart failure patients, which harms self-care and treatment adherence (Megiati et al., 2022). Limited access to healthcare and poor economic conditions can affect a patient's ability to undergo treatment (Shamali et al., 2023).

Previous literature reviews confirm that psychosocial factors are closely related to the clinical condition of heart failure patients. Adequate social support has been shown to improve treatment adherence (Carrillo et al., 2024), while high levels of depression and anxiety are associated with reduced treatment effectiveness (Hardianti et al., 2024). Low economic status significantly limits treatment success, especially for patients in remote areas with limited access to health care. This situation negatively affects treatment outcomes and worsens the severity of their conditions (Miftode et al., 2021). In addition, other psychosocial factors such as weak coping mechanisms, low health beliefs, and mental health comorbidities also play an important role in worsening the condition of heart failure patients (Jiakponna et al., 2024). Various psychosocial factors have a significant influence on symptoms in patients with heart failure. Limited evidence from previous studies linking these factors to worsening symptoms formed the basis for conducting this study, with the aim of identifying psychosocial determinants that contribute to the worsening of clinical conditions and symptom manifestations in patients with heart failure.

METHOD

This study employed a quantitative method with a descriptive approach at the Heart Clinic of Universitas Sebelas Maret Hospital from February to April 2025. The population consisted of 1,528 heart failure patients, and a sample of 317 respondents was selected through purposive sampling. Inclusion criteria included: (1) age over 18, (2) diagnosed with heart failure, (3) discharged from hospitalization for over two weeks, (4) good communication skills, and (5) reasonable level of consciousness. Respondents unwilling to participate or with a life expectancy of less than one year were excluded.

Data collection was conducted using an instrument that included the Hospital Anxiety and Depression Scale (HADS) to assess levels of anxiety and depression. The Cronbach's alpha values

were 0.85 for the anxiety subscale and 0.80 for the depression subscale. (Tiksnadi et al., 2023). The Multidimensional Scale of Perceived Social Support (MS-PSS) measures the level of social support perceived by respondents, with a Cronbach's alpha value of 0.85 (Oktarina et al., 2021). The Edmonton Symptom Assessment System (ESAS) assesses the severity of symptoms reported by respondents, with a Cronbach's alpha value of 0.78 (Lilis et al., 2023). Logistic regression analyses were conducted to examine the determinants of independent variables, which included psychosocial factors, anxiety, depression, and family support. The dependent variable for this study was symptom worsening, categorized into two groups: good and shameless. The research protocol received ethical clearance from the Universitas Sebelas Maret Hospital ethics committee, with approval number 013/UN27.46/TA.04.19/KEP/EC/2025.

RESULT

Table 1.
Respondent Characteristics (n=317)

Component	f	%
Age (years)		
18-39	3	0,9
40-59	171	53,9
≥60	143	45,1
Gender		
Male	188	59,3
Female	129	40,7
Education		
Elementary School	65	20.5
Junior High School	83	26.2
Senior High School	106	33.4
DIPLOMA	31	9.8
Bachelor's Degree	32	10.1
Occupation		
Not working	90	28.4
Farmer	41	12.9
Laborer	21	6.6
Civil servant	23	7.3
Self-employed/Entrepreneur	105	33.1
Retired	37	11.7
Comorbidities		
Hypertension	185	58.4
Diabetes Mellitus	45	14.2
Kidney Failure	14	4.4
Others	10	3.2
None	63	19.9
Total	317	100
Duration of Suffering		
<1 Year	86	27.1
1-3 Years	132	41.6
>3 Years	99	31.2
Functional Class		
NYHA I	92	29.0
NYHA II	148	46.7
NYHA III	66	20.8
NYHA IV	11	3.5

The majority of respondents were middle-aged adults (53.9%), male (59.3%), and had a high school education (33.4%). The most common occupation was entrepreneur (33.1%), while the least common was laborer (6.6%). The most common comorbidities were hypertension (58.4%), while only a small proportion of respondents had high cholesterol and stroke (3.2%). Based on the NYHA heart function classification, most respondents were in class II (46.7%), while the fewest were in class IV (3.5%).

Table 2.
Psychosocial Conditions

Component	f	Percentage (%)
Anxiety		
Normal	96	30.3
Borderline Abnormal	127	40.1
Abnormal	94	29.7
Depression		
Normal	108	34.1
Borderline Abnormal	125	39.4
Abnormal	84	26.5
Social Support		
Low Support	112	35.3
Moderate Support	117	36.9
High Support	88	27.8
Worsening Symptoms		
Good	154	48.6
Bad	163	51.4

Most respondents experienced anxiety at borderline abnormal levels (40.1%), while abnormal anxiety was the least common (29.7%). In terms of depression, respondents with borderline abnormal levels also dominated (39.4%), while abnormal depression was the lowest (26.5%). Based on the level of social support, the majority of respondents were in the moderate category (36.9%), while the high category was the least (27.8%). In terms of symptom worsening, more than half of the respondents experienced worsening conditions (51.4%), while the rest were in good condition (48.6%).

Table 3.
Psychosocial Determinants Causing Symptom Worsening

Variable	B	Sig.	Exp(B)
Anxiety	1.113	0.001	3.043
Depression	.584	0.002	1.793
Social Support	-.974	0.001	.378

The results of the analysis show that the psychosocial factor that significantly affects the worsening of symptoms in heart failure patients is anxiety, with a significance value of 0.0001 ($p < 0.05$). The *Exp(B)* value (*odds ratio*) obtained was 3.043, indicating that anxiety has the strongest association with symptom worsening. Therefore, it can be concluded that anxiety is the psychosocial factor that most significantly worsens the condition of heart failure patients.

DISCUSSION

Respondent Characteristics

The study results show that most respondents were middle-aged adults (40–59 years old). These findings indicate that heart failure is more common in older individuals. As we age, various physiological changes occur in the cardiovascular system, such as decreased blood vessel elasticity, enlargement of the left ventricle, and reduced systolic and diastolic heart function. These changes cause a decrease in the heart's efficiency in pumping blood, resulting in suboptimal distribution of oxygen and nutrients to body tissues. The results of these physiological changes contribute significantly to an increased risk of heart failure in the elderly (Wiratama & Alvina, 2025). Thus, age plays a vital role in the occurrence of heart failure, given that the aging process is accompanied by a decrease in blood vessel elasticity and an increase in blood pressure, which overall increases the workload on the heart (Daersa & Nurbaeti, 2023). Based on gender, males dominated the number of respondents. This condition is associated with the absence of estrogen hormone protection, which is present in women, where this hormone plays a role in maintaining blood vessel health and increasing HDL levels (Hardianti et al., 2024). However, several studies also show that women have a high

prevalence of heart failure, which is influenced by differences in physical activity and poor diet (Maharani et al., 2023).

Regarding education, most respondents were high school graduates, followed by elementary and junior high school graduates, while respondents with higher education (diploma and bachelor's degree) were fewer. The level of education affects an individual's ability to understand, analyze, and care for their health condition (Widadi et al., 2024). Higher education is usually associated with better knowledge and understanding of self-care and disease prevention (Widadi et al., 2024). Meanwhile, the most common type of work among respondents was self-employment, followed by those not working. Work activities are closely related to physical exertion and rest patterns. Heavy work can be a risk factor for heart failure due to high physical and mental stress, while not working is also risky due to the lack of physical activity that is important for heart health (Amilatusholiha & Kristinawati, 2023).

In terms of comorbidities, hypertension is the most common comorbidity found and experienced by respondents. Hypertension increases the workload on the heart and causes narrowing of the blood vessels, which results in a lack of oxygen and nutrients to the body's tissues (Nauli & Suprapti, 2025). If not optimally controlled, this condition can accelerate the progression of heart failure, trigger exacerbation of symptoms, and increase the likelihood of repeated hospitalizations (Haryawati & Rahmawati, 2022). Based on the duration of the disease, most respondents had experienced heart failure for 1–3 years. The length of time a person has suffered from this disease significantly affects their physical and emotional condition, including their economic situation and overall quality of life (Hardianti et al., 2024). Regarding cardiac functional class, most patients were classified as NYHA Class II, indicating mild limitations in physical activity. Common symptoms such as shortness of breath and mild chest pain indicate impaired cardiac function, reflecting a decrease in the heart's capacity to meet the body's metabolic needs. If not treated appropriately, this condition can progress to a higher NYHA classification, characterized by more severe symptoms even at rest. This directly impacts the patient's ability to perform daily activities and worsens their condition (Alwi et al., 2024).

Psychosocial Characteristics of Heart Failure Patients

This study also revealed that most respondents experienced anxiety at abnormal levels. This condition indicates that patients have significant psychological disorders due to fear of worsening conditions and the burden of treatment. This anxiety problem has been proven to be closely related to a decline in patients' quality of life because it affects their physiological and social conditions (Hardianti et al., 2024). In addition to anxiety, depression was also commonly found among respondents, at abnormal (moderate) levels. This condition reflects mood and emotional functioning changes that can worsen overall health. Patients are often unaware of the symptoms of depression, but its effects on social and physical functioning are significant (Arifudin & Kristinawati, 2023).

Social support is also an essential factor affecting patients' psychosocial condition. The majority of respondents received moderate levels of social support. Support from family, friends, and the surrounding environment is essential in coping with chronic diseases such as heart failure. When patients feel supported, both morally and materially, they tend to have lower levels of anxiety and depression and greater enthusiasm for maintaining their health and undergoing treatment (Maharani et al., 2023). However, more than half of the respondents experienced worsening symptoms while suffering from heart failure. This indicates that the majority of patients showed clinical decline, both physically and emotionally. A combination of psychosocial factors, such as anxiety, depression, lack of social support, and the duration of the disease often exacerbates this decline (Hardianti et al., 2024). Nevertheless, there are also findings from other studies that show that deterioration can be prevented if patients have a positive self-perception, good financial support, and do not experience severe complaints (Adipati et al., 2025).

Psychosocial Determinants of Worsening Symptoms in Heart Failure Patients

Further analysis in this study shows that anxiety is the most dominant psychosocial factor influencing the worsening of symptoms in heart failure patients. With a significance value of 0.0001 ($p < 0.05$) and an Exp(B) odds ratio value of 3.043, anxiety is the strongest factor predicting the worsening of a patient's condition. This means that patients with high anxiety are three times more likely to experience worsening symptoms than those who do not experience anxiety (Bannepadang et al., 2023). This finding is reinforced by another study showing that the majority of heart failure patients experience moderate to severe anxiety due to uncertainty about their condition (Nitasari & Prihatiningsih, 2021). Anxiety not only has psychological effects but also physical effects, with a decrease in the body's ability to respond to stress and regulate bodily functions. In addition, anxiety also contributes to a decline in patients' ability to care for themselves, thereby exacerbating symptoms and reducing quality of life (Arifudin & Kristinawati, 2023). Anxiety is not only experienced by patients but is also significantly felt by family members, who are often in a state of psychological distress due to excessive anxiety about the possibility of losing their loved ones (Kristinawati et al., 2024). Thus, anxiety is not only a psychological indicator but also a major determinant that significantly influences the clinical condition of heart failure patients. Interventions targeting psychosocial aspects, particularly in managing anxiety, are crucial in preventing symptom deterioration and improving patients' overall quality of life.

CONCLUSION

Based on the results of the study, it was found that psychosocial factors influence the worsening of symptoms in patients with heart failure. Anxiety was the most dominant or primary determinant among the psychosocial factors studied. The higher the level of anxiety experienced by patients, the greater the likelihood of worsening symptoms, because anxiety can affect the body's physiological response and aggravate clinical conditions. In addition, the level of depression also contributes to the worsening of symptoms, as it can affect the psychological and social condition of patients. Low social support also worsens the condition by reducing self-confidence and adherence to treatment. However, among these three variables, anxiety shows the most decisive influence on the worsening of symptoms in patients with heart failure.

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