

Relationship Between Depression, Anxiety Levels, and Coping Mechanisms in Patients with Congestive Heart Failure

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ABSTRACT

Introduction: Congestive heart failure is a serious medical condition that often experiences severe physical symptoms and significant psychological distress, including depression and anxiety. Coping mechanisms are strategies used by patients with congestive heart failure to deal with depression and anxiety related to their medical condition. Patients with adaptive coping mechanisms can better manage symptoms and reduce the risk of depression and anxiety. However, patients with maladaptive coping mechanisms are more vulnerable to psychological distress.

Objective: This study aimed to determine the relationship between depression and anxiety levels and coping mechanisms in congestive heart failure patients attending the Heart Polyclinic of Sejiran Setason Regional General Hospital in 2025.

Method: This study used a cross-sectional design and chi-square test, with univariate and bivariate analyses. The study was conducted from May 21 to June 10, 2025. The population was 138 outpatients with congestive heart failure who were admitted to the Heart Polyclinic of Sejiran Setason Regional General Hospital between January and February. The sample consisted of 67 congestive heart failure patients.

Result: The results of this study indicate a relationship between depression ($p = 0.016$) and anxiety ($p = 0.000$) and coping mechanisms in patients with congestive heart failure.

Conclusion: This study suggests that it can serve as a basis for developing a holistic care program for patients with congestive heart failure, one that focuses not only on managing physical symptoms but also on psychological aspects and enhancing patients' coping skills to face daily challenges.

Keywords: anxiety, depression, coping mechanisms

Introduction

Universally, the leading cause of mortality each year is heart disease, a non-communicable disease. One of the most common types of cardiovascular disease is heart failure. Heart failure is a condition in which the heart is no longer able to pump sufficient blood to the tissues to meet the body's metabolic needs (forward failure), or both (Iswahyudi et al., 2022). Data from the WHO (World Health Organization) and the World Heart Federation (WHF) predict that by 2025, cardiovascular disease will be the leading cause of mortality in Asian countries. Currently, approximately 78% of global deaths are caused by cardiovascular disease, with the highest prevalence among the lower and middle classes. Between 1990 and 2020, mortality rates from cardiovascular disease in developing countries are expected to increase by 120% for women and 137% for men. In developed countries, the increase is smaller, at 29% for women and 48% for men (Farida & Bahri, 2024).

The WHO (2020) also states that the increase in cases of heart failure worldwide, including in Asia, is due to increases in smoking, diabetes, obesity, and dyslipidemia. The incidence of heart failure also increases with age. According to a study conducted in Framingham, the annual incidence of heart failure for men (per 1,000 incidents) increased from 3 cases in men aged 50-59 to 27 cases in men aged 80-89. Compared to women, the incidence of heart failure tends to be lower. Annually, deaths from cardiovascular disease exceed 17.8 million. Meanwhile, data from the Indonesian Ministry of Health in 2023 recorded that the number of deaths due to this disease in Indonesia reached 650,000 people annually. The Basic Health Research (Riskesdas) showed that the prevalence of chronic heart failure increased from 0.2% in 2013 to 0.38% in 2018. Based on doctor's diagnoses, the prevalence of heart failure is estimated at 1.5%, or approximately 29,550 people. Furthermore, symptom analysis estimates the number of people suffering from heart failure at 0.4%, or approximately 29,880 people (Hardianti et al., 2024).

Based on available information, no data on heart failure was obtained from the Bangka Belitung Islands Provincial Health Office or the West Bangka Regency Regional Health Office between 2022 and 2024. However, secondary data was obtained from the hospital studied, Sejiran Setason Regional Hospital, West Bangka. There was a significant increase in 2022, 2023, and 2024. In 2022, there were 356 patients with congestive heart failure, followed by 411 in 2023. Meanwhile, in 2024, there were 500 patients. Almost everyone with heart disease realizes that the heart is a vital organ and that damage to it can be detrimental to health. Heart failure is a clinical syndrome characterized by symptoms such as shortness of breath, shortness of breath, leg edema, and fatigue. It can also be accompanied by signs of increased jugular venous pressure, pneumonia, and peripheral edema (Hardianti et al., 2024).

These symptoms appear in patients during activity or at rest after activity. Individuals with heart failure not only experience physical limitations caused by their disease but also psychological problems such as anxiety and depression due to maladaptive coping. Heart failure patients must receive regular treatment to alleviate symptoms, improve quality of life and functional status, and prolong survival by preventing recurrence and worsening of the condition. Undergoing long-term therapy will impact various important aspects of a patient's life, including physical, psychological, and social aspects. Psychological problems frequently encountered in heart failure patients include stress, feelings of helplessness, and hopelessness regarding their condition. This can occur if an individual is unable to develop adaptive coping mechanisms (Rusli et al., 2021). Two types of coping mechanisms can be identified: adaptive coping mechanisms and maladaptive coping mechanisms. Adaptive coping mechanisms involve the formation of new habits that help individuals adapt to

changing situations, while maladaptive coping mechanisms involve negative behaviors that can be detrimental to the individual, their family, others, and the surrounding environment (Safitri et al., 2021).

Based on a preliminary survey conducted on January 13, 2025, among five respondents undergoing treatment at the Sejiran Setason Regional Hospital's heart clinic, using a depression and anxiety questionnaire, three respondents experienced depression and anxiety. In the coping mechanism questionnaire, three respondents used maladaptive coping mechanisms due to fatigue from taking medications, fear of their weakened condition, concerns about their recovery, and future treatment. This occurs because patients lack effective coping mechanisms for their illness; they tend to surrender and avoid the problems they face. Based on the above phenomenon, the researchers are interested in conducting a study entitled: The Relationship Between Depression and Anxiety Levels and Coping Mechanisms in Congestive Heart Failure Patients in the Sejiran Setason Regional Hospital's Heart Clinic in 2025.

Objective

This study aimed to determine the relationship between depression and anxiety levels and coping mechanisms in congestive heart failure patients attending the Heart Polyclinic of Sejiran Setason Regional General Hospital in 2025.

Method

This study used a cross-sectional design and chi-square test, with univariate and bivariate analysis. The study was conducted from May 21 to June 10, 2025. The population was 138 outpatients with congestive heart failure who were treated at the Heart Polyclinic of Sejiran Setason Regional General Hospital between January and February. The sample consisted of 67 congestive heart failure patients. The study was conducted from April 21 to June 10, 2025 at the Heart Polyclinic of Sejiran Setason Regional General Hospital. After obtaining a confirmation letter of research permission from Sejiran Setason Regional General Hospital, then determining potential respondents, the researcher identified or conducted observations at the Heart Polyclinic of Sejiran Setason Regional General Hospital selected according to the criteria. After the researcher gave the questionnaire to those who had agreed and signed the informed consent, the respondents filled it out. Immediately after the respondents filled out the questionnaire, the questionnaire was returned to the researcher. Data analysis used the chi-square statistical test.

Result

Table 1. The Relationship between Depression and Coping Mechanisms in Congestive Heart Failure Patients at the Cardiology Clinic of Sejiran Setason Regional General Hospital in 2025

Depression	Coping Mechanisms						p-value	POR (95%CI)
	Adaptive		Maladaptive		Total			
	n	%	n	%	n	%		
Normal	35	92.1%	3	7.9%	38	100%	0.016	6.140 (1.505-25.048)
Mild	19	65.5%	10	34.5%	29	100%		

Based on above, more congestive heart failure patients with adaptive coping mechanisms had normal depression levels (35 people (92.1%) compared to those with mild depression levels. Meanwhile, more congestive heart failure patients with maladaptive coping mechanisms had mild depression levels (10 people (19.4%).

The results of data analysis using the Chi-Square test obtained a p -value (0.016) $< \alpha$ (0.05), which means there is a relationship between depression and coping mechanisms in congestive heart failure patients at the Heart Clinic of Sejiran Setason Regional General Hospital in 2025.

Further analysis obtained a Prevalence Odds Ratio (POR) value of 6.140 (95% CI = 1.505-25.048), meaning that congestive heart failure patients with normal depression have a tendency to use adaptive coping mechanisms 6.14 times greater than congestive heart failure patients with mild depression.

Table 2. The Relationship of Anxiety to Coping Mechanisms in Congestive Heart Failure Patients at the Cardiology Clinic of Sejiran Setason Regional General Hospital in 2025

Anxiety	Coping Mechanisms				Total		<i>p-value</i>	POR (95%CI)
	Adaptive		Maladaptive					
	n	%	n	%	n	%		
Mild	39	95.1%	2	4.9%	41	100%	0	14.300 (2.830-72.263)
Moderate	15	57.7%	11	42.3%	26	100%		

Based on above, more congestive heart failure patients with adaptive coping mechanisms had mild anxiety levels (39 people (95.1%) compared to moderate anxiety levels. Meanwhile, more congestive heart failure patients with maladaptive coping mechanisms had moderate anxiety levels 11 people (42.3%). The results of data analysis using the Chi-Square test obtained a p -value (0.000) $< \alpha$ (0.05), which means there is a relationship between anxiety and coping mechanisms in congestive heart failure patients at the Heart Clinic of Sejiran Setason Regional General Hospital in 2025. Further analysis obtained a Prevalence Odds Ratio (POR) value of 14.300 (95% CI = 2.830-72.263), meaning that congestive heart failure patients with mild anxiety have a tendency to use adaptive coping mechanisms 14.3 times greater than congestive heart failure patients with moderate anxiety.

Discussion

Optimal medical management of congestive heart failure may require both problem-focused coping strategies, such as behavioral engagement, and emotion-focused coping strategies, such as maintaining an optimistic outlook on current health. This may indicate coping as a potential pathway through which the presence of depression influences prognosis in congestive heart failure (Trivedi RB, et al., 2009). The results of this study found that 38 individuals (56.7%) had normal levels of depression compared to those with mild depression. Bivariate analysis revealed that respondents predominantly used adaptive coping mechanisms, with a p -value of 0.016 $< \alpha$ of 0.05. This indicates that individuals are able to cope with depressive symptoms with positive strategies. They may experience feelings of sadness, loss of interest, or mood swings, but are able to manage these symptoms effectively

through various means, such as seeking support from loved ones, engaging in enjoyable activities, or managing stress effectively. By using adaptive coping mechanisms, respondents can mitigate the negative impact of mild depression.

This is in line with the findings of researchers Putranto et al. al., (2021) entitled "Depression in Heart Failure: Psychosomatic Approach," a review of the articles in this paper shows that the prevalence of depression in heart failure is quite high but is often underrecognized by physicians. There is a relationship between psychosomatics and heart failure, and a biopsychosocial-spiritual approach through non-pharmacological approaches such as psychotherapy and pharmacological therapy has benefits. Future research is needed to create evidence-based evaluations and treatment algorithms tailored to the specific needs of the target population.

Furthermore, according to researchers Trivedi RB et al., (2009) entitled "Coping styles in heart failure patients with depressive symptoms." The results showed that in a linear regression model, higher BDI scores were associated with lower scores on the acceptance ($\beta=-.14$), humor ($\beta=-.15$), planning ($\beta=-.15$), and emotional support ($\beta=-.14$) subscales of the COPE, and higher scores on the behavioral disengagement ($\beta=.41$), denial ($\beta=.33$), venting ($\beta=.25$), and mental disengagement ($\beta=.22$) subscales. Higher PSSS and ESSI scores were associated with lower BDI scores ($\beta=-.32$ and $-.25$, respectively). Higher LOT-R scores were associated with higher BDI scores ($\beta=.39$, $p<.001$). In a logistic regression model, $BDI \geq 10$ was associated with a greater likelihood of behavioral disengagement ($OR=1.3$), denial ($OR=1.2$), mental detachment ($OR=1.3$), venting ($OR=1.2$), and pessimism ($OR=1.2$), as well as lower perceived social support as measured by the PSSS ($OR=0.92$) and ESSI ($OR=0.92$). In conclusion, depressive symptoms in patients with congestive heart failure were associated with avoidant coping, lower perceived social support, and pessimism. The results suggest that interventions designed to enhance coping may reduce depressive symptoms.

The researchers hypothesized that depression is associated with coping mechanisms in patients with congestive heart failure. The results showed that more patients with normal/non-depressive depression compared to those with mild depression had a significant impact on coping mechanisms in patients with congestive heart failure. Respondents with mild depression tended to use maladaptive coping mechanisms to manage feelings of sadness, hopelessness, and frustration. Unbalanced mindsets and lack of motivation can also impact their ability to use effective coping mechanisms. Therefore, appropriate interventions are needed to help them manage depression and improve their coping skills.

According to researchers, anxiety is related to coping mechanisms in patients with congestive heart failure. The results showed that more patients experienced mild anxiety than severe anxiety. Respondents with moderate anxiety tended to use maladaptive coping mechanisms because they were trapped in a vicious cycle of anxiety, leading them to resort to maladaptive coping mechanisms to quickly reduce symptoms. Losing control over their thoughts and emotions led them to seek ways to reduce anxiety, even in unhealthy ways. Negative thought patterns and a lack of resources made them more susceptible to using maladaptive coping mechanisms, which actually worsened anxiety symptoms. Meanwhile, respondents with mild anxiety tended to use adaptive coping mechanisms because they still had control over their thoughts and emotions, allowing them to manage anxiety more effectively. They had sufficient internal and external resources to face problems and develop positive coping strategies. Thus, they were able to reduce anxiety symptoms and improve their quality of life through strategies such as relaxation, exercise, or other positive activities.

Conclusion

The study conducted at the cardiac polyclinic of Sejiran Setason Regional Hospital in 2025 revealed a relationship between depression and coping mechanisms in patients with congestive heart failure. In addition, a significant relationship was also found between anxiety and coping mechanisms in the same patient population. These findings indicate that psychological conditions, such as depression and anxiety, play an important role in influencing how patients cope with congestive heart failure.

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