

## Conference Paper

# The Relationship Between Functional Class of Heart Failure and Anxiety Level in Patient with Heart Failure

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**Abstract**

Heart failure is a major health problem in the world as well as in Indonesia. Various sign and symptoms felt by patients with heart failure along with increasing degrees of heart failure can cause anxiety. The purpose of this study was to determine the relationship between the functional class of heart failure and the level of anxiety in patients with heart failure. This study used descriptive correlative method with cross sectional design. This study involved 50 respondents of heart failure patients. The instrument used to measure the functional class of heart failure was a questionnaire and the level of anxiety was assessed using DASS 21. Data analysis used chi square test. The results of this study showed that there is no a significant relationship between the functional class of heart failure and the level of anxiety (p value 0.55), so it can be concluded that the functional class of heart failure does not affect the level of anxiety in patients with heart failure. Recommendations from this study were nurses must provide nursing interventions to reduce the problem of anxiety in heart failure patients.

**Keywords:** functional class of heart failure, anxiety, heart failureCorresponding Author:  
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Accepted: 26 February 2019  
Published: 12 March 2019Publishing services provided by  
Knowledge E

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Selection and Peer-review under the responsibility of the 1st PANIHC Conference Committee.

## 1. Introduction

Cardiovascular disease is the leading cause of death in the last few decades in the world. Cardiovascular disease caused 17 million mortality and more than 151 million caused loss of ability in daily activities in 2004. One of the most common cardiovascular diseases is heart failure (HF). Increasing of life expectancy resulting in the prevalence of heart failure is increasing. This is due to the increasing number of elderly people who have hypertension significantly increased the chances of developing heart failure. In addition, the improvement in post-infarct safety rates in middle age causes an increase in the number of elderly people at risk of developing heart failure (1).

HF is “a complex clinical syndrome that can result from any structural or functional cardiac disorder that impairs the ability of the ventricle to fill or eject blood”. Some causes

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of HF are hypertension, coronary heart disease, insulin resistance, bad lifestyle likes fatty foods, lack of exercise and obesity (2).

Some manifestations caused by HF such as dyspnea, orthopnea, PND, DOE, fatigue which will cause limitations in activities and feelings of anxiety, fluid and sodium retention that cause pulmonary congestion and liver congestion or peripheral edema. HF is the main diagnosis that causes people to be hospitalized. AHA said that more than 1 billion patients with HF who were treated in hospital and the incidence of re-hospitalization within one month to reach 25% (3). Patients who have been diagnosed with HF significantly show a decrease in their quality of life. This is caused by a decrease in physical function and aggravated by unstable psychological conditions.

New York Heart Association (NYHA) heart failure divide into 4 functional classification. It places patients in one of four categories based on how much they are limited during physical activity. Class I No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, dyspnea (shortness of breath). Class II Slight limitation of physical activity. Comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea (shortness of breath). Class III Marked limitation of physical activity. Comfortable at rest. Less than ordinary activity causes fatigue, palpitation, or dyspnea. Class IV Unable to carry on any physical activity without discomfort. Symptoms of heart failure at rest. If any physical activity is undertaken, discomfort increases.

Functional status is an important assessment in patients with heart failure because it can be used for all patients with heart failure and can also assess the effectiveness of the therapy program (4). Along with the increasing degree of heart failure, perceived physical complaints also increase. This will also aggravate the psychological condition of the patient, one of which is anxiety. Anxiety is a confusion or concern for something that happens with an unclear cause and is associated with an uncertain and helpless feeling (5).

Patients with heart failure often feel anxiety, fear and depression. Almost all patients realize that the heart is an important organ and when damaged, health is also threatened. When the disease increases and the manifestation worsen, patients often have excessive fear of permanent disability and death. Patients express fear in various ways such as nightmares, insomnia, acute anxiety, depression and denying reality (6).

Excessive anxiety will disrupt the body's functions and daily activities where anxiety can affect a person's interpersonal relationships, self-concept, cognitive function, psychological status and other aspects of life (5). Nurses must be able to assess the causes of anxiety and the level of anxiety felt by patients so that they can provide nursing interventions to overcome them.

Along with increasing degrees of heart failure physical complaints felt by HF patients also increase, as well as anxiety feelings. The purpose of this study is to find out the relationship between the functional class of heart failure and the level of anxiety in patients with heart failure.

## 2. Method

The method in this study is descriptive correlative with cross sectional design. Sample of this research are 50 patients with heart failure were taken using purposive sampling technique. The research was conducted in the flamboyant ward of Arifin Achmad Hospital, Riau Province. This study also has passed the ethical clearance by the ethics committee of the Faculty of Medicine, University of Riau.

The instrument for measuring the degree of heart failure is the questionnaire of the functional class of heart failure by NYHA, while to assess anxiety levels using DASS 21. Data collection procedures start from the preparation, implementation and data collection stages. The data analysis used is the chi square test to determine the relationship between the functional class of heart failure and the level of anxiety in patients with heart failure.

## 3. Result

The characteristics of respondents in this study can be seen in table 1.

TABLE 1: Frequency distribution of respondents by age, length of stay and diagnosed of HF.

No	Variable	Mean (Min- Max)	Median	SD
1	Age	48.98 (18 – 73)	48	13.11
2	Diagnosed of HF	2.48 (1 – 8)	2	1.59
3	Length of stay	3.38 (1 – 29)	2	4.23

Based on the table above can be seen that the average HF respondents treated were 49 years old (the youngest age was 18 years and the oldest was 73 years). The average of HF respondents with HF have been diagnosed for 2.48 years. The average length of stay was 3 days.

Based on Table 2, it is known that HF patients are male as many as 28 people (56%), while female are 22 people (44%). The most education of respondents was high school as many as 26 people (52%) and only 2 people were highly educated (4%). HF patients

TABLE 2: The frequency distribution of respondents by gender, education and employment.

No.	Variable	n	%
1	Gender		
	Male	28	56
	Female	22	44
2	Education		
	Elementary	13	26
	Junior High school	9	18
	Senior High school	26	52
	Bachelor	2	4
3	Employment		
	Entrepreneur	9	18
	Government	2	4
	Housewife	16	32
	Etc (traders, farmers, drivers and laborers)	23	46

work mostly as traders, farmers, drivers and laborers as many as 23 people (46%) and work as civil servants as many as 2 people (4%).

TABLE 3: Frequency distribution of respondents by the functional class HF.

No.	Functional Class of HF	n	%
1.	Class II	24	48
2.	Class III	18	36
3.	Class IV	8	16

Table 3 presents the functional class of HF patients, it can be seen that the most patients are in the class II as many as 24 people (48%) and class III are 8 people (16%) in the class IV.

TABLE 4: Frequency distribution of respondents by anxiety level.

No.	Anxiety levels	n	%
1.	Moderate	3	6
2.	Severe	4	8
3.	Extreme Severe	43	86

Based on Table 4, it can be seen that HF patients who were hospitalized were at very severe anxiety levels, are 43 respondents (86%) and at least were at moderate anxiety levels are 3 respondents (6%).

The results showed that of the 24 respondents in the class II most felt anxiety at extreme severe levels were are 20 respondents, severe anxiety were are 3 respondents and there was 1 respondents feeling moderate anxiety. Patients in the class III amounted to 18 patients and most felt extreme severe anxiety levels as many as 15 respondents,

TABLE 5: Relationship between the functional class of heart failure and anxiety level.

Functional class	Anxiety levels						Total		P value
	Moderate		Severe		Extreme Severe		n	%	
	n	%	n	%	n	%			
Class II	1	4.2	3	12.5	20	83.3	24	100	0.558
Class III	2	11.1	1	5.6	15	83.3	18	100	
Class IV	0	0	0	0	8	100	8	100	
<b>Total</b>	3	6	4	8	43	86	50	100	

there was 1 respondents at the level of severe anxiety and 2 respondents felt moderate anxiety. All respondents who are at IV class heart failure feel anxiety extreme severe. The chi-square test results obtained p value 0.558 ( $> \alpha = 0.05$ ). Further interpretation of the results of statistical tests showed that there was no significant relationship between the functional class of heart failure and the level of anxiety in HF patients.

## 4. Discussion

The incidence of heart failure increases with age. Increasing age is associated with endothelial dysfunction and an increased risk of coronary heart disease, this is also consistent with a decrease in capillary density and coronary decline, which causes myocardial ischemia (Jurgens et al., 2015). 80% of the population of heart failure patients are in the elderly (7). As age increases, the ability of the heart to perform its functions also decreases (3). The increase in life expectancy makes the prevalence of HF events increasingly increase in the future.

Gender is a supporting factor in cardiovascular disease. Various studies suggest that male have a risk of heart failure 2 times greater than female in productive age, while after entering the age of menopause (50 years) female will be at greater risk of developing cardiovascular disease than men (8).

The level of knowledge influences the increased risk of heart disease, a low level of education is said to have 3.09 times more often MCI compared to higher levels of education (Kelly & Weitzen, 2010).

Various studies have shown that the average heart failure patient treated in hospital is at class II. This may be due to the class II of complaint that is felt as a sense of tightness that increases when performing daily activities, so this complaint is felt very disturbing and brings feelings of anxiety (9). Heart failure affects daily life, patients with heart failure often feel uncomfortable with the situation. It is caused by a variety of symptoms that arise as a result of heart failure, symptoms often complain that dyspnea and fatigue. In

addition to physical complaints, heart failure patients also feel fear, shame, loss of control and feel socially isolated. This has an impact on the treatment to be acceptable to the patient (10,11). Management therapy in heart patients must consider physical, psychological and social effects on patients and families. Psychosocial support and rehabilitation can help patients and families to overcome and deal with the symptoms caused by heart disease (12).

As a result of heart failure will affect their daily lives, both physically, as well as fear, shame, loss of control and feel socially isolated (Jeon, Kraus, Jowsey, & Glasgow, 2010; J. Jones, McDermott, Nowels, Matlock, & Bekelman, 2012). Nurses as a health team in handling heart failure patients play an important role in providing health promotion to reduce the risk and incidence of heart failure (LeMone & Burke, 2008). The nursing care plan starts from the assessment to detect problems experienced by patients to take action to overcome these problems.

Many neurohormonal changes occur as a consequence of hemodynamic changes in patients with heart failure, caused by increased sympathetic nerve modulation, this tends to harm patients with heart failure (13,14). Increased modulation of the sympathetic nerve will increase blood pressure, heart rate, if this is not modified it will cause the workload of the heart to increase. This condition will certainly aggravate the health status of heart failure patients (15). In addition to physical problems such as psychological complaints, anxiety is a complaint often felt by patients with heart failure.

Anxiety is a feeling of discomfort or faint anxiety with an autonomous response (the source is often not specific or unknown to the individual), a feeling of fear caused by anticipation of danger (16). Anxiety is divided into 4 levels, namely mild, moderate, severe and extreme severe. Anxiety at a mild level can be a positive thing, because at this level can cause a person to be more vigilant and increase the field of perception about the assessment of a problem. Moderate anxiety is happening while being able to make a person more focused on the problem but can still be able to sort the problem into direction. Severe anxiety makes a person's perception or view of the problem they face become narrower and focus only on the problem. Whereas in anxiety that is extreme severe / panic, a person's perception is very narrow, the ability to do something decreases (17).

Anxiety in patients with HF may lead to a poor prognosis. The results of several studies suggest that anxiety experienced by HF patients is higher than anxiety in patients with other cardiovascular disorders (7). Anxiety in HF patients is caused by physical complaints that are felt to be increasing, treatment processes, dietary restrictions, therapeutic regimens and restrictions on daily physical activity, other illnesses that can aggravate

patient complaints, repeated treatment processes, despair, failure to use coping mechanisms, isolation from family and friends, finances and fear of death (7). This is the reason that the degree of heart failure is not a major factor that can cause an increase in anxiety in patients with heart failure. Patients with a degree of heart failure in class II and IV both feel levels of anxiety ranging from moderate to severe.

## 5. Conclusion

The results of this study indicate that the functional class of heart failure does not affect the level of anxiety in patients with heart failure. The recommendation of this study is that nurses must provide nursing interventions to reduce anxiety problems in patients with heart failure.

## Acknowledgement

Researchers would like said thank to the Director of Research and Community Service of the Directorate General of Higher Education of the Republic of Indonesia (RISTEK DIKTI), Higher Education Service Institutions X (LLDitkti X) regional regions of West Sumatra, Riau, Jambi and Riau Islands, Head of STIKes Payung Negeri Pekanbaru, Head of the Research Institute and Community Service (LPPM) of STIKes Payung Negeri Pekanbaru, and Arifin Achmad Regional General Hospital, Riau Province, which have facilitated this research.

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