

**INTRODUCTION**

In general, the global incidence of heart failure ranges from 100 to 900 cases per 100,000 people each year. It is estimated that 915,000 new cases of heart failure occurred in the United States in 2012. Heart failure is still a health problem in the world due to high rates of mortality, morbidity, hospitalization, and disability.

Heart failure causes a mortality burden and an unabated hospitalization rate although significant sustained efforts to treat and manage cardiac failure have been made. Heart failure is a complex clinical symptom that occurs due to functional or structural disorders of the heart, causing a decrease in the ability of the ventricles to fill and pump blood throughout the body. This condition will cause the main symptoms of the patient including fluid retention which can lead to pulmonary congestion or peripheral edema as well as dyspnea and fatigue which causes limitations in activity. States that Heart failure causes a significant decrease in the physical and psychological abilities of the patient, causing the patient’s quality of life to decrease.
The quality of life of heart failure is influenced by the functional degree of heart failure according to the New York Heart Association (NYHA) \(^6\). In addition, self-efficacy is a predictor of the quality of life of heart failure patients \(^8\). Data on heart failure patients treated at the Aceh Government Hospital are still high, heart failure patient also often experiences repeated hospitalizations.

Based on this description, the researchers wanted to see the relationship between the degree of NYHA and self-efficacy with the quality of life of patients with heart failure.

**MATERIALS AND METHODS**

**Design**

This type of quantitative research with a cross-sectional approach is a study that aims to see the relationship between the degree of NYHA, self-efficacy, and quality of life of heart failure patients.

**Participants**

This research was conducted at the Zainoel Abidin Hospital in Banda Aceh, Indonesia. A total of 154 heart failure patients who went to Polyclinic participated in this study. The sampling criteria included: (1) patients with a diagnosis of heart failure for more than 1 month, (2) stable condition (not in a state of shortness of breath), and (3) NYHA I, NYHA II, and NYHA III patients.

**Data Collections**

Data collection was carried out from July 14 to July 31, 2022. The instruments used were the Cardiac Self-Efficacy (CSE) and the Minnesota Living with Heart Failure (MLHF) questionnaire.

CSE is a research questionnaire developed by \(^9\) to assess the self-efficacy of patients with heart disease. The questionnaire used to measure Self-efficacy (CSE) in this study is the CSE questionnaire which has been modified by \(^10\) with a Cronbach alpha of 0.926. While the MLHF is a questionnaire developed by \(^11\) to measure the quality of life of patients with heart failure. The MLHFQ questionnaire consists of two domains, namely the physical domain and the emotional domain, which is designed to describe two aspects of quality of life. The MLHFQ questionnaire is a standard questionnaire that has been tested for validity and reliability by the Rector, with the Cronbach alpha coefficient between 0.87 to 0.95 \(^12\).

The following is the NYHA form used to assess the NYHA degrees of patients to be sampled for research, these NYHA guidelines are created by adapting the NYHA classification mentioned by \(^4\). This NYHA guideline form is filled out before the patient is given the CSE and MLHF questionnaires, by marking the checklist in the “Yes” column on the NYHA degree that best suits the patient’s condition and complaints. If the patient is included as having a functional degree of NYHA I, II, and III then the patient is included in the study sample, while NYHA IV is not included in the study sample because the patient with NYHA IV is in a condition of shortness of breath so it is not suitable to be involved in the study, NYHA IV patients are also rarely found to be treated at the Polyclinic.

To overcome the belief the researcher set inclusion criteria, made a detailed description of the research setting and used a standardized questionnaire that had been tested for validity and reliability.

**Ethical Considerations**

The ethical license was obtained from the Ethics Committee of the Zainoel Abidin hospital in Banda Aceh, Indonesia.

**Data Analysis**

The data that has been collected was analyzed using univariate analysis, bivariate analysis, and multivariate analysis. Univariate analysis in this study was conducted to obtain the results of the frequency distribution of each independent variable, namely the degree of NYHA and self-efficacy, and to see
the frequency distribution of the dependent variable, namely the quality of life. Bivariate analysis using the Chi-square test to see the relationship between the independent variable and the dependent variable. While the multivariate test uses logistic regression to see the independent variables that are most related to the quality of life of patients with heart failure.

RESULT

The results of the data analysis in the study can be seen in the table 2:

Univariate Analysis Result

Table 2. Characteristics of patients

<table>
<thead>
<tr>
<th>Characteristics of Respondents</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-35</td>
<td>4</td>
<td>2.6</td>
</tr>
<tr>
<td>36-45</td>
<td>17</td>
<td>11.0</td>
</tr>
<tr>
<td>46-55</td>
<td>38</td>
<td>24.7</td>
</tr>
<tr>
<td>56-65</td>
<td>52</td>
<td>33.8</td>
</tr>
<tr>
<td>&gt;65</td>
<td>43</td>
<td>27.9</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>103</td>
<td>66.9</td>
</tr>
<tr>
<td>Female</td>
<td>51</td>
<td>33.1</td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic education</td>
<td>40</td>
<td>26.0</td>
</tr>
<tr>
<td>Middle education</td>
<td>50</td>
<td>32.5</td>
</tr>
<tr>
<td>Higher education</td>
<td>64</td>
<td>41.6</td>
</tr>
</tbody>
</table>

Notes: Give a checklist in the column that corresponds to the patient’s NYHA

Table 3. Self-efficacy of Heart Failure Patients

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>88</td>
<td>57.1</td>
</tr>
<tr>
<td>Middle</td>
<td>36</td>
<td>23.4</td>
</tr>
<tr>
<td>Low</td>
<td>30</td>
<td>19.5</td>
</tr>
</tbody>
</table>

Table 4. Quality of Life of Heart Failure Patients

<table>
<thead>
<tr>
<th>Quality of Life</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>103</td>
<td>66.9</td>
</tr>
<tr>
<td>Poor</td>
<td>51</td>
<td>33.1</td>
</tr>
</tbody>
</table>

Table 3 shows that out of 154 heart failure patients who went to the hospital, 88 people (57.1%) have high self-efficacy.

Table 4 shows that out of 154 heart failure patients who went to the hospital, 103 patients (66.9%) have a good quality of life, while the quality of life is less than as many as 51 patients (33.1%).
Bivariate Analysis Result

Table 5. Relationship of NYHA Degree with Quality of Life of Heart Failure Patients

<table>
<thead>
<tr>
<th>No</th>
<th>NYHA degrees</th>
<th>Quality of Life</th>
<th>Total</th>
<th>α</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Good</td>
<td>%</td>
<td>Poor</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>NYHA I</td>
<td>20</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>NYHA II</td>
<td>76</td>
<td>89.4</td>
<td>9</td>
<td>10.6</td>
</tr>
<tr>
<td>3</td>
<td>NYHA III</td>
<td>7</td>
<td>14.3</td>
<td>42</td>
<td>85.7</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>103</td>
<td>66.9</td>
<td>51</td>
<td>33.1</td>
</tr>
</tbody>
</table>

Table 5 shows that the p-value is < 0.001, these results indicate a significance value of <0.05, so there is a relationship between the degree of NYHA and the quality of life of heart failure patients.

Table 6 show the p-value < 0.001, these results indicate a significance value of <0.05. So that there is a relationship between self-efficacy and the quality of life of heart failure patients.

Multivariate Analysis Results

Based on multivariate analysis with a logistic regression test, it was found that the degree of NYHA was the most dominant predictor related to the quality of life of heart failure patients with Odds Ratio (OR: 17.438).

DISCUSSION

NYHA’s Degree of Relationship with Quality of Life of Heart Failure Patients

The study shows that among patients with NYHA III degree of which 42 people (85.7%) experienced a decrease in their quality of life. This study is in line with what was stated by 13 stated that in addition to age, the degree of NYHA also greatly affects the quality of life of heart failure patients. NYHA II has the highest percentage of 55.8% compared to NYHA I. This study is also following the opinion conveyed by 14 in stating that heart failure patients will experience a decrease in quality of life caused by the worsening NYHA functional class, the worse the NYHA class or the NYHA degree of heart failure patients, the better the quality of life. The patient’s life will also decrease. This opinion is following the results found in this study that the quality of life of heart failure patients decreased with increasing NYHA.

Another supportive study 15 stated there was a significant relationship between the functional class of NYHA and the quality of life of heart failure patients. The degree of NYHA was assessed as a predictor that affected the quality of life. The worse the degree of NYHA patients, the patient’s quality of life will also decrease.

Patients high degree of NYHA often complain of weakness and tiredness easily, especially when doing activities outside the home, causing the patient to have difficulty carrying out daily activities and social
activities. Heart failure patients who seek treatment at the Zainoel Abidin Hospital is generally accompanied by their family, especially patients with NYHA III degree. Reducing the patient’s NYHA degree is the best step to prevent a decrease in quality of life in heart failure patients.

**Relationship of Self-efficacy with Quality of Life of Heart Failure Patients**

The results of data analysis in this study indicate the relationship between self-efficacy and the quality of life of heart failure patients. The higher the self-efficacy of the heart failure patient, the better the patient’s quality of life, and vice versa, the lower the self-efficacy of the heart failure patient, the lower the patient’s quality of life. Previous research stated that a lower level of self-efficacy can predict a poor quality of life, thus health care facilities must pay attention to factors related to self-efficacy when improving the patient’s quality of life. 16

Self-efficacy has positive and negative impacts, high self-efficacy affects a better quality of life, when self-efficacy is low it will be a barrier to self-care, so it will affect the patient’s quality of life 17.

Another study also wrote that self-efficacy is a predictor of quality of life, low self-efficacy and depression experienced by patients will worsen the quality of life of patients with heart failure, and a high level of self-efficacy can predict the better quality of life. These results indicate that the perceived confidence in managing symptoms and maintaining function is a better indicator of improving the quality of life of heart failure patients 8.

This study shows that heart failure patients have high self-efficacy. This finding can be influenced because of the strong culture and spirituality of the Acehnese people, the Acehnese are famous for their adherence to religion and highly uphold their culture and customs. This condition can also be influenced by coping mechanisms and patients can accept the disease, patients also have the ability and confidence in themselves that patients must seek treatment according to a predetermined visit schedule.

These findings indicate that patients with low self-efficacy are unable to control their disease, especially in a state of chest pain and shortness of breath. This situation can be influenced by the severity of the symptoms of the disease. Severe clinical symptoms felt by the patient will cause the patient to be unable to carry out social activities as usual and do light exercise to improve heart function. Meanwhile, patients with high self-efficacy can control the disease so that their quality of life does not decrease.

**RESEARCH LIMITATIONS**

This study was limited to heart failure patients with NYHA I, NYHA II, and NYHA III.

**CONCLUSION**

This study found a significant relationship between the degree of NYHA, self-efficacy, and quality of life of patients with heart failure. The degree of NYHA is the predictor that most influences the quality of life of patients with heart failure. The quality of life can be improved by reducing the patient’s NYHA degree and increasing the self-efficacy of heart failure patients.

**Source of funding**

There is no financial support for this research project.

**Conflict of interest**

There is no competing interest carried out by the author.

**REFERENCES**


