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Research Article

The Relationship between Physical Activity and Quality of Life in Patients with Congestive Heart Failure (CHF)

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Abstract: Background: Maintaining long-term regular physical activity is crucial for several weeks. Unfortunately, only 10% of patients benefit from cardiac rehabilitation programs after hospitalization for acute heart failure, and the majority of patients do not pursue long-term physical activity. The purpose of this study was to determine the relationship between physical activity and quality of life in CHF patients at Sultan Agung Islamic Hospital, Semarang. Method: This study was a quantitative study using a cross-sectional design. Data collection was conducted using a questionnaire. A total of 108 respondents were selected using a purposive sampling technique. The data obtained were analyzed statistically using the chi-square test. Result: Based on the analysis, it was found that of the 108 respondents, the average age was 55 years, the average diagnosed with CHF for 3 years, with the characteristics of the majority of male gender, namely 66.7%, the last education was high school level as much as 56.6%, and the majority worked as private employees as much as 47.2%. The results also showed that 65.7% of respondents had moderate activity, 27.8% had light activity and 6.5% had heavy activity. A total of 61.1% of respondents had a good quality of life, 31.5% had a moderate quality of life, and 7.4% had a poor quality of life. Conclusion: There is a significant relationship between physical activity and quality of life (p-value <0.05).

Keywords: Cardiac Rehabilitation; CHF; Cross-Sectional Study; Physical Activity; Quality of Life.

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1. Introduction

Congestive Heart Failure (CHF), often referred to as congestive heart failure, is a collection of clinical symptoms characterized by structural and functional abnormalities associated with ventricular and cardiac dysfunction. Heart failure is generally not a primary condition, indicating a later stage of the disease that has become its primary disorder.

Data from the WHO (World Health Organization) in 2019 showed that 17.9 million people died from heart failure, representing 32% of all global deaths. The prevalence of heart failure increases gradually with age, with a prevalence of 6-10% in those over 65 years of age (WHO, 2012). In 20123, in Southeast Asia, Indonesia was among the countries with the highest number of deaths, namely 345 cases per 1010,000 people, much higher compared to Thailand, which only had 1016 cases per 1010,000 people (Yelkti Widadi et al., 2024). Based on the 2018 Basic Health Research data, the prevalence of congestive heart failure in Indonesia diagnosed by doctors was 1.5% or approximately 1,017,290 people. Meanwhile, in Central Java Province itself, when comparing 2018 and 2019, data shows that there has been

a decrease in the cumulative incidence rate or proportion of new cases of congestive heart failure in Central Java, from a total of 9.82% in 2018 to 1.90% in 2019 (Lilik & Bludiono, 2012). Based on data from the Indonesian Health Profile in 2012, cases of heart disease were found to be 201,013,728 cases (Ministry of Health, 2012).

Physical activity is important in heart failure for improving functional capacity, quality of life, and prognosis, and is a Class IA recommendation in the European Society of Cardiology guidelines. After cardiac rehabilitation, long-term maintenance of regular physical activity is crucial, as is the benefit of a multi-week exercise program. Unfortunately, only 10% of patients benefit from a cardiac rehabilitation program after hospitalization for acute heart failure, and the majority of patients do not maintain long-term physical activity (Khasan As'ari, 2012).

2. Theoretical Study

Congestive heart failure (CHF) is the inability of the heart to pump blood to meet the body's oxygen and nutrient needs. Congestive heart failure (CHF) is also defined as a pathological condition in which the heart is unable to pump enough blood to meet the body's metabolic needs. This is due to impaired cardiac contractility (systolic dysfunction) or cardiac filling (diastolic) resulting in a lower-than-normal cardiac output (Mamay Maftuha et al., 2024).

Physical activity is any movement of a person's body cells produced by skeletal muscles that requires energy expenditure. Physical activity is any activity or movement of the body that can increase energy expenditure and circulation. Physical activity can be categorized as sufficient if a person does physical exercise or sports for 30 minutes every day or at least 3-5 days a week (Azmiya, 2023).

In the context of health, quality of life is often used to measure the impact of a disease or medical intelligence on the patient's life. Wahyu Widnyani elt al. (2023) activity is any bodily movement that increases energy expenditure and energy production. Adequate physical activity can help strengthen the heart, allowing it to pump blood more effectively with less effort. A stronger heart allows for smoother blood circulation, allowing the body's oxygen and nutrient needs to be met more effectively. Fulfilling these needs positively contributes to improving the patient's quality of life, as the patient becomes better able to carry out daily activities without experiencing symptoms such as shortness of breath or excessive fatigue.

The results of previous research found that physical activity in patients with CHF was in the moderate category (52%) and the quality of life of patients with CHF was in the moderate category (48%). The test results obtained a p value of 0.01, 0.01, which means there is a relationship between physical activity and the quality of life of patients. Things that can be done to reduce the risk factors for CHF include doing sufficient physical activity, maintaining blood pressure, a healthy diet, and maintaining blood pressure (Balyan et al., 2023). The results of this study are in line with research Utami et al. (2021), showing a significant relationship between physical activity and the quality of life of patients.

Previous research has shown that the quality of life of CHF patients is influenced by various factors, including the degree of physical ability. At the Regional General Hospital of Kelandari, it was found that most CHF patients (89.4%) had a good quality of life, but most patients from the same area only had a mild degree of physical ability, with a relatively high comorbidity of hypertension (76.9%). Although the duration of the disease did not have a significant effect, the degree of physical ability was shown to be related to quality of life ($p = 0.01$) (Saida et al., 2012). Conversely, at the Regional General Hospital of dr. Slamet Garut, in addition to CHF patients, actually have a low quality of life (76.5%) and poor self-care ability (67.6%) (Yelkti Widadi et al., 20124). This confirms that the quality of life of CHF patients varies greatly depending on the context and individual factors such as physical activity undertaken.

Thus, research on "The relationship between physical activity and quality of life in patients with Congestive Heart Failure (CHF)?" is important to be conducted, especially at Sultan Agung Selmarang Islamic Hospital to find out whether there is a relationship between the two variables,

3. Research Method

Research This constitute research quantitative with using cross- selectional design. The population in this study were Congestive Heart Failure (CHF) patients who were admitted to RSI Sultan Agung Selmarang. The total number of visitors to the heart polyclinic of RSI Sultan Agung Selmarang from March to April 2012 was 151 patients who experienced Congestive Heart Failure (CHF). The sampling technique used was is Telecommunications Purposive sampling with 1018 samples. The questionnaire used that is questionnaire activities physical and questionnaire quality life Minn Elsota Living with Heart Failure Quelstionnairel (MLHFQ) Indonesian language version. Static test using the Chi Square Test.

4. Results and Discussion

Table 1. Distribution Respondents based on Age and Duration of CHF Suffering in CHF Patients at RSI Sultan Agung Semarang in the month July -September (n= 108).

Characteristics	n	Mean±SD	Min - Max	CI 95%	
				Lower	Upper
Age	10l8	55.0l9± 5.568	37-70l	54.0l3	56.15
Long-term CHF Suffering	10l8	2.96± 1.440l	1 -8	2.69	3.24

The table above shows that the average age of respondents was 55 years with (± SD 5.568 years). The youngest age was 37 years and the oldest age was 701 years. The results of the interval estimation can be concluded from the 95% CI that the average age of respondents was between 54.013-56.15 years. The average time respondents were diagnosed with CHF was 2.96 years with (± SD 1,440 years). The youngest diagnosis was 1 year and the oldest diagnosis was 8 years. The interval estimation results can be concluded from the 95% CI that the average age of the relapse was between 2.69-3.24 years.

Table 2. Distribution Respondents based on Type Gender, Education, Occupation, Activities Physical, and Quality Life expectancy of CHF patients at RSI Sultan Agung Semarang in the month July -September (n= 108).

Characteristics	Category	Frequency (f)	Percentage (%)
Gender	Man	72	66.7%
	Woman	36	33.3%
Education	Elementary	18	16.7%
	School	17	15.7%
	JUNIOR HIGH	61	56.5%
	SCHOOL	12	11.1%
	SENIOR HIGH SCHOOL		
	PT		
Work	Doesn't work	26	24.1%
	civil servant	3	2.8%
	Private	51	47.2%
	Self-employed	23	21.3%
	Farmer	5	4.6%
Physical Activity	Light	30	27.8%
	Currently	71	65.7%
	Heavy	7	6.5%
Quality of Life	Good	66	61.1%
	Currently	34	31.5%
	Bad	8	7.4%
	Total	108	10 0 %

The table above shows that the distribution of respondents' gender is not even between men and women. The majority of respondents are male, namely 72 respondents (66.7%). The distribution of respondents' educational levels is not even for each level of education. The majority of respondents have a high school education, namely 61 respondents (56.5%), while the minority have a higher education level, namely 12 respondents (11.1%). The distribution of respondents' occupations is not even for each type of occupation. The majority of respondents work as private sector employees, namely 51 respondents (47.2%), while the minority work as civil servants, namely 3 respondents (2.8%).

Table 3. Relationship Activity Physique with Quality Life expectancy of CHF patients at RSI Sultan Agung Semarang in the month July -September (n= 108).

Physical Activity	Quality of Life				Total		p
	Bad		Good				
	n	%	n	%	n	%	
Light	22	73.3 %	8	26.7%	30	100 %	0l,0l0l 1
Currently	78	100 %	0	0.0%	78	100 %	
Amount	100	92.6 %	8	7.4 %	1 08	100 %	

The results of data analysis using Telecommunications correlation Chi- Square Non Parametrik di pelrolelh mark significance selblelsar 0l,0l0l1 karelna mark significance <0l,0l5, then hypotheses There is connection between activity physique with quality life accepted. So, Ha is accepted and Ho is rejected.

In the research this, variablell activity physical and quality life initially each categorized become three group. However, at this stage analysis blivariate second variablell telrselblut changed become two category (dummy) karelna in grouping beginning there is a sell with mark elxpelcteld count <5 cellsup to No melmelnuhi Chi- Square test assumptions. Combination category done with melmpelrtimblangkan similarity characteristics between group, selhingga obtained over distribution of data balanced, the test results are more valid, and make things easier intelligence connection between activity physical and quality life. Research This road with research (Utami et al., 201201) Based on the Kelndall's Tau test, the p- value obtained is 01,01014 <α (01,015) which states blahwa available significant relationship between activities physique with quality life.

The results of this study are also in line with research (Hasanah, 2019) with the results of the analysis of the relationship between the two variables obtained a significance value of 0.010101 smaller than the α value of 0.01015 which means there is a relationship between physical activity and the quality of life of heart failure patients who are admitted to Dr. Saiful Anwar Regional General Hospital and Aisyiyah Islamic Hospital in Malang City. Regularly doing physical activity can increase life expectancy. People who do physical activity can bring a sense of pleasure and can eliminate stress (Razaan, 20124).

study found that respondents with moderate-to-moderate physical activity had a better quality of life. This finding is in line with research showing that moderate-intensity physical activity provides physiological benefits such as improved cardiovascular function, muscle strength, and reduced fatigue symptoms, thus improving quality of life. (Afiani & Qodir, 2012).

5. Conclusion and Suggestions

BLelrbased on research results available Connection between Activity Physique with Quality Life CHD patients. Physical activity is an important part of CHF management and contributes significantly to improving patients' quality of life. These findings are expected to provide a basis for healthcare professionals, especially nurses, in developing education, mentoring programs, and nursing intelligence that encourage CHF patients to maintain physical activity according to their abilities so that their quality of life can continue to improve.

Health care providers are expected to take a more active role in helping heart failure patients incorporate regular activity or exercise into their daily routines. Health care providers are expected to provide specific guidance on the type, frequency, and duration of exercise or activity that patients should incorporate into their daily routines.

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