



THE RELATIONSHIP BETWEEN FAMILY SUPPORT AND PHYSICAL ACTIVITY ABILITY IN HEART FAILURE PATIENTS

Annisa Dini Aryani, Beti Kristinawati*

School of Nursing, Universitas Muhammadiyah Surakarta, Jl. Ahmad Yani, Pabelan, Kartasura, Sukoharjo, Central Java 57169, Indonesia

*Bk115@ums.ac.id

ABSTRACT

Heart failure is a condition of being unable to pump enough blood throughout the body, which can cause symptoms of fatigue and shortness of breath. These symptoms affect the physical activity of heart failure patients. Family support is one factor that can help influence the ability to engage in physical activity, especially in the daily activities of heart failure patients. This study aimed to determine the relationship between family support and physical activity in heart failure patients. This type of research uses quantitative research with a descriptive correlational design through a cross-sectional approach. It assesses family support using the PSS-Fa questionnaire and physical activity ability using the RAPA questionnaire. Sampling used a purposive sampling technique and determined the number of samples using the Slovin formula with 154 respondents. The results showed that 93 respondents (60.4%) received good family support. Optimal physical activity was 131 respondents (85.1%). The test results showed a significant p-value of 0.000 ($p < 0.05$), which indicated a relationship between family support and physical activity ability.

Keywords: family support; heart failure; physical activity

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INTRODUCTION

Heart failure is when the heart cannot pump enough blood throughout the body to meet the body's needs (Palilati et al., 2021). According to the Universal Definition of Heart Failure, heart failure is a common disease characterized by signs and symptoms due to structural or functional damage to the heart accompanied by increased levels of natriuretic peptides and objective signs of pulmonary congestion or systemic syndrome (Perhimpunan Dokter Spesialis Kardiovaskular Indonesia, 2023). Heart failure occurs due to impaired myocardial function (systolic and diastolic function), valve or pericardial disease, or anything that can cause impaired blood flow with fluid retention, usually in the form of pulmonary congestion, peripheral edema, shortness of breath, and fatigue (Kemenkes RI, 2021). The frequency and severity of symptoms associated with heart failure can affect physical, emotional, and social function and health (Mchorney et al., 2021).

The incidence of heart failure is increasing because patients with acute heart injury can develop chronic heart failure (Perhimpunan Dokter Spesialis Kardiovaskular Indonesia, 2023). The World Health Organization (WHO) explains that the increase in the incidence of heart failure worldwide, including in Asia, is due to the increasing prevalence of smoking, obesity, dyslipidemia, and diabetes (Kemenkes RI, 2021). Basic Health Research data in 2018, the prevalence of congestive heart failure and decreased heart function was 1.5% diagnosed by doctors in Indonesia. Meanwhile, in Central Java Province, when compared to 2018 and 2019, data shows that the cumulative incidence of congestive heart failure decreased by 9.82% in 2018 and 1.90% in 2019 (Lilik & Budiono, 2021).

One of the impacts of heart failure is a change in lifestyle so that sufferers cannot carry out activities as before (Nwosu et al., 2022). Several factors influence the physical activity of people with heart failure: self-care management, compliance with treatment, weight monitoring, and old age (Kemenkes RI, 2021). Several barriers to physical activity, such as fear of injury, lack of knowledge, and motivation, make physical activity levels low (Misiąg et al., 2022). Physical limitations make sufferers unable to care for themselves properly, so they need help from others, especially family (Susanto et al., 2022). People with chronic diseases get help to deal with their illnesses from family members, especially spouses and children (Yuliastuti et al., 2022).

Family is the closest person to congestive heart failure patients because of the provision of attitudes, acceptance, and actions to sick family members (Risma Anggia et al., 2024). Family support is information, advice, genuine assistance, or actions provided by the closest people in their environment as a presence that can provide emotional benefits and influence the recipient's behavior (Lestari, 2020). Family support includes emotional, informative, instrumental, and appreciation or assessment support (Zafirah et al., 2022). Chronic disease sufferers need families to help with daily activities actively, listen to their complaints, and discuss and look for solutions (Roger, 2021). Family members provide emotional support to help patients cope with stress due to their illness. The patient's condition will improve when the family provides support to the patient (Silviana et al., 2023). The importance of the family providing emotional, physical, and social support can encourage patients to make lifestyle changes sufferers need to control heart failure and increase their physical activity abilities (Susanto et al., 2022). This study urgently needs to answer the limitations of previous studies, which show that family support plays a positive role in caring for heart failure patients (Susanto et al., 2022). Meanwhile, this study explains the importance of family support in helping patients do physical activities safely and comfortably, thereby increasing life expectancy. This study aimed to determine the relationship between family support and physical activity ability in heart failure patients.

METHOD

This type of research uses quantitative research with a descriptive correlational design using a cross-sectional approach. The study was conducted at the Heart Polyclinic of a general hospital in Surakarta for 3 months in October-December 2024. Based on the data obtained, the average population of heart failure patients visiting the Heart Polyclinic of a general hospital in Surakarta in that year was 249. Sampling was carried out using a purposive sampling technique, and the number of samples was determined using the Slovin formula, namely 154 respondents, who were selected according to the predetermined inclusion and exclusion criteria. The questionnaire was a demographic questionnaire and two independent and dependent variable questionnaires. The demographic questionnaire contains age, gender, education, occupation, relationship status, and caregiver. In the independent variable, namely family support, using the PSS-Fa (Perceived Social Support from Family) questionnaire, which has a Cronbach Alpha value of 0.752, with a total of 20 questions with answers yes, no, and do not know with parameters divided into 3, namely less (score 20-23), enough (score 34-47) and sound (score 48-60). In the dependent variable, namely physical activity, using the RAPA (Rapid Assessment of Physical Activity) questionnaire, which has a value ($R = 0.542$), with answers yes and no, the parameters are divided into 2, namely less than optimal (score <6) and optimal (score >6).

Data was collected with the approval of the Faculty of Health Sciences, Muhammadiyah University of Surakarta. This study has also received written approval from the research ethics committee of Dr. Moewardi Hospital with Number 2.374 / IX / HREC / 2024. Data

processing using the SPSS program. Data analysis consists of univariate and bivariate analysis. Univariate, unit-based analysis is used to analyze variable data presented in frequency and percentage. Bivariate analysis is used to analyze the relationship between 2 variables tested using the chi-square test. All data obtained are presented in the form of frequency distribution and percentage.

RESULT

Based on the study results in Table 1, it is known that the characteristics of respondents from a total sample of 154 respondents are mainly in the elderly category, namely 66 respondents (42.9%). The majority are male, namely 82 respondents (53.2%), with the highest level of education being high school, namely 56 respondents (36.4%). Regarding work frequency, the most significant job group is unemployed/housewives, with as many as 55 respondents (35.7%). The most significant relationship status is married, with as many as 115 respondents (74.7%), the majority living with a partner, and as many as 111 respondents (72.1%).

Table 1.
Respondent characteristics (n= 154)

Respondent characteristics	f	%
Age		
Young adults (19-44 years)	29	18.8
Old adult (45-59 years)	59	38.3
Elderly (60 years and above)	66	42.9
Gender		
Male	82	53.2
Female	72	46.8
Education		
Primary School	46	29.9
Junior High School	24	15.6
High School	56	36.4
Diploma/Bachelor	28	18.2
Occupation		
Not working/Housewife	55	35.7
Laborer	22	14.3
Self-employed	30	19.5
Farmer	10	6.5
PNS/TNI/POLRI	7	4.5
Retired	13	8.4
Others	17	11.0
Relationship status		
Single	7	4.5
Living alone	2	1.3
Widowed/widower	30	19.5
Married	115	74.7
Living		
Couple	111	72.1
Alone	6	3.9
Children	27	17.5
Other, family	10	6.5

The results of the data analysis in Table 2 show that the family support obtained is mostly in the good category, 93 respondents (60.4%), and the most physical activity is in the optimal category, 131 respondents (85.1%).

Table 2.
Univariate analysis (n= 154)

Univariate analysis	f	%
Family Support		
Less	6	3.9
Sufficient	55	35.7
Good	93	60.4
Physical Activity		
Suboptimal	23	14.9
Optimal	131	85.1

Table 3.
Bivariate analysis (n= 154)

Family Support	Physical Activity						p-value
	Suboptimal		Optimal		total		
	f	%	f	%	f	%	
Less	6	100.0	0	0.0	6	100.0	0.000
Sufficient	17	30.91	38	69.09	55	100.0	
Good	0	0.0	93	100.0	93	100.0	

Table 3 shows the results of cross-tabulation between family support and physical activity ability; respondents who have good family support with optimal activity are 93 respondents (100.0%). Moreover, there are zero respondents with good family support with suboptimal activity (0%). In the category of sufficient support with optimal physical activity, there are 38 respondents (69.09%). Sufficient support with suboptimal physical activity is 17 respondents (30.91%). There were zero respondents in the category of less family support with optimal physical activity (0%). Moreover, there is less family support with suboptimal activity in 6 respondents (100.0%). The results of the Chi-Square statistical test show a p-value of 0.000 (<0.005), which indicates that in this study, the null hypothesis (H₀) is rejected, and the alternative hypothesis (H_a) is accepted. These results indicate a relationship between family support and physical activity ability in heart failure patients.

DISCUSSION

In this study, the characteristics of respondents based on age were mainly in the elderly category, namely 66-76 years, as many as 66 respondents. Several studies have identified that the elderly age group is more susceptible to heart failure. In a study conducted by (Sherly et al., 2022), acute heart failure was the most common cause of hospitalization in patients over the age of 65 years. Research (Utami & Pratiwi, 2021) also shows that heart failure often occurs in those over 60 years of age (elderly). As age increases, there are changes in the structure and function of the heart and blood vessels. Blood vessels are no longer elastic and flexible, resulting in plaque or fat buildup, and can block blood flow, resulting in atherosclerosis, which can develop into ischemia or infarction and lead to acute heart failure (Sherly et al., 2022).

The majority of older adults with heart failure in this study were male, namely 82 respondents. Most respondents were male, which aligns with the research (Pramesti & Kristinawati, 2024). Research (Sherly et al., 2022) stated that of the 57 samples experiencing acute heart failure in the elderly, the largest gender was male, namely 35 people (61.4%). The gender that experienced the most heart failure was male due to an unhealthy lifestyle (Utami & Pratiwi, 2021). The habit of smoking and consuming excessive alcohol increases the risk of various diseases compared to women (Donsu et al., 2020). A person's susceptibility to heart failure is influenced by the role of the hormone estrogen, which protects women from various cardiovascular diseases (Anggraeni & Syafriati, 2022).

In this study, most of the last education was in high school, with as many as 56 respondents. In line with research (Risma Anggia et al., 2024), most (51%) were high school graduates. In this study, most respondents only had a high school education or below. Although education is not a risk factor for heart disease, the level of education and knowledge affects health behavior (Anggraeni & Syafriati, 2022). A person with low education has limited knowledge and information, so there is a lack of motivation to maintain health; a high level of education will increase their knowledge and easily accept information so that they have a desire to maintain health and improve the quality of life (Anggraeni & Syafriati, 2022). The higher the education and knowledge, the greater the influence of a person in implementing a healthy lifestyle (Aprilia, 2020).

Based on the most jobs, those who are unemployed or housewives are 55 respondents. In line with the study (Istiqomah et al., 2021) where most of the respondents are no longer working, namely 20 people (57.1), and in the study (Risma Anggia et al., 2024) where most (60%) are also unemployed. Patients who work have a better quality of life than those who are unemployed or retired. In contrast, working patients have routine activities that can reduce stress and anxiety and positively influence physical, social, and economic activities (Utami & Pratiwi, 2021).

Based on the data obtained, the most relationship status obtained was married, with 115 respondents. In the study (Aprilia, 2020), most of the respondents were married, namely 80%. In line with the study (Pramesti & Kristinawati, 2024), the respondent's marital status characteristics were mostly married or had a partner. Marital status can be a form of social support influencing patient health improvement behavior, such as medication compliance and healthy lifestyles (Aprilia, 2020).

The majority of respondents live with their partners. The results of this study are supported by research at the Heart Polyclinic of Sukoharjo Hospital, which showed that most respondents with heart failure live with their partners (husband/wife) (45.3%) (Pramesti & Kristinawati, 2024). Motivation obtained from partners is very much needed to provide support and information when facing health problems so that individuals can maintain their health correctly (Pramesti & Kristinawati, 2024). Based on the results of the chi-square statistical test that has been carried out on the family support variable with physical activity ability, a p-value of 0.000 ($p < 0.05$) was obtained. The study results showed that H_0 was rejected and H_a was accepted, which means there is a relationship between family support and physical activity ability in heart failure patients. Family support is the family's attitude, actions, and acceptance towards the patient (Silviana et al., 2023). Family support is in the form of internal social support obtained from siblings, husband, and wife, or it can also be in the form of external family support for the nuclear family (Silviana et al., 2023). Family members who live in the same house have a close emotional and physical relationship that the patient needs to get comfort and improve the quality of their health (Zafirah et al., 2022). Essential family responsibilities include providing affection, a sense of security and belonging, and preparing the individual's adult role in society (Risma Anggia et al., 2024).

In this study, the majority of respondents received good family support, as many as 93 respondents. This aligns with research (Pramesti & Kristinawati, 2024), which showed high family support, as many as 192 (95.5%). Research (Silviana et al., 2023) found that most respondents received good family support, as many as 57 people (57.6%). Research conducted by Beti Kristinawati and Siti Rahmawati in 2020 showed that family support increases self-confidence and motivation when facing problems and life satisfaction (Kristinawati et al., 2020). Emotional support given to heart failure patients can make them

more confident, help them in self-care and adherence to treatment, and increase motivation to recover from their illness (Febby, Arjuna, 2023). Patients who receive emotional support and motivation from their families can carry out daily physical activities better than those who lack family support (Silviana et al., 2023).

Patients felt inspired to be physically active by others who were physically active or who encouraged them to be physically active (Klompstra et al., 2021). They said being physically active with others made it easier to be physically active than doing it alone (Klompstra et al., 2021). Physical activity is a body movement produced by skeletal muscles that requires energy expenditure (Istiqomah et al., 2021). In this study, optimal physical activity in heart failure patients was 131 (85.1%), which shows that most heart failure patients undergo structured physical activity. Physical activity plays a role in the success of heart failure treatment and can significantly improve heart failure (Istiqomah et al., 2021). Regular physical activity like walking can improve heart function and increase blood circulation (Veni & Supriatna, 2023). Physical activity can increase maximum oxygen consumption (Kemenkes RI, 2021). This confirms that the family plays a significant role in supporting patient activities through motivation and direct assistance in daily activities. Patients who receive high family support tend to have more regular activity patterns and follow their health conditions. Family support is needed in the care of heart failure patients so that patients feel safe and comfortable doing physical activities. Optimal physical activity can help heart failure patients improve their quality of life.

CONCLUSION

The research results concluded that respondents have good family support and optimal physical activity. A relationship exists between good family support and optimal physical activity in heart failure patients treated as outpatients in the heart polyclinic of a general hospital in Surakarta. The better the family support, the more optimal the physical activity of heart failure patients. Family support increases the patient's motivation to remain active in daily physical activities. The role of the family is significant in supporting the physical activity of heart failure patients. This finding highlights the crucial role of nursing in optimizing patient care through family-centered interventions. Nurses play a key role in assessing, educating, and empowering both patients and their families to improve self-care and adherence to physical activity recommendations. Through structured health education, nurses can enhance families' understanding of the importance of physical activity, reduce misconceptions, and promote sustainable behavioral changes. Additionally, nurses can implement telemonitoring and periodic follow-ups to ensure continued adherence to prescribed physical activities.

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