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THE EFFECTIVENESS OF IMPLEMENTING *DISCHARGE PLANNING* ON FAMILY KNOWLEDGE IN CARING FOR PATIENTS WITH CORONARY HEART DISEASE

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Abstract

Discharge planning is a dynamic and systematic process of assessment, preparation, and coordination aimed at facilitating the supervision of health and social services before and after hospital discharge. This study aims to determine the effectiveness of discharge planning implementation on family knowledge in caring for patients with Coronary Heart Disease (CHD). A quasi-experimental design with a one-group pretest-posttest approach was used. The sample consisted of 27 respondents selected through accidental sampling based on inclusion criteria. The intervention involved providing educational material using a leaflet on family knowledge in caring for CHD patients. Knowledge was measured using a 25-item questionnaire. The results showed that most respondents were aged 45–54 years (48.1%), female (59.3%), had a high school education (59.3%), and had cared for CHD patients for less than one year (55.5%). In the bivariate analysis, the pretest scores indicated that 73.4% had moderate knowledge, while posttest scores revealed that 96.74% had good knowledge. These findings demonstrate that discharge planning significantly improves family knowledge in caring for CHD patients, which may help reduce recurrence and hospital readmission rates.

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INTRODUCTION

Coronary heart disease (CHD) is a significant public health issue globally, being the leading cause of mortality and a major contributor to the loss of disability-adjusted life years (DALYs). The condition primarily results from the accumulation of plaque within the coronary arteries, reducing blood flow to the heart. This compromised circulation can lead to myocardial infarction or other cardiovascular complications (1).

Around the world, approximately 640 million people are living with heart and circulatory diseases. This number has been steadily rising due to factors such as changing lifestyles, an ageing and growing global population, and improved survival rates following heart attacks and strokes. If these trends continue, this figure is expected to rise further. It is estimated that globally, 1 in 12 individuals is affected by heart or circulatory disease. In 2021, it was estimated that men and women were similarly affected, with approximately 320 million people of each sex living with these conditions (2).

The dynamic and methodical process of *discharge planning* involves assessment, planning, and coordination to make it easier to oversee health and social services before and after a patient leaves the hospital. With an emphasis on routine care, therapy, prevention, and rehabilitation, this process entails communication between professional nurses, patients, and families to guarantee the required continuity of care (3). In order to improve patient health status and lower rehospitalization rates, effective *discharge planning* entails determining patient needs, evaluating,

establishing goals, and putting health education programs into action, coordinating and assessing them (4).

Using thorough *discharge planning* can help prevent readmissions to the hospital. The patient's post-hospital care needs—such as self-care, family support, or professional care—are evaluated through this process (5). Patients and their families must receive quality health education during the discharge process to be ready to move from the hospital to their homes. *Discharge planning*, when done correctly, can enhance patient safety and quality of life prior to discharge (6). Involving family members in *discharge planning* has significantly improved patients' and family members' physical and mental health (7,8).

Discharge planning has been shown to improve family members' understanding of caring for patients with coronary heart disease (CHD), but there is still a lack of understanding regarding how family involvement in discharge planning affects their preparedness to provide long-term care at home (9)**.** Existing research mainly focuses on the discharge planning process itself, but there is limited exploration of how the lack of effective communication tools and media hinders the success of discharge planning, particularly in the context of CHD patients in Indonesian hospitals (3).

Additionally, the high readmission rates due to families being unprepared or inadequately trained suggest a significant gap in the development of educational programs for families (3,9). Therefore, this study aims to fill this gap by investigating the impact of discharge planning on family knowledge regarding the care of CHD patients, and efforts to reduce readmission rates through enhanced educational support for families.

The data indicates that a significant portion of nurses in several nations, including Indonesia, do not perform *discharge planning*; in Yogyakarta, this number is 61%, while in Bandung, it is 54% (6,10). Enhancing care through efficient *discharge planning* is crucial given the high death rate from cardiovascular disease, including coronary heart disease, which stands at 7.6 million globally (4).

According to preliminary data obtained from the author's initial study conducted at Arifin Achmad Regional Public Hospital in 2024, one of the challenges in implementing effective discharge planning is the lack of media to support communication about home care. This barrier has the potential to increase readmission rates, as families may not have adequate knowledge to properly care for patients with CHD. Of the 12 patients who were readmitted, the preliminary findings revealed that many of their family members were not adequately prepared to provide appropriate care (11). Therefore, this study aims to explore the impact of discharge planning on improving family knowledge in caring for patients with coronary heart disease.

METHODS

This study employed a quasi-experimental design with a *one-group pretest-posttest design* to assess how *discharge planning* education affected family knowledge of CHD patient care. A questionnaire was used to measure the family's knowledge of how to care for patients with CHD. At the same time, the independent variable in this study is the discharge planning process, which is the educational process given to the patient's family during hospital treatment. The research was conducted in the intensive care unit of a hospital in Riau Province from January to July 2024.

The tools utilized in this study included a knowledge questionnaire that referred to the *Heart Disease Fact Questionnaire* (HDFQ), which comprises 25 questions about knowledge about Coronary Heart Disease (CHD), and a demographic questionnaire to gather information about the characteristics of respondents. Education was provided using leaflets containing information about CHD, risk factors, management, and prevention of CHD. 27 respondents made up the research sample, which was chosen by *accidental sampling*, a *non-*

probability sampling technique, with the inclusion criteria being that the patient's family must reside at home with them and be willing to take care of them once they return. Respondents must also be proficient in reading, writing, and communication. The gathered data was analyzed univariately to characterize the distribution of respondent characteristics. Bivariate analysis was then performed to examine family knowledge variations before and after the intervention. Data analysis in this study employed the Wilcoxon signed-rank test due to the non-normal distribution of the data

This research has received ethical approval from the Health Research Ethics Committee, Faculty of Nursing, Riau University, with certificate number 808/UN19.5.1.8/KEPK.FKp/2024. Research procedures were conducted with consideration for ethical principles, such as protecting the confidentiality of data and upholding the rights of respondents.

RESULTS AND DISCUSSION

The characteristics of respondents, such as age, gender, education level, and length of time spent caring for family members with coronary heart disease (CHD), are displayed in the univariate analysis results. **Table 1** below provides a detailed explanation of these traits:

Table 1 Demographic Characteristics

Characteristic	Frequency (n)	Percentage (%)
Age		
Adult (25-44 Years)	2	7,4
Early Elderly (45-55 Years)	13	48,2
Elderly (56-65 Years)	9	33,3
Late Elderly (>65 Years)	3	11,1
Total	27	100
Gender		
Man	11	40,7
Woman	16	59,3
Total	27	100
Education		
Elementary School	3	11,1
Junior High School	3	11,1
Senior High School	16	59,3
Bachelor	5	18,5
Total	27	100
Length Time of Caring for Family with CHD		
< 1 year	15	55,5
> 1 year	10	37,1
Dodn't know	2	7,4
Total	27	100

According to **Table 1**, 48.2% of respondents are in the early elderly age range, which includes those between the ages of 45-54 years. With five more respondents than men, women predominate in terms of gender (59.3%). Most of the respondents had completed high school (59.3%), and most had been providing care for patients with congenital heart disease (CHD) for less than a year (55.5%).

Table 2 The Distribution of Family Knowledge in caring for CHD

Knowledge Level	Frequency (n)	Percentage (%)
Pre-test		
Good	14	51,9
Enough	10	37,0
Less	3	11,1
Total	27	100
Post-test		
Good	27	100
Total	27	100

According to **Table 2**, 14 respondents (51.9%) demonstrated good knowledge prior to the intervention (pre-test), whereas all respondents (100%) demonstrated good knowledge following the intervention (post-test). Bivariate analysis was then used to assess how well discharge planning had affected family members' understanding of how to care for patients with congenital heart disease (CHD) both before and after the intervention. The research findings will be deemed significant if the p-value < α (0.05). The Shapiro-Wilk statistical test results for the data normalcy test are displayed in **Table 3** below.

Table 3 Data Normality Test with the Shapiro-Wilk Test

Variable	N	P-value
Pretest	27	0.007
Posttest	27	0.000

According to **Table 3**'s results of the Shapiro-Wilk test for data normality, the pretest p-value (0.007) and the posttest p-value (0.000) are less than 0.05, indicating that the data is not normally distributed. Consequently, the Wilcoxon test was used to conduct a non-parametric test.

Table 4 Average Value of Family Knowledge In Caring For Patients With Coronary Heart Disease Before and After Implementing Discharge planning

Variable	N	Mean	DS	Min-Max	P-value
Pretest	27	73.48	15,695	20-100	0.000
Posttest	27	96.74	4,443	84-100	

As seen in **Table 4**, the average family knowledge in caring increased by 23.26 points from the pretest score of 73.48 to the posttest score of 96.74. On the pretest, the standard deviation was 15.695; on the posttest, it was 4.443. The pretest's minimum and maximum scores range from 20 to 100, while the posttest's range is 84 to 100. According to the Wilcoxon statistical test findings, the p-value is 0.000, meaning it is less than 0.05. This result demonstrates that the discharge planning process successfully raises family awareness of how to care for patients with CHD in the CVCU unit.

According to this study, most participants were between the ages of 45 and 54, considered early elderly. The majority of respondents were in this age range, according to earlier research by Khoirini & Utario, which aligns with these findings. Indeed, a person's age significantly impacts their capacity to assimilate information (12). A person's capacity to comprehend information tends to improve with age, according to Bakri (13). According to Soimah, this idea was also expressed, who claimed that an individual's thought processes and information-gathering skills mature with age. The ability of older individuals to care for patients, including those with CHD, is impacted by their more excellent life experience and knowledge.

Women comprised the majority of the study's respondents in terms of gender. Women are more involved in taking care of their families than men, according to data from the Health Service, which supports this finding. Similar studies by Sinaga (14) and Edison (15) also supported the idea that women are typically more dominant in the role of family carer. As women tend to give more attention to caring for their families than men do, Sari *et al* suggest that these findings may be related to the nature of women caring more about their health and families.

Regarding educational background, the vast majority of those surveyed completed high school. The results of Khoirini & Utario's (12) study, which revealed that their respondents had comparable educational backgrounds, also support this finding. Their educational background significantly influences a person's ability to comprehend and absorb information (11). According to Edison (15), people with more education typically have an easier time understanding information, including patient care. As a result, more education can help families become more knowledgeable about caring for patients with CHD (14).

Regarding how long they had been patient carers, most study participants provided care for families with CHD for less than a year. The findings of Ardiati (16), which also demonstrated a comparable treatment duration, are consistent with these outcomes. Two primary factors impact the length of care: the number of hours per day and the total amount of time spent providing care, expressed in weeks, months, or years. The care of patients with CHD is continuous and frequently places a burden on family members who have other obligations (15). As a result, it is not unusual for someone to have two skills: caring for the patient as a family member and performing their primary responsibilities as an individual. Support from family members, whether practical, emotional, or informational, is crucial to a patient's successful recovery from treatment. Thanks to this support, patients eventually feel more loved and inspired to stick with their treatment plan (17).

The application of the discharge planning intervention, which was conducted over the course of three meetings, can improve family knowledge regarding the care of patients with CHD, according to one of the study's key findings. Family knowledge significantly changed after participating in the intervention, according to the statistical test results. According to statistics, regular discharge planning interventions effectively improve family knowledge in caring of CHD patients treated in the CVCU unit. This result is consistent with Yunitasari (18) study, which found that family members' knowledge increased after involvement in the *discharge planning* program. In order to give patients and their families clear and thorough information about the care that must be provided after the patient is released from the hospital, discharge planning is crucial.

Well-structured discharge planning helps patients and their families transition more smoothly from hospital to home care. This process includes providing information on how to perform independent care, manage medications, recognize signs of complications that require attention, and identify whom to contact when problems arise in the caregiving process (17). As explained by Fitri (19) clear and accurate information is essential for families to provide proper care and ensure continuity of the patient's treatment. With adequate knowledge and a thorough understanding of care procedures, families can improve the patient's quality of life and reduce the likelihood of repeated hospital visits (20).

Appropriate health education also contributes to the prevention of disease recurrence. Knowledge provided by healthcare professionals enables the patient's family to better understand preventive measures for coronary heart disease. As noted by Agustin (21) families with a good understanding of prevention and disease management tend to be more effective in avoiding relapses in patients. Therefore, delivering clear and precise information to the families of coronary heart disease patients not only enhances their knowledge but also helps them become more prepared to provide independent care and prevent further complications (22).

CONCLUSION

The findings of this study indicate that discharge planning has a significant positive impact on improving family members' knowledge and readiness in caring for patients with Coronary Heart Disease (CHD). Structured discharge planning provided during hospitalization equips families not only with knowledge but also with the confidence and skills necessary to carry out proper care at home. Prior to the intervention, the family's understanding was adequate; after the intervention, it improved to a good level. This enhanced understanding supports more effective and consistent caring behavior, contributing to better continuity of care after discharge. Furthermore, this study suggests that regular and systematic discharge planning can reduce the rate of hospital readmissions and strengthen family involvement in the caring process for CHD patients.

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