

## **THE ROLE OF FAMILY IN THE CARE OF CHD PATIENTS: AN INTEGRATIVE REVIEW**

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### **ABSTRACT**

**Backgrounds:** CHD contributes to decreased quality of life related to health. family economy, treatment, and clinical indicators. Thus it is necessary to involve the role of the family as an effort to improve the quality of life of CHD patients. Family roles needed such as family support, information and psychosocial social support. **Objectives:** The purpose of this integrative review is to identify the role and family support that can be provided to CHD patients based on the results of previous studies and their impact on patient care. **Methods:** An integrative review was conducted based on the Whittemore & Knafi approach. **Results:** Strategies in the care of CHD patients can be in the form of network-based family care, increased counseling, coping strategies, regulation of family functions, home-based cardiac rehabilitation and information provision. **Conclusions:** This review is very important in providing insights to nurses that emphasize the importance of understanding the role of family that can help improve psychosocial support, medication adherence, and overall quality of life of CHD patients.

**Keywords:** *Role of family, CHD Patients*

## **BACKGROUND**

Cardiovascular disease accounts for 18.5 million deaths worldwide. In 2019, there were 2.37 million events among people under 20 years old (Y. Zhang et al., 2023). Data from the 2019 Global Burden of Disease, Injury, and Risk Factor Tors Study (GBD), the total number of CVD cases (272 million to 523 million), deaths (12.1 million to 18.6 million), increased significantly in the overall population from 1990 to 2019. (Roth et al., 2020). An estimated 16 million adults in the United States have CHD (Arnold et al., 2023).. Based on the 2018 Basic Health Research, the prevalence of CHD in Indonesia reached 1.5% of the adult population and is predicted to continue to rise in the future (Kemenkes RI, 2018). This increase in prevalence indicates the high burden of cardiovascular disease, especially CHD in Indonesia.

*Coronary Heart Disease* (CHD) is a common and major health problem worldwide. CHD is a leading cause of death and is associated with various risk factors. High total cholesterol, type-2 diabetes mellitus, and smoking are identified as significant risk factors for CHD incidence. (Adiputra, 2023). Controlling risk factors can reduce the risk and mortality of *Coronary Heart Disease*. (Alifita & Pingit, 2023).. Factors such as lower income, higher rates of diabetes, stroke, anxiety, and poor sleep quality significantly decrease quality of life in CHD patients. (Yong, 2021).

CHD contributes to decreased health-related quality of life. family economic, treatment, and clinical indicators (Rao et al., 2023). Important predictors of quality of life include activities of daily living (ADLs), age, living situation, information transfer, main source of income, and risk of disability (Huo et al., 2019). Unmarried patients and hypertension comorbidity affect the quality of life of CHD patients and require more attention. social support and psychological counseling (Dou et al., 2022). Thus it is necessary to involve the role of the family as an effort to increase psychosocial support, treatment adherence and improve the quality of life of CHD patients.

The care of CHD patients not only involves medical interventions, but also requires the closest support, especially family. The role of family in the care of CHD patients is increasingly recognized as an important component in disease management and improvement of patients' quality of life (Dunbar et al., 2018). By comprehensively understanding the role of family in the care of CHD patients, it is expected to provide new insights for health professionals in developing interventions that optimally involve families. This may ultimately contribute to improved care outcomes and quality of life for CHD patients. (Xu & Fang, 2023).

Family-focused support interventions can be used as an effective method to improve self-care behavior in patients with heart failure. (Shahriari et al., 2013).. Family engagement empowers family members to become active partners in care delivery. The goal of involving families in care is to improve the experience of care to achieve better outcomes for patients and family members. Many cardiovascular healthcare professionals have limited awareness of the role and potential benefits of family involvement in care (Goldfarb et al., 2013). (Goldfarb et al., 2022).

The role of family needed by CHD patients is family, social, informational and psychosocial support. Psychosocial support is important to improve the quality of life of patients with CHD and prevent stress and depression that can worsen the patient's health condition. (Wenn et al., 2022).. Families play an important role in providing psychosocial support for CHD patients. Several studies have shown that family support is associated with increased CHD patient adherence to treatment regimens and self-care (Xu & Fang, 2022). (Xu & Fang, 2023)decreased post-heart attack depression, and improved overall quality of life for CHD patients (Wenn et al., 2023). (Wenn et al., 2022).

There are various forms of support that families can provide to CHD patients, such as emotional support (providing attention, empathy and affection), appreciation support (appreciating the patient's efforts in self-care), instrumental support (helping the patient's daily

needs). (Suryaningsih; Rodiyatun; Fitriah; Haris, 2019) Informational support (providing advice and information about the disease), and network support (involving patients in social interactions). (Xu & Fang, 2023).. However, until now there have not been many comprehensive reviews of the various forms of family roles and support and their impact on the care of CHD patients.

Therefore, this integrative review aims to identify the role and family support that can be provided to CHD patients based on the results of previous studies and their impact on patient care. The results of this integrative review are expected to provide recommendations to nurses and other health workers to optimally involve families in the care of CHD patients. This is important to improve psychosocial support, medication adherence, and overall quality of life of CHD patients.

## **METHODS**

There are many studies on the role of family in the care of CHD patients. We sought to focus and understand more about the description of family roles, the impact of family roles and the strategies used by families in the care of CHD patients. More specifically, we are interested in exploring the following:

- a. What is the role of family in the care of CHD patients?
- b. What strategies are used in the care of CHD patients?

### **2.1 Search Strategy**

This integrative review will use the method developed by Whitemore and Knaf (Whittemore, 2005) (Cooper, 1989) The method consists of 4 stages, namely problem identification, literature search, data evaluation, and data analysis. At the problem identification stage, the purpose of this integrative review was stated. An integrative review allows various study designs to be brought together, thus providing a comprehensive picture of a phenomenon. This integrative review follows the PRISMA 2020 checklist guidelines (Yao et al., 2022) followed in conducting the review.

A literature search was conducted in six online databases in December 2023. For five databases, namely PubMed, ProQuest, Scopus, Ebsco and ScienceDirect with the keywords "*coronary heart disease*" or "*atherosclerosis*" AND "*patient care*" or "*healthcare*" AND "*rehabilitation*" or "*recovery*". And Garuda with the keywords "CHD", "Family Role", "Cardiac Rehabilitation". Garuda is an Indonesian database recommended by the Ministry of Education, Culture, Research and Technology of the Republic of Indonesia.

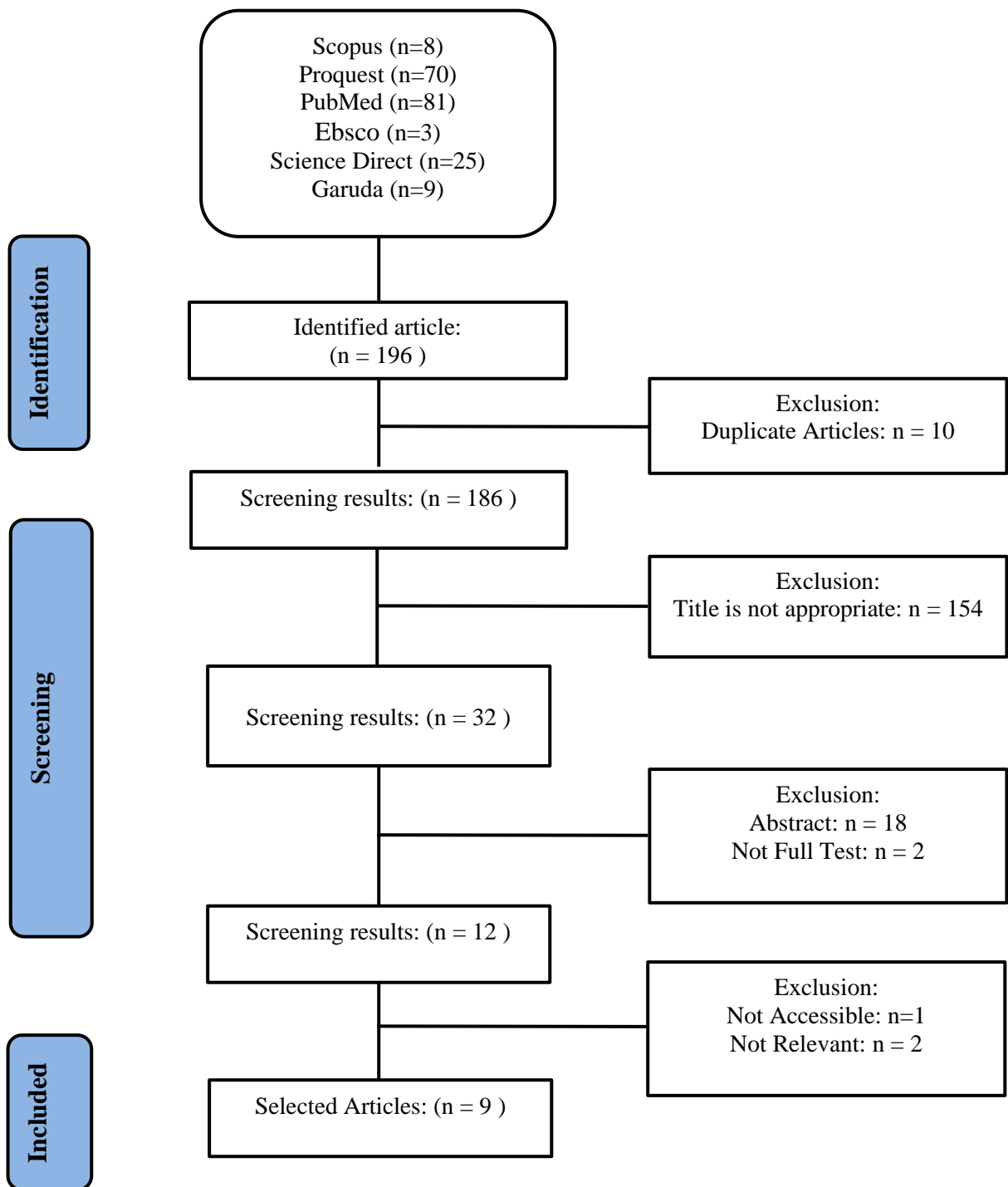


Fig 1. Prism Flowchart

The inclusion criteria for articles that will be used include: (1) written in English or Indonesian; (2) published in the last 10 years (2013-2023); (3) in the form of qualitative or quantitative studies; (4) participants are patients and family members of CHD patients; (5) measuring the role or family support in CHD care. Exclusion criteria included: (1) literature reviews, case studies, or opinions; (2) unpublished studies

In the data evaluation stage, a *critical appraisal* will be conducted using the JBI *Critical Appraisal Tools* in accordance with the research design. Finally, in the data analysis stage, the narrative integration method will be used by synthesizing the main themes from the studies included in this review. The results of this review will be presented in the form of a structured narrative along with a table of family support that plays a role in the care of CHD patients. The references used are the last 10 years according to the inclusion criteria.

## 2.2 Data extraction and quality assessment

An initial search was conducted based on predefined keywords, resulting in articles from six databases. After identifying the articles, duplicate articles were removed. This was followed by selecting articles related to full-text availability, publication within the last ten years, and topic suitability to obtain full-text articles that met the eligibility criteria. The process continued with careful scrutiny of the available full-text articles. Articles that met the inclusion criteria were then selected for the integrative review process (Fig. 1).

In integrative reviews, although quality assessment is not a requirement, it can support the interpretation of a study. The nine selected studies were then critically appraised for quality using an instrument created by Bowling. These studies were put into a table to be assessed and interpreted. The assessment used three scales: 'Yes', 'Not reported' and 'Poor'. The results of this assessment were used to determine the quality of the selected articles. This quality assessment method was chosen because it can assess both quantitative and qualitative research.

From the quality assessment results, seven studies were rated as high quality, and two studies were rated as average quality. Thus, it can be concluded that the selected articles are of sufficient quality to be reviewed (Table 1). After the quality assessment, data analysis was conducted in several stages: data reduction, display, comparison, conclusion drawing, and verification. Data reduction was done by classifying the data, which was then extracted, simplified, organized into a framework, and analyzed sequentially (Table 2). Subsequently, the data were compared for repeated review to identify patterns, themes or relationships.

**Table 1.** Quality assessment

Author	The goal is to clearly explain	Learning design explained	As per the research method	Adequate description, sample and exclusion criteria	Ethics presented	Results clearly reported	The results are consistent with the research questions and literature	Limitations presented	Implications discussed	Value. Level
Avila et al (2018)	Yes	Yes	Yes	Poor	Yes	Yes	Poor	Yes	Yes	7/9 Average
Zhang et al, (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9/9 High
Jin et al (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Poor	Yes	Yes	8/9 High
Tuomisto (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9/9 High
Liang et al (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9/9 High
Tuomisto (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9/9 High
Bravo et al (2017)	Yes	Yes	Yes	Poor	Yes	Yes	Poor	Yes	Yes	7/9 Average

Vahedian et al, (2015)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9/9 High
Lestari LJ (2017)	Yes	Yes	Yes	Yes	Poor	Yes	Yes	Yes	Yes	8/9 High

**Table 2.** Data extraction

First Author	Year/Country	Research Objectives	Methods	Sample. Settings	Role (Source/Activity)	Coping strategies/behaviors
Avila et al	Belgium 2018	Evaluating the effectiveness of home-based rehabilitation with telemonitoring guidance in coronary artery disease patients	Randomized Controlled Trial	90 CAD patients	Not specified	Home-based cardiac rehabilitation with telemonitoring guidance may be an effective alternative to Center-based CR to further improve exercise capacity after phase II CR in CHD patients
Zhang et al	China 2022	Evaluate the relationship between family functioning and health-related quality of life in hospitalized patients with coronary heart disease.	cross-sectional study	224 patients	Emotional and informational support to patients.	Improving family functions (adaptation, partnership, growth, compassion and resolution)
Jin et al	China/2020	Explore the effects of network-assisted family nursing on clinical outcomes and patient quality of life atherosclerotic coronary heart disease (CHD) undergoing coronary artery bypass grafting	randomized, controlled trial	112 patients	Not specified	Network-assisted family care is effective for improving clinical outcomes and quality of life of patients after coronary artery bypass surgery.
Tuomisto et al	Finland/2018	Exploring coronary artery disease patients' perspectives on family involvement in their rehabilitation.	cross-sectional descriptive research	218 patients	Emotional support instrumental support, social interaction, and individual autonomy.	Family relationship/closeness of family members Improved counseling
Liang et al	China/2021	To analyze the correlation between family care, coping strategies and subject well-being coronary heart disease (CHD) patients	cross-sectional study.	264 CHD patients	Community interaction activities to improve communication and expression of feelings. understanding the mind patients, further improve care for patients, and increase patient's quality of life.	Coping strategies mediate the relationship between family support and subjective well-being after percutaneous coronary intervention.
Tuomisto et al	Finland/2020	To describe the family composition and living arrangements of people diagnosed with coronary artery disease and their association with family involvement in self-managed rehabilitation.	cross-sectional study.	172 respondents	Family encouragement in rehabilitation and burdensome problems patient rehabilitation	Living arrangements have a strong relationship with the problems that burden the rehabilitation of coronary artery disease patients living arrangements are associated with how families allows for good conditions for recovery.

Bravo et al	Spain. 2017	to analyze the effectiveness and safety of cardiac rehabilitation programs Home-based with mixed supervision in patients with ischemic cardiopathology at moderate cardiovascular risk.	Randomized Controlled Trial	28 patients with coronary artery disease	Not specified	Home-based cardiac rehabilitation program with mixed surveillance is as effective and safe as the usual model in moderate-risk patients with ischemic cardiomyopathy
Vahedian et al,	Iran/2015	To determine whether the hybrid cardiac rehabilitation program uses the Empowerment Model Family-Centered compared to standard cardiac rehabilitation will improve patient quality of life, perceived stress and anxiety of patients with myocardial infarction.	Randomized Controlled Trial	70 patients	family-centered empowerment	Empowerment Model Family-Centered is an effective cardiac rehabilitation method to improve patient's mental health and personal assessment of physical health after AMI
Lestari LJ	Indonesia/ 2017	to find out the relationship between family support and dietary adherence of coronary heart disease patients	cross-sectional study.	96 patients	Family support, social support, emotional support	Provision of information, provision of material assistance that can provide immediate help

#### Abbreviations.

CHD: *Coronary Heart Disease*

CR: *Cardiac Rehabilitation*

HRQoL: *Health Related Quality of Life*

Similar data was regrouped and harmonized with each other. Finally, the last stage of data analysis was to verify the source data to ensure its accuracy, followed by drawing conclusions.

## RESULTS AND DISCUSSION

Nine articles were critically analyzed and synthesized, resulting in answers to questions regarding family role descriptions, barriers, and problem-solving strategies. The research was conducted in different contexts in different countries: China (n = 3), Finland (n = 2), Iran (n = 1), Spain (n = 1), Belgium (n = 1) and Indonesia (n = 1).

### 3.1 Overview of family roles in CHD patient care

Six of the nine studies reviewed focused on discussing the role of the family in patient and family relationships. Most of the studies revealed that the description of the family's role in the cardiac rehabilitation program which according to the reviewed studies includes:

- Emotional and informational support to patients (H. Zhang et al., 2022).
- Emotional support instrumental support, social interaction, and individual autonomy (Tuomisto et al., 2018).
- Community interaction activities to improve communication and expression of feelings, understand the patient's thoughts, further improve care for patients (Liang et al., 2022).
- Family encouragement in rehabilitation and problems that burden patient rehabilitation (Tuomisto et al., 2020).
- Family-centered empowerment (Vahedian-Azimi et al., 2016).
- Family support, social support, emotional support (Lestari & Darliana, 2017).

### 3.2 Strategies in the Care of CHD patients

The reviewed studies identified several strategies in the care of CHD patients:

- a. Home-based cardiac rehabilitation with telemonitoring guidance may be an effective alternative to center-based CR to further improve exercise capacity after phase II CR in patients with CHD. (Avila et al., 2018).
- b. Improving family functions (adaptation, partnership, growth, affection and resolution) (H. Zhang et al., 2022).
- c. Network-assisted family care (Jin et al., 2020).
- d. Family relationships/family member closeness and Improved counseling (Tuomisto et al., 2018).
- e. Coping strategies (Liang et al., 2022).
- f. Living arrangements (Tuomisto et al., 2020).
- g. Home-based cardiac rehabilitation program with mixed supervision (Bravo-Escobar et al., 2017).
- h. Family-Centered Empowerment Model (Vahedian-Azimi et al., 2016).
- i. Provision of information, provision of material assistance that can provide direct help (Lestari & Darliana, 2017).

### 3.3 Overview of family roles in CHD patient care

The most discussed roles of family in this review are family support, emotional support, social support and information. According to one study social support plays an important role in patients with *Coronary Heart Disease* (CHD), especially in relation to symptom severity and outcomes. Several studies have explored the relationship between social support and CHD. One study found that low social support was strongly associated with cardiovascular risk factors and subclinical CAD in middle-aged women (van den Houdt et al., 2023). Another study showed that perceived social support was associated with life satisfaction and depressive symptoms in patients with stable heart failure (HF), with gender also playing a role in life satisfaction (Pérez-García et al., 2013). In addition, studies have shown that social support is positively associated with better health outcomes and treatment adherence in coronary patients (Nahlén Bose, 2023). Based on this report it is important for nurses to enhance the role of the family and optimally involve the family in the care of CHD patients.

### 3.3 Strategies in the Care of CHD patients

This review identifies several strategies in the care of CHD patients that relate to the role of the family:

- a. Cardiac rehabilitation consists of physical exercise, behavior modification, and psychosocial interventions to help patients recover after a heart attack or invasive cardiac procedure.
- b. Family functions are the dynamics of relationships and interactions between family members to fulfill emotional and physical goals.
- c. The effectiveness of this family intervention is partly because the family is the closest individual to the patient and best understands their needs and behavior. Family support also has a positive impact on patients' motivation and psychological outcomes during recovery.
- d. Close relationships and emotional closeness between family members are protective factors that greatly affect the mental and physical health of all members.
- e. Adaptive coping strategies that can be learned include increased physical and social activity, relaxation, counseling, supportive therapy, and spiritual approaches.
- f. Families play a vital role in creating a home environment that supports the recovery of CHD patients. Some of the ways include ensuring a clean home, good ventilation, providing healthy low-salt foods, limiting the use of cigarettes and alcohol, and facilitating access to health services.
- g. Home-based cardiac rehabilitation can be recommended as an effective alternative for moderate-risk patients with ischemic cardiomyopathy who cannot undergo conventional models of cardiac rehabilitation and motivate patient compliance.



- h. Involving and empowering families in caring for, motivating and accompanying patients during rehabilitation at home. The family is considered the closest support system that plays a vital role in influencing the patient's health behavior and adherence.
- i. Providing information and providing material assistance is a form of direct aid intervention that aims to help fulfill basic needs.

## CONCLUSION

This integrative review synthesizes and evaluates various studies by identifying family roles and strategies in the care of CHD patients. This review is critical in providing insights to nurses that emphasize the importance of understanding the role of family that can help improve psychosocial support, medication adherence, and overall quality of life for CHD patients.

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