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REVIEW ARTICLE

Cardiac Rehabilitation for Heart Failure Patients: A Narrative Review

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Abstract

Heart failure (HF) affects millions globally, and family caregivers play a vital role in supporting HF patients through cardiac rehabilitation (CR). These caregivers help with medication management, physical activity, and emotional support, contributing significantly to patient outcomes. However, the impact of caregiving on family members' health and well-being is understudied. This review aims to evaluate the effects of family caregiver involvement on cardiovascular outcomes, quality of life, and mental well-being for HF patients.

A narrative review was conducted by analyzing studies on family caregivers in CR for HF patients, using databases such as PubMed, Google Scholar, and Embase. Family caregivers' involvement is to improved cardiovascular outcomes, exercise capacity, and mental well-being in HF patients, but also face emotional and physical burdens. Supporting caregivers is essential for optimizing CR programs.

Keywords: Heart failure, Family caregivers, Cardiac rehabilitation.

Introduction

Heart failure (HF) is a major public health problem with a rapidly increasing global health burden.[1] Heart failure (HF) affects approximately 64 million people worldwide, and its prevalence continues to rise due to aging populations and increasing social and lifestyle risk factors contributing to poor cardiovascular health. Implementing strategies to promote healthier lifestyles on a larger scale is vital for reducing the prevalence of these conditions.[2]

Cardiac Rehabilitation (CR) is a comprehensive, preventive program designed to enhance cardiovascular health through structured exercise, psychological support, and education aimed at encouraging positive lifestyle modifications.[3] It is typically implemented in three phases and has been shown to lower mortality rates, reduce hospital admissions and healthcare costs, while also improving physical fitness, quality of life, and mental well-being. The core elements of CR include patient evaluation, physical activity guidance, exercise training, nutritional counseling, risk factor management, educational support, psychosocial care, and vocational rehabilitation, all of which contribute to better long-term health outcomes.[3,4] Family caregivers ensure adherence to these programs by assisting with medication management, facilitating physical activity, and providing emotional support. However, regardless of HF subtypes, optimal self-care, including better medication adherence, complying with diet and fluid restrictions, and engaging in exercise, are essential to prevent symptom aggravation and maintain a good quality of life.[5] For the most part, patients with HF rely on family caregivers for help with self-care behaviors including general day-to-day monitoring of health status.[6,7] Family caregivers play an important role in community-based HF management, which requires the investment of substantial time and energy to ensure patients' adherence to self-care behaviors.[6] HF management is complex and requires daily coordination of and adherence to multiple medications and a set of lifestyle changes related to dietary restrictions, fluid intake, exercise, and weight monitoring. Frequent healthcare appointments—across several different provider types—are often necessary for the management of HF patients.[8,9]

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In previous studies, caregivers of patients with HF experienced both positive and negative effects of caregiving.[10,10] Additionally, the emotional well-being of family caregivers is associated with the emotional well-being of patients with HF.[11] Research suggests that there is an increased general awareness of the need to support family caregivers in HF care.[10,12] Existing studies have largely evaluated only particular aspects of HF family caregiving,[8,13] including general experiences,[14] relationship quality,[14] needs,[15,16] burden,[15,17] and roles in patient self-care.[7,8] Therefore, the aim of this review was to evaluate the impact of member as a caregiver to greater improvement in cardiovascular outcomes, health related quality of life, mental well-being and exercise capacity.

Materials & Methods

This review was conducted using PRISMA guidelines. The review consisted of 5 steps: (1) problem identification; (2) literature searching; (3) data review and evaluation; (4) data synthesis and analysis; and (5) data presentation.

This narrative review aimed to evaluate the impact of family caregivers involved in cardiac rehabilitation (CR) for heart failure (HF) patients on cardiovascular outcomes, quality of life (QoL), mental well-being, and exercise capacity. A comprehensive literature search was conducted using PubMed, Google Scholar, and Embase. The search strategy was designed using relevant keywords and Medical Subject Headings (MeSH) terms related to "cardiac rehabilitation," "heart failure," "family caregivers," "quality of life," and "psychosocial impact."

The inclusion criteria encompassed studies published in English that examined the role of family caregivers in CR programs for HF patients. Studies focusing on caregiver burden, psychosocial effects, and adherence to rehabilitation programs were included. Exclusion criteria involved studies that did not specifically assess caregivers' roles in CR, case reports, editorials, and non-peer-reviewed articles.

The review process involved screening titles, abstracts, and full texts based on the eligibility criteria. Data were extracted systematically, including study design, participant demographics, caregiver involvement, intervention type, outcomes assessed, and key findings. Studies evaluating the effectiveness of caregiver participation in CR programs on patient adherence, lifestyle modifications, and psychosocial well-being were prioritized.

The quality of the selected studies was assessed based on methodological rigor and relevance. Criteria such as sample size, study design, intervention details, and outcome measurements were reviewed to ensure the reliability of the findings.

A narrative synthesis was performed to summarize findings across the included studies. Given the variability

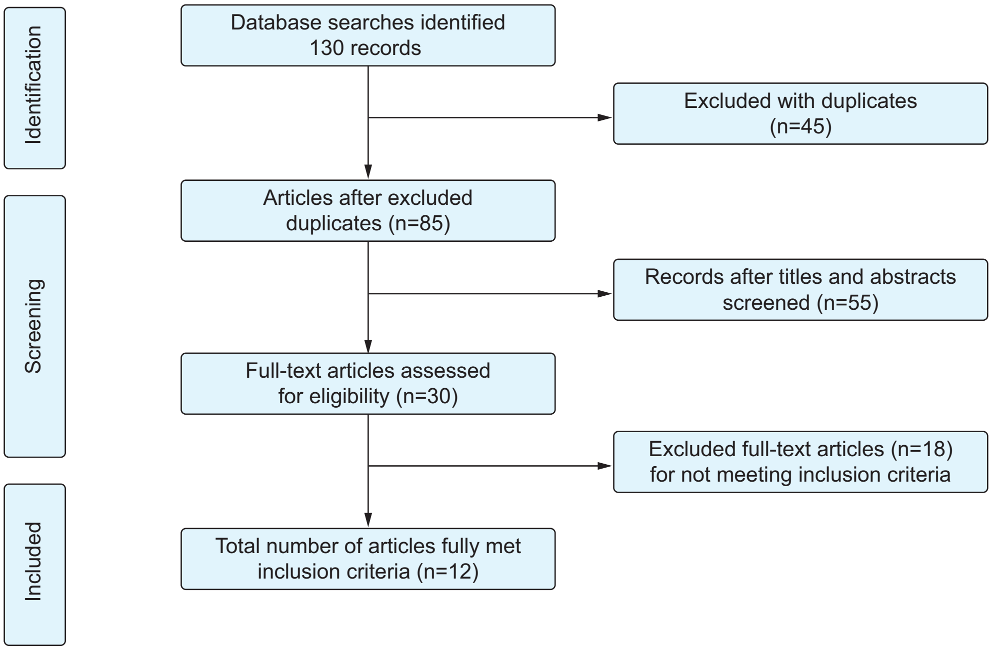

Figure 1: Flow chart of systematic review of literature selection process for the present research

in study designs, intervention protocols, and outcome measures, a meta-analysis was not conducted. Instead, the results were categorized based on key themes, including caregiver involvement in CR, its impact on patient outcomes, and the psychological and physical effects on caregivers. This approach provided a comprehensive evaluation of the role of family caregivers in CR programs for HF patients.

Results

The search resulted in 130 articles which were identified in the initial databases (Figure 1). After duplicates were removed, 85 articles remained. Of these, 55 were excluded based on titles and abstracts screened; 18 full articles were excluded for not meeting inclusion criteria. Finally, 12 publications met the criteria and were included in this review. In the present review, we included 12 papers: six were qualitative studies and six were cross-sectional studies (Table 1).

The involvement of caregivers in heart failure (HF) management and cardiac rehabilitation (CR) plays a crucial role in patient care. However, caregivers often experience a range of emotional, psychological, and physical challenges that impact both their personal and family lives. The reviewed studies highlight key aspects of caregiver burden, role adaptation, relationship dynamics, and financial stressors.

1. Emotional and Psychological Impact

Caregiving for HF patients leads to significant emotional distress, including fear about the future and a sense of hopelessness (Wingham et al., 2017).[18] Many caregivers report anxiety and stress due to their new responsibilities, exacerbated by a lack of knowledge about HF management (Bahrami et al., 2022).[15] The burden of continuous care can result in high levels of fatigue, sleep disturbances, and social isolation, significantly affecting caregivers' quality of life (Bahrami et al., 2022).[15]

In some cases, caregivers experience positive psychological effects by learning from other HF patients and their caregivers, developing coping mechanisms, and finding support through shared experiences (Piamjariyakul et al., 2022).[19] The presence of strong marital relationships and mutual understanding between caregivers and patients contributes to improved emotional resilience (Rohrbaugh, 2022).[24]

2. Role Adaptation and Changes in Identity

Becoming a caregiver often results in a shift in identity and personal roles within the family (Wingham et al., 2017).[18] Many caregivers struggle with redefining their personal and professional lives as they take on extensive caregiving duties, including medication management, dietary supervision, and emotional support (Durante et al., 2022).[25] The evolving caregiving role may lead to internal conflicts and difficulties in balancing personal well-being with patient care responsibilities (Wingham et al., 2022).[9]

Some caregivers report feeling excluded from decision-making by both healthcare professionals and the patients themselves, leading to a sense of isolation and frustration (Wingham et al., 2017).[18] The exclusion from healthcare planning limits their ability to provide optimal support and contributes to feelings of helplessness.

3. Relationship Dynamics and Caregiver Burden

The caregiver-patient relationship significantly influences caregiver burden and stress levels. A reduction in mutuality between caregivers and patients over time is associated with increased caregiver burden, as it amplifies the impact of the patient's functional decline, symptom severity, and disability (Cooney et al., 2022).[21]

Conversely, stronger caregiver-patient mutuality enhances confidence in patient self-care and reduces perceived caregiver burden (Hooker et al., 2022).[23] Caregivers with a positive relationship with the patient tend to report lower stress levels, whereas strained relationships contribute to emotional exhaustion (Yeh, 2022).[22]

4. Financial and Social Impact

Caregiving often leads to financial strain due to medical expenses, reduced employment opportunities, and additional caregiving costs. Financial stress is influenced by caregivers' economic status, perceived control, and available social support (Hwang et al., 2022).[10] Many caregivers feel inadequately supported by healthcare systems and family members, contributing to additional emotional distress and financial insecurity (Bahrami et al., 2022).[15]

Despite these challenges, structured interventions such as the REACH-HF program have been shown to improve caregivers' quality of life by enhancing disease-specific knowledge and reducing caregiving stress (Wingham et al., 2022).[3]

5. Contributions to Patient Care and Health Outcomes

Caregivers play an essential role in HF self-care management, ensuring medication adherence, encouraging physical activity, and reinforcing dietary restrictions (Durante et al., 2022).[25] They also assist in recognizing symptoms and implementing treatment

Table I: Summary of the selected published articles

Author	Country	Year	Study design	Sample size	Outcome
Wingham et al.,[3]	UK	2019	Qualitative study	n=97	• The REACH-HF intervention improves the disease • Specific HRQoL of people with HF with reduced ejection fraction (HFrEF) and is a cost-effective use of healthcare resources.
Wingham et al.,[9]	UK	2015	Qualitative study	n=22	• Providing support. • Becoming a caregiver. • Getting help
Hwang et al.,[10]	USA	2011	Cross-sectional study	n=76	• Impact on finances was related to CGs' economic status, perceived control, and social support. Although caregivers' economic status.
Bahrami et al.,[15]	Iran	2014	Qualitative study	n=18	• Family caregivers believed that they have little knowledge about the patients' disease, drugs, and how to perform caregiving roles. • CGs experienced negative physical and psychosocial consequences of full-time and highly extended caregiving roles, such as musculoskeletal disorder, fatigue, and sleep disturbance, and a high level of anxiety, stress, and social isolation. • CGs believed that they receive little familial and organizational support on the emotional and financial dimensions of caregiving.
Wingham et al.,[18]	England	2017	Qualitative study	n=22	• Emotional impact (fear regarding the future and sense of hopelessness). • Role definition (changing sense of who I am, reduced resilience, learning care skills, role conflict and changing role). • Exclusion (exclusion by the patient and by health professionals and feeling alone). • Ignoring one's own health
Piamjariyakul et al.,[19]	USA	2012	Qualitative study	n=17	• Family caregiver involvement. • Continuous learning about HF. • Acceptance of and coping with HF diagnosis. • Learning from other patients with HF. • Guidance for daily problem-solving. • Lifestyle changes. • Financial resources
Jackson et al.,[20] China	China	2018	Cross-sectional study	n=458	• Time spent and activity: caregivers were most often required to provide support included reminding patients to take their medication, helping patients prepare meals, and providing emotional support and encouragement.
Cooney et al.,[21]	USA	2021	Cross-sectional study	n=100	• For 12 months, a decline in caregiver-patient mutuality intensified the relationship between caregiver burden and patient functioning, including dyspnea, symptom severity, and disability.
Yeh,[22]	USA	2012	Cross-sectional study	n=100	Caregiver-reported relationship quality was negatively associated with caregiver burden.
Hooker et al.,[23]	USA	2018	Cross-sectional study	n= 99	• Patients and caregiver's mutuality increased the confidence in-patient self-care. • Regression models indicated that caregivers with greater mutuality reported less perceived burden. • Perceived caregiver burden was also significantly and negatively associated with caregiver confidence in patient self-care
Rohrbaugh,[24]	USA	2002	Cross-sectional study	n=181	• Marital quality (self-reported marital satisfaction and marital routines)
Durante et al.,[25]	Italy	2019	Qualitative study	n=22	• Caregiver contributions to self-care maintenance included practices related to: (1) monitoring medication adherence, (2) educating patients about HF symptom monitoring, (3) motivating patients to perform physical activity, (4) reinforcing dietary restrictions • Caregiver contributions to self-care management included practices related to: (1) symptom recognition, (2) treatment implementation

strategies, significantly impacting patient health outcomes.

In addition to direct patient care, caregivers report learning from other HF patients and caregivers, leading to improved problem-solving skills and greater acceptance of their caregiving role (Piamjariyakul et al., 2022).[19] However, a lack of knowledge about HF and caregiving responsibilities remains a key challenge that needs to be addressed through better caregiver education and support systems (Bahrami et al., 2022).[15]

Discussion

This narrative review examined the impact of family caregivers involved in cardiac rehabilitation (CR) for heart failure (HF) patients, highlighting both the positive and negative consequences on their personal and family lives. The included studies (six qualitative and six cross-sectional) provided valuable insights into caregivers' experiences, including their emotional well-being, role adaptation, burden, and the influence of caregiver-patient dynamics on self-care adherence. Caregivers play a crucial role in supporting patients with heart failure by offering care, health assistance, and enhancing the patients' quality of life.[21,26] This review supports the conclusions of Clements et al.,[27] who found that most caregivers of heart failure (HF) patients are females, often the patients' spouses. Various studies have highlighted that caregivers experience physical, psychological, social, vocational, and economic changes as a result of their caregiving responsibilities.[28-31] Similarly, one study found that spousal caregiver stress was substantially associated with relationship unhappiness, higher patient depression, and worse patient-perceived social support levels.[32] Several studies found that HF caregivers spend over 8 hours each day caring for HF patients.[33,34] Some studies revealed that caregivers spent 5 to 8 hours or more per day when caring for HF patients.[35,36] Caregivers who cared for patients with HF for several hours per day were more likely to experience emotional stress, and some caregivers were not mentally equipped for the caregiving position. This review discovered that HF caregivers spent more time providing care, which reduced the quality of care and resulted in negative caregiver outcomes such as poor psychological well-being, worse health, stress, and decreased quality of life.[37] Caregivers of individuals with chronic illnesses bear a substantial responsibility, and this increased caregiver burden has consequences on their physical, psychological, social, and financial well-being.[38] Healthcare providers mostly focus on patients with HF by relieving HF symptoms and providing an ongoing care plan—without considering the caregivers' burden. The burden evaluation should incorporate both the caregiving situation and the burden assessment. First, healthcare practitioners must gather information about caregiver situations, including needs, strengths, problems, and resources for the family caregiver.[39,40] Additionally, healthcare providers should conduct a thorough evaluation of caregivers' burden, encompassing physical, psychological, social, and economic aspects.[41] These caregiver contributions in self-care reflected the relationship between caregivers and patients, highlighting that active engagement between caregivers and patients could help prevent clinically adverse events in patients.[42] Various research teams have developed interventions, such as health education, post-discharge home visits, phone calls, counseling, and support groups, aimed at reducing caregivers' burden in the context of heart failure (HF) care.[43,44] The challenges in sustaining effectiveness over the long term were attributed to the chronic nature of HF, with patients experiencing exacerbations of symptoms like pain, dyspnea, depression, gastrointestinal distress, and fatigue multiple times after diagnosis.[45] The extended duration of caregiving increased the risk of HF burden for caregivers. Previous interventions focused on addressing caregivers' burdens by offering health education, emotional support, and support groups. However, a crucial missing component identified was social support, which could enhance support from social service and healthcare systems. Caregiver burden exhibited a negative association with social support; increasing social support was linked to a decrease in depression, highlighting the importance of integrating social support into caregiver interventions.[46,47]

The study has several limitations, including a limited number of published articles that do not represent the broader HF patient population. Its cross-sectional design captures data at one point in time, which restricts long-term insights. Additionally, this narrative review focuses solely on HF patients, which does not fully encompass other cardiovascular diseases.

Conclusion

Caregivers of HF patients in CR programs experience significant emotional, physical, financial, and social challenges. While they play a vital role in patient self-care and adherence, the burden of caregiving can negatively impact their well-being and family dynamics. Future research should focus on developing caregiver-centered interventions that provide emotional support, financial relief, and structured training to optimize both patient and caregiver outcomes.

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