



THE ROLE OF NURSING IN PROMOTING CARDIOVASCULAR HEALTH AND PREVENTING HEART DISEASE

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Abstract

Inadequate self-care practices may result in a heightened likelihood of negative health consequences in those suffering from heart failure. Despite several research on the efficacy of nurse-led self-care teaching, there is still uncertainty surrounding the impact of nurse-led treatment in heart failure. The objective of this research was to assess the evidence on the efficacy of nurse-led cardiovascular self-care education in improving health outcomes among patients with coronary artery disease. In order to identify studies that examined the effectiveness of nurse-led education in enhancing self-care among heart failure patients, a thorough search was conducted between January 2000 and October 2019. This search involved systematically searching six electronic records: CINAHL, PubMed, Cochrane library, Embase, SCOPUS, and Web of Science. The research data pieces that satisfied the criteria were evaluated and analyzed separately utilizing random-effects meta-analysis techniques. Out of a total of 612 research, only eight papers met the criteria to be included in this study. Nevertheless, the provision of heart failure self-care instruction by nurses did not result in any enhancements in the quality of life or heart failure knowledge. Research on the efficacy of nurse-led coronary artery disease self-care education mostly focuses on the favorable impact on patients' health outcomes, while there is currently minimal information about the efficacy of the nurse-led method. Thus, it is essential to conduct rigorous randomized controlled trials that provide comprehensive and precise descriptions of the intervention components.

Keywords: heart failure, self-care, nursing, systematic reviews, meta-analysis

1. Introduction

Heart failure is a significant global public health issue, impacting about 26 million individuals globally [1,2,3]. It is quite prevalent, especially among elderly persons. Individuals who are 65 years of age or older have been shown to make up 80% and 90% of hospitalizations and fatalities linked to heart failure, respectively [4]. Although there have been improvements in



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the early detection and treatment of heart failure, its gradual and incapacitating nature leads to significant illness and a heavy responsibility for long-term care. This has a detrimental impact on patients, their families, and the healthcare system. Previous studies have shown that heart failure patients had a hospital readmission rate of around 20-30% within 30 days, and a death rate of up to 15% after being discharged from the hospital [7,8]. Those with heart failure have significantly worse health-related quality of life compared to those with other chronic health disorders [5]. Given the exponential growth of the elderly population and the permanent nature of heart failure, it presents a significant challenge that necessitates additional measures to mitigate negative health consequences and enhance quality of life.

According to the recommendations provided by the European Society of Cardiology for diagnosing and treating acute and chronic heart failure, following self-care instructions is a crucial aspect of enhancing patient outcomes, such as lowering death rates and increasing quality of life. Consequently, recommendations for managing heart failure prioritize the need of following self-care practices, including making changes to one's lifestyle and adhering to limitations on fluid intake [10]. Recent evaluations have emphasized the positive impact of heart failure self-management therapies. These programs have been shown to effectively reduce rates of heart failure-specific readmission and death, while also enhancing the quality of life for individuals with heart failure [11,12]. Prior research has identified the issue of inadequate compliance with self-care among individuals with heart failure [13,14]. This may be attributed to the intricate nature of self-care, a lack of recognition of the importance of self-care, the challenge of sustaining long-term behavioral modifications, or a deficiency in motivation [14].

During the process of moving from the hospital to the community, patients are required to maintain the knowledge and skills they were taught for taking care of themselves while in the hospital. Thus, it is important for individuals with heart failure to diligently follow self-care practices in order to maintain the self-care teaching provided by hospitals. Nurses are regarded as a crucial component of the healthcare system for heart failure [15]. They have a crucial role in offering patients educational support by finding access to specialized information, boosting patients' health literacy, and therefore empowering them [16]. Nurse-led self-care interventions have many benefits, including patients' positive opinion of nurses, high-quality delivery of treatments, regular and frequent follow-ups, and the possibility for reduced healthcare costs [17].

Based on the findings of a prior comprehensive analysis, heart failure care programs managed by nurses resulted in a 32% decrease in heart failure-specific readmission rate and a 15% decrease in readmission for all causes [18]. Given that this review primarily examined the rate of readmission specific to heart failure as its primary outcome [18], further evidence is needed regarding the impact of nurse-led heart failure self-care education on comprehensive, patient-centered health outcomes, such as patient-reported quality of life or knowledge on heart failure. Nurses possess a favorable position in the healthcare system, although their potential is not fully used. They have the ability to take the lead in self-care interventions and execute techniques to encourage compliance in persons with complicated chronic diseases, such as heart

failure. Nurse-led heart failure self-care education is a program where hospital nurses, regardless of how it is delivered, have a direct role in providing the intervention to study participants in order to enhance health outcomes after they are discharged from the hospital. They have the option to work alone or as part of a multidisciplinary team. This systematic review suggests that including nurse-led heart failure self-care education into the treatment plan should be regarded as an extra form of care. Consequently, we performed a comprehensive evaluation and statistical analysis of randomized controlled trials (RCTs) with the accompanying objectives: The purpose of this study is twofold: (1) to delineate the attributes of the intervention, and (2) to assess the impact of nurse-led interventions on patients' health outcomes.

2. Methods

In order to minimize potential biases, our research only focused on Randomized Controlled Trials (RCTs) when evaluating the efficacy of nurse-led heart failure self-care teaching. In order to verify all relevant publications released from January 2000 to October 2019, we performed a methodical exploration of six databases: PubMed, EMBASE, Cochrane library, CINAHL, Web of Science, and SCOPUS .

3. The Impact Of Nurse-Led Heart Failure Self-Care Education On Patients' Health Outcomes

This review investigates the impact of nurse-led heart failure self-care education on patients' health outcomes and explores the characteristics of its methods. The findings from the random-effects meta-analysis indicate that providing heart failure self-care instruction led by nurses resulted in a 25.2% decrease in all-cause readmission among heart failure patients. Additionally, there was a 40.0% reduction in heart failure specific readmission and a 29.4% decrease in all-cause death or readmission. While there was a 13.3% decrease in overall mortality, this improvement did not reach statistical significance.

The findings of the present study indicate that nurse-led heart failure self-care education was successful in lowering readmission rates for all causes, with a special emphasis on reducing readmission specifically related to heart failure. Nurses are the most appropriate experts to serve as main educators for home care of patients discharged with chronic disease due to their ability to establish trustworthy connections via extended communication with patients and their families [32,33]. Trust in the nurse-patient relationship can improve compliance with self-care instructions, identify discharge plan errors to prevent unplanned readmissions, and facilitate a comprehensive understanding of the patient's specific discharge requirements [34]. In addition, nurses have access to specialized knowledge and may get support from other healthcare professionals. The study describes how nurses facilitated self-care for heart failure patients after discharge by doing heart failure knowledge assessments, performing physical exams, providing psychological support, and delivering information on heart failure treatment. The results of our

study align with earlier studies that have shown the impact of nurse-led heart failure self-care education in encouraging healthy behaviors [35,36].

Research has also shown the impact of healthcare practitioners' education in managing heart failure in other fields. For instance, including pharmacists in the care of heart failure showed enhanced drug adherence [37], whereas counseling provided by dietitians was successful in promoting adherence to low-sodium diets [38]. Past studies only focused on interventions related to specific disciplines like diet or medication. However, nurse-led self-care interventions offer the benefit of a more comprehensive approach to managing heart failure. This makes them more likely to improve clinical outcomes and encourage self-care behaviors in patients with heart failure.

However, in the present evaluation, it is possible that the nurse-led heart failure self-care instruction did not show a substantial decrease in all-cause mortality, perhaps due to the shorter duration of the intervention. Three of the studies included in the meta-analysis had intervention durations that lasted between 1 and 15 days [25,26,31]. Living with heart failure necessitates diligent self-care through comprehensive long-term management, including sodium restrictions, monitoring symptoms, adhering to medical treatment, and promoting physical activity and exercise [39]. Hence, heart failure patients may have difficulties in assimilating substantial quantities of novel knowledge if the heart failure self-care education, guided by a nurse, is delivered over a brief duration. Therefore, altering the duration of the intervention period may be a strategy to enhance nurse-led heart failure self-care teaching and its impact on reducing death.

Additionally, we hypothesize that the intervention's emphasis may not be enough congruent with patients' actual objectives and self-care priorities. Therefore, the level of involvement from participants may not be enough to get the intended results. An alternative explanation is that the mortality rate calculated in this meta-analysis encompassed all causes of death. This is because the analysis included studies that involved patients with different underlying health conditions, such as atrial fibrillation, chronic obstructive pulmonary disease, chronic kidney disease, and diabetes. Therefore, heart failure may have been just one of several contributing factors to mortality. Prior research has shown that heart failure patients who have comorbidities have a low chance of survival [40,41]. Support for controlling comorbidities is crucial in treatments aimed at enhancing heart failure patients' self-care skills in this particular situation. Additional study is required to determine the impact of nurse-led heart failure self-care education on mortality caused by heart failure.

4. Summary

The results of our study emphasize the beneficial impact of nurse-led heart failure self-care education on important clinical outcomes, including readmission rates and death. Nevertheless, it remains uncertain whether treatments led by nurses are efficacious in improving patient-reported quality measures, such as quality of life and illness knowledge. Therefore, there is a need for more randomized controlled trials (RCTs) with extended periods of observation that may provide

lasting impacts and exert influence on patients' behavioral modifications. Furthermore, it is essential to carefully organize nurse-led heart failure teaching programs before patients are discharged from the hospital, as well as promptly once the diagnosis is made. To enhance the efficacy of nurse-led methods, it is crucial to clearly outline the specific duties and obligations of nurses in carrying out heart failure therapies in each program. Prior to hospital discharge, as well as at the time of diagnosis, it is important to establish nurse-led education programs.

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