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An Effectiveness of Self-Management Education Through Self-Care and Quality of Life Resulting in Decreasing Readmission in Patients with Heart Failure: Based on Nursing Intervension: Systematic Review

Tery Luky Puspitawati[1]*, Ni Luh Widani[2]

[1-2]Program Magister Keperawatan STIK Sint Carolus Jakarta

* Email Corespondence: terry.lucky@siloamhospitals.com

ABSTRACT

Introduction: The introduction of a research paper sets the stage by presenting the topic and context of the study. It aims to engage readers, provide background information, and outline the research problem or question. In this section, the researcher introduces the significance of the topic, discusses relevant literature, identifies gaps in existing knowledge, and states the research objectives.

Objective: This research study aims to examine the impact of nurse-led self-care management educational programs on improving disease knowledge, self-care behavior and quality of life in heart failure patients.

Method: This research is a systematic review that absolutely have many characteristics such as (author, year of publication, country, and number, age, and male percentage of patients in each group) and intervention parameters (type of intervention, ejection fraction at inclusion, form of proactive contact intervention, home visit status, time assessment, and status of educational strengthening). For instance, primary outcomes (rate of all-cause or HF-related readmission and all-cause mortality), quality of life evaluated by the Minnesota Living with Heart Failure Questionnaire (MLHFQ).

Result: The results were showed that nurse-led interventions to be a cost effectiveness of treatment for heart failure patients, and nurses play an important role in educating and managing their condition. Overall, nurse-led self-care management education programs have demonstrated effectiveness in improving self-care and quality of life in heart failure patients. In concludes, Heart failure self-management education has been shown to improve patient self-care and quality of life.

Implication: This research has maximum stakeholders that utilize evidence-based medicine to understand the role of nurses in the prognosis of HF patients to support and respect nurse-led educational efforts. The results of this study can provide strong evidence to expand the role of nurses and facilitate the planning and completion of nurse-led patient education programs.

Conclusion: In concludes, it is also leads to significant improvements in quality of life. Due to nurse-led education programs that have been shown to reduce heart failure-related hospital readmissions and all-cause readmissions, as well as mortality rates in patients with heart failure.

Keywords: Effectiveness; Education; Self-Care; Self-Management; Heart Failure Patients

INTRODUCTION

Heart failure (HF) is a syndrome associated with high morbidity, mortality and hospital readmissions (1). Cardiovascular disease is the most common cause of heart failure (1). The information from HF reduces EF (HFrEF) have been results with decreasing of heart pumping function (left ventricular ejection fraction ≤ 40%). While HF preserved EF (HFpEF) is clinical heart failure that preserved by left ventricular ejection fraction (≥ 50%) and characterized by impaired ventricular relaxation, then increasing stiffness, diastolic; HF with midrange ejection fraction (HFmrEF) falls somewhere in between. However, HF can cause the amount of oxygenated blood pumped to be insufficient to meet the needs of tissues and organs.

According to research by Heidenreich et al. (2022) examined that HF is characterized by signs or symptoms of volume overload or manifestations were impaired with tissue perfusion (such as dyspnea, edema, fatigue, or impaired activity tolerance) (2). Based on research by McDonagh et al., (2021) assumed that the prevalence of HF is reported to be approximately 1.8% to 2.1% in the United States, with a marked increase to 4.3% among people aged 65 to 70 years (3). The lifetime risk of developing heart failure is estimated to be around 20% during 1965-1989 and 25% during 1990-2014. Based on research by Vasan et al. (2022) said that HF patients may experience asymptomatic left ventricular structural and/or functional changes. A stage is important to identify early because rapid initiation of treatment can reduce death rates related to heart failure (4). Poor self-care behavior can lead to an increased risk of adverse health impacts (5). Therefore, patients with heart failure require multidisciplinary program management including self-care education, selfmanagement interventions often led by nurses, effective in improving knowledge, self-care behavior, quality of life, and reducing the number of hospitalizations, then deaths in heart failure patients.

METHOD

This research study absolutely has many characteristics such as (author, year of publication, country, and number, age, and male percentage of patients in each group) and intervention parameters (type of intervention, ejection fraction, form of proactive contact intervention, home visit status, time assessment, and status of educational strengthening). For instance, primary outcomes (rate of all-cause or HF-related readmission and all-cause mortality), quality of life evaluated by the Minnesota Living with Heart Failure Questionnaire (MLHFQ). This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews of the Literature guidelines [20]. We developed a search strategy based on the PICOT principle [3]. Potentially, the eligible studies were published by 2018 – 2023 that searched in PubMed, Science Direct, ProQuest, Gale and the Cochrane Library using the MeSH terms “Heart Failure”, “Nursing”, “Education”, and “Self-care management”, as well as keywords other relevant issues (such as knowledge and self-care), followed by screening based on eligibility criteria. In contrast, the eligibility criteria were (1) population: patients with a confirmed with diagnosis of HF, whose diagnosis was based on clinical criteria by an experienced clinician, including previous medical history, medications, symptoms, signs, imaging, biomarkers, and other assessment criteria; (2) intervention: nurse-led educational program, which consists of several processes, such as intensive education by experienced nurses, individualized dietary assessment and instruction by a nutritionist, anticipatory discharge planning and care coordination as well as psychosocial evaluation of the needs of those being counseled and developed. by social service officers, and intensive follow-up after discharge carried out through individual home visits; (3) comparator: usual care, defined as routine medical care with conventional standards of treatment; (4) outcomes: primary outcomes included rates of all cause or heart failure-related readmission and allcause mortality; (5) research design: RCT; and systematic reviews and meta-analyses as well as quasi experimental.

RESULTS

Nurse-led educational program

In the research study by Cui et al., (2019) said that a structured, nurse-led educational intervention during hospitalization and after hospital discharge improved self-management skills in patients with chronic heart failure (5). Furthermore, it would increase both compliance and delivery of medication in rural patients. Even though, adherence to dietary recommendations and monitoring, then society can support with the readmission rate in the first 12 months after discharge from the hospital that educed. This can identify with studies that examining nurse-led education and designed like to improve self-care among heart failure patients, a comprehensive search method was used between January 2000 and October 2019 to systematically search six electronic databases and was shown to be effective in reduce readmission and death rates (6). Currently, HF knowledge and self-care behavior among HFrEF HF patients can be improved by introducing structured, nurse-led educational programs into clinical practice. The educational model "The Weak Heart" which was created based on HF guideline recommendations. It has also proven to be effective in increasing the level of HF knowledge and self-care behavior for HFrEF patients that hospitalized

with ADHF. However, time spent in the hospital should be used to prepare the patient for many challenges of the "vulnerable phase" post hospital discharge by providing appropriate training on self-care skills provided by a certified nurse. In this review of the research by Tian et al., (2023) assumed that multi-component self-care education was defined as the addition of additional strategies such as additional telephone calls, clinical assessments, and home visits to promote education (7). Self-care education combined with telephone calls or home visits was the most frequently used by management strategy. One research study was provided with four components such as self-care education, telephone calls, home visits, and clinical assessment. Heart failure (HF) is a syndrome associated with high morbidity, mortality and hospital readmissions (1). Cardiovascular disease is the most common cause of heart failure (1). However, HFreduceEF (HFrEF) results in decreased by heart pumping function (left ventricular ejection fraction ≤40%). Nevertheless, HF has been preserved with EF (HFpEF), which is clinical heart failure and left ventricular ejection fraction (≥50%). It has characterized by impaired ventricular relaxation and increased stiffness, diastolic; HF with mid-range ejection fraction (HFmrEF) falls somewhere. However, HF can cause the amount of oxygenated blood pumped to be insufficient to meet the needs of tissues and organs. Another side of research by Heidenreich et al., (2022) said that HF is characterized by signs or symptoms of volume overload or manifestations of impaired tissue perfusion (such as dyspnea, edema, fatigue, or impaired activity tolerance) (8). According to McDonagh et al., (2021) stated that the prevalence of HF is reported to be approximately 1.8% to 2.1% in the United States, with a marked increase to 4.3% among people aged 65 to 70 years (9). Roger, (2021) assumed the lifetime risk of developing heart failure, which is estimated to be around 20% during 1965-1989 and 25% during 1990-2014 (10). Based on Vasan et al., (2022) probably talked about HF patients might has other experience asymptomatic left ventricular structural and/or functional changes (11). This is an early stage that is important to identify early because rapid initiation of treatment can reduce death rates related to heart failure (12). According to Son et al., (2020) said that poor self-care behavior can lead to an increased risk of adverse health impacts (13). Therefore, a lot of patients with heart failure require multidisciplinary program management including self-care education, self-management interventions often led by nurses, effective in improving knowledge, self-care behavior, quality of life and reducing the number of hospitalizations and deaths in heart failure patients.

Review Articles

Self-care is essential in the long-term management of chronic heart failure. The theory of Heart failure guidelines stresses the importance of patient education on treatment adherence, lifestyle changes, symptom monitoring, and adequate response to possible deterioration. Self-care is related to medical and person-centered outcomes in patients with heart failure such as better quality of life as well as lower mortality and readmission rates. Although guidelines give general direction for self-care advice, health care professionals working with patients with heart failure need more specific recommendations. The situation-specific theory of heart failure (HF) self-care was first published in 20081 and updated most recently in 2016. In the theory, self-care was defined as a naturalistic for a decision-making process and involve many choices for behavior that maintain physiologic stability and response to symptoms.

What are Self-Care Behaviors? 1) Healthy Eating discusses about what and how much you eat plays a huge role in the control of your blood sugars. 2) Being Active means moving your body every day is so important for our overall health and well-being. 3) Monitoring. 4) Taking Medication. 5) Problem Solving. 6) Reducing Risks. 7) Healthy Coping.

The aim of the management recommendations in this research study is to provide practical advice for health professionals delivering care to patients with heart failure. Recommendations for nutrition, physical activity, medication adherence, psychological status, sleep, leisure and travel, smoking, immunization and preventing infections, symptom monitoring, and symptom management are consistent with information from guidelines, expert consensus documents, recent evidence and expert opinion.

Quality Of Life

Heart Failure for Patients

Heart failure usually gets worse over time, but there are many things you can do to feel better, avoid the hospital, and live longer. Because self-care means managing your health by doing certain things every day, like weighing yourself. It's about knowing which symptoms to watch for so you can avoid getting worse. The quality management of HF patients included four major pillars of pharmacological treatment. Therefore, an ideal patient will be managed with ARNi, beta-blockers, MRAs, and an SGLT2 inhibitor (Table 1). Beta-blockers and MRAs are longstanding class I recommendations for the treatment of HFrEF. Nevertheless, heart failure-related self-care behavior is important to optimize outcomes for patients with heart failure. Such behaviors include adherence to medication, diet and exercise, but self-care also refers to such things as seeking assistance when symptoms occur, and daily weighing.

Heart Failure Management Principles, In the case from the theory of management, treatment should aim at: (a) removing the cause of heart failure; (b) improving contractile performance (by enhancement of the intrinsic contractile properties or by decreasing after load); (c) moderating the major symptom-producing features (increased filling pressure) and decreasing peripheral demands for cardiac. Ultimately, a goal of treatments for heart failure for patients to relieve symptoms; relieve live symptoms; reduce the chances that you will develop complications: and slow, stop, or reverse any progression of the underlying process.

Table 1. Example of table title

No.	Title	Research purposes	Population	Intervension	Comparation	Outcome	Time
1.	Evaluation of a nurse-led interventio n program in heart failure: A randomized trial (Ortiz-Bautista et al., 2019)	The aim of this study was to develop a nurse-led clinical intervention program for HF patients and to assess whether the intervention had a positive impact on patient prognosis, cost of care, and perceived quality of life	The study population consisted of 127 patients with reduced ejection fraction who were randomized into a standard care group (40 responders) and a nurse-led intervention group (87 responders).	● This intervention is a disease management program for chronic heart failure patients based on case manager nurses with follow-up visits at outpatient clinics. ● All patients received usual management by their respective cardiologists and patients randomized to the intervention group were scheduled individually with a nurse for health education counseling and evidence-based drug treatment titration. ● Nurses review and reinforce educational counseling with patients during follow-up visits, and when possible and evidence-based HF medication titration (With regard to evidence-based treatment for HF, more than 80% of the study population were on angiotensin converting	research group who received the self-management intervention plus usual care and a control group who received only usual care	Self-management interventions are effective in improving outcomes of heart failure patients, demonstrating better self-care and quality of life	January 2011 to December 2013

				enzyme inhibitor (ACEI)/angiotensin II receptor blocker (ARB) and betablocker (BB) treatment) ● The number and regularity of visits are planned individually, depending on the clinical situation. Medical treatment is optimized as long as possible according to contraindications or side effects.			
2.	A nurse-lead structured education program improves self-management skills and reduces hospital readmissions in patients with chronic heart failure: a randomized and controlled trial in china (Cui et al., 2019)	The aim of the study was to evaluate the impact of a nurse-led education program on patient self-management and hospital readmission in chronic heart failure (CHF) patients in rural China and to determine the effect of a structured nurse-led education program on patients. - management, symptom control, and hospital readmission	Between January and October 2016, 265 patients with coronary heart disease (CHD) were treated at the cardiology department of Liaocheng People's Hospital and screened for inclusion in the study, with 96 patients included in the study and 169 excluded from the study	● Structured educational program during hospitalization and before discharge ● Self-management skills education, positive feedback and interviews, social support, exercise and rehabilitation, a combination of face-to-face teaching and tutorials, using printed materials and images ● Teaching the skills of measuring blood pressure, peripheral pulse, weighing daily, calculating daily fluid intake and urine output ● Reassess participants' knowledge and understanding of CHF and its management	Impact of a nurse-led education program on patient self-management and hospital readmission in rural Chinese patients with chronic heart failure (CHF) between intervention and control groups. The intervention group received a structured education program during hospitalization and after discharge from the hospital, while control group patients were treated according to clinical guidelines without structured education.	The results of this study were improved patient self-management skills and reduced hospital readmission rates in chronic heart failure patients in rural China as a result of a nurse-led education program.	inpatient and 12 months after discharge

				during follow-up schedules, detailed exercise plans for each study participant ● Regular attendance at the heart failure clinic every 8 weeks after hospital discharge ● Routine consultation by telephone or face to face for 15-30 minutes every 4 weeks for the intervention group			
3.	Effectiveness of Nurse-Led Heart Failure Self-Care Education on Health Outcomes of Heart Failure Patients: A Systematic Review and Meta-Analysis (Son et al., 2020)	The aim of this study was to evaluate the effectiveness of nurse-led heart failure self-care education on health outcomes in heart failure patients	The population is heart failure patients, especially those aged 65 years and over, a total of 1979 patients with a control group of 1030 participants, an intervention group of 949 participants	Educational intervention is given once before discharge from the hospital, with a duration of one day of education delivery. The content mainly contains basic facts about heart failure and its treatment, such as symptoms, lifestyle, diet and therapy. The intervention delivery modality is face-to-face discussion, and one study added video presentations as multimedia education. Educational materials include information booklets, manuals, guides, and DVDs. The time to start self-care education was before hospital discharge, and the follow-up periods were 3, 6, and 12 months.	Between the intervention group (nurse-led heart failure self-care education) and the control group (standard care) in a randomized controlled trial (RCT).	Nurse-led heart failure self-care education significantly reduces the risk of readmission and death. Secondary outcomes include patient-reported quality of life and knowledge of heart failure, but it is unclear whether nurse-led interventions are effective on patient-reported quality indicators, including quality of life and knowledge of the disease.	January 2000 to October 2019
4.	The effect of nurse-led interventions on readmission and mortality for congestive heart	The aim of this study was to systematically demonstrate the impact of nurse-led intervention (NLI nurse lead intervention)	CHF patients with an average age ranged from 50.8 to 80.3 years, the percentage of male patients varied, and comorbidities included	Impact of nurse-led interventions on readmission and mortality in patients with congestive heart failure (CHF) with reduced ejection fraction. This study demonstrated that nurse-led	Between the outcomes of nurse-led intervention (NLI) and usual care in congestive heart failure (CHF) patients with reduced	Nurse-led interventions significantly reduce hospitalizations and deaths in CHF patients with reduced ejection fraction.- The impact is seen at both shorter (3-6 months) and longer (1-2 years) follow-up	The follow-up period ranged from 3 to 24 months

	failure A meta-analysis (Qiu et al., 2021)	on readmission and mortality in congestive heart failure (CHF) patients with reduced ejection fraction.	hypertension and diabetes mellitus. Total: 3282- Nurse-led intervention group: 1571- Usual care group: 1711	interventions significantly reduced the risk of readmission and death in these patients, in both short-term (3-6 months) and long-term (1-2 years) follow-up periods.	ejection fraction. The nurse-led intervention group demonstrated significantly lower readmission and mortality rates compared with the usual care group, both over shorter (3-6 months) and longer (1-2 years) follow-up periods.	periods.- Systematic review and meta - analysis demonstrated significant benefits of nurse-led interventions in reducing the risk of readmission and death in CHF patients with reduced ejection fraction	
5.	A quasi-experimental study examining a nurse-led educational program to improve disease knowledge and self-care for patients with acute decompensated heart failure with reduced ejection fraction (Kolasa et al., 2021)	The aim of this study was to implement a nurse-led standardized HF education program focused on improving disease knowledge and self-care behavior in hospitalized patients with acute decompensated heart failure with reduced ejection fraction (HFrEF) and to evaluate its effectiveness	The patient was hospitalized with acute decompensated heart failure with HFrEF in Poland Total participants 259	● The intervention was a nurse-led HF education program, consisting of 2 in-hospital educational visits and 3 telephone calls after hospital discharge. ● The education includes basic information about HF, etiology, symptoms, principles of self-care, basics of treatment, and the importance of lifestyle, diet, and exercise. ● After completing the education session, participants received a heart failure passport with an individualized treatment plan, a letter of introduction to the primary care physician, and a medication dispenser. ● The nurse educator has completed and is certified in HF training before starting patient education. Level of disease knowledge using a 10-item HF knowledge questionnaire and self-care behavior	The comparisons" in this paper involved comparing levels of HF knowledge and self-care behavior before and after the nurse-led education program, as well as comparing the performance of different groups of patients based on previous education and history of hospitalizatio n. The comparisons were based on statistical analyzes and measurements taken at time points different before and after the educational program	● A nurse-led HF education program significantly improved disease knowledge and self-care behavior in hospitalized patients with ADHF (Acute Decompassed Heart Failure) with HFrEF. ● This study demonstrated significant improvements in HF knowledge and self-care behavior after implementation of the educational program. ● A nurse-led structured education program based on HF guideline recommendations was shown to be effective in increasing the level of HF knowledge and self-care behavior in patients with HFrEF hospitalized with ADHF	Interventi on in the "The Weak Heart" program starts with education al activities, 2 education al visits at the hospital and 3 telephone calls after leaving the hospital, until the end of the 3 month follow-up period.

				using the 9-item European Heart Failure Self-Care Behavior Scale (9-EHFScBS)			
6.	Effect of Illness Perception Correction - Based Educational Program on Quality Of Life and Self- Care in Patients with Heart Failure: a Randomized Controlled Trial(Akbari et al., 2019)	The aim of this study was to evaluate the effect of an educational program based on disease perception correction on quality of life and self-care in heart failure patients	78 eligible patients were included in the study from Rajaei Heart Center (Tehran, Iran) and randomly assigned to intervention and control groups with an allocation ratio of 1:1	The intervention carried out was an educational program based on correcting disease perceptions. The program consists of 30 minute sessions over 3 consecutive days. Telephone calls were made once a week for 10 minutes during the 8-week program. - The control group received usual care	This study compared the effects of an educational program based on disease perception correction on quality of life and self-care in heart failure patients. The intervention group received an educational program while the control group received usual care. The intervention group showed significant improvements in quality of life, self-care, and illness perception compared with the control group. - Nurses can use this program as *discharge planning* to improve patient quality of life, self-care, and disease perception.	The main finding of this study is that correction of disease perception based on an educational program significantly improves quality of life, self-care, and disease perception in heart failure patients compared with the control group. This program can be implemented by nurses as a discharge plan to improve quality of life, self-care, and disease perception in heart failure patients. Educational programs based on disease perception correction may be an effective non-pharmacological intervention to improve the quality of life and self-care in heart failure patients	April to July 2014
7.	Outcome of Conducting Self-Management Educational Sessions on Quality of Life among Patients with Chronic Heart Failure	The aim of this paper is to evaluate the results of implementing self-management education sessions on the quality of life of chronic heart failure patients. This study aims to assess the impact of self-	The study population consisted of 50 adult patients diagnosed with chronic heart failure. The majority are men, with ages ranging from 50 to 65 years. The patients had different levels of education, employment status, and	The intervention provided is in the form of education regarding self-management for chronic heart failure patients, including basic knowledge about CHF, the medications used and their side effects, appropriate actions to treat drug side effects, and	The comparison in this paper is between self-care behavior and quality of life before and after implementing self-management education sessions in chronic heart failure patients. This	Self-management has a very statistically significant effect on increasing self-care behavior and improving patient quality of life. The study recommends that self-management education sessions can be beneficial for chronic heart failure patients to improve their quality of life	The research period is September 2021 to March 2022, a total of 7 months

	(Mayhob & Amin, 2022)	management on self-care behavior and overall quality of life of chronic heart failure patients	duration of chronic heart failure	how to deal with CHF symptoms. Each group of patients received two sessions on self-management, with each group ranging between 6 and 8 patients. At the end of each session, the researcher gave each patient a copy of the suggested written instructions regarding what they had been taught in the session. The educational session also includes implementing a healthy lifestyle regarding weight control, limiting salt intake, stopping smoking, the amount of fluid intake per day that is allowed, and the importance of physical exercise. Variables measured: Patient demographic and medical data Self-Care Heart Failure Index (includes self-care maintenance, symptom perception, and self-care management components) RAND 36-Items Health Survey (SF-36)	study found highly statistically significant differences in self-care behavior before and after educational sessions, as well as highly statistically significant associations between quality of life and educational sessions. The self-management intervention had a highly statistically significant effect in improving self-care behavior and improving the quality of life of the chronic heart failure patients studied		
8.	Implementation of a heart failure educational intervention for patients with recent admissions for acute decompensated heart failure (Stahlman et al., 2023)	Can the implementation of heart failure (HF) education classes targeted at patients and their caregivers reduce the worsening of heart failure, visits to the emergency department (ER) and readmissions, as well as improve patient quality	A total of twenty-six patients attended the classes and were included in the analysis. The average age was 70 years, and most patients were white. All patients were American College of Cardiology/American Heart Association (ACC/AHA) Stage C and the majority had New York Heart Association	Patients with HF and newly hospitalized with ADHF are given educational classes covering HF pathophysiology, treatment, diet, and lifestyle modification. Patients completed surveys before and 30 days after completing educational classes. Participants' results at 30 and 90 days after class completion were compared to the same patient's	Comparison" in this paper refers to the comparison of outcomes before and after class attendance, which showed a significant reduction in the occurrence of primary and secondary composite outcomes after educational classes	The primary composite outcome occurred less frequently in the 90 days after class attendance compared with the 90 days before (96% vs. 35%, $p < 0.01$). Similarly, secondary composite outcomes occurred less frequently in the 30 days after class attendance compared with the 30 days before (54% vs. 19%, $p = 0.02$). Implementation of educational classes improves clinical outcomes, patient	between September 2018 and February 2019

		of life and confidence in managing the disease condition?	(NYHA) Class II or III symptoms. The average left ventricular ejection fraction (LVEF) is 40%.	results at 30 and 90 days before taking the course. Data were collected using electronic medical records, face-to-face during class, and during telephone follow-up. Outcomes: The primary outcome was a composite of hospital stays, ED visits, and/or outpatient visits for HF within 90 days.		confidence, and ability to self-manage HF, thereby potentially reducing overall health care costs and improving patient quality of life	
9.	Knowledge about heart failure and self-care persists following outpatient programme -a prospective cohort study from the Faroe Islands (Róin et al., 2019)	The aim of this study was to investigate whether self-care and heart failure knowledge persisted at 9-month follow-up among heart failure patients after an outpatient program in the Faroe Islands	This study involved seven (15%) women and 40 (85%) men The mean age of women was 66 (5) years and men 63 (10) years (p = 0.2, Table 1). Ischemic heart disease was the most common cause of heart failure (43% in women and 55% in men, p = 0.6, Both men and women experienced an increase in mean LVEF from baseline to follow-up (p < 0.05). The majority of patients were in NYHA functional class II at baseline (57%). All patients were titrated to the highest tolerated dose during follow-up.	A standardized multidisciplinary heart failure-related patient education program, which includes verbal and written information based on the COM-B model, social support, goal setting, monitoring, instructions on how to perform behaviors, learning to define and observe HF symptoms, risk assessment, self-monitoring (limitations Sodium and exercise fluids), and psychological support and guidance to deal with negative feelings of HF-related anxiety or depression	The comparison" in this paper is an investigation into the persistence of self-care and heart failure knowledge at 9 months after the outpatient program, which demonstrated an overall improvement in patient self-care and knowledge scores compared to baseline. This demonstrates the effectiveness and persistence of the outpatient program in improving care self and knowledge of heart failure patients	This study demonstrated persistent improvements in self-care and knowledge following an outpatient program for heart failure patients. This shows that patient education regarding certain diseases provides benefits and is implemented well	2 years (January 2015 to January 2017), interventi on period per patient: 9 months
10	Impact of nurse-led education on the prognosis of heart failure patients: A systematic review and meta-analysis (Tian et al., 2023)	To conduct a meta-analysis of randomized controlled trials to investigate the effect of nurse-led education on mortality, readmission, and quality of life in patients with heart failure	patients with heart failure, including 15 RCTs	Nurse-led educational programs include various components such as intensive education, dietary assessment, discharge planning, care coordination, psychosocial evaluation, follow-up home visits, and education about comorbidities and medications. Some interventions also include mandatory	Impact of nurse-led education on readmission rates, all-cause mortality, and quality of life in patients with heart failure.	Education carried out by nurses significantly reduces readmission rates due to heart failure and readmission rates due to all causes or death rates in patients with heart failure. Nursing interventions also improve the quality of life of heart failure patients, as evidenced by improvements in the Minnesota Living with Heart Failure Questionnaire	Potentiall y eligible studies published through May 2022

				exercise. Intervention with home visits has proven to be more effective.		(MLHFQ) and EuroQol-5D (EQ-5D). Nursing home visits were found to be more effective in reducing HF readmissions compared with nursing interventions without home visits	
11	The Effects of the ManageHF 4Life Mobile App on Patients With Chronic Heart Failure: Randomized Controlled Trial (Dorsch et al., 2021)	The aim of this study was to explore the effect of self-management interventions on four prognostic indicators: readmission rate, mortality rate, self-management ability, and quality of life in chronic heart failure patients	Chronic heart failure patients from various countries, including the United States and China Patients with high readmission rates and death rates Patients with varying levels of self-management ability, with a wide range of total scores	Self-management interventions were implemented via telephone, text messaging, network software, health education, follow-up, and WeChat. Specific components include self-monitoring of changes in symptoms, weight management, diet management, limiting sodium and water intake, rational treatment, regular exercise, and lifestyle adjustments. This intervention aims to guide chronic heart failure patients in adjusting their diet and lifestyle structure, teach patients to monitor their condition, improve self-management abilities and quality of life. Specific frequency, duration, or number/dose of interventions were not provided The results measured are readmission rate, mortality rate, self-management ability, quality of life	Comparison" in Chunqianfeng, Zhi Qu, Shanqing Zheng is the effect of self-management interventions on readmission rates, mortality, self-management ability, and quality of life in patients with chronic heart failure.	Self-management interventions can reduce readmission rates, improve self-management abilities, and improve quality of life in patients with chronic heart failure	January 1999 to January 2022
12	Persistent effect of nurse-led education on self-care behavior and disease knowledge in heart failure patients (Huesken et al., 2021)	The aim of the study was to evaluate knowledge about self-care behavior and disease knowledge in patients with chronic heart failure Assess the impact of a one-hour structured education	The population in this study consisted of 150 patients who were hospitalized because of heart failure, with a median time since diagnosis of 41 days and some patients had a long-term history of heart failure and had been hospitalized	The intervention included a one-on-one educational session provided by a qualified heart failure nurse. This session includes information on cardiac function, causes of heart failure, consequences, and patient self-care behavioral requirements, including specific	Patient self-care behavior and disease knowledge before and after structured education sessions by qualified heart failure nurses, as well as at 6-month follow-up. This study demonstrated	. Structured educational sessions conducted by qualified heart failure nurses provided significant improvements in patient self-care behavior and disease knowledge immediately after the sessions, with lasting effects after 6 months of follow-up	March 2018 - March 2019

		session by a qualified heart failure nurse on patient disease knowledge and self-care. behavioral techniques immediately after education and at 6-month follow-up, and identify factors that influence the success of patient education	because of heart failure.	recommendations for daily weight monitoring, reduced sodium intake, reduced fluid intake, high compliance with drug therapy, self-observation regarding dyspnea, swelling, and fatigue, as well as recommendations for regular physical activity. Patients were also given a brochure about heart failure and self-care behaviors as well as a daily weight diary outcomes measured the short-term and long-term impact of structured education provided by qualified heart failure nurses on patient self-care behavior and disease knowledge	significant improvements in self-care behavior and disease knowledge immediately after the education sessions, and these improvements were maintained through 6 months of follow-up. Furthermore, the study showed that there were no patient characteristics that could hinder the implementation of educational sessions		
13.	A Quasi-experimental Study Examining a Nurse-led Education Program to Improve Knowledge, Self-Care, and Reduce Readmission for Individuals with Heart Failure (Awoke et al., 2019)	The aim of this study was to evaluate the impact of nurse-led heart failure patient education on knowledge, self-care behavior, and all-cause hospital readmission over a 30-day period.	The population in this study consisted of 29 people diagnosed with heart failure. Characteristics of the participants: the majority were male (52%) and female (48%), with an average age of 66 years. The majority of participants had a NYHA score of III-IV and more than 62% had an ejection fraction of less than 55%.	An evidence-based, standardized heart failure patient education program based on American Colleges of Cardiology and American Heart Association guidelines was implemented with telephone follow-up at 7, 30, and 90 days after hospital discharge. Individuals (N=29) diagnosed with heart failure were asked to complete the Dutch Heart Failure Knowledge Scale (DHFKS) and the Self-Care Heart Failure Index (SCHFI) before hospital discharge. DHFKS scores were evaluated in the period before intervention, then at 7 and 90 days after discharge from the hospital. The SCHFI questionnaire was distributed to participants at the pre-intervention		Nurse-led heart failure patient education significantly improved knowledge, self-care maintenance, self-care management, and confidence in self-care at both the 7-day and 90-day follow-up periods	The duration of the study was from September 2015 to February 2016

				time period, with follow-up at 7 and 30 days after hospital discharge.			
14.	Effect of self-management intervention on prognosis of patients with chronic heart failure: A meta-analysis (Feng et al., 2023)	The aim of this study was to explore the effect of self-management interventions on four prognostic indicators: readmission rate, mortality rate, self-management ability, and quality of life in chronic heart failure patients	The population is patients with chronic heart failure, characterized by impaired ventricular filling and ejection caused by various structural or functional diseases of the heart, and are in the terminal stages of various heart diseases. The number of participants was 3459 chronic heart failure patients.	Self-management interventions were implemented via telephone, text messaging, network software, health education, follow-up, and WeChat. Specific components include self-monitoring of changes in symptoms, weight management, diet management, limiting sodium and water intake, rational treatment, regular exercise, and lifestyle adjustments. This intervention aims to guide chronic heart failure patients in adjusting their diet and lifestyle structure, teach patients to monitor their condition, improve self-management abilities and quality of life. Specific frequency, duration, or number/dose of interventions were not provided	Readmission rate, Mortality rate, Self-management ability, Quality of life	Self-management interventions can reduce readmission rates, improve self-management abilities, and improve quality of life in patients with chronic heart failure	January 1999 to January 2022
15.	Adherence to self-care recommendations and associated factors among adult heart failure patients. From the patients' point of view(M. A. Seid et al., 2019)	The aim of this study was to assess heart failure patients' compliance with self-care recommendations and associated factors, as well as provide insight into heart failure patients' compliance with self-care recommendations.	The population in this study consisted of 310 adult heart failure patients who were treated at the Gondar University referral hospital from February to May 2017	Refers to the complex treatment, low-sodium diet, regular exercise, and weight monitoring that are usually part of heart failure treatment. This paper also emphasizes the importance of adherence to self-care recommendations and highlights factors associated with better adherence. compliance with self-care recommendations Outcomes measured adherence to self-care recommendations	Compliance of heart failure patients with different self-care recommendations and factors associated with compliance, as well as comparison of findings with previous studies on this topic.	assessment of heart failure patient compliance with self-care recommendations and associated factors.	February to May 2017
16.	Effectiveness of nurse-led self-	This study aims to determine the	individuals diagnosed with heart failure,	Methods MEDLINE, Embase, Web of	self-care maintenance, self-care	A nurse-led self-care intervention improves self-care	Nurse-led self-care interventi

	care interventions on self-care behaviors, self-efficacy, depression and illness perceptions in people with heart failure: A systematic review and meta-analysis (Huang et al., 2022)	effectiveness of nurse-led self-care interventions on self-care behavior, self-efficacy, depression, and illness perception in heart failure sufferers and to identify optimal characteristics of effective nurse-led heart failure self-care. care program	with a total of 2488 participants included in the review. The age range of participants varied from 18 years and above, with a wide age range represented in this study	Science, CENTRAL, CINAHL, and PsycINFO were electronically searched for relevant articles from inception to December 2021. Randomized controlled trials examining the effects of self-care interventions on self-care behavior, self-efficacy, depression, and Perceptions of illness among people with heart failure published in English were also included. Quality assessment of included studies was carried out using the revised Cochrane tool for assessing the risk of bias in randomized controlled trials (RoB 2.0). Meta-analysis was carried out using R statistical software. The certainty of the evidence was assessed using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach	management, self-efficacy, depression	maintenance, self-care management, self-efficacy, and depression in people with heart failure. The ideal duration of intervention to improve self-care behavior and self-efficacy is 1 to 3 months, and to reduce depression is 1 month	on, namely 1 to 3 months to improve self-care behavior and self-efficacy, and within 1 month to reduce depression.
17.	Effect of the self-management education program on the quality of life in people with chronic heart failure: a randomized controlled trial (Abbasi et al., 2018)	The aim of the research was to determine the effect of a self-management education program on the quality of life in CHF sufferers	This randomized controlled trial study was conducted on 60 people with CHF and without sensory-cognitive problems	Using the convenience sampling method, and randomly assigned to intervention and control groups. The control group received the routine education provided to participants at discharge. However, in addition to routine education, the intervention group received a self-management education program consisting of three sessions followed over a 3-month period	Comparison of the average changes in total quality of life and its dimensions between the intervention group and the control group after implementing the self-management education program.	No statistically significant differences were reported between groups in terms of demographic and clinical characteristics, indicating that they were homogeneous. Statistically significant differences were reported between the two groups after the intervention in terms of mean change in quality of life	April-August 2015
18.	The effects of a self-regulation programme	To determine the effect of a self-regulation program on	Eighty-two patients with heart failure were recruited from	The intervention group participated in a 4-week self-regulation program,	between the intervention group who took part in a	The intervention group showed significantly greater improvements in self-	research period from January

	on self-care behaviour in patients with heart failure: A randomized controlled trial (Hsu et al., 2021)	self-care behavior in heart failure patients	the cardiovascular outpatient department of a teaching hospital in northern Taiwan. Methods : Participants were randomly assigned to the intervention group (n = 41) or control group (n = 41).	including one 20- to 30-minute face-to-face individual self-regulation education session and 15- to 20-minute telephone follow-up counseling sessions twice weekly for four weeks. The control group only received routine outpatient care. Self-care behavior was measured by the Heart Failure Self-Care Index at baseline, 4 weeks and 8 weeks after the patient was registered. The outcome measured was the self-care behavior of heart failure patients, which was assessed using the Self-Care of Heart Failure Index (SCHFI version 6.2) at baseline, 4 weeks, and 8 weeks after the patient was registered. The SCHFI consists of three self-care subscales: self-care maintenance, self-care management, and self-care confidence. Each item in the SCHFI is scored from 1 to 4, and the score of each subscale is calculated separately by a formula to convert the score to a standard score ranging from 0 to 100, with higher scores indicating better self-care behavior	4-week self-management program and the control group who only received routine outpatient care.	care maintenance, self-care management, and confidence in self-care compared with the control group at four weeks and eight weeks after enrollment	2015 to Septembe r 2015
19.	Self-Care and Quality of Life Among Adult Patients With Heart Failure: Scoping Review (S.S. Seid et al., 2023)	The aim of the study was to identify scientific evidence that examines the extent of self-care, quality of life, and the relationship between self-care and quality of life	The population studied in this paper was adult patients (>18 years) suffering from heart failure, with a total of 3,127 people across the study that focused on self-care and quality of life among	A literature search of electronic databases and web searches were conducted for published articles. Four databases were used: MEDLINE, Scopus, Web of Science, and the Cochrane Library. Studies	Emphasizes the positive correlation between self-care behavior and quality of life, indicating that higher self-care practices are associated with better quality of life.	. This review found that the level of self-care practices among heart failure patients was inadequate, the majority of patients enrolled in the studies reviewed had moderate quality of life, and higher self-care practices were associated with better quality of life. Self-	March 23, 2010 to March 23, 2020

		in heart failure patients.	adult patients with heart failure.	collected from Google web searches and Google Scholar were also included. Results: Of the 1,537 papers identified through the search, 12 were included. The studies reviewed included 3,127 patients. Ten articles used cross-sectional study designs, while the remaining articles used longitudinal and quasi-experimental designs The intervention in this study was to identify and evaluate self-care practices and their impact on the quality of life of heart failure patients. This paper emphasizes the need for a comprehensive understanding of self-care and its impact on quality of life to inform the development of effective self-care strategies. Outcomes measured self-care behavior and quality of life	This paper also highlights factors that hinder self-care practices and affect the quality of life of heart failure patients.	care behavior and quality of life are influenced by social support, gender, age, education level, place of residence, disease knowledge, presence of comorbidities, and functional classification of HF.	
20.	Factors Associated with Heart Failure Knowledge and Adherence to Self-Care Behaviors in Hospitalized Patients with Acute Decompensated Heart Failure Based on Data from "the Weak Heart" Educational Program	The aim of this study was to identify factors associated with HF knowledge and self-care behavior in patients hospitalized with acute decompensated heart failure (ADHF) in Poland, examining the current level of HF knowledge and self-care behavior in this group, and improve patient quality. ' compliance	The study population consisted of 259 patients hospitalized with acute decompensated heart failure (ADHF), all of whom had ejection fractions below 40%. The specific demographic characteristics of the population are not provided extensively, but several general characteristics are mentioned, such as age, gender, education, place of residence, professional	nurse-led education model, "The Weak Heart" program for patients hospitalized for acute decompensated heart failure (ADHF) in Poland, which includes two one-hour educational sessions conducted in the hospital. and three monitoring telephone calls for 30 minutes according to the predetermined schedule. In addition, it is stated that other multidisciplinary team members can also be involved	Comparison of factors associated with HF knowledge and self-care behavior in patients hospitalized due to acute decompensated heart failure(ADHF) in Poland. This study aims to identify the impact of education, history of previous hospitalization, and age on HF knowledge and self-care	This paper concludes that disease education has a positive effect on HF knowledge and self-care ability, and compliance with self-care recommendations among patients with ADHF is still poor	period between February 2019 to October 2019

with HF recommendations through a well-designed educational model based on HF management guidelines	activities, and marital status.	after receiving adequate training. Outcomes measured level of heart failure (HF) knowledge and self-care behavior. at three different time points: before starting educational activities (visit 1), immediately after completing hospital education (visit 2), and three months later (visit 5).	behavior, as well as highlighting the influence of disease education on these two aspects.

DISCUSSION

One of the major benefits of nurse-led interventions is the ability to reduce readmission rates and mortality in patients with heart failure. Studies showed that interventions that directly involved nurses in patient education and self-management significantly reduced readmission rates in the first 12 months after hospital discharge. This suggests that nurse-led programs not only help in the management of acute conditions but also in the long-term maintenance of patients' conditions (19,5). Nurses play a key role in educating patients about the importance of good self-care behaviors. A study showed that patients who received structured education led by nurses had significant improvements in their knowledge of heart failure and their ability to care for themselves. The education provided included knowledge of symptoms, lifestyle management, and adherence to treatment, all of which contributed to improving patients' quality of life (27). Nurse-led structured education models include multiple components, such as intensive education, dietary assessment, discharge planning, and psychosocial evaluation. These interventions are designed to provide comprehensive support to patients, which has been shown to be more effective than standard care without nurse-led interventions. For example, (29) a program that included home visits by nurses resulted in better outcomes in reducing readmission rates compared to an intervention that did not involve home visits. Nurses act as a liaison between patients and the healthcare system, ensuring that patients receive the education and support they need to manage their condition. Nurses who were directly involved in an education program successfully improved patients' knowledge and ability to care for themselves, which in turn reduced the need for further hospitalization. The effectiveness of nurse-led interventions is not limited to short-term outcomes. The positive impacts of these interventions, such as reduced hospitalizations and deaths, can persist over a longer period, between 1 and 2 years. This suggests that nurse-led interventions have the potential to provide lasting benefits to patients (21)

Structured education programs, as mentioned in several studies, are effective in providing patients with a better understanding of their condition and how best to manage symptoms. These programs typically include intensive education sessions, ongoing monitoring, and home visits, all aimed at strengthening patients' ability to manage their own condition (27,29)

One of the main goals of nurse-led interventions is to improve patients' quality of life. Studies reviewed in the literature review show that nurse-led educational programs significantly improve the quality of life of patients with heart failure. For example, a study (2) showed that education based on correcting disease perception can significantly improve the quality of life of patients with heart failure, especially in aspects related to disease perception and self-care behavior. Other studies, such as that conducted by Mayhob & Amin (2022), also showed that self-management education sessions improved self-care behaviors and directly contributed to improving patients' quality of life. This intervention allows patients to better understand their condition and how best to manage symptoms, ultimately reducing psychological distress and improving overall well-being.

Nurse-led interventions provide not only clinical benefits but also significant economic benefits. Reduction in readmission rates and improvement in patients' quality of life directly impact health care costs. Effective education and self-management programs can reduce the frequency of hospital visits, which in turn reduces the cost burden on the health care system. Emphasized that this approach is a cost-effective way to improve health outcomes for patients with heart failure. The use of technology such as mobile applications and telehealth also contributes to cost efficiency by providing more affordable tools for patients to manage their condition at home (8).

Despite the many benefits of nurse-led interventions, there are also challenges and barriers to consider. Factors such as limited patient understanding, lack of social support, and economic barriers can impact the effectiveness of self-care programs. Patients who have limited knowledge about their illness or who lack support

from family and community may have difficulty following self-care recommendations. Seid et al. (2019) identified that adherence to self-care recommendations is strongly influenced by factors such as age, education level, and social support. Lack of understanding and limited access to resources can hinder the effectiveness of these programs. Therefore, it is important to develop more inclusive strategies and consider the various barriers that patients may face.

Technology and innovation play a critical role in supporting nurse-led care interventions. The use of mobile apps, telehealth, and other digital platforms provide additional tools for patients to monitor their condition and stay connected with their healthcare providers. Studies showed that technology-based interventions, such as eHealth apps, can improve self-care behaviors, reduce readmission rates, and improve quality of life. Apps like ManageHF4Life allow patients to access health information, perform self-monitoring, and receive direct support through their mobile devices. This provides flexibility and convenience for patients, especially those with limited access to healthcare facilities (16,6).

CONCLUSION

In conclude, Nurse-led self-care management education in heart failure patients has been shown to be effective in improving self-care behavior, self-care maintenance, self-care management, and self-care confidence. This also leads to significant improvements in quality of life. These, Nurse-led education programs have been shown to reduce heart failure-related hospital readmissions and all-cause readmissions, as well as mortality rates in patients with heart failure. These programs have been shown to have a positive impact on patient mental health outcomes, with significant improvements reported in certain studies.

Additionally, nurse-led interventions have been shown to be a cost-effective treatment for heart failure patients, and nurses play an important role in educating and managing their condition. Overall, nurse-led self-care management education programs have demonstrated effectiveness in improving self-care and quality of life in heart failure patients. Ultimately, Heart failure self-management education has been shown to improve patient self-care and quality of life. This research has founded that educational classes targeted at patients and caregivers can reduce worsening of heart failure, emergency department visits, and hospital admissions, while increasing patient self-confidence and ability to self-manage the disease.

SUGGESTION

It is suggested by researcher about self-care management interventions, such as educational programs, have been effective in reducing readmission rates and improving self-care abilities. The use of mobile applications with telephone support calls has also been shown to be effective in increasing self-care improvement and nurses' contribution to the self-care of heart failure patients. Additionally, eHealth self-management interventions, including the use of apps and websites, have been shown to reduce mortality, patient readmissions, and improve medication adherence and self-care behaviors. Inadequate self-care behaviors have been associated with poor health-related quality of life, highlighting the importance of identifying patients who lack self-care skills and providing targeted educational interventions.

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