



**Health-care Professionals involved in Self-care Management and their
Recommendations for Congestive Cardiac failure in an Outpatient Department setting:
A scoping review**

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ABSTRACT



The objective of this scoping review is to understand the extent and type of evidence in relation to Health care professionals involved in Self-care management and their recommendations for self-care individuals with congestive cardiac failure in a hospital outpatient department setting. Researches included were Randomized Controlled Trials and Quasi experimental studies on patients with congestive cardiac failure published in English and prior to August 2022. The sources of evidence were PubMed, Science Direct, JSTOR, Cochrane Database and registry of clinical trial, PEDro (Physical therapy Evidence Database). A total of 24 articles (14 randomised controlled trials, 4 multicentre RCTs, 2 quasi-experimental studies, 1 single-arm prospective feasibility study, 1 randomised control single centre study, 1 clustered randomised controlled trial, 1 randomised comparative effectiveness trial) were included in our final analysis. Among health-care professionals, cardiology experts, nurses (Heart Failure nurse, a geriatric nurse), pharmacist, physical therapist, exercise physiologist, occupational therapist, health behaviorist, dietitian, psychiatrist were involved in self-care management programs. We conclude that health-care professionals of every field involved in self-care management program in few research articles. The substantial existing evidence from this review corroborate that there are various self-care management programs but recommendations from all programs have similar aspects.

Keywords

Congestive heart failure; Dieticians; Health care professionals; Nurses; Primary care physicians; Pharmacists; Physiotherapists; Psychologists; Self-care management.

INTRODUCTION

Heart failure (HF), which has a post-admission death rate of 20%–30%, is a significant health issue in India. Between 25% and 50% of patients adhere to their medications, and Indian



population have a low tolerance for medication based on recommended dosages as per the guidelines. (1)

Self-care management has been identified as a crucial component of modern healthcare systems. Supporting patient Self-care management of chronic illnesses is now widely recognised as a critical component of lowering disease burden and chronic disease-related utilisation of health services. (2)

An important task is to improve the outpatient management of individuals suffering from chronic heart failure (CHF). It is generally accepted that a multidisciplinary approach to treatment and care is necessary to enhance patient outcomes, including health care utilisation and associated expenditures, quality of life, and death. Some authors argue that patient adherence to the treatment regimen is critical to the success of HF programmes, while others emphasize the importance of optimal medical treatment in conjunction with self-management by CHF patients. An additional issue is enlisting the engagement of the right combination of healthcare specialists, as there are discussions over the efficacy of HF self-care management programmes. Some heart failure programs establish formal liaisons between cardiologists and heart failure nurses along with support specialties such as dietitians, physical therapists, and/or social workers. (3,4)

A large number of patients do not receive optimal physical activity, pharmacological, or dietary regimens. In 2002, Kasper et. Al. studied the effectiveness of multidisciplinary care in heart failure for 6 months including health professionals such as CHF cardiologist, CHF



nurse, telephone nurse coordinator, and patient's primary physician which showed improvement in clinical outcomes of CHF patients. (4)

A systematic review in 2012 described the determinants of heart failure self-care which mainly focused on the socio-demographic, psychosocial, health-related, care-related, cognitive and behavioral determinants of HF selfcare and assess the evidence. (5)

The healthcare system continues to place a high priority on episodic acute care, whereas primary and preventative illness management, promoted by optimal self-care, receives much less attention from the medical community. However, it is crucial for health care professionals to enhance our capacity to prevent disease development, reduce morbidity and mortality, and optimise patients' quality of life in addition to the issue of financial expenditures. (6,7)

A multidisciplinary care management approach is implemented for HF patients to lower the likelihood of hospitalisation and mortality. (8)

Since Self-care management is a multidisciplinary approach, every health-care professional must be involved in the management of congestive cardiac failure. Therefore, this scoping review's goal is to evaluate the extent of the literature and the nature of the evidence in relation to Health care professionals involved in Self-care management and their Recommendations for self-care individuals with Congestive Cardiac failure in a hospital outpatient department setting. The review question of the scoping review is who are the health care professionals involved in Self-care management and what are their recommendations of self-care management for Congestive Cardiac Failure patients?



A preliminary search of MEDLINE, the Cochrane Database of Systematic Reviews, and JBI Evidence Synthesis revealed no results for any active scoping reviews on the topic.

Methodology

Health-care Professionals involved and their recommendations in self-care management. For studies to be included, the criteria included randomized control trial, experimental study, quasi experimental study, clinical trials, population with congestive cardiac disease and articles published in English and prior to February 2023. The systematic reviews, policy briefs, books, book chapters, editorials, commentaries, guidelines and published or unpublished reports from governments and other agencies were excluded. PubMed, Science direct, JSTOR, Cochrane Database and registry of clinical trial, Pedro (Physical therapy Evidence Database).

Search strategy: A search strategy was formulated to locate both published and unpublished primary types of research done on Self-care in Congestive Cardiac failure patients. Articles related to this topic were identified through a primary search. Table 1 is showing the key-words used in the search strategy and table 2 included number of articles extracted for each database.



Table 1. Keywords searched on Databases

Keywords searched on Databases	((Congestive cardiac failure OR myocardia failure OR chronic heart failure OR congestive heart failure OR heart failure) AND (self-care management or self-care)) AND (health care professionals OR Cardiologists OR Dieticians OR Nurses OR Primary care physicians OR Pharmacists OR Physiotherapists OR Psychologists)
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Table 2. Number of articles extracted along with timeline

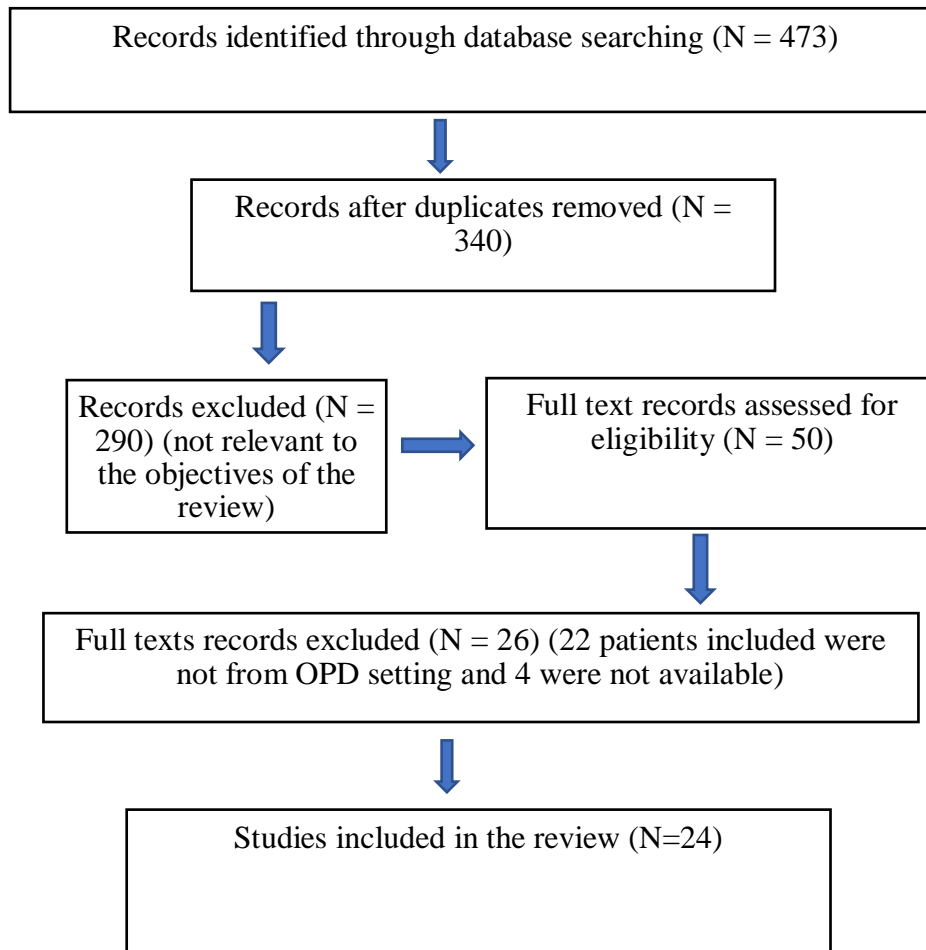
Date of search	Electronic database	Number of studies retrieved
10/10/2022	Pub Med	40
10/10/2022	Science direct	215
10/10/2022	PEDro	27
13/10/2022	JSTOR	68
18/10/2022	Cochrane Database	123



Study selection process

473 records were identified by using the search strategy and the above mentions sources. Records were downloaded and were compiled in the reference management software (ZOTERO) and all the articles were processed for duplicity and 133 duplicate records were removed. 340 articles titles and abstracts were screened for the inclusion criteria by two independent reviewers for including the articles in the review in which 290 records were not included. The rest of the 50 records were included for full-text screening and 22 records was excluded as per the full texts, patients included were not from OPD setting and 4 were not available. As described in figure 1, 24 records were included for the review, data charting was done.

Figure 1: Prisma-SCR flow diagram



Data charting:

Results extracted from the source of evidence (according to the concept of the scoping review) Table 3.

Table 3: Systematic representation of results extracted from the source of evidence



	Authors	Aims/Purpose/Hypothesis	Sample size	Methodology	Health professional s included	Recommendations by health professionals	Outcomes
1	Stromberg et. al., 2005, Sweden	To assess a computer-based teaching session affects the knowledge, compliance, and quality of life	N = 154	A randomised controlled multicentre trial	Specially trained heart failure nurse	Seven educational modules on heart failure were included in the application, and one module also included as a self-test.	After six months, the computer-based group had a better effect. (9)
2	Ducharme et. al., 2005, Canada	Comparing the effects of treatment at a specialised congestive heart failure clinic with that of conventional care on outcomes	N = 230	Randomized trial	Study nurse, dietician and clinic cardiologists	The medical condition, heart failure symptoms and signs, sodium and fluid intake restrictions, daily body weight monitoring and medications adherence	At six months, the intervention group had fewer patients who needed to be readmitted to the hospital [39% vs. 57%]. (10)
3	Todd M. Koelling et. al., 2005, USA	Effect of Discharge education programme on clinical outcomes	N = 223	Randomized controlled trial	Staff physicians, nurses, and dietitians	Information on heart failure symptoms, daily weight instructions, pneumococcal/influenza vaccination information, exercise recommendation.	Program led to better clinical outcomes, increased adherence to self-care measures, and lower healthcare costs. (11)
4	Sally C. Inglis et.	In order to compare the efficacy of nurse-led,	N = 297	Randomized controlled	Nurse and pharmacist	HBI: Received a combination of corrective counselling, the	HBI is a cost- and time-effective method for



	al., 2006, Australia	multidisciplinary home-based intervention (HBI) to post-discharge customary care.	IG (n =149) CG (n =148)	trial		introduction of techniques aimed at enhancing treatment adherence, exercise plan	modifying the natural history of chronic heart failure relative to Usual Care (12)
5	Aggie H. Balk et. al., 2008, Netharlands	To assess the effects of the MOTIVA system's counselling on patients suffering from CHF.	N = 214	A multi-centre, randomised controlled study	Cardiologist s and Heart Failure nurse	Teleguidance that offered instructional content, prescription reminders, surveys relating to health, and inspirational messages to support the recommended lifestyle regimen.	There were no differences between the groups. However, the Intervention group's knowledge of heart failure rose noticeably more (p=0.001). (13)
6	Machiko R Tomita et. al., 2009, USA	To assess and develop the efficacy of an online self-management program for heart failure patients by multidisciplinary healthcare providers	N = 40	Randomized controlled trial	Occupational therapist, physical therapist, exercise physiologist , geriatric physician, geriatric nurse, health behaviourist .	In this e-health intervention, 4 different support types (emotional assessment, informational and instrumental) were given at appropriate stages of behavioural changes.	The therapy group showed a statistically significant improvement in knowledge, activity, and life quality, and a decrease in HF-related symptoms. (14)
7	Smeulders	To evaluate how the	N =	Randomized	Cardiac	To increase self-efficacy	CDSMP significantly



	et. al., 2009, Netherlands	"Chronic Disease Self-Management Programme" (CDSMP) affects patient's health behaviours.	317	controlled trial	nurse specialist	expectations, the programme uses modelling, social persuasion, reinterpretation of symptoms, and skill mastery.	improved physical activity among CHF patients (15)
8	Wang et. al., 2011, Taiwan	To compare Health education about heart failure self-care (HFSC) programme with usual care.	N = 27	Quasi-experimental study	A cardiologist, pharmacist, and senior nursing staff	It emphasises on the significance of adhering to dietary, pharmaceutical, and exercise regimes as well as adopting lifestyle adjustments and regular weight-checking practises.	HFSC programme reported less heart failure symptoms, an improvement in functional status, and a higher quality of life. (16)
9	Granger et. al., 2015, United Kingdom	To assess a new intervention's clinical effectiveness for enhancing medication adherence	N = 86 IG (n = 44) CG (n = 42)	Randomized control trial	Nurses	Knowledge of an early reaction to symptom exacerbation. The carers of participants received written instructions to supplement the verbal instructions.	Patients in the intervention group were more likely to adhere to their prescription regimens. (17)
10	Meng at. al., 2015, Germany	To compare a patient-centred self-management educational group programme with standard care education.	N = 475	A multicentre cluster randomized controlled trial	Physician, a nurse, a psychologist and a physiotherapist	Self-monitoring and awareness, learning new skills and techniques, self-efficacy, symptom control, exercise, and medication adherence.	Patient-centred self-management programme may be superior to normal care instruction. (18)



11	Creber et. al., 2015, USA	To compare the effectiveness of a customised motivational interviewing (MI) intervention versus standard care	N = 67	Randomized controlled trial	Nurses	MI tailored intervention: Smaller daily goals aimed at enhancing self-care practises, medication adherence, and physical activity.	MI intervention showed clinically significant improvement in HF self-care maintenance than standard therapy. (19)
12	Siabani et. al., 2015, USA	Comparing the efficacy of an educational strategy based in homes to a hospital-based educational strategy	N = 231	Randomized controlled trial	A nurse and a general practitioner	Recognising CHF symptoms, evaluating symptoms, assessing appropriate treatment for symptoms, exercise daily, and following a diet plan.	Health education showed significant improvement than standard care. (20)
13	Koberich et. al., 2015, Germany	To examine the impact of hospital-based education session on heart failure.	N = 64	Randomised controlled trial	Nurses	HF-specific diet, medication, fluid restriction, and pathophysiology of HF with a focus on fluid retention, Changes in lifestyle, symptom monitoring, and signs and symptoms of deteriorating HF.	The educational session did not have any impact on care reliance. (21)
14	Piette et. Al, 2015, USA	To ascertain the influence of automated feedback on the burden of caregiving and self-management support for carers	N = 369	Randomized comparative effectiveness trial.	Primary care Physicians, cardiologists , HF nurse	Standard mHealth intervention: HF symptoms, and self-management techniques. Patients received pre-recorded material adapted	Systematic feedback on their patient-partner helped to reduce the symptoms of depression and significant



					care managers, and experts	to their symptoms and self-care routines.	caregiving stress. (22)
15	Lufei Young et. al., 2016, USA	Comparing the intervention and usual care (UC) groups on awareness about Self-Management (SM), self-efficacy for SM, activation of patient, and SM methods	N= 105 IG (n=54) CG (n = 51)	Randomized controlled trial	Physician	Patient AcTivated Care at Home (PATCH) intervention: Spoken, written, and visual aids used to include low-sodium diet, weighing themselves, taking prescribed medications, and exercising every day.	PATCH intervention considerably outperformed standard treatment. (23)
16	Yiyin Chen et. al., 2017, China	To ascertain if a Multidisciplinary Disease Management Program (MDMP) enhances mortality or re-hospitalization	N = 62 CG (n = 31) IG (n = 31)	A randomized controlled single center study	3 cardiologists , 1 coach nurse, 10 nurses, 1 dietitian and 1 psychiatrist	Signs, and symptoms of HF, the requirement of body weight control and input/output monitoring, what to do when one feels aggravated, self-care techniques, the significance of medication adherence.	MDMP significantly improved QoL, depressive symptoms, and self-care behaviours when compared to SC. (24)
17	Qiong Wang et.	To examine how a PRECEDE-based	N = 62 IG (n =	Randomized controlled	Senior cardiology experts.	Knowledge of the illness, including decompensation	The intervention group's mean total EHFSBS-9,



	al., 2017, China	education intervention affects heart failure patients' self-care behaviours, depression, and quality of life.	31) CG (n = 31)	trial		signs and symptoms, provoking/aggravating factors, and treatments, self-care behaviours, self-care skills, symptoms of depression, and attitudes toward self-care behaviours.	PHQ-9, and MLHFQ scores dramatically dropped. (25)
18	Abbasi et. al., 2018, Iran	To ascertain the impact of the self-management education programme on Congestive Heart Failure Patients' Quality of Life	N = 60	Randomized controlled trial	2 nursing faculty members and 1 cardiovascular physician	Risk factors for CHF, symptoms and diagnosis, treatment options, diet and exercise guidelines, medication interactions, and blood pressure monitoring.	Health care professionals may view the self-management education programme as an appropriate approach for enhancing CHF patients' QOL. (26)
19	KirsiKivelä et. al., 2019, Finland	To assess the impact of nurse-led health coaching on clinical health outcomes and health-related quality of life among regular primary care patients.	N = 110 IG (n = 52) CG (n = 58)	A quasi-experimental study	Individual health-coaching nurse	Medication adherence, self-care, lifestyle modifications, including food, exercise, weight management, quitting smoking, cutting down on alcohol usage, and stress management.	The experimental participants' blood pressure and quality of life were statistically significantly improved. (27)



20	Xiaorong Guo et. al., 2019, China	The study's aim was to ascertain the programme on telehealth based on the hospital-community-family (HCF) model.	N = 70	Single-Arm, Prospective Feasibility Study	Cardiologists, general practitioners	To record and submit detailed data items linked to the risk of CHF self-care management, such as a daily diary of symptom and sign changes and medication adherence, participants can utilise the app at home.	The programme had a good impact on patients' ability to manage their own care, including maintaining a balanced diet, monitoring their weight and blood pressure (28)
21	Jennifer Wingham et. al., 2019, United Kingdom	To compare the carer results between the Rehabilitation EnAblement in Chronic Heart Failure (REACH-HF) and control groups.	N = 216 IG (n = 107) CG (n = 109)	Multicentre randomized controlled trial	Cardiac nurses, physiotherapists, clinicians	It enables patients to keep track of their condition, amount of exercise, and more approaches based on self-care.	Giving the REACH-HF intervention to those who care for HF patients increased their self-management skills. (29)
22	Jing Wang et. al., 2020, China	To investigate the impact of self-care instruction on the standard of living for people with chronic heart failure.	N = 80 IG (n = 40) CG (n = 40)	Randomized controlled trial	Nurses	Risk factors for heart failure, management and diagnosis of disease and symptoms, physical activity and proper nutrition, drugs and their relevant side effects, and how to use a blood pressure	The self-care education programme can be thought of as the best way to enhance people with CHF's quality of life. (30)



						monitor.	
23	Getenet Dessie et. al., 2021, Ethiopia	To determine if an educational programme at Debre Markos and FelegeHiwot Referral Hospitals in Northwest Ethiopia is successful in helping patients adhere to their own self-care regimens.	N = 186	A clustered randomized controlled trial	Nurses and Physicians	Information about identifying HF, taking medications as prescribed, according to dietary recommendations, putting together a low-salt diet, reducing alcohol consumption, exercising, and quitting smoking.	The adherence scores of the intervention group's patients were higher than those of the control group's patients. (31)
24	Johnson et. al., 2022, USA	To create a mHealth programme that will improve patients' ability to manage their HF on their own by boosting awareness, symptom and self-efficacy, recognition.	N = 31 IG (n = 16) CG (n = 15)	Randomized controlled trial	Physicians, nurses	The mHealth programme included a patient-facing, internet-based platform that could be used with any smartphone. The programme was with daily prompts and instructive videos specifically designed for people with chronic HF.	This pilot intervention shows promise for assisting HF patients in leading healthy, independent lives. (32)



Results

Total number of sources were 5 (including grey literature search) between 2017 and 2022 were 9. Number of publications every year: 2005:3, 2006:1, 2008:1, 2009:2, 2011:1, 2015:6, 2016:1, 2017:2, 2018:1, 2019:3, 2020:1, 2021:1, 2022:1

Discussion

We identified 24 research articles as per the specified inclusion criteria out of which 9 articles were published in last 5 years (2017-2022). Nine different types of health-care professionals were involved in the studies as per their established programs and 13 types of different Self-care management programs are identified by the authors.

Out of 24 articles reviews, in 7 research articles the self-care management program was implemented by nurses and cardiologists or general physicians. These articles used computer-based app, MOTIVA system, mhealth app and one to one education on self-care. These interventions improved quality of life, self-care behavior adherence of the patients and improved the knowledge about heart failure. Aggie H. Balk et. al. in 2008 studied MOTIVA system included a secured broad band home TV-channel providing educational material provided by nurses and cardiologists. As their plan mainly included medicines that were prescribed, salt restriction advice and intake of fluid and agreed lifestyle regimen, appropriate knowledge of heart failure, their symptom recognition, physical activity and vaccination were not included which are the necessary components in management of heart failure through



Self-care. These different recommendations can be given through other health professionals as well. As in the MOTIVA system, treatment was given by nurse and recommended by cardiologists, their results might improve if they included other health-care professionals. (13,22)

Usage of electronic gadgets for self-care management are developed showing commending outcomes for patients' behavior adherence, record keeping and tracking progress of the patients.

In 2009, Tomita et. al. studied the program of self-care management by multidisciplinary team such as cardiology experts, heart failure nurse, primary care physician, a physical therapist psychiatrist, psychologist, occupational therapist, pharmacist, and an exercise physiologist, health behaviorist and dietitian. The results revealed an increase in knowledge, exercise level, and quality of life as well as a decrease in symptoms associated to heart failure, blood pressure, length of stays at the hospitals as well as the number of visits in emergency room. (14)

As self-care management program consists of numerous recommendations as per the field of each health-care professionals, the outcomes reported to be satisfactory.

Total of 3 articles showed contributions of Physical therapist out of 24 in self-care management. As physical activity is a primary component in lifestyle modification of patients suffering from heart failure, self-care programs including Physical therapist shows quality



results such as in 2015 patients showed improvement in certain dimension of patients' self-management competence, symptom control, medication adherence, exercise capacity. (18)

Most of the articles shows that nurses are the primary health-care professional involved in self-care management programs.

Limitations:

More studies are needed in approaches to self-care management programs. Additional rigorous studies are required in future study, as seen by the included studies' inconsistent findings and weak methodology.

Conclusion:

We conclude that health-care professionals of every field involved in self-care management program in few research articles. This review's extensive existing evidence supports that there are various self-care management programs but recommendations from all programs have similar aspects. Considering Self-care Management is a multidisciplinary approach, not many researchers have included concerned health-care professionals. As per this scoping review, various articles suggest that usage of app for Self-care Management program as proven useful.



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