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Impact of Caregiver Support on Patient Self-Care Outcomes with Heart Failure: A Systematic Review

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Abstract

Aim: The purpose of this systematic review was to assess the impact on patient outcomes of caregivers' contribution to heart failure (HF) self-care. The reason for choosing this condition is because of the importance of involving the caregiver support in self-care patients with HF.

Methods: The review was guided by The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines; the search was conducted for years 2014 to 2019 utilizing three databases: CINHAL, PubMed, and Psych INFO.

Results: The systematic review revealed that caregivers contribute to self-care and patient confidence. Five studies reported a level of confidence for health behavior (exercise, medication adherence, and diet) as a significant predictor for caregiver contributions to patient self-care. One study found that patients who were cared for by their spouses experienced a risk for a low level of confidence compared to adults-children caregivers. Four studies reported the relationship between caregiver contribution to patient self-care and health related quality of life. Two studies found that caregiver contributions to patient self-care caused a significant reduction in readmission, hospitalization, and mortality of patients.

Clinical implication: The findings from this review have encouraged providers to conduct interventions that focus on quality of patient-caregiver relationships (e.g., mutuality).

Keywords

Caregivers, Hear Failure, Self-Care

Description and Rationale for Caregiver Population

An informal caregiver is someone who provides unpaid care to a family member or friend who is unable to coordinate self-care without support [1]. This support may include day-to-day activities such as mobility assistance, medical tasks such as checking daily medications, helping with injections, scheduling appointments, and discussing the patient's medical plan. This support may also be emotional, social or psychological [2]. Approximately 43.5 million informal caregivers provide unpaid care to family or friends with physical or mental disabilities [3,4]. The Family Caregiver Alliance[3] estimated that care provided by informal caregivers to family or friends was approximately $470 billion in 2013. Government policymakers saw the importance and value of caregivers under the legislation of the Family Caregiver Alliance in 1977. In 2018, the National Guidelines for Health and Care Excellence [5] (NICE 106) recommended that caregivers be included in the decision-making process during the planning of medical care. A meta-analysis of 569 medication adherence studies found that medication adherence rates were approximately 25% among patients with chronic illness. According to a mixed-method study by Sussman, et al. [6], which looked at family and friends support for chronic disease management, 35% of patients reported that family support is the most important aspect of chronic disease management. Although several interventional studies have been conducted to promote effective self-care HF, little research has been done to explore the extent to which informal family caregivers support health care activities, primarily because family caregivers are not identified in the family care experience [7].

Aims

The purpose of this systematic review was to assess the impact of informal caregiver contributions to HF self-care on

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patient outcomes. The reason behind choosing this condition is because HF is a chronic condition that significantly impacts the quality of life of patients living with the disease. Approximately one in five adults in the United States have HF; and approximately 50% of people who develop HF die during the first five years of diagnosis [8]. Heart failure presents a major challenge for health policy makers in primary and secondary intervention care [9] and has a significant impact on the physical and mental health of caregivers who provide personal care and support for self-care planning [10].

Self-Care and Caregiver

Self-care is an approach that enables individuals to solve problems as they arise, practice new health behaviors, and gain emotional stability [11]. Self-care, in the literature on heart failure, is defined as daily activities that address key behaviors such as medication, diet, and exercise [12].

Self-care is initiated by HF patients with varied levels of support from informal caregivers (CGs) such as family members or friends. Wingham, et al. [9] noted that caregivers need to have a clear picture of the patients they care for; caregivers need to know how to participate in care giving activities. The care activities should include monitoring and planning for daily life activities, providing complex medications that may require modification, and adherence to dietary restriction.

Furthermore, caregivers should be involved in discussions about care to develop their abilities to support self-maintenance and self-management experiences. The National Institute of Health and Care Excellence Clinical Guidelines 108 for HF [5] recommended that caregivers be involved in discussion about self-care management plan. Most caregivers, however, have little knowledge about how to expand their competence to support self-care [9]. Researchers agree that it is critical to engage caregivers in self-care activities to achieve positive health outcomes for HF patients [6,7,9-11].

Methods

This Systematic Review way was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [13]. PRISMA ensures the transparent and thorough reporting of systematic review [14]. The search was conducted for years 2014 to 2019 utilizing three databases: CINHAL, PubMed, and Psych INFO. This five-year period was chosen to synthesize the current findings of literature with evidence-based practice. To extract the appropriate articles, the following key words were used in PubMed: "Self-management OR self-care" AND "family caregivers OR informal caregivers OR relatives OR family" AND "heart failure." The same search strategy was followed with the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Psych Info. The search was limited to English, peer-reviewed, year of publication, and full text research articles. There were no limitations on geographical location or type of patient outcomes because this systematic review aimed to identify all possible self-care outcomes and to involve all possible studies for the purpose of this review.

Eligibility Criteria

Studies were included in the systematic review if they (a) Used a quantitative methodology; (b) Included participants with HF who were > 18 years old; (c) included an informal caregiver; (d) explicitly measured patient outcomes. Studies were excluded in the systematic review if they (a) used a qualitative methodology; the traditional way for systematic review is only including empirical study with statistical outcomes [15]; (b) Included formal caregivers.

Review Process

All screened articles were organized and retrieved using a Microsoft word document and RefWorks reference management software. Articles titles and abstracts were assessed for eligibility after removing duplicates. Then, the full-text articles were retrieved and extracted into a table. The data were extracted based on the following methods: Authors' name, year of publication, country name, design and sample size, purpose, key variables and instruments, and findings. The validity of the studies was assessed using the Systematic Review

Table 1: Quality assessment of the studies included in the review

Author/ yr. pub	Sampling methods	Outcomes measurements (objective, self-report	Response Rate mentioned	Control of Confounding factors	Outcomes measurement Validity and Reliability)	Total percentage	Quality Score
Bidwell al., 2018	Probability sampling	Objective	Yes	Yes	Yes	80%	Good
Bidwell al., 2017	Non-probability sampling	Self-report	No	Yes	Yes	40%	Satisfactory
Bidwell al., 2015	Non-probability sampling	Self-report	No	Yes	Yes	40%	Satisfactory
Deek et al., 2017	Probability sampling	Self-report	Yes	Yes	Yes	80%	Good
Dunbar al., 2016	Probability sampling	Objective	Yes	Yes	Yes	100%	Good
Hooker al., 2018	Probability sampling	Self-report	Yes	Yes	Yes	80%	Good
Lee al., 2015	Non-probability sampling	Self-report	No	Yes	Yes	40%	Satisfactory
Lyons et al., 2015	Non-probability sampling	Self-report	Yes	Yes	Yes	60%	Satisfactory
Srisuket al., 2016	Probability sampling	Self-report	Yes	No	Yes	60%	Satisfactory
Stampet al., 2016	Probability sampling	Self-report	Yes	Yes	Yes	60%	Satisfactory
Velloneet al., 2018	Probability sampling	Self-report	No	Yes	Yes	60%	Satisfactory
Wu et al., 2017	Probability sampling	Self-report	No	Yes	Yes	60%	Satisfactory

of Observational Studies (QATSO) checklist Quality Evaluation Tool [16], which was slightly updated to suit the analysis (Table 1). The QATSO consists of items for assessing external validity, bias, and confounding, and the validity/reliability of outcomes measurement. The total quality score is the total score divided by 100 items multiplied by the total number. Studies were referred to as bad (0-33%), satisfactory (34-66%), and good (67-100%) [16].

Results

Selection of the studies

The electronic search extracted 379 articles (Figure 1); 51 duplicate articles were removed. The remaining 328 articles and abstracts were screened for eligibility and 253 articles were excluded because of inclusion and exclusion criteria. The remaining full-text articles (75) were further screened for eligibility. Of these, 63 articles were excluded because these articles: (a) Did not measure self-care as outcomes (30); (b) did not have full text articles (13); (c) lacked complete instrument development (concept identification, item construction, validity and reliability testing) (5); (d) did not measure patient outcomes (5; (e) was not in English language (1); (f) were qualitative studies (6); (g) was systematic review (1); (h) was integrative review (1); (i) used a mixed method methodology (1). The remaining 12 studies were involved in the systematic review.

Study characteristics

The 12 studies reviewed for this paper were published between 2014 and 2019 (Table 2). The study samples' sample size ranged from 83 to 1192 participants. The samples represented four countries: Italy (n = 5), Lebanon (n = 1), Thailand (1), and the United States (n = 5). Studies from the United States involved White, African American, and Hispanic or Latino. The mean age for participants included in the review ranged, for patients, from 52 to 76 years old and for caregivers from 33 to 64 years old. Both male and female caregivers including spouses/partners, children, and sisters were included in the review, with a dominant percentage of females ranging from 50% to 90%. Six studies (60%) had a cross-sectional design. Of these 12 studies, six studies had an RCT (randomized controlled trial) design [17-22]. The remaining studies used a descriptive design.

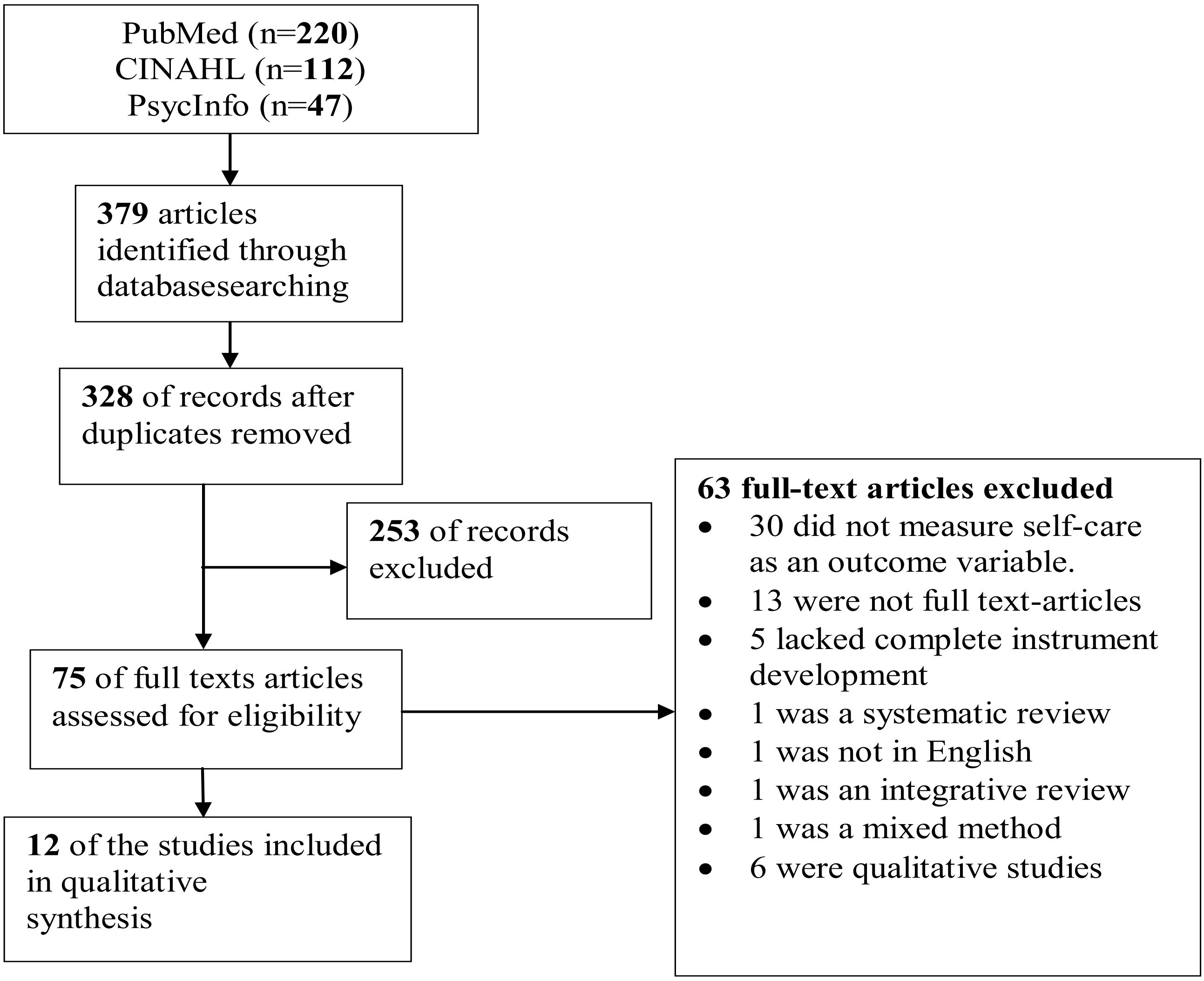

Figure 1: Flow Diagram of the Selection Process of the Studies

Table 2: Characteristics of the Studies

Author/year/ country	**Design Sample (n) population**	**Purpose**	**Key Variables and Instruments**	**Findings / Significance Similarities / Differences**
Lyons et al., 2015 Italy	Cross-sectional N=1192 Outpatient HF	Identify individual and dyadic determinants of patient and caregiver HF self-care confidence using multilevel modeling	• Confidence • Heart Failure Index • Mini Mental State Examination (MMSE). • Minnesota Living with Heart Failure Questionnaire • Carers of Older People in Europe (COPE) Index • Caregiver Burden Inventory • COPE Index	• Dyadic HF Confidence: patients and the caregivers reported moderate levels of HF self-care confidence. • Patient and caregiver levels of confidence were significantly higher when the patient rated the quality of the relationship higher, the caregiver experienced greater mental health, and the patient had lower levels of cognitive impairment (*p*=0.001). **Self-care confidence of the patients:**Men with HF reported lower levels of confidence than women. Patients may be risk for some low of lower confidence whey cared for by spouse. In this study souse caregiver had significantly poorer physical health than adult-child caregiver. Spouse caregiver may focus on their own health and are not likely engage in patient self-management.
Deek et al., 2017 Lebanon	RCT N=260 intervention=126 control=130	Evaluate effectiveness of family focused approach to improve heart failure care in Lebanon quality intervention (FAMILY) study on patient outcomes	• Self-care of heart failure index (A-SCHFI) • Medical Outcome Study Short Form SF-12v2 • SHARE Index	**Self-care:** Improvement in self-care maintenance and confidence, fewer major vascular events and health care utilization in the intervention group (p=0.01). **Readmission rate:** Significant reduction in readmission (*P*=0.02). **Major vascular event (heart attack, cerebral vascular accident and peripheral vascular event):** Statistically significant in control group for 30 days period (*P*= .01) **QOL:** No significant difference in physical and mental health among groups (p=.77, .25,) respectively.
Bidwell et al., 2017 Italy	Secondary analysis of a subset of data from a multi-site observational study N=183 outpatient cardiovascular clinics across 82 Italian provenances	Quantify the influence of patient and caregiver characteristics on patient clinical-event risk in HF.	SF12 Scale Italian Self-Care of HF Index version 6.2	• **Caregiver strain:** Higher caregiver strain significantly associated with lower patient clinical events. (*P*=<.001). • **Caregiver mental health:** Better self-reported caregiver mental health status was associated with lower patient clinical event risk (*P*=0.02) • **Caregiver contribution to HF self-care:** Higher caregiver contributions to self-care maintenance were associated with better patient event-free survival (*P*=0.04) • **10 % decrease or increase in mortality** for each 10-point shift in caregiver contributions to self-care maintenance or management • **Non-spousal caregiver** did not have statistical significance on HF patients clinical event outcomes (*p*=.44)

Bidwell et al., 2015 Italy	Cross-sectional Secondary data analysis N= 364	(a) characterize HF maintenance and management behaviors within a dyadic context, (b) identify individual-and dyad-level determinants of both patient and caregiver contributions to HF self-care maintenance and management behaviors	• Quality of life. • Function activities: The Barthel Index • Mini-Mental State Examination Tools • Caregiver strain: CBI measurement • perceived social support: COPE Index. • HF self-care	• **Caregiver and patient quality of life:** QOL related to physical symptoms of HF was not a determinant of patient self-care or caregiver contributions to patient self-care. QOL related to emotional symptoms of HF was a significant determinant of better self-care maintenance for patients and higher contributions to patient self-care maintenance from caregivers (β=0.42). • **Gender and self-care:** Female caregiver gender were a significant determinant of better patient self-care maintenance (β=3.45 • **Patient cognition:** Patients cognition was significant predictor of caregiver contribution to patient self-care (β=0.30*). • **Caregiver strain was** not a predictor of caregiver contribution to patient self-care. • **Social support** were predictors of caregiver contribution to patient self-care.
Stamp et al., 2016 USA	Randomized study N=117	Examine (1) association of family functioning and the self-care antecedents of perceived confidence and treatment self-regulation (autonomous and controlled) and (2) whether participants exposed to an FPI had greater confidence scores for diet, medications and treatment self-regulation at baseline, four and eight months compared to participants exposed to patient–family education (PFE) intervention or usual care (UC)	• Family support • Perceived confidence: PCS	**Family function:**Family functioning was related to self-care confidence for diet (p=0.02). • The family partnership intervention group significantly improved confidence (p=0.05) and motivation (medications (p=0.004; diet p=0.012) at four months; patient–family education group and usual care did not change.
Dunbar et al., 2016 USA	Secondary data analysis of randomized study to patient and family education (PFE), family partnership intervention (FPI), or usual care (UC) N=117	Determine if family functioning influences response to family-focused interventions aimed at reducing dietary sodium by heart failure (HF) patients.	• Family function: The Family Assessment Device Questionnaire • Depressive symptoms: (BDI-II)	**Family Function:** In the poor family functioning groups, FPI and PFE had lower mean urine sodium than UC (p < .05) at 4 months, and FPI remained lower than UC at 8 months (p < .05). For good family functioning groups, FPI and PFE had lower mean sodium levels by 3-day food record at 4 and 8 months compared to the UC group. **Depression:** Those who have poor family function have higher depressive symptoms and higher level of NA.

Hooker et al., 2018 USA	Cross-sectional N=99	Examine the associations among mutuality, patient self-care confidence (beliefs in abilities to engage in self-care behaviors) and maintenance (behaviors such as medication adherence, activity, and low salt intake), caregiver confidence in and maintenance of patient care, and caregiver perceived burden	• Mutuality: Mutuality Scale of the Family Caregiving Inventory • Self-care: SCHFI. • The Caregiver Contributions to self-care: • Perceived caregiver burden: ZBI-SF.	• The more likely mutual care the more confident level (r=.33*). • Patients and caregivers who perceived better mutuality also reported more confidence in patient self-care, and for patients, those who were more confident also reported better maintenance.
Lee et al., 2015 Italy	Secondary data analysis of cross-sectional data collecting during a study of Italian heart failure patients and their caregivers N= 509	• Identify and characterize archetypes (i.e., naturally occurring patterns) of heart failure patient-caregiver dyads with respect to patient and caregiver contributions to self-care. • Identify additional patient caregiver- and dyadic-level factors that were helpful in determining which of the observed archetypes the dyad was most likely to embody.N=509	• Patient and caregiver contributions to self-care: CCSCHFI • Patient comorbidities: Charlson comorbidity index • Patient cognitive function: Mini mental state examination • Patient activities of daily living: Barthel index • Patient physical and emotional quality of life: Minnesota living with heart failure questionnaire • Caregiver quality of life: SF 12 • Caregiver strain: CBI	• Novice and complementary heart failure dyadic archetype: patients in this archetype reported greater contributions to self-care maintenance than their caregivers. In contrast, caregivers reported greater contributions than patients to self-care management (i.e., complementary contributions). Older patient age, better emotional QOL, fewer limitations to the patient's activities of daily living, and dyads predominantly comprising patients and their adult child caregivers were additional attributes of the novice and complementary dyadic archetype of contributions to heart failure self-care (p=0.044, 0.023, 0.035), respectively. • Patients in the inconsistent and compensatory dyadic archetype of contributions to heart failure self-care had fewest limitations in performing activities of daily living and more of them had hospitalizations for heart failure in the past year, compared with the other archetypes. (p=0.035). • Expert and collaborative heart failure dyadic archetype: Patients of this archetype also had the worst mental and physical QOL and the greatest limitations to activities of daily living compared with the other archetypes.

Srisuk et al., 2016 Thailand	RCT N= 83	• Develop and evaluate a family-based education program for patients with HF and their carers residing in rural Thailand	• HF knowledge: DHFKS. • Career perceived control over managing patient HF symptoms: CAS-R • Self-care: SCHFI • HF QOL: MLHF	• HF knowledge: Patients in education group had a 2.2-point higher DHFKS score than those in usual care group at three months [95% CI (1.06, 3.34), P < 0.001] and a 1.7- point higher score at six months [95% CI (0.64, 2.87), P = 0.002]. • Career perceived control over managing patient HF symptoms: The fixed effects revealed that carers perceived control over managing patient HF symptoms, as measured by the CASR, changed significantly with time [F (2/91) = 11.80, P < 0.001] and there was significant interaction between groups and time [F (2/91) = 6.53, P < 0.001]. • Self-care: The fixed effects revealed that mean self-care maintenance [F (2/88) = 22.7001], self-care management [F (2/56)= 16.26, P < 0.001] and self-care confidence [F (2/93) = 75.68, P < 0.001] scores changed significantly with time. • HF QOL: The fixed effects revealed that the emotional dimension of health-related quality of life, as measured by the MLHF, showed significant differences between the patient groups [F (2/99) = 5.01, P = 0.027]. patients in the education group had a 1.7-point lower MLHF emotional dimension score (lower scores indicate better quality of life) than those in the usual care group [95% CI (-3. 05, -0.35), P = 0.014.
Bidwell et al., 2018 USA	Secondary data of cross-sectional data analysis. N=114	• Identify configurations of shared HF knowledge in patient-caregiver dyads • Characterize dyads within each configuration by comparing sociodemographic factors, HF characteristics, and psychosocial factors • Quantify the relationship between configurations and patient self-care adherence to managing dietary sodium and HF medications	• Heart failure knowledge: AHFKT • Autonomy support: (FCCQ-P, FCCQ-F) • Depressive symptoms: BDI-II • Patient quality of life: MLHFQ • Caregiver quality of life: SF-12 PCS • Sodium intake: Self-report and 3DFR • Medication adherence: MEMS	• Dyadic HF knowledge and depressive symptoms: Lower ejection fraction and higher depressive symptoms were associated with poorer dyadic knowledge. • Autonomy support: HF patients in the "Knowledgeable Together" group perceived greater autonomy supportive communication from their family caregiver. • Caregiver QOL: Caregiver health related QOL in this sample was generally lower than national norms, and especially low in the "Knowledge Gap" group.

Vellone et al., 2018 Italy	RCT N=366	Evaluate the influence of mutuality as a whole and of its dimensions on self-care maintenance, management, and confidence in HF patient–caregiver dyads.	• Patient and caregiver mutuality • Patient self-care and caregiver contribution to self-care: Self-Care of Heart Failure Index	• For the Mutuality Scale as a whole and for the dimensions of shared pleasurable activities and reciprocity, patients scored significantly higher than their caregivers • Caregivers, however, scored higher than patients on the love and affection dimension • In the patient version, the strongest correlations were between the Shared Pleasurable Activities and Reciprocity dimensions (r = .826); the lowest correlations was between Love and Affection and Shared Values dimensions (r = .613). • In the caregiver version the strongest correlation was between Shared • Pleasurable Activities and Reciprocity dimensions (r = .814); but the lowest correlation was between Love and Affection and Reciprocity (r = .508). • Regarding the love and affection dimension, the only actor effect that we found was on self-care confidence; a higher score on the love and affection dimension was associated with higher caregiver self-care confidence (B = 7.369, p < .001). • In respect of scores on the shared values dimension, we observed a partner effect on patient self-care maintenance (B = 2.542, p = .006)
Wu et al., 2017 USA	RCT- secondary data analysis N= 113 Pairs	Explore how health literacy levels of patients with HF and their FMs influence HF knowledge and self-care behaviors (i.e., medication adherence and sodium intake).	• Health literacy: Rapid Estimate of Adult Literacy in Medicine • HF knowledge: Atlanta Heart Failure Knowledge Test • Self-care behaviors • Medication adherence: MMAS-8 Scale • Sodium intake: A self-report measure, 3-day food record.	• Patients with LHL had significantly lower HF knowledge (p < .001) and their FMs also had significantly lower HF knowledge (p = .001) than those with HHL. • Patients with LHL also trended to have lower medication adherence (p = .077), and their 24-hr urinary sodium levels were higher by 650.4 mg compared with patients with HHL, although both did not reach significant level (p = .072). • When both patient and FM had LHL, both the patient and FM HF knowledge was significantly lower (both ps< .001), and the patient medication adherence was significantly lower (p = .026) than the HHL and DHL groups. • It is possible that when both HF patients and FMs have LHL, they both have less understanding of HF and treatment that cause more difficulty understanding and following medication instructions and which may be one factor leading to patient medication nonadherence.

Studies categorization

Relationship between caregiver contribution and patient self-management outcomes

The systematic review revealed that caregivers contribute to self-care and patient confidence. Five studies reported a level of confidence for health behavior (exercise, medication adherence, and diet) as a significant predictor for caregiver contributions to patient self-care [17,18,21-23]. One study found that patients who were cared for by their spouses experienced a risk for a low level of confidence compared to adults-children caregivers [24]. This was because the spouse caregivers in this study had poor physical and mental health compared to adult-children caregivers. However, in the same study also found that the level of confidence among patients mediated the high level of medication adherence and diet [24].

Caregiver and patient health related quality of life

Four studies reported the relationship between caregiver contribution to patient self-care and health related quality of life [17,20,25,26]. For example, two studies reported the inverse relationship between caregiver contributions to self-care and patient physical and mental health related quality of life (p = 0.77, 0.25) respectively [17,26]. However, two studies found the health quality of life related to emotional symptoms was a significant determinant of better self-care from caregivers to their recipients [25,26].

Caregiver and patient clinical outcomes

Three studies reported the impact of involvement of caregivers on patient self-care caused a significant reduction in readmission, hospitalization, and mortality of patients (p = 0.02) [17,26,27]. Also, the study by Deek, et al. [17] in their study found patients who involved their family centered- self-care intervention had lower readmission rates and fewer major vascular events (heart attack, cerebral vascular) than control group patients (p = 0.01).

Caregiver patient motivation for medication adherence and diet

Two studies reported the relationship between caregiver contributions to patient self-care and patient motivation for medication adherence and diet [18,19]. For example, the study by Stamp, et al. [18] showed that the motivation for medication and diet was significant among patients. Dunbar, et al. [19] found an inverse relationship between poor family function and high level of Na in diet among patients with heart failure.

Patient-caregiver Dyads and self-care Outcomes. Five studies demonstrated the influence of mutuality on self-care outcomes for HF patients [21,23-25,28]. Specifically, among the six studies, Vellone, et al. [21] investigated the three dimensions of self-care including self-maintenance, management and confidence.

Discussion

The purpose of this systematic review was to examine the impact of caregivers' contributions to self-care on patient outcomes. The findings revealed a link between the contribution of caregivers to patient self-care and patient outcomes. These findings are consistent with those of other reviews conducted among patients with other chronic diseases [28-31].

The findings of this review demonstrate the evolution of self-care science in the contribution of caregivers to HF self-care. These findings indicate that patients' physical and psychological health determines patients' self-care outcomes [27]. These findings from our review are consistent with findings from other reviews of family care and their impact on the physical and mental health of the patient [32]. As far as the caregiver is concerned, the strain, the quality of life, and social support are linked to the caregiver in the context of self-care [25]. Health care providers should take caregivers' situation into account when they are involved in patient self-care. The review also highlighted the importance of a dyadic approach to interventions such as educational supplements and archetypes of dyadic caregivers. These findings indicate that the dyadic approach plays a significant role in patient self-care outcomes [26, 27].

Overall, although the studies involved in this systematic review showed a significant impact on patient self-care outcomes, there was a discrepancy between the results. There are three causes that explain the discrepancy in findings. First, there are differences in the cultural background of the populations studied. Second, the sample size ranges from 83 to 1192 participants. Third, age ranging from 52 to 76 years of age. As a result, this discrepancy in findings suggested that caregivers' experiences may differ across age groups, populations, patient comorbidities, and cultures, indicating the need to understand the perceptions of caregivers about their contribution to HF self-care.

Limitations

These findings demonstrate the limitations of the studies reviewed. First, the majority of the studies used secondary data analysis with cross-sectional design. Most of the studies in this review lack probability sampling, which confines causality and generalizability of the findings to populations with heart failure. Furthermore, a plurality of the studies used self-report measures of caregiver contributions to patient self-care, which could present recall bias and a misestimate of caregiver contributions. Also, these studies used dissimilar definition criteria for caregiver contributions to patient self-care. As a result, more studies are needed to measure caregiver contributions to patient self-care objectively and consistently.

Moreover, this review is susceptible to assorted limitations, which are deep-rooted in the systematic review. This review is subject to selection and reporting bias because this systematic review was confined to English full-text studies, year of publication, and only quantitative studies retrieved from three electronic databases. As a result, non-English reviews, books, theses or dissertations, and studies obtained through a manual search or references list were not included.

Implications for Clinical Practice and Future Research

The findings from this review have various implications for the clinical and research arena. Clinically, we need to educate healthcare providers about the importance of involvement of caregivers in patient self-care activities and all educational sessions. Also, it is imperative to encourage providers and practitioners to conduct interventions that focus on quality of patient-caregiver relationships (e.g., mutuality) to improve patient self-care and caregiver contributions to self-care. Most of the studies included in this analysis used secondary data analysis with cross-sectional designs and various measures of self-care. Therefore, future studies are needed to measure caregiver contributions to patient self-care using objective measures; longer follow-up periods are also essential to assess long-term self-care activities on outcomes, such as readmission, mortality, and quality of life. More longitudinal studies are needed to examine the impact of caregiver contributions to patient self-care on outcomes.

Conclusion

This systematic review sought to incorporate findings of quantitative studies to examine the impact of caregiver contributions to self-care on HF patient outcomes. Findings showed that caregiver strains, gender, and caregiver quality of life were related to greater caregiver contributions to patient self-care. Also, findings showed mixed results concerning the relationship between caregiver roles regarding symptoms and the treatment evaluation process. Furthermore, the findings highlighted that self-confidence mediates and moderates the relationship between patient self-care and outcomes. The findings of this systematic review accentuate the significance of the caregiver role, specifically the dyadic approach and mutuality. Given these findings, it is important to merge interventions focusing on a dyadic approach.

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