

Self-Care and Quality of Life Among Adult Patients With Heart Failure: Scoping Review

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Abstract

Introduction: Although self-care has a therapeutic effect on heart failure (HF), patients experience a marked reduction in physical and executive function, resulting in poor quality of life (QoL). A literature review revealed limited evidence regarding the possible relationship between self-care and QoL in HF patients. Therefore, this scoping review aimed to identify scientific evidence that examines the extent of self-care, QoL, and relationship between self-care and QoL in patients with HF.

Methods: Full-text research published from March 23, 2010, to March 23, 2020, written in English, that had content on both self-care and QoL among adult patients with HF was included. A literature search of electronic databases and web searches was conducted for published articles. Four databases were used: MEDLINE, Scopus, Web of Science, and the Cochrane Library. Studies collected from Google and Google Scholar web searches were also included.

Results: Of 1,537 papers identified by the search, 12 were included. The reviewed studies included 3,127 patients. Ten articles used a cross-sectional study design, whereas the remaining articles used a longitudinal and quasi-experimental design. This review found that the extent of self-care practices among patients with HF was inadequate, a significant proportion of patients enrolled in the reviewed studies had a moderate QoL, and higher self-care practices were associated with a better QoL. Self-care behavior and QoL were affected by social support, sex, age, educational level, place of residence, illness knowledge, presence of comorbidities, and functional classification of HF.

Conclusion: Self-care behavior was positively correlated with QoL in patients with HF. Self-care and QoL in these patients have been reported to be affected by several factors. Further research with a rigorous study design is recommended to investigate the influence of self-care practices on QoL in patients with HF.

Keywords

self-care, self-management, quality of life, QoL, adult, heart failure

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Introduction

Cardiovascular disease (CVD) is a major cause of morbidity and mortality (Li et al., 2021). Of all CVD, heart failure (HF) accounts for most deaths, especially in adults over the age of 65 years, and poses a significant burden to health systems (Savarese & Lund, 2017). Worldwide, in Europe, and in the United States, HF affects more than 64.3, 15, and 6 million people, respectively (Groenewegen et al., 2020; Lippi & Sanchis-Gomar, 2020; Network, 2020; Virani et al., 2021).

Studies have also demonstrated that HF negatively affects the quality of life (QoL) (McHorney et al., 2021; Molla et al., 2021; Yeh & Shao, 2021). The World Health Organization (WHO) defines QoL as individuals' perception of their

position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, concerns, and standard (Wulfovich et al., 2022). In healthcare settings, the concept of QoL refers to a patient's view of the overall effect of their clinical conditions and treatment on their lives (Comin-Colet et al., 2016).

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Specifically, it measures physical, psychological (emotional and cognitive), and social functioning (Seid, 2020). Poor QoL is consistently linked to HF-related outcomes in patients with HF, including higher mortality, frequent hospitalization, and poor self-care adherence (Molla et al., 2022; Seid et al., 2022; Wisnicka et al., 2022).

Self-care is the practice of maintaining one's health through preventative and health-promoting behaviors (Jaarsma et al., 2021). Self-care for HF encompasses a range of activities, including limiting alcohol intake, sodium and fluid restriction, cessation of smoking, adherence to the treatment schedule, daily weight monitoring, regular physical activity, diet, prompt identification and monitoring of signs and symptoms of disease exacerbation, and the search for an adequate response to possible deterioration (Asadi et al., 2019; Jaarsma et al., 2021; Jiang & Wang, 2021; Lee et al., 2018; Vellone et al., 2017). Self-care maintenance, self-care management, and self-care confidence are the three main concepts of self-care in HF. Self-care maintenance reflects routine symptom monitoring and treatment adherence. Self-care management is a process initiated by symptom recognition and evaluation which stimulates the use of self-care treatments, while self-care confidence is thought to mediate the effect of self-care on various outcomes (Bidwell et al., 2015; Riegel & Dickson, 2008).

Studies have shown that HF patients who received self-care interventions showed a decrease in rehospitalization, morbidity, and mortality rate (Jonkman et al., 2016; Ruppert et al., 2016; Toukhsati et al., 2019). Furthermore, patients with HF who engage in effective self-care experience better health outcomes than those who do not (Jaarsma et al., 2021; Pobrotyn et al., 2021).

However, despite the growing importance of good self-care practices in improving QoL, many patients with HF find it difficult to perform self-care activities which could be due to a lack of formal initiatives to empower people with HF to adopt self-care, perceived need for self-care, understanding of the influence of self-care on QoL, motivation, support from healthcare providers, and the complexity of self-care (Jaarsma et al., 2017; Network, 2020).

It is believed that a full understanding of self-care and its influence on the QoL among patients with HF will help nurses and other healthcare providers develop an effective self-care strategy that improves the unmet needs of patients to maximize their QoL.

A preliminary search of PROSPERO, MEDLINE, Cochrane Database of Systematic Reviews, and *JBIR Evidence Synthesis* databases was conducted, and no current or ongoing scoping or systematic reviews on the topic were identified. Therefore, this scoping review aimed to identify scientific evidence that fills gaps in the literature by focusing on the extent of self-care, QoL, and their relationship among patients with HF.

Review Question

1. What have been studied regarding the extent of self-care, quality of life, and their relationship and determinants among adult patients with heart failure?

Methodology

This scoping review was conducted in accordance with the Joanna Briggs Institute methodology for scoping reviews (Peters et al., 2020) and in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) ("PRISMA Extension for Scoping Reviews (Tricco et al., 2018)).

Eligibility Criteria

The PCC (participant, concept, and context) strategy was adapted to determine the inclusion criteria. Full-text research published in English from March 23, 2010, to March 23, 2020, was considered. Incomplete articles, such as conference abstracts and those whose full text was not accessible, were excluded.

Participants

This scoping review considered studies that included adult HF patients aged >18 years in which self-care and QoL were included as the main concepts.

Concepts

The concepts considered in this review were self-care, QoL, and HF.

Context

This scoping review considered studies that have been conducted in healthcare facilities of any types, including, but not restricted to, hospitals, medical centers, and long-term care facilities. Studies from any geographical setting were eligible for inclusion.

Information Source

To identify potentially relevant articles, PubMed, Cochrane Central, Scopus, and Web of Sciences databases were searched from March 23, 2010, to March 23, 2020. In addition, the review also considered unpublished gray literature from Google Scholars and OpenGrey. The initial search strategy used when searching the MEDLINE (PubMed) database is presented in Appendix I. Following the search, all

identified records were collected and uploaded into EndNote X9 version software, and duplicates were removed.

Search Strategy

The text words contained in the titles and abstracts of the relevant articles and the index terms used to describe the articles were used to develop the full search strategy. An initial limited search of the MEDLINE database was performed to identify articles on the topic. The search strategy, including all the identified keywords and index terms, was adapted for each information source.

The identified keywords were combined with the “OR” operator and then linked the search strategies for the two axes with the “AND” operator to search for studies.

The key terms used for the MEDLINE database searches were ((((((Self-care) OR (“Self Care”) OR (Self-Care)) OR (Care, Self) OR (Self Management) OR (Self-Management) OR (“Management, Self”) AND (((“qualit* of life”) OR (“life qualit*”) OR (“health related qualit* of life”) OR (“health?related qualit* of life”) OR (HRQOL) AND (((((((((((“heart failure”) OR (“cardiac failure”) OR (“heart decompensation”) OR (“decompensation,heart”) OR (“heart failure,right?sided”) OR (“heart?failure,right sided”) OR (“right-sided heart failure”) OR (“right sided heart failure”) OR (“right sided heart failure”) OR (“congestive heart failure”) OR (“heart failure,congestive”) OR (“heart failure,left-sided”) OR (“heart failure left sided”) OR (“left sided heart failure”) OR (“Left?sided heart failure”)).

Selection of Sources of Evidence

Following the search and removal of duplicated articles, titles and abstracts were screened by two independent reviewers to assess the inclusion criteria for the review. Potentially relevant studies were retrieved in full text, and their citation details were imported into the software. The reference lists of articles selected for full-text review included in the review were screened for additional papers. Full-text papers that did not meet the inclusion criteria were excluded, and the reasons for their exclusion were provided (see Appendix II). Any disagreements between reviewers were resolved through discussion.

Data Charting Process

Data were charted from the papers included in the scoping review by two independent reviewers, using a data extraction tool developed by the reviewers (see Appendix III). Reviewers independently extracted data from each included article, and any disagreements arose between reviewers were resolved through discussion.

Data Items

The extracted data included specific details about the years in which the studies were published, origin of the study, type of study, methods (study design, sample size, and data analysis technique), key findings relevant to the review question (self-care, QoL, their relationships, and determinants), and limitations of the study.

Synthesis of Results

The charted articles were grouped according to the type of database used in the search and summarized according to the type of concept. Following the search of each database, the citations of searched articles were imported into the group created by the names of the respective databases and then copied into another group created based on the type concepts of the included articles. For example, articles that had content only on self-care, QoL, or both were grouped into different categories. Finally, articles that potentially met the inclusion criteria were grouped together, and data were extracted using the developed data extraction tool. All components of the extracted data are presented in tabular form in a manner that aligns with the objective of this scoping review (Appendix IV).

Results

Selection of Sources of Evidence

A total of 1,537 studies in English language were identified using search strategies, of which 1,273 remained after duplicates were removed. Of the remaining, 1,238 articles were excluded after their titles and abstracts were reviewed, leaving 35 studies to be read in full text. Ultimately, 12 eligible articles were included in the final review. The flow of articles from identification to final inclusion is shown in Figure 1.

Characteristics of Included Studies

In total, 12 primary English-language articles published between 2010 and 2020 were considered in the review. In terms of country of origin, four articles were conducted in the United States (Auld et al., 2018; Britz & Dunn, 2010; Buck et al., 2012; Koirala et al., 2020), two in Italy (Buck et al., 2015; Vellone et al., 2014), and one in the Netherlands (Kessing et al., 2017), China (Liu et al., 2014), Taiwan (Tung et al., 2013), Iran (Asadi et al., 2019), Canada (Seto et al., 2011), and Ethiopia (Seid, 2020).

A total of 3,127 populations were studied in all reviewed articles. The maximum included sample size was 1,192 population (Buck et al., 2015), while the minimum included sample size was 30 patients (Britz & Dunn, 2010). Ten out of 12 articles used a cross-sectional study design (Asadi et al., 2019;

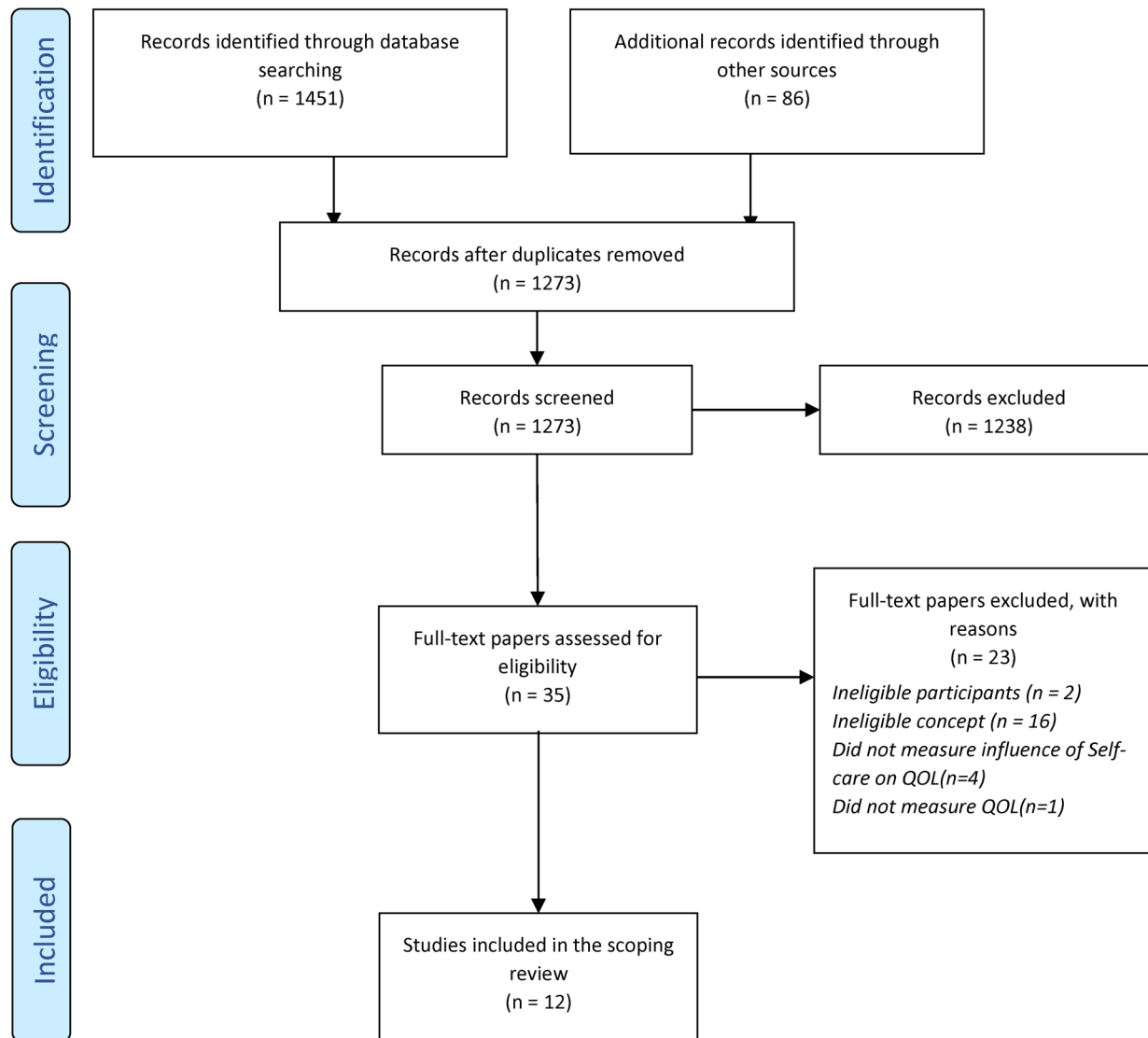


Figure 1. Search results and study selection and inclusion process (Moher et al., 2009).

Auld et al., 2018; Britz & Dunn, 2010; Buck et al., 2012, 2015; Koirala et al., 2020; Liu et al., 2014; Seid, 2020; Seto et al., 2011; Vellone et al., 2014), while the remaining articles used a longitudinal (Kessing et al., 2017) and quasi-experimental study design (Tung et al., 2013).

The included studies varied widely in terms of the instruments used to measure self-care behavior and QoL in patients with HF. Overall, six different types of instruments were identified in the included studies. Of these, two were used to assess self-care, and the other four were used to measure QoL. Of the total articles, eight utilized the Self-Care of Heart Failure Index (SCHFI) (Auld et al., 2018; Britz & Dunn, 2010; Buck et al., 2012, 2015; Koirala et al., 2020; Seto et al., 2011; Tung et al., 2013; Vellone et al., 2014), and four used the European Heart Failure Self-care Behavior Scale (EHFScBS-9) (Asadi et al., 2019; Kessing et al., 2017; Liu et al., 2014; Seid, 2020), to measure self-care. Among the

included articles, QoL was measured using four different types of instruments. Nine out of 12 articles used the Minnesota Living with HF Questionnaire (MLHFQ) (Auld et al., 2018; Britz & Dunn, 2010; Buck et al., 2012, 2015; Kessing et al., 2017; Liu et al., 2014; Seid, 2020; Seto et al., 2011; Tung et al., 2013), one article used the Short Form Health Survey 12 (SF-12) (Vellone et al., 2014), one other article used the Short Form Health Survey 36 (SF-36) (Asadi et al., 2019), and the remaining article used the visual analytic scale (Koirala et al., 2020) (see Appendix IV).

The Extent of Self-Care and Quality of Life Among Patients With Heart Failure

From the included studies, there was a different type of finding in terms of self-care practices among patients with

HF. Different types of instruments have been utilized in reviewed articles to measure self-care practice as a result, and different ways of presentation in findings were observed as some of them indicated self-care in terms of the mean score without classifying it as adequate or inadequate practice. However, most of the reviewed articles presented their finding in categorized forms of self-care score (Auld et al., 2018; Britz & Dunn, 2010; Buck et al., 2012, 2015; Kessing et al., 2017; Koirala et al., 2020; Seid, 2020; Seto et al., 2011; Tung et al., 2013).

Of the included studies, the majority found that the extent of self-care practice among patients with HF was inadequate or below the established cut-off point for adequate self-care score (Auld et al., 2018; Britz & Dunn, 2010; Buck et al., 2012, 2015; Kessing et al., 2017; Koirala et al., 2020; Seid, 2020; Seto et al., 2011; Tung et al., 2013). Specifically, approximately 48% of the participants had inadequate self-care practice in Ethiopia (Seid, 2020); in Italy, only 20% of the patients performed adequate self-care practice (Buck et al., 2015); in the United States, HF self-care was poor, with mean scores below the established cut-off for adequate self-care scores, a standardized score of 70 on each subscale of the SCHFI (Koirala et al., 2020) score (Auld et al., 2018; Britz & Dunn, 2010; Buck et al., 2012); and in Canada, patients did not perform adequate self-care as measured with the SCHFI (Seto et al., 2011).

A study conducted in Iran showed that the mean score of self-care behavior was 39.42 ± 7.04 , and most of the patients (67.5%) were at a moderate level (Asadi et al., 2019), while a study conducted in China indicated that the overall scores for self-care ranged between 15 and 63, with an average of 43.2 ± 9.4 . Among the three dimensions of self-care, healthy behaviors in general was found to be the best self-care behavior (mean = 9.8, SD = 3.6) (Liu et al., 2014).

Regarding the QoL among patients with HF, a variety of findings were identified from the included studies. In Ethiopia (Seid, 2020), the total mean score for QoL was 46.4 ± 22.4 , while in the United States (Auld et al., 2018), it was 46.9 ± 25.4 . As the mean score in both studies falls within the accepted cut-off point for poor QoL, which is above 45, this indicates that the participants' QoL was low. Moderate QoL was reported by the majority of patients in the other three articles (Britz & Dunn, 2010; Koirala et al., 2020; Seto et al., 2011), and good QoL was reported in two articles (Asadi et al., 2019; Liu et al., 2014). The remaining articles described QoL only in terms of the mean score without classifying it (Kessing et al., 2017; Tung et al., 2013; Vellone et al., 2014).

The Influence of Self-Care on Quality of Life Among Patients With Heart Failure

In most of the reviewed studies, self-care was found to have a positive relationship with QoL among patients with HF (Britz

& Dunn, 2010; Buck et al., 2012, 2015; Kessing et al., 2017; Koirala et al., 2020; Seid, 2020; Seto et al., 2011; Tung et al., 2013). For instance, one study conducted in the United States revealed that each 1-point increase in self-care confidence was associated with a decrease in the likelihood of poorer health-related QoL; however, in this study, no significant correlations were found between self-care maintenance or management and health-related QoL (Buck et al., 2012).

Surprisingly, a negative correlation was observed in two other included studies (Auld et al., 2018; Vellone et al., 2014). Specifically, a study conducted by Vellone et al. found that higher self-care was related to lower physical QoL in patients with HF (Vellone et al., 2014). Similarly, another study conducted by Auld et al. identified that better self-care maintenance and management were both independently associated with worse emotional health-related QoL (Auld et al., 2018), and the remaining other studies found that self-care had no influence on or correlation with QoL (Asadi et al., 2019; Liu et al., 2014).

Factors Associated With Self-Care and Quality of Life Among Patients With Heart Failure

Of the included articles, eight of them had assessed the predictors and determinants of self-care behavior and QoL in patients with HF (Asadi et al., 2019; Britz & Dunn, 2010; Buck et al., 2015; Kessing et al., 2017; Koirala et al., 2020; Liu et al., 2014; Seid, 2020; Seto et al., 2011). Of the identified factors, marital status (Asadi et al., 2019), social support, educational level, living status, and HF functional classification were associated with self-care behavior (Koirala et al., 2020). Higher education, better NYHA HF functional class, and higher social support were associated with higher self-care confidence and better self-care (Koirala et al., 2020). In other included articles, factors such as illness knowledge, gender, age, and perceived general health were also found to determine self-care confidence (Britz & Dunn, 2010) and self-care behavior (Liu et al., 2014).

Moreover, the reviewed studies identified several factors that predict the QoL of patients with HF. Gender, age, educational level, smoking, presence of comorbidities, place of residence, self-care behavior, HF functional class, and living status were found to be associated with QoL (Asadi et al., 2019; Buck et al., 2015; Kessing et al., 2017; Liu et al., 2014; Seid, 2020; Seto et al., 2011). The reviewed articles have shown that male sex, older age, living in an urban area, having a university-level education, a free job (Asadi et al., 2019), higher self-care behavior (Seto et al., 2011), illness knowledge (Liu et al., 2014), and the presence of fewer comorbidities (Buck et al., 2015; Seto et al., 2011) were associated with a better QoL. While living in rural areas, inadequate self-care, smoking, and having a lower

educational level were found to be predictors of poor QoL in patients with HF (Kessing et al., 2017; Seid, 2020).

Discussion

This scoping review aimed to map available scientific evidence that has been conducted over a 10-year period between March 2010 and March 2020 to answer the question of what have been studied regarding the extent of self-care, QoL, and their relationship and determinants among adult patients with HF.

This review found that self-care practices among patients with HF were inadequate or poor. The current finding is in line with a scientific statement by professionals from the American Heart Association (AHA), which reported that the vast majority of people do not perform self-care (Riegel et al., 2017). Similarly, the present finding was also in line with other studies that showed that patient non-adherence to recommended self-care activities is common throughout the globe (Davis et al., 2015; Jaarsma et al., 2013; Moser et al., 2012; Ok & Choi, 2015).

Despite the fact that the AHA recommends that all patients with HF should strongly engage in adequate self-care activities such as taking prescribed medication on regular bases and on time, routine monitoring of changes in signs and symptoms of HF, a daily diet with 2 to 4 g of sodium, discouraging alcohol or limiting to one drinks per day, weight loss when body mass index (BMI) exceeds 40 kg/m², routine exercise at levels based on prescriptions, hand washing, smoking cessation, daily dental hygiene, and annual vaccination against influenza (Barbara Riegel et al., 2009), majority of the reviewed articles reported that self-care practice among patients with HF was inadequate, which implies that the majority of the HF patients never or infrequently performed self-care practices in areas such as daily weight monitoring, limiting salt consumption and fluid intake, engaging in minimal physical activity, and taking their medications as prescribed (Siabani et al., 2016).

Inadequate self-care practice could be related to several identified factors that are found to impede self-care practice which include lack of social support, low educational level, depression, in a rural area, poor cognition, older age, poor HF functional classification, lack of recall about basic elements of the nature of HF, and lack of illness knowledge and self-care skill (Britz & Dunn, 2010; Clark et al., 2014; Cocchieri et al., 2015; Graven & Grant, 2014; Harkness et al., 2015; Jaarsma et al., 2017; Kessing et al., 2016; Koirala et al., 2020; Liu et al., 2014; Seid, 2020).

Although the majority of studies included in this review reported a moderate QoL among patients with HF, other studies reported a low QoL (Iqbal et al., 2010; Kozhekenova et al., 2014), and in this review, low QoL was attributed to inadequate or poor self-care behavior and several other aforementioned factors. This finding is also

supported by other studies (Hwang et al., 2014; Nesbitt et al., 2014; Sedlar et al., 2017; Vellone et al., 2017).

Moreover, the findings from this review also revealed that HF self-care behavior has a positive influence on the QoL. This finding indicates a positive correlation between self-care behavior and QoL. In other words, the higher the self-care practice, the better is the QoL. Our findings are in line with those of randomized controlled trial studies (Dunbar et al., 2015; Shao et al., 2013). However, based on this study, we could not determine whether this relationship was influenced by other factors. Additionally, most of the included studies were conducted using a cross-sectional design; as a result, it was difficult for reviewers to determine the cause-and-effect relationships between self-care behavior and QoL. Therefore, adequately powered and designed studies are needed to identify possible cause-and-effect relationships between self-care and QoL in patients with HF.

As with all review studies, the findings of this study should be interpreted in light of its limitations. First, most of the included studies had used a cross-sectional design. Therefore, no conclusions could be drawn regarding the causality of the observed relationships. Second, methodological heterogeneity across the reviewed articles resulted in difficulties in drawing strong conclusions about the subject of interest. Third, the majority of the included studies were conducted using a small sample size. Finally, a significant number of the included review results depended on the patients' self-reporting of self-care. This may result in misinformation and social desirability bias.

Conclusion

Although the methodological heterogeneity across the reviewed articles interfered considerably with drawing strong conclusions, the majority of articles have shown that self-care practices among patients with HF were inadequate, and self-care had a positive correlation with the QoL in patients with HF. Further research with a strong study design is recommended to draw a strong conclusion and investigate the influence of self-care behavior on QoL among patients with HF.

The implication of the study: These findings may be useful to inform nurses and other healthcare providers about the need for further research with rigorous study designs and methods to evaluate the causality of the observed relationships between self-care practices and QoL among patients with HF.

Author Contribution

All authors made a significant contribution to the work reported, whether in the conception, study design, execution, acquisition of data, analysis, and interpretation or, in all these areas, took part in drafting, revising, or critically reviewing the article; gave the final approval of the version to be published; agreed on the journal to which the article has been submitted; and agreed to be accountable for all aspects of the work.

Declaration of Conflicting Interests

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References

- Asadi, P., Ahmadi, S., Abdi, A., Shareef, O. H., Mohamadyari, T., & Miri, J. (2019). Relationship between self-care behaviors and quality of life in patients with heart failure. *Heliyon*, 5(9), e02493. <https://doi.org/10.1016/j.heliyon.2019.e02493>
- Auld, J. P., Mudd, J. O., Gelow, J. M., Hiatt, S. O., & Lee, C. S. (2018). Self-care moderates the relationship between symptoms and health-related quality of life in heart failure. *The Journal of Cardiovascular Nursing*, 33(3), 217–224. <https://doi.org/10.1097/JCN.0000000000000447>
- Bidwell, J. T., Vellone, E., Lyons, K. S., D'Agostino, F., Riegel, B., Juárez-Vela, R., & Lee, C. S. (2015). Determinants of heart failure self-care maintenance and management in patients and caregivers: A dyadic analysis. *Research in Nursing & Health*, 38(5), 392–402. <https://doi.org/10.1002/nur.21675>
- Britz, J. A., & Dunn, K. S. (2010). Self-care and quality of life among patients with heart failure. *Journal of the American Academy of Nurse Practitioners*, 22(9), 480–487. <https://doi.org/10.1111/j.1745-7599.2010.00538.x>
- Buck, H. G., Dickson, V. V., Fida, R., Riegel, B., D'Agostino, F., Alvaro, R., & Vellone, E. (2015). Predictors of hospitalization and quality of life in heart failure: A model of comorbidity, self-efficacy and self-care. *International Journal of Nursing Studies*, 52(11), 1714–1722. <https://doi.org/10.1016/j.ijnurstu.2015.06.018>
- Buck, H. G., Lee, C. S., Moser, D. K., Albert, N. M., Lennie, T., Bentley, B., & Riegel, B. (2012). Relationship between self-care and health-related quality of life in older adults with moderate to advanced heart failure. *The Journal of Cardiovascular Nursing*, 27(1), 8–15. <https://doi.org/10.1097/JCN.0b013e3182106299>
- Clark, A. M., Spaling, M., Harkness, K., Spiers, J., Strachan, P. H., Thompson, D. R., & Currie, K. (2014). Determinants of effective heart failure self-care: A systematic review of patients' and caregivers' perceptions. *Heart*, 100(9), 716–721. <https://doi.org/10.1136/heartjnl-2013-304852>
- Cocchieri, A., Riegel, B., D'Agostino, F., Rocco, G., Fida, R., Alvaro, R., & Vellone, E. (2015). Describing self-care in Italian adults with heart failure and identifying determinants of poor self-care. *European Journal of Cardiovascular Nursing*, 14(2), 126–136. <https://doi.org/10.1177/1474515113518443>
- Comin-Colet, J., Anguita, M., Formiga, F., Almenar, L., Crespo-Leiro, M. G., & Manzano, L., & VIDA-IC (Quality of Life and Heart Failure in Spain: Current Situation) multicenter study researchers (2016). Health-related quality of life of patients with chronic systolic heart failure in Spain: Results of the VIDA-IC study. *Rev Esp Cardiol (Engl Ed)*, 69(3), 256–271. <https://doi.org/10.1016/j.rec.2015.07.030>
- Davis, K. K., Himmelfarb, C. R., Szanton, S. L., Hayat, M. J., & Allen, J. K. (2015). Predictors of heart failure self-care in patients who screened positive for mild cognitive impairment. *The Journal of Cardiovascular Nursing*, 30(2), 152–160. <https://doi.org/10.1097/JCN.0000000000000130>
- Dunbar, S. B., Reilly, C. M., Gary, R., Higgins, M. K., Culler, S., Butts, B., & Butler, J. (2015). Randomized clinical trial of an integrated self-care intervention for persons with heart failure and diabetes: Quality of life and physical functioning outcomes. *Journal of Cardiac Failure*, 21(9), 719–729. <https://doi.org/10.1016/j.cardfail.2015.05.012>
- Graven, L. J., & Grant, J. S. (2014). Social support and self-care behaviors in individuals with heart failure: An integrative review. *International Journal of Nursing Studies*, 51(2), 320–333. <https://doi.org/10.1016/j.ijnurstu.2013.06.013>
- Groenewegen, A., Rutten, F. H., Mosterd, A., & Hoes, A. W. (2020). Epidemiology of heart failure. *European Journal of Heart Failure*, 22(8), 1342–1356. <https://doi.org/10.1002/ejhf.1858>
- Harkness, K., Spaling, M. A., Currie, K., Strachan, P. H., & Clark, A. M. (2015). A systematic review of patient heart failure self-care strategies. *The Journal of Cardiovascular Nursing*, 30(2), 121–135. <https://doi.org/10.1097/JCN.0000000000000118>
- Hwang, S. L., Liao, W. C., & Huang, T. Y. (2014). Predictors of quality of life in patients with heart failure. *Japan Journal of Nursing Science*, 11(4), 290–298. <https://doi.org/10.1111/jjns.12034>
- Iqbal, J., Francis, L., Reid, J., Murray, S., & Denvir, M. (2010). Quality of life in patients with chronic heart failure and their carers: A 3-year follow-up study assessing hospitalization and mortality. *European Journal of Heart Failure*, 12(9), 1002–1008. <https://doi.org/10.1093/eurjhf/hfq114>
- Jaarsma, T., Cameron, J., Riegel, B., & Stromberg, A. (2017). Factors related to self-care in heart failure patients according to the middle-range theory of self-care of chronic illness: A literature update. *Current Heart Failure Reports*, 14(2), 71–77. <https://doi.org/10.1007/s11897-017-0324-1>
- Jaarsma, T., Hill, L., Bayes-Genis, A., La Rocca, H. B., Castiello, T., Celutkiene, J., & Stromberg, A. (2021). Self-care of heart failure patients: Practical management recommendations from the Heart Failure Association of the European Society of Cardiology. *European Journal of Heart Failure*, 23(1), 157–174. <https://doi.org/10.1002/ejhf.2008>
- Jaarsma, T., Stromberg, A., Ben Gal, T., Cameron, J., Driscoll, A., Duengen, H. D., & Riegel, B. (2013). Comparison of self-care behaviors of heart failure patients in 15 countries worldwide. *Patient Education and Counseling*, 92(1), 114–120. <https://doi.org/10.1016/j.pec.2013.02.017>
- Jiang, Y., & Wang, W. (2021). Health promotion and self-management among patients with chronic heart failure. In G. Haugan, & M. Eriksson (Eds.), *Health promotion in health care - vital theories and research* (pp. 269–285). Springer International Publishing.
- Jonkman, N. H., Westland, H., Groenwold, R. H., Agren, S., Anguita, M., Blue, L., & Hoes, A. W. (2016). What are effective program characteristics of self-management interventions in patients with heart failure? An individual patient data meta-analysis. *Journal of Cardiac Failure*, 22(11), 861–871. <https://doi.org/10.1016/j.cardfail.2016.06.422>
- Kessing, D., Denollet, J., Widdershoven, J., & Kupper, N. (2016). Psychological determinants of heart failure self-care: Systematic review and meta-analysis. *Psychosomatic Medicine*, 78(4), 412–431. <https://doi.org/10.1097/PSY.0000000000000270>

- Kessing, D., Denollet, J., Widdershoven, J., & Kupper, N. (2017). Self-care and health-related quality of life in chronic heart failure: A longitudinal analysis. *European Journal of Cardiovascular Nursing, 16*(7), 605–613. <https://doi.org/10.1177/1474515117702021>
- Koirala, B., Dennison Himmelfarb, C. R., Budhathoki, C., & Davidson, P. M. (2020). Heart failure self-care, factors influencing self-care and the relationship with health-related quality of life: A cross-sectional observational study. *Heliyon, 6*(2), e03412. <https://doi.org/10.1016/j.heliyon.2020.e03412>
- Kozhikenova, L. G., Lanzoni, M., Rakhypbekov, T. K., Mussakhanova, A. K., Zurikanov, K. S., & Castaldi, S. (2014). Health-related quality of life in Kazakh heart failure patients evaluated by the Minnesota living with heart failure questionnaire and comparison with a published large international sample. *Annali di Igiene, 26*(6), 547–552. <https://doi.org/10.7416/ai.2014.2013>
- Lee, C. S., Bidwell, J. T., Paturzo, M., Alvaro, R., Cocchieri, A., & Jaarsma, T., . . . E. Vellone (2018). Patterns of self-care and clinical events in a cohort of adults with heart failure: 1 year follow-up. *Heart & Lung, 47*(1), 40–46. <https://doi.org/10.1016/j.hrtlng.2017.09.004>
- Li, Z., Lin, L., Wu, H., Yan, L., Wang, H., Yang, H., & Li, H. (2021). Global, regional, and national death, and disability-adjusted life-years (DALYs) for cardiovascular disease in 2017 and trends and risk analysis from 1990 to 2017 using the global burden of disease study and implications for prevention. *Frontiers in Public Health, 9*, 559751. <https://doi.org/10.3389/fpubh.2021.559751>
- Lippi, G., & Sanchis-Gomar, F. J. (2020). Global epidemiology and future trends of heart failure. *AME Medical Journal, 5*(15), 1–6. <https://doi.org/10.21037/amj.2020.03.03>
- Liu, M. H., Wang, C. H., Huang, Y. Y., Cherng, W. J., & Wang, K. W. (2014). A correlational study of illness knowledge, self-care behaviors, and quality of life in elderly patients with heart failure. *The Journal of Nursing Research, 22*(2), 136–145. <https://doi.org/10.1097/JNR.0000000000000024>
- McHorney, C. A., Mansukhani, S. G., Anatchkova, M., Taylor, N., Wirtz, H. S., Abbasi, S., & Globe, G. (2021). The impact of heart failure on patients and caregivers: A qualitative study. *PLOS ONE, 16*(3), e0248240. <https://doi.org/10.1371/journal.pone.0248240>
- Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *BMJ, 339*(jul21 1), b2535–b2535. <https://doi.org/10.1136/bmj.b2535>
- Molla, B., Geletie, H. A.-O. X., Alem, G., Gualu, T., Zewudie, B. A.-O., Tesfa, S., & Amlak, B. T. (2022). Adherence to Self-Care Recommendations and Associated Factors among Adult Heart Failure Patients in West Gojjam Zone Public Hospitals, Northwest Ethiopia. (2356-6981 (Print)).
- Molla, S., Yitayal, M., Amare, G. J. R. M., & Policy, H. (2021). Health-related quality of life and associated factors among adult patients with heart failure in Wolaita zone governmental hospitals, Southern Ethiopia. *Risk Management and Healthcare Policy, 14*, 263–271. <https://doi.org/10.2147/RMHP.S288326>
- Moser, D. K., Dickson, V., Jaarsma, T., Lee, C., Stromberg, A., & Riegel, B. (2012). Role of self-care in the patient with heart failure. *Current Cardiology Reports, 14*(3), 265–275. <https://doi.org/10.1007/s11886-012-0267-9>
- Nesbitt, T., Doctorvaladan, S., Southard, J. A., Singh, S., Fekete, A., Marie, K., & Dracup, K. (2014). Correlates of quality of life in rural patients with heart failure. *Circulation. Heart Failure, 7*(6), 882–887. <https://doi.org/10.1161/CIRCHEARTFAILURE.113.000577>
- Network, H. F. P. J. L. H. (2020). Heart failure policy and practice in Europe.
- Ok, J. S., & Choi, H. (2015). Factors affecting adherence to self-care behaviors among outpatients with heart failure in Korea. *Korean Journal of Adult Nursing, 27*(2), 242–250. <https://doi.org/10.7475/kjan.2015.27.2.242>
- Peters, M. D. J., Godfrey, C., McInerney, P., Munn, Z., Tricco, A. C., & Khalil, H. (2020). Chapter 11: Scoping Reviews (2020 version). In E. Aromataris, & Z. Munn (Eds.), *JBI Manual for Evidence Synthesis* (pp. 406–451). JBI. Retrieved from <https://reviewersmanual.joannabriggs.org/>.
- Pobrotyn, P., Mazur, G., Kaluzna-Oleksy, M., Uchmanowicz, B., & Lomper, K. (2021). The level of self-care among patients with chronic heart failure. *Healthcare (Basel), 9*(9), 1179. <https://doi.org/10.3390/healthcare9091179>
- Riegel, B., & Dickson, V. V. (2008). A situation-specific theory of heart failure self-care. *Journal of Cardiovascular Nursing, 23*(3), 190–196. <https://doi.org/10.1097/01.Jcn.0000305091.35259.85>
- Riegel, B., Moser, D. K., Anker, S. D., Appel, L. J., Dunbar, S. B., Grady, K. L., & Whellan, D. J. (2009). State of the science. *Circulation, 120*(12), 1141–1163. <https://doi.org/https://doi.org/10.1161/CIRCULATIONAHA.109.192628>
- Riegel, B., Moser, D. K., Buck, H. G., Dickson, V. V., Dunbar, S. B., & Lee, C. S., . . . American Heart Association Council on Cardiovascular and Stroke Nursing; Council on Peripheral Vascular Disease; and Council on Quality of Care and Outcomes Research (2017). Self-care for the prevention and management of cardiovascular disease and stroke: A scientific statement for healthcare professionals from the American heart association. *Journal of the American Heart Association, 6*(9), 1–27. <https://doi.org/10.1161/JAHA.117.006997>
- Ruppar, T. M., Cooper, P. S., Mehr, D. R., Delgado, J. M., & Dunbar-Jacob, J. M. (2016). Medication adherence interventions improve heart failure mortality and readmission rates: Systematic review and meta-analysis of controlled trials. *Journal of the American Heart Association, 5*(6), 1–18. <https://doi.org/10.1161/JAHA.115.002606>
- Savarese, G., & Lund, L. H. (2017). Global public health burden of heart failure. *Card Fail Rev, 3*(1), 7–11. <https://doi.org/10.15420/cfr.2016:25:2>
- Sedar, N., Lainscak, M., Martensson, J., Stromberg, A., Jaarsma, T., & Farkas, J. (2017). Factors related to self-care behaviours in heart failure: A systematic review of European heart failure self-care behaviour scale studies. *European Journal of Cardiovascular Nursing, 16*(4), 272–282. <https://doi.org/10.1177/1474515117691644>
- Seid, M. A. (2020). Health-related quality of life and extent of self-care practice among heart failure patients in Ethiopia. *Health and Quality of Life Outcomes, 18*(1), 27. <https://doi.org/10.1186/s12955-020-01290-7>
- Seid, S. S., Amendoeira, J., & Ferreira, M. R. (2022). Self-Care and health-related quality of life among heart failure patients in Tagus valley regional hospital, Portugal: A pilot study. *Nursing: Research and Reviews, 12*, 85–99. <https://doi.org/10.2147/NRR.S358666>
- Seto, E., Leonard, K. J., Cafazzo, J. A., Masino, C., Barnsley, J., & Ross, H. J. (2011). Self-care and quality of life of heart failure

- patients at a multidisciplinary heart function clinic. *The Journal of Cardiovascular Nursing*, 26(5), 377–385. <https://doi.org/10.1097/JCN.0b013e31820612b8>
- Shao, J. H., Chang, A. M., Edwards, H., Shyu, Y. I., & Chen, S. H. (2013). A randomized controlled trial of self-management programme improves health-related outcomes of older people with heart failure. *Journal of Advanced Nursing*, 69(11), 2458–2469. <https://doi.org/10.1111/jan.12121>
- Siabani, S., Driscoll, T., Davidson, P. M., Najafi, F., Jenkins, M. C., & Leeder, S. R. (2016). Self-care and its predictors in patients with chronic heart failure in western Iran. *The Journal of Cardiovascular Nursing*, 31(1), 22–30. <https://doi.org/10.1097/JCN.0000000000000211>
- Toukhsati, S. R., Jaarsma, T., Babu, A. S., Driscoll, A., & Hare, D. L. (2019). Self-Care interventions that reduce hospital readmissions in patients with heart failure; towards the identification of change agents. *Clinical Medicine Insights. Cardiology*, 13, 1179546819856855. <https://doi.org/10.1177/1179546819856855>
- Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., & Straus, S. E. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine*, 169(7), 467–473. <https://doi.org/10.7326/m18-0850>
- Tung, H. H., Lin, C. Y., Chen, K. Y., Chang, C. J., Lin, Y. P., & Chou, C. H. (2013). Self-management intervention to improve self-care and quality of life in heart failure patients. *Congestive Heart Failure*, 19(4), E9–E16. <https://doi.org/10.1111/chf.12014>
- Vellone, E., Chung, M. L., Cocchieri, A., Rocco, G., Alvaro, R., & Riegel, B. (2014). Effects of self-care on quality of life in adults with heart failure and their spousal caregivers: Testing dyadic dynamics using the actor–partner interdependence model. *Journal of Family Nursing*, 20(1), 120–141. <https://doi.org/10.1177/1074840713510205>
- Vellone, E., Fida, R., Ghezzi, V., D'agostino, F., Biagioli, V., Paturzo, M., & Jaarsma, T. (2017). Patterns of self-care in adults with heart failure and their associations with sociodemographic and clinical characteristics, quality of life, and hospitalizations: A cluster analysis. *Journal of Cardiovascular Nursing*, 32(2), 180–189. <https://doi.org/10.1097/JCN.0000000000000325>
- Virani, S. S., Alonso, A., Aparicio, H. J., Benjamin, E. J., Bittencourt, M. S., Callaway, C. W., & Tsao, C. W. (2021). Heart disease and stroke statistics-2021 update: A report from the American heart association. *Circulation*, 143(8), e254–e743. <https://doi.org/10.1161/CIR.0000000000000950>
- Wisnicka, A., Lomper, K., & Uchmanowicz, I. (2022). Self-care and quality of life among men with chronic heart failure. *Frontiers in Public Health*, 10, 942305. <https://doi.org/10.3389/fpubh.2022.942305>
- Wulfovich, S., Buur, J., & Wac, K. (2022). Unfolding the quantification of quality of life. In K. Wac, & S. Wulfovich (Eds.), *Quantifying quality of life* (pp. 3–24). Springer International Publishing.
- Yeh, H. F., & Shao, J. H. (2021). Quality of life and associated factors in older adults with heart failure. *The Journal of Nursing Research*, 29(5), e166. <https://doi.org/10.1097/JNR.0000000000000445>

APPENDIX I: Medline Search Strategy

Pubmed search conducted on March 23,2020,Time 15:15:33

Search	Query	Records retrieved
#1	Selfcare OR "Self Care" Or Self-Care OR Care, Self OR Self Management OR Self-Management OR "Management,Self"	123717
#2	"qualit* of life" OR "life qualit*" OR "health related qualit* of life" OR "health?related qualit* of life" OR HRQOL	250650
#3	"heart failure" OR "cardiac failure" OR "heart decompensation" OR "decompensation,heart" OR "heart failure,right?sided" OR "heart?failure,right sided" OR"right-sided heart failure" OR "right sided heart failure" OR "right sided heart failure" OR "congestive heart failure" OR "heart failure,congestive" OR "heart failure,left-sided" OR "heart failure left sided" OR "left sided heart failure" OR "Left?sided heart failure"	113430
#4	#1 AND #2 AND #3 Limited from 2010 to present and written in English	583

Appendix II: Studies ineligible following full-text review

- Abbasi A, Ghezeljeh TN, Farahani MA. Effect of the self-management education program on the quality of life in people with chronic heart failure: a randomized controlled trial. *Electron Physician*. 2018;10(7):7028-37.
Reason: ineligible concept
- Abbasi A, Najafi Ghezeljeh T, Ashghali Farahani M, Naderi N. Effects of the self-management education program using the multi-method approach and multimedia on the quality of life of patients with chronic heart failure: A non-randomized controlled clinical trial. *Contemp Nurse*. 2018;54(4-5):409-20.
Reason: in illegible concept
- Dickson VV, Howe A, Deal J, McCarthy MM. The relationship of work, self-care, and quality of life in a sample of older working adults with cardiovascular disease. *Heart Lung*. 2012;41(1):5-14.
Reason: ineligible concept
- Dunbar SB, Reilly CM, Gary R, Higgins MK, Culler S, Butts B, et al. Randomized clinical trial of an integrated self-care intervention for persons with heart failure and diabetes: quality of life and physical functioning outcomes. *J Card Fail*. 2015;21(9):719-29.
Reason: ineligible concept
- Evangelista LS, Lee JA, Moore AA, Motie M, Ghasemzadeh H, Sarrafzadeh M, et al. Examining the effects of remote monitoring systems on activation, self-care, and quality of life in older patients with chronic heart failure. *J Cardiovasc Nurs*. 2015;30(1):51-7.
Reason: ineligible concept
- Goodman H, Firouzi A, Banya W, Lau-Walker M, Cowie MR. Illness perception, self-care behaviour and quality of life of heart failure patients: a longitudinal questionnaire survey. *Int J Nurs Stud*. 2013;50(7):945-53.
Reason:the influence of selfcare on Qol was not measured
- Grady KL, de Leon CF, Kozak AT, Cursio JF, Richardson D, Avery E, et al. Does self-management counseling in patients with heart failure improve quality of life? Findings from the Heart Failure Adherence and Retention Trial (HART). *Qual Life Res*. 2014;23(1):31-8.
Reason: ineligible concept
- Heidari M, Shahbazi S. Effect of self-care training program on quality of life of elders. *Iran Journal of Nursing*. 2012;25(75):1-8.
Reason :ineligible participant
- Hua CY, Huang Y, Su YH, Bu JY, Tao HM. Collaborative care model improves self-care ability, quality of life and cardiac function of patients with chronic heart failure. *Braz J Med Biol Res*. 2017;50(11):e6355.
Reason:ineligible concept
- Jonkman NH, Schuurmans MJ, Groenwold RHH, Hoes AW, Trappenburg JCA. Identifying components of self-management interventions that improve health-related quality of life in chronically ill patients: Systematic review and meta-regression analysis. *Patient Educ Couns*. 2016;99(7):1087-98.
Reason:ineligible participant
- Kim J, Hwang SY, Heo S, Shin MS, Kim SH. Predicted relationships between cognitive function, depressive symptoms, self-care adequacy, and

Appendix IV. Characteristics of included studies.

Authors (year)	Origins	Types of research	Sample size	Instrument	Design	Findings	Limitations
(Seid, 2020)	Ethiopia	Primary study	284	Self-care: EHFSCBS QoL: MLHFQ	Cross sectional	<p>This study showed that around 48% of the participants had inadequate self-care practices. Overall, the majority of HF patients had poor HRQOL.</p> <p>There was a significant negative relationship between HF patients' HRQOL score and self-care practice score that mean when HF patients' self-care practice score increases (good self-care) their HRQOL score decreases (good quality of life). Rural residence and inadequate level of self-care practice were independent predictors of poor HRQOL.</p>	<p>Limited generalizability, social desirability, and the recall bias during self-report might have affected the data obtained.</p> <p>Lack of a causal relationship between quality of life and self-care.</p>
(Koirala et al., 2020)	United States	Primary study	221	Self-care: SCHFI QoL: Visual analytic scale	Cross sectional	<p>Overall, HF self-care was poor with mean scores below the established cut-off for adequate self-care scores. There was poor self-care maintenance (38.5, 11.56), management (45.7, 15.14), and confidence (40.9, 16.31). Patients with higher education were associated with higher self-care maintenance and management. Living alone and a better New York Heart Association functional classification for HF were related to higher self-care confidence. Higher social support was associated with better self-care. The mean HRQOL as measured by the visual analytic scale was 56.9 ± 19.76.</p>	<p>Limited generalizability, cross-sectional nature, small sample size, social desirability bias.</p>
(Asadi et al., 2019)	Iran	Primary study	77	Self-care: EHFSCBS QoL: SF-36	Cross sectional	<p>Self-care was associated with better quality of life. The mean of self-care score was 39.42 ± 7.04, and most of the patients 67.5% were in the moderate level. The mean score of quality of life was 38.45 ± 17.28. There was no correlation between self-care and quality of life. However, there was a correlation between marital status and self-care ability, and the results indicated better quality of life in male, educated patients at the level of university, free job, and lived in the urban area. Self-care was associated with HRQOL, and better mean self-care was associated with better HRQOL over time, but this relationship was greatly affected by psychological distress, primarily depression.</p>	<p>Non-probability sampling was applied in which convenience sample was practiced, limited the sample size.</p>
(Kessing et al., 2017)	Netherlands	Primary study	459	Self-care: EHFSCBS QoL: MLHFQ	Longitudinal study	<p>Higher self-care remained a predictor for better physical HRQOL when anxiety and type D personality were included, and lower self-care was associated with poorer overall HRQOL, as well as</p>	<p>The observational nature of the study design, no conclusions can be drawn regarding the causality of these relationships.</p>

(continued)

Appendix IV. Continued.

Authors (year)	Origins	Types of research	Sample size	Instrument	Design	Findings	Limitations
(Buck et al., 2015)	Italy	Primary study	1192	Self-care: SCHFI QoL: MLHFQ	Cross sectional	<p>its physical and emotional subcomponents. Moreover, low education level was a significant predictor of worse HRQoL.</p> <p>The mean scores of self-care maintenance and management were 54.99 (SD = 15.70) and 53.18 (SD = 20.01), respectively. Based on the cut-off of >70, only about 20% of the sample performed adequate self-care.</p> <p>Higher levels of self-care maintenance were associated with higher QoL and lower hospitalization rates. Higher levels of comorbidity were associated with lower levels of self-care management.</p> <p>Better physical quality of life was associated with fewer comorbid conditions, better self-efficacy, and better self-care maintenance, and better emotional quality of life was associated with fewer comorbid conditions and better self-care maintenance.</p> <p>Higher self-care maintenance was associated with higher physical and emotional quality of life and fewer hospitalizations; higher self-care management was associated with lower emotional quality of life.</p> <p>It is demonstrated that self-care maintenance was associated positively with both physical and emotional quality of life.</p>	<p>Study involved a secondary analysis of existing cross-sectional data from one country. Selected only symptomatic patients.</p>
(Vellone et al., 2014)	Italy	Primary study	138	Self-care: CC-SCHFI QoL: SF-12	Cross sectional	<p>The study demonstrated the mean score of self-care maintenance 53.7 (15.5), management 51 ± 18.5, and confidence 49.8 ± 18.5, whereas the mean score of physical domain of quality of 36.1 ± 9.7 while mental score of QoL was mental 43.1 ± 9.8. Higher self-care was related to lower physical QoL in patients and caregivers. Higher self-care maintenance in patients was associated with better mental QoL in caregivers, and self-care confidence worsened physical QoL in patients. Patients' self-care scores were negatively correlated with their own physical QoL; higher self-care maintenance was associated with worse physical QoL. Self-care management was not significantly correlated with physical QoL of patients or caregivers.</p>	<p>Cross-sectional nature of the data, no power analysis was conducted prior to data collection, the regression coefficients in the analysis were quite small, as a result readers should not over-interpret these results.</p>
(Buck et al., 2012)	United States and Australia	Primary study	207	Self-care: SCHFI QoL: MLHFQ	Cross sectional	<p>Overall, HF self-care was poor with the sample average well below the established cut-off for</p>	<p>Secondary analysis of data collected for other</p>

(continued)

Appendix IV. Continued.

Authors (year)	Origins	Types of research	Sample size	Instrument	Design	Findings	Limitations
(Seto et al., 2011)	Canada	Primary study	94	Self-care: SCHFI QoL: MLHFQ	Cross sectional	adequate self-care score (a standardized score of 70) for each of the three SCHFI scores. A significant linear association was found between self-care confidence and HRQOL but not between self-care maintenance or management and HRQOL. In addition, all domains of HRQOL (emotional, physical, and total) were influenced by self-care confidence, with each 1-point increase in self-care confidence associated with a decrease in the likelihood of poorer HRQOL. No significant correlations were found with self-care maintenance or management and HRQOL. Patient did not perform adequate self-care as measured with the SCHFI, and QoL was found to be moderate among the participants. A better self-care was associated with better quality of life. Better quality of life is associated with higher self-care confidence. Determinants of better quality of life were older age, better functional capacity, higher self-care confidence, and fewer comorbidities.	11% of the patients declined participation. Participants may have reported performing more self-care practices than the reality.
(Britz & Dunn, 2010)	United States	Primary study	30	Self-care: SCHFI QoL: MLHFQ	Cross sectional	The study demonstrated the mean score of self-care maintenance 24.93 ± 3.55 , management 8.67 ± 2.19 , and confidence 14.73 ± 2.57 , whereas the mean score of physical domains of quality of 30.20 ± 6.18 , while mental score of QOL was mental 15.6 ± 6.30 . Overall, the study results are promising as self-care confidence and perceived better health have been shown to be positively associated with improved quality of life. Gender, age, and perceived general health of patients were found to be determinants of self-confidence. The average overall HRQOL was low. On average, self-care maintenance was adequate and self-care management inadequate using the common cut-point of 70. In HF, HRQOL is dependent upon both the severity of physical and depressive symptoms and the level of engagement in HF self-care behaviors. Better self-care maintenance and management were both independently associated with worse emotional HRQOL in adjusted models. That is, the better the self-care,	Small sample size, low reliabilities for self-care maintenance, and self-care management, cross-sectional nature of the study.
(Auld et al., 2018)	United States	Primary research	202	Self-care: SCHFI QoL: MLHFQ	Cross sectional		Cross-sectional design of the study prevents drawing conclusions about temporal or causal relationships, limited generalizability.

(continued)

Appendix IV. Continued.

Authors (year)	Origins	Types of research	Sample size	Instrument	Design	Findings	Limitations
(Liu et al., 2014)	China	Primary research	141	Self-care: EHFSCBs QoL: MLHFQ	Cross sectional	<p>the less the physical symptoms that affect emotional HRQOL.</p> <p>The overall scores for self-care behaviors ranged between 15 and 63, with an average of 43.2 ± 9.4. Scores for quality of life ranged between 4 and 89 with the mean of 38.7 ± 19.5. This showed that participants had a good quality of life in general. It is shown that illness knowledge was associated with self-care behavior and quality of life, whereas self-care behavior was not associated with quality of life.</p> <p>Illness knowledge and age were identified as significant correlated factors of self-care behaviors; and functional class, living independently, and age were identified as significant correlated factors of quality of life.</p>	<p>Cross-sectional nature of design, lack of proper assessment of the cognitive function, and health literacy level of the participants, who were older adults with a generally low level of formal education.</p>
(Tung et al., 2013)	Taiwan	Primary research	82	Self-care: SCHFI QoL: MLHFQ	A quasi-experimental design	<p>Results from this study revealed a low self-care score among HF patients and a positive correlation between self-care and QoL. Self-management interventions have been found to have the potential to improve self-care and to promote QoL.</p>	<p>Limited generalizability.</p> <p>Due to limited resources, data were collected only at baseline, 1 month, and 2 months postintervention.</p>