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Review Article

Factors Affecting Self-Care in Cardiovascular Patients: An Integrative Review Based on Orem's Theory

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Abstract

Background: The management of Cardiovascular Disease (CVD), the leading cause of death in the world, is often associated with a variety of treatments and lifestyle modifications.

Objectives: In this review, the authors sought to identify and summarize self-care related behaviors in patients with CVD based on Orem's self-care theory. By applying this theory, healthcare professionals can involve patients in their own care in a holistic way that can improve health outcomes.

Methods: A comprehensive review was conducted using the Web of Science, PubMed, Magiran, SIDS, Scopus, CINAHL and Google Scholar databases. The results were organized into themes based on the Orem's Self-care model for patients with CVD.

Results: A total of 1153 articles were identified through databases. After excluding duplicated, unavailable or unqualified articles a total of 12 articles met all inclusion criteria and were included in this review and categorized into five major themes based on Orem's self-care model for patients with CVD: basic conditioning factors and self-care agency, initiating and adhering to self-care activities, symptom recognition, and supportive nursing interventions and culture. The model suggests that patients should take responsibility for self-care behaviors; and nurses, peers, families and health systems can have a great impact on the level of self-care in these people with considering cultural factors.

Conclusion: Improving the well-being in people with CVD and reducing the related healthcare costs are achievable by promoting self-care behaviors based on culture, educational interventions and monitoring the self-care over time as suggested by the model.

Keywords: Chronic Illnesses, Cardiovascular Disease, Orem Self-care Theory, Self-care Agency, Quality of Life, Educational Intervention

1. Background

According to the World Health Organization (WHO), CVD is the leading cause of death in the world, with 82% of deaths occurring in developing countries. There are over 500 million cases of CVD with 18 million deaths occurring each year (31% of all deaths). Iran has one of the highest prevalence rates of CVD and a high CVD mortality rate. By 2025, the burden of the CVD in this country will be more than double the rate in 2005. Accounting for 21% of all deaths in Iran, CVDs are the most important causes of death.[1,2] Moreover, aging population, increased numbers of individuals with multiple CVD risk factors, increased prevalence of people with multiple chronic conditions and eventually fragmented, episodic, and acute care as a major focus of the healthcare system create critical conditions for healthcare that may be addressed in healthcare particularly in nursing practice.[3]

Not only identifying the patients but also appropriate interventions are needed to raise awareness and interventions need to be implemented at individual and community levels (primary prevention). Medications may also be prescribed at the individual level (secondary prevention). Tertiary prevention involves slowing, arresting, or reversing disease to prevent recurrent symptoms, further deterioration, and subsequent events through the promotion of self-care.[4]

Despite evidence-based guidelines for treatment and

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follow-ups for this population, CVDs and especially heart failure remain the leading cause of hospitalization particularly in the elderly. CVDs are often associated with a variety of treatment and lifestyle modifications that must be made for the individual to sustain health.[5] The concept of self-care was first developed by Dorothea Orem and published in 1959. She defined self-care as the maintenance of practices developed by an individual for his or her benefit to maintain life, health, and well-being. Correctly performed, self-care activities assist in structural and functional maintenance of health. Orem's model is one of the most frequently used theories of self-care in general nursing practice.[6-8] The term of self-care was added to the Medical Subject Headings of the National Library of Medicine in 1981 and has been defined as caring for self when ill; or positive actions and adopting behaviors to prevent illness.[9]

Many patients, however, are unaware of the care that the CVDs need and therefore failed to engage in self-care activities correctly. In this context, nursing interventions may be a resource for maintaining self-care behaviors among those with the CVDs and may lead to improved well-being and reduced morbidity and mortality.[8,10] The self-care deficit nursing model is a general theory composed of the following four related concepts:

1) The theory of self-care, which describes why and how people care for themselves.
2) The theory of dependent-care, which explains how family members and/or friends provide dependent-care for the person.
3) The theory of self-care deficit, which describes and explains why people can be helped through nursing interventions.
4) The theory of nursing systems, which describes and explains relationships that must be brought about and maintained for nursing interventions to be effective.[11]

The main critique of most self-care theories is that they do not address the complexity of living with a chronic illness.[12] Adherence to self-care behaviors in patients with chronic diseases is important, and by acquiring self-care skills, patients can influence their quality of life , functional abilities, and limit disease progression.[8,13] An effective form of nursing care involves the application of Orem's Self-Care Theory. By doing so, health care becomes directed to the patient's needs in a holistic manner. Self-care in this theory has been defined as the individual's capacity to perform all activities necessary to live and survive. Among these are physical, psychological and spiritual dimensions.[14] Therefore, nurses may consider this theory as the most common applicable framework to explain self-care particularly in chronic diseases. The theory suggests that if patients use all of their own capacity to provide an appropriate self-care for themselves, they can easily overcome any limitations and complications related to the diseases and be safe from their consequences over time. Moreover, many studies that used this theory as a platform for intervention programs found that it may be a helpful context to promote self-care among people with different chronic disorders.[15,16] Therefore, we concluded that the theory might be an appropriate theoretical basis to explain the likely factors related to self-care in people with CVD which has affected many people across the world.

According to de Souza et al. (2010), an integrative review tries to combine prior empirical and theoretical literature to produce a better understanding on a specific phenomenon or health related issue. Therefore, this type of review may be a good method for making nursing science and practice that will help to theory development and improving the consistency between the policies and practices.[17]

2. Objectives

Due to the importance of paying attention to self-care particularly among people with chronic diseases like those with CVD problems, this integrative review sought to identify and summarize the factors affecting self-care in CVD patients in order to provide a basis for future applications of the self-care theories in healthcare settings.

3. Methods

Literature reviews involve a systematic way of collecting and synthesizing previous research, one that integrates empirical findings, addresses research questions across many studies, and creates a firm foundation for advancing knowledge and theory development.[18,19]

An integrative review looks more broadly at a phenomenon of interest than a systematic review and allows diverse research, which may contain theoretical and methodological literature that enables new theoretical frameworks and perspectives to emerge. This approach seeks to identify, analyze, appraise and synthesize all published studies, but does not include statistical methods that synthesize the findings.[18,20]

The present integrative literature review proceeded in six stages.[20] The first stage consists of recognition of the topic and expansion of the research question. The topic of this review involved identifying factors affecting the self-care of patients with CVD. The second stage was the identification of published articles addressing the topic. The integrative review involved searches of online databases including the Web of Science, PubMed, Scopus, CINAHL and Google Scholar. The time covered articles published between May 1993 and December 2021. The descriptors in the list of health sciences Descriptors (DeCS) and Medical Subject Headings (MeSH) associated with Boolean operators were the following combinations: "heart failure" AND "coronary artery disease" AND "pacemaker" AND "myocardial infarction"

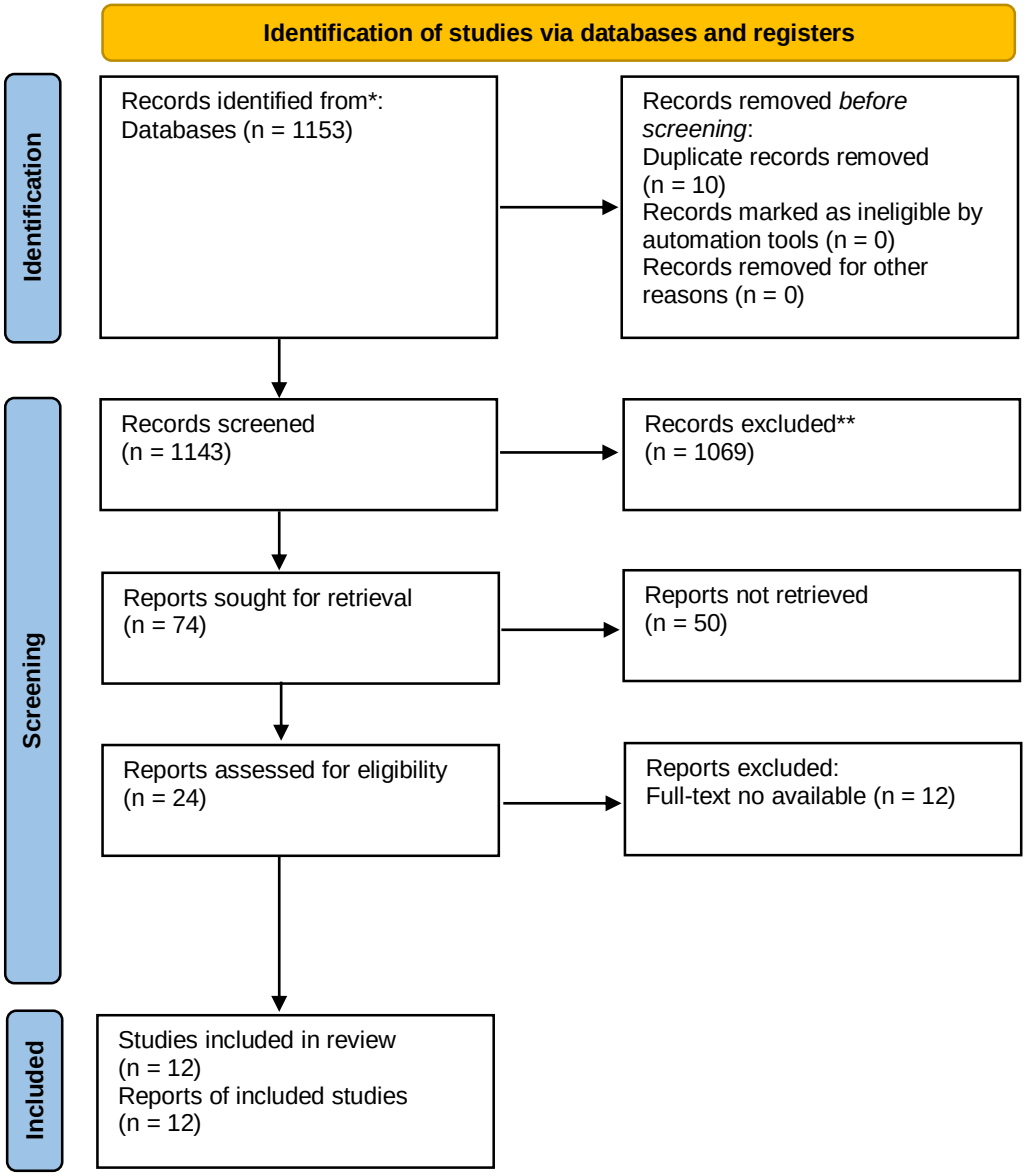

Figure 1. Flow Diagram of Studies' Screening and Selection.

AND "hypertension" AND "self-care". EndNote software was used to organize the articles, deleting duplicates in the databases. The inclusion criteria included articles involving adult populations and those published primarily in English language involving self-care factors involved in CVD.

In the third stage, two researchers collected the following information: country of origin, year of publication, type of study, and factors affecting self-care of CVD patients.

In the fourth stage, an analysis of the studies was performed, organizing them into four main subgroups based on Orem's self-care model. These subgroups were basic conditioning factors involving self-care agency, symptom recognition, supportive education, initiating and adhering of treatment and cultural factors. The fifth stage comprised the interpretation and discussion of the results. Finally, the sixth stage involved a summary and synthesis of the findings in the articles. The obtained articles were reviewed by two researchers who read the full articles and categorized the results according to Orem's model. In cases where there was a disagreement, a third researcher independently resolved the issue, and a final consensus was reached by all three reviewers.

To assess the quality of the obtained articles we used the Mixed Methods Appraisal Tool (MMAT) version 2018. This is an instrument designed to assess the quality of studies with different designs such as qualitative, quantitative and mixed methods in the literature review. There are five questions for each design. The "yes" answer for all these questions indicates the high quality of the apprised study. However, developers discouraged calculating an overall score to indicate the quality of the scale and instead advised addressing the details of each criterion to find the quality of the included studies.[21] Nevertheless, we only included the studies who could get

at least three "yes" responses as the qualified ones.

4. Results

In the initial search, 1153 articles were identified. Of those, 10 duplicated articles were excluded, leaving 1143 titles to review. Among these articles, 74 contained abstracts that were reviewed. Finally, 24 articles met the inclusion criteria. Of those 24, nine articles were excluded because full texts were not available resulting in 12 articles on which our integrative review was based.

Factors affecting self-care were categorized into self-care agency and basic conditioning factors,[22-29] symptom recognition,[30-32] education and support of patients,[5,27,33,34] and initiating and adhering[8,10,13] based on the Orem's self-care model. The details of these categories have been presented:

4.1. Self-care Agency and Basic Conditioning Factors

According to Orem, self-care involves individuals performing what should be done in order to preserve their life, health and well-being. The ability to perform these activities, however, is defined as self-care agency.[22] Self-care agency is an acquired ability of mature and maturing individuals to know and meet their continuing requirements by deliberate, purposive action to regulate their functioning and development.[11] Based on the Orem's self-care theory, internal and external conditioning factors were examined as either positively or negatively influencing self-care agency.[35] Orem described basic conditioning factors as "factors internal or external to individuals that affect their abilities to engage in self-care or affect the kind and amount of self-care required".[16] Orem identified 10 basic conditioning factors in the conceptualization of self-care agency. These are age, gender, developmental state, and health state, pattern of living, health care system factors, family system factors, sociocultural factors, availability of resources, and external environmental factors.[11,36]

Akyol found that the mean self-care agency rate among patients in general was moderate, with educational attainment and social insurance affecting self-care.[22] Karakurt found that 90.6% of the patients were independent on the activities of daily living, and the patients' age, sex, marital status, employment status, income status, and partners did not affect their self-care agency scores, whereas educational status did.[23] Lukkarinen and Hentinen found that self-care agency of their patients was moderate and many background factors were related to it.[24] Yildiz et al. found that the Orem's self-care deficit nursing theory-based training program used for Coronary Artery Disease (CAD) patients significantly increased self-care agency.[20] Paying attention to the CAD-related educational level of patients by nurses strengthened the self-care agency of these patients, resulting in an increase in quality of life. Finally, Yildiz et al., suggested that medical institutions and governments should develop appropriate education policies for patients at risk of CAD and for those with CAD.[26] Hassani et al. found that the self-care ability of individuals with CAD was moderate and that self-care ability and health were not affected by basic conditioning factors.[25]

Self-efficacy as one of the concepts related to self-care agency has been defined as "a belief in one's capability to exercise control over actions and environmental demands".[37] With regard to basic conditioning factors and quality of life self-efficacy among those undergoing coronary artery bypass grafting, the ability to take effective care of oneself was significantly related to several basic conditioning factors based on Orem's theory.[38] In the study by Salimian et al., the highest level of self-efficacy was found for medication use, regular physician follow-up visits, and low fat and low salt diet consumption at home. They concluded that self-care education based on Orem's theory can improve the quality of life of patients with hypertension.[29] Khademian et al., also found that self-efficacy among patients in the experimental group did not increase significantly compared to the control group.[27]

The basis of the Orem model is the individual's ability to choose and to take responsibility for his own survival and well-being, thereby potentially increasing quality of life. Malm found that designing and implementing the Orem self-care program did indeed increase the quality of life of patients with hypertension.[28] Thus, it is recommended that health care providers seek to improve the quality of life of patients by implementing the Orem self-care model.[15,26]

4.2. Symptom Recognition

Self-care and its related concepts are often used interchangeably to describe a range of activities that include lifestyle changes in response to illness, participation in monitoring treatment plans, adherence to treatment plans, and initiation of action in response to a change in baseline health. Symptom recognition is an antecedent to self-care management.[30] Additionally, multiple symptoms of different conditions may be occur simultaneously making symptom monitoring, interpretation and management difficult and confusing. Choosing which symptoms to report and which health provider to contact can be hard when symptoms are misunderstood.[9] Therefore, symptom recognition is needed to initiate a decision to engage in a behavior to relieve the symptom. Yet, a surprising number of individuals fail to detect symptoms and delay in addressing early warnings of a health problem.[39] The study of Riegel et al., reveal that symptom monitoring correlates positively with treatment adherence as early symptom recognition leads to on time lifesaving interventions and support to the use of the situation-specific theory of CVDs self-care in research and practice.[31,32]

Table1. Key Characteristics of the Included Studies

No.	Author/country of origin/year of publication	Topic	Type of study	Most important findings
1	Salimian et al. (2014) Iran	Factors associated with self-efficacy based on Orem's theory in patients after coronary bypass surgery	Correlation study	The highest level of self-efficacy was related to medication use, regular physician consultation, and low fat/ low salt diet consumption at home.[29]
2	Hassani et al. (2010) Iran	Self-care ability and basic conditioning factors in coronary artery disease	Correlation study	Basic conditioning factors had not a significant relationship with self-care ability.[25]
3	Abotalebi et al (2016) Iran	Self-care motivation among patients with heart failure	Qualitative study	Several primary codes such as fear of death and love of life, returning to previous physical health status, preventing or alleviating symptoms, understanding the value of self-care behaviors trusting them, having the desire for remaining were obtained.[48]
4	Salamah et al. (2003) USA	Factors that influence self-efficacy behaviors related to self-care management among people with heart disease	Exploratory, descriptive	Complementary approaches, especially prayer, exercise, and lifestyle modification Are related to increasing self-efficacy for self-care.[37]
5	Khademian et al (2020) Iran	self-care education based on the quality of life and self-efficacy in patients with hypertension	Quasi-experimental	Applying self-care based on Orem's theory may improve the quality of life of in patients with hypertension.[27]
6	Srikan (2012) USA	How much variables related to sodium reduction are congruent with Orem's Self-Care Theory.	Cross-sectional	Significant associations among variables related to self-care behavior and urinary sodium excretion were observed which were consistent with Orem's Self-Care Theory.[35]
7	Jaarsma et al (2000) Netherlands	Effect of education and support on self-care behavior to discuss limitations.	Experimental	Education enhanced self-care behavior significantly after discharge. Despite intensive education and support, patients did not manifest all self-care behaviors that might be expected. There were limitations in knowledge, judgment/decision-making and skills among patients.[5]
8	Karakurt et al (2017) Turkey	Effect of activities of daily living on the self-care agency of patients in a cardiovascular surgery clinic	Descriptive study	Nurses are encouraged to design educational and training programs that include care activities so that patients can acquire independence in activities of daily living and improve their self-care behaviors during the postoperative period.[23]
9	Mohammadpour et al (2015) Iran	effect of a supportive educational intervention developed based on the Orem's self-care theory on the self-care ability of patients with myocardial infarction	Randomized controlled trial	The supportive educational intervention developed based on the Orem's self-care theory can improve patients' self-care ability. The supportive educational intervention developed based on the Orem's self-care theory can help health care professionals to identify and fulfill patients' self-care needs.[34]
10	Mousavian et al (2019) Iran	Orem-based self-care program to care in lower-extremity edema in patients undergoing coronary artery bypass grafting	Clinical trial	Orem's model could be used to enhance self-care abilities in patients requiring long-term care.[2]
11	Wissen & Blanchard (2020) New Zealand	Aspects of self-care and revealing the extent of 'work' dedicated to self-care.	Qualitative	Encouraging self-determination and working with the preferences patients have for self-care in order to enhance their quality of life while living with ill-health.[50]
12	Navidian et al (2015) Iran	The Effect of Self-Care Education on the Awareness, Attitude, and Adherence to Self- Care Behaviors in Hospitalized Patients Due to Heart Failure with and without Depression	Quasi-experimental	Self-care behavior education had lower effects on the depressed patients with heart failure particularly in those with depression.[55]

4.3. Initiating and Adhering to Self-Care Activities

Concerning the chronic and the progressive nature of

CVDs and its complex treatment regimen, patients' endurance in self-care requires strong self-care motivation. Implementing support programs for strengthening patients' self-care motivation can enhance adherence to self-care activities. A key prerequisite to the implementation of such programs is to understand patients' current motivations for doing self-care activities. Self-care knowledge and skills alone, however, does not appear to lead to the emergence or continuation of self-care behavior in patients. Self-care knowledge and skills together with motivation are required for adherence.[40]

4.4. Supportive Educative Nursing Intervention

The nursing intervention in the abovementioned studies was based on Orem's model of self-care, in which the nurses' role in promoting self-care is described as one that is supportive and educational. This involved providing patients with the information and resources needed to engage in self-care, and assisting or supporting them in incorporating self-care behaviors into their everyday lives.[41]

Orem's framework provides a nursing-based focus and systematic guidelines for examining the balance between patients' needs, capabilities and limitations when exercising self-care actions through the use of an educational approach.[42] Supportive-educational modes of helping include combinations of supporting, guiding, teaching, instructing in self-care skills, and offering physical and emotional encouragement as individuals navigate through difficult periods in their chronic illness. When nurses have an understanding of a patient's lifestyle and their personal goals, they are able to explain the relevance of the tasks in relation to the patient's goals. This understanding will also help nurses incorporate patient goals into the plan of care, ensuring that the patient remains an integral part of the rehabilitation team. This participation will increase patients' confidence in their self-care ability and decrease the apprehension that many CVD patients experience when returning into the community.[33]

Orem's self-care theory allows nurses to provide information, support and educate in such a way that nursing care affects the entire life of the patient.[28] In Mohammadpour et al.'s study, it was revealed that a supportive educational intervention developed based on the Orem's self-care theory can improve non-hospitalized patients' self-care ability and positively affect health outcomes. Consequently, using this program for providing follow-up care to non-hospitalized patients was recommended.[34] Jaarsma et al. found that education enhanced self-care behavior significantly at 1- and 3-months following discharge among patients with heart failure.[38] Despite intensive education and support, patients did not manifest the self-care behaviors that were expected. Patients in both the intervention and control groups described limitations in knowledge, judgement/ decision-making and skills. More research is needed to further investigate the benefits of nursing interventions under each of the above categories.

4.5. Cultural Factors Influencing Self-Care

Culture influences self-care in general, but predominantly will affect the self-care maintenance behaviors. In different populations, cultural beliefs such as fatalism, collectivism and traditional gender roles clashed with dietary adherence. Traditional beliefs and ideas, collectivism, family and kinship ties, fatalism, cultural norms and normative thinking played critical roles in medication adherence and use of complementary/alternative medicine. Similarly, cultural beliefs and social norms influenced how individuals interpreted and responded to their symptoms.[43]

To maximize health outcomes for all ethnic groups within a diverse population, it is necessary to consider the health of different groups, as differential patterns of disease among subgroups may be masked by overall health trends. Cross-cultural differences in incidence and mortality can partly be attributed to differences in disease risk factors and differential engagement in health promoting behaviors.[44]

5. Discussion

This integrative review aimed to identify and summarize the self-care related factors in CVDs that have shaped the concept through health relevant literature, in order to apply Orem's self-care model in the care of CVD patients as much as possible. Recognizing these factors not only empower the patients in self-care, but also help the policymakers and health care systems in predicting, planning and providing the self-care requisites of these patients.

Findings demonstrated that the main concerns of researchers are classified as these factors:

a. Ability to identify factors affecting health and function
b. Ability to decide and regulate the function
c. Fulfill self-care requisites[36,38,45,46]

The role of nursing, using the three basic systems of nursing care described by Orem consist of wholly compensatory, partially compensatory and supportive–educative.[47] The most of available evidence has investigated the correlation of basic conditioning factors and self-care agency, which indicates the ambiguity and unclarity of this issue for researchers. Also, based on the Orem's triple nursing systems and allocating the least time to wholly compensatory care in CVDs, the main focus of nursing care is on the partly compensatory and supportive-educative system. In addition, among these, the nurse's supportive-educative role is more prominent, especially after discharge from hospital.

The effect of educational level as one of the most important conditioning factors in promoting patients' self-

care has always been considered by researchers. Akyol expressed the positive role of educational status and insurance in promoting self-care agency.[22] Karacurt compared the effect of education status on the level of independency on activities of daily living with the other basic conditioning factors considered effective.[23] In a study by Yildiz, an education program based on Orem's self-care deficit theory, increased the level of self-care agency.[19] According to Mohammad Hassani's findings, self-care ability was moderate in CVD patients and basic conditioning factors did not affect it.[25] Based on findings, there was a consensus on the effect of self-care training programs on self-care ability in CVD patients, while the other basic conditioning factors do not have a significant effect on self-care agency and self-care ability.

In relation to basic conditioning factors and quality of life self-efficacy, the ability to take effective care of oneself was significantly correlated with some basic conditioning factors based on Orem's theory in CVD patients. and undergo CABG.[38] According to the results of Salimian and Khademian's studies on the self-efficacy of CVD patients, there seems to be disagreement. While in the study of Khademian, there was no significant difference between the experimental and control groups in the levels of self-efficacy, but Salimian stated the maximum level of self-efficacy in terms of medication, follow-up visit and adherence to low-salt and low-fat diet.[27,29] Therefore, it can be stated that the identification of facilitating and inhibiting factors is critical, as the completion of the requirements of the prescribed cardiac therapy regimen can assist individuals in achieving maximal cardiac self-efficiency while promoting.[13]

CVDs and their complications reduce the patients' quality of life. Meanwhile, self-care is considered to be one of the basic concepts in nursing care and has important outcomes in providing, maintaining and promoting the health of CVD patients. Also, adherence might imply a more holistic view about self-care than compliance, because it places the patient in a central position. Patients who adhere to a prescribed therapy program are likely to have positive outcomes and promoted quality of life.[8,13] The results of other studies have revealed that designing and implementing the Orem self-care program can increase the quality of life of CVD patients.[26,28]

In the meantime, taking care of CVD patients by nurses, augments the self-care agency of CVD patients and eventually promotes their quality of life.[15,27] Therefore, it seems paying attention to physical factors such as diet and medication, daily weighing, regular exercise, monitoring and recognizing symptoms and the signs of exacerbation of CVDs (leads to treatment adherence), providing appropriate treatments as well as psychological factors and reducing stress and patients' self-care motivation in CVDs to be effective.[15,30,31,38,48-50] According to the result of Malm's study, supportive-educative interventions can affect patients' lives. This is while Mohammadpour et al. stated that these positive effects are restricted to non-hospitalized patients. However supportive-educative intervention was recognized effective in promoting CVD self-care behavior.[28,34]

Every country has its own cultural characteristics, ideas, customs, and social behaviors, both nationally and within particular groups or communities. This applies as much to self-care beliefs and practices as to any other aspect of life.[51] Although the broad elements of self-care (e.g., physical activity, healthy eating, and good hygiene) are universal, the particularities differ. For example, consulting a physician for a minor condition may be discouraged in some societies and welcomed in others. Some of these practices reflect differences in remuneration but in other countries, the differences reflect deeply and historically entrenched beliefs and values.[52] Some cultural traditions are reductionist, analytical, objectoriented and intervention-focused, leading to the treatment of a malfunctioning body part. Other cultural traditions are holistic with a view of health as complex and contextual, leading to a focus on balance, prevention and collective harmony.[53] People who undertake self-care as an expression of collective harmony may be avoiding being a burden on their families, their communities and society.[54] Also,in societies where people have a deeper perceiving of health rights, they may ignore their duties and demand them from the health system, and this dependency, harms self-care behaviors by reducing personal efforts.[9]

This study also had some limitations. The first limitation of the present study is the impossibility of using the results of unpublished studies, which is beyond the control of the researcher. Another limitation of the study which can be considered, is the heterogeneity of the articles, so that the location, conditions, type of disease and patients, type of study, tools, etc. were very different. Finally, the last limitation may be related to the variability of the included studies. Indeed, we included various kinds of articles which used the Orem's theory as a basis of their study, whereas by choosing some specific kinds of the studies, for example interventional ones we might assess the effectiveness of the studies as well.

6. Conclusion

Based on accessible evidences, chronic CVD patients, should take responsibility for self-care while researchers have acknowledged the intricacy of self-care and have proven that an extensive diversity of factors impress how patients take care of themselves. Due to their extensive roles in patient's care, nurses, peers, families and partners, can have a great impact on the level of CVD patients' self-care agency and strengthening self-care behaviors. Also, based on the findings of this review, the effect of basic conditioning factors on self-care behaviors of CVD

patients was reported to be mostly positive. According to these studies, with the increase of effective self-care behaviors, the quality of life of CVD patients also increased. It can be concluded that early symptom recognition leads to on time decision making to response to symptom and readmission to prevent more complications. Therefore, according to the results of reviewed studies and moderate to high self-care agency of the CVD patients and the types of specific self-care requisites of these patients, it can be considered that the most important and effective interventions, are supportive educative interventions. The results showed that the appropriate time for educational intervention is post-intensive period that reducing the patient's requisite for a wholly compensatory system and the best time for educative-supportive interventions will be outpatient setting. Also, the need to pay attention to cultural diversities in different nations, ethnicities, and races plays a significant role in strengthening self-care behaviors of CVD patients.

Therefore, health care managers and policymakers are advised to develop effective self-care behaviors of CVD patients by promoting the application of Orem's self-care theory and especially equipping health centers to facilitate supportive-educative interventions for CVD patients. It is also recommended that in further studies, the follow-up and intervention should be continued in a longer term, so that the effects of the intervention on self-efficacy can be examined longitudinally. It also seems that the inclusion of the theoretical training related to self-care of CVD patients in the undergraduate curriculum of nursing must be considered crucial.

Finally, it is also recommended that, policy makers and researchers should consider specific challenges for those with multiple chronic conditions including those with poor access to healthcare and those who experience fragmented care, polypharmacy, functional/psychological limitations, diet complexity, complex lifestyle changes, and inability to cope with the burden of multi-morbidity such as mental illnesses that may particularly be audience of self-care theories.

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Author Contributions

HM and MS both contributed to the design and concept making of the study. RJ did perform the review and found the relevant literature. RJ and AA reviewed the literature, contributed to screening and chose the most relevant articles. HM, MS, and RJ drafted the initial report. HGK and CYL critically reviewed the content and edited the manuscript. All authors approved the final version of the manuscript.

Research Highlights

What Is Already Known?

Since CVD is one of the prevalent chronic diseases in many communities, using self-care approaches would be helpful to improve health status among the people with such disorders. There are many different self-care approaches that exploring them may provide key information regarding how and when effectively self-care would be applied for the clients. The Orem theory is one of the most practical approaches in this regard that has been suggested by many authors.

What Does This Study Add?

- Orem's self-care theory is a practical and widely used framework to plan self-care in CVD patients particularly after hospital discharge.
- Healthcare professionals including nursing staff may use the Orem's self-care theory to empower their clients with CVD.
- The principles of Orem's self-care theory are consistent with contemporary self-care needs in patients with CVD problems and the theory may be used as a guide to perform educational interventions in healthcare centers.
- Based on Orem's self-care theory factors such as having information about the condition, self-efficacy, supportive educational interventions, and culture may influence the self-care activities in these people.

Conflict of Interest Disclosures

All authors declared that they have no conflict of interest.

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