

# Self-care Concept Analysis in Cancer Patients: An Evolutionary Concept Analysis

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## ABSTRACT

**Background:** Self-care is a frequently used concept in both the theory and the clinical practice of nursing and is considered an element of nursing theory by Orem. The aim of this paper is to identify the core attributes of the self-care concept in cancer patients.

**Materials and Methods:** We used Rodgers' evolutionary method of concept analysis. The articles published in English language from 1980 to 2015 on nursing and non-nursing disciplines were analyzed. Finally, 85 articles, an MSc thesis, and a PhD thesis were selected, examined, and analyzed in-depth. Two experts checked the process of analysis and monitored and reviewed the articles.

**Results:** The analysis showed that self-care concept is determined by four attributes of education, interaction, self-control, and self-reliance. Three types of antecedents in the present study were client-related (self-efficacy, self-esteem), system-related (adequate sources, social networks, and cultural factors), and healthcare professionals-related (participation).

**Conclusion:** The self-care concept has considerably evolved among patients with chronic diseases, particularly cancer, over the past 35 years, and nurses have managed to enhance their knowledge about self-care remarkably for the clients so that the nurses in healthcare teams have become highly efficient and able to assume the responsibility for self-care teams.

**Key words:** Cancer, Evolutionary concept analysis, Self-care

## INTRODUCTION

Cancer is a main public health problem in the United States and worldwide. One in four deaths in the United States occurs because of cancer.<sup>[1]</sup> Cancer is a major public health problem in Iran. The recent reports of the Iran's Ministry of Health and Medical Education have stated that it is the third reason for death in Iran after coronary heart disease and accidents.<sup>[2]</sup> Cancer mortality rates have been constantly decreasing for the past two decades. Overall, the risk of death due to cancer decreased by 20% between 1991 and 2010.

The progress has been noted mainly in middle-aged dark-skinned men, among whom mortality rates have declined by about 50%.<sup>[1]</sup> Cancer can cause many different symptoms, some subtle and some not at all subtle.<sup>[3]</sup> Currently, cancer is increasingly considered a chronic condition.<sup>[4]</sup> Cancer may have many effects on different domains of quality of life in cancer patients.<sup>[5]</sup> Cancer leads to socioeconomic problems, depression, and social isolation in the patients.<sup>[6]</sup> The participation of cancer patients in self-care programs causes

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behavioral changes and health promotion.<sup>[7]</sup> Currently, the best management approach to this chronic condition is self-care, which refers to patients' involvement in self-observing, recognizing, and labeling symptoms and judging their severity, assessing, and adopting treatment choices, and evaluating the efficiency of self-care.<sup>[8]</sup> A study indicated that participants who used self-care strategies had lower stress than the participants who did not use these strategies,<sup>[9]</sup> suggesting that use of self-care strategies could improve coping skills.<sup>[10]</sup> One of the most widely applied theories in predicting health behaviors is self-efficacy theory, which provides a comprehensive mechanism analysis of self-efficacy to change behaviors.<sup>[8]</sup> However, little literature has so far evaluated the relationships among the physical, psychological, social, demographic, and disease-related variables and self-care self-efficacy among gastric and colorectal cancer patients.

The self-care concept was introduced as an element of nursing theory by Orem.<sup>[9]</sup> The psychological factors such as depression, a sense of emptiness and futility, inefficiency, and worthlessness affect self-care practices significantly.<sup>[11]</sup> The findings have indicated that beliefs, individual characteristics, the relationship between treatment team and patient, and patient's sociocultural background affect self-care behaviors.<sup>[9]</sup> Ethno-tribal experiences, sociopolitical factors, socioeconomic background, education level, environmental factors (environmental pollution), and no or low knowledge are some other factors effective on self-care behaviors.<sup>[12]</sup>

Humans need to maintain health, and provision of adequate healthcare facilities for all community people, and stupendous costs spent for healthcare services have led to paying attention to the self-care concept.<sup>[13]</sup> Over time, the self-care concept has been investigated from different perspectives.<sup>[14]</sup> Self-care has been referred to as independence, self-efficacy, authority, self-guidance, and individual accountability, affected by socioeconomic and political factors.<sup>[8]</sup>

Concepts are elements of theories and contribute significantly to the evolution of theories.<sup>[15]</sup> Concept evolution is an important step in scientific progress of a discipline. The process and strategies of concept evolution have been paid greater attention over the past two decades.<sup>[16]</sup>

Concept analysis leads to development, testing, and evaluation of a theory. By analysis, concepts become more concrete and comprehensible. Any concept has certain

attributes differentiating it from other concepts.<sup>[17]</sup> Concept analysis assists in not only refining the vague concepts of theories but also clarifying the concepts applicable to nursing that are ambiguous and are occasionally used inappropriately and excessively. Concept analysis provides researchers and theorists with a correct understanding of the underlying attributes of concepts so that by arriving at a clear definition of the problem, they develop the theories to reflect the relationships among the concepts. Furthermore, concept analysis plays a significant role in developing research instruments or interview.<sup>[18]</sup> Over the past decades, several approaches have been developed and applied in nursing, each with their own philosophical fundamentals.<sup>[17]</sup> Attitude toward analysis of the concepts focuses mainly on originalism.<sup>[19]</sup> Rodgers' evolutionary concept analysis is based on the contemporary philosophical thinking on the concepts and their role in science evolution and development. This attitude focuses on the dynamic nature of the concepts, constantly changing and evolving over time in the social context.<sup>[20]</sup> From an evolutionary perspective, instead of responding to the question "What is the concept of interest?," the researchers focus on exploratory approach and facilitation of an appropriate process for further studies and exploration. By this method, any concepts can be evolved gradually, iteratively, and inductively within the framework of a process. In this approach, the analysis seeks to explain and describe the concept and its common applications, and to clarify its attributes as a basis for further development and evolution.<sup>[18]</sup> This study was conducted to clarify the concept of self-care in patients with cancer, and to better understand and identify the attributes, antecedents, and outcomes of self-care in the context of and the variations in these patients over time.

## MATERIALS AND METHODS

In this study, Rodgers' evolutionary concept analysis was used. Although six steps have been suggested to conduct the study, Rodgers believes that these activities can be accomplished simultaneously [Table 1].

### Sampling

The first step was to define the concept of interest and to set the range of related literature.<sup>[18]</sup> In this study, the self-care concept was investigated in cancer context. The second step was sampling from the published articles. In this study, the texts regarding self-care in nursing and non-nursing disciplines (health, medicine, etc.) published within the past 35 years were included in the analysis. By Rodgers'

**Table 1: Steps of Rodgers' evolutionary concept analysis**

Defining the concept of interest and the related or surrogate terms and words
Setting and selecting appropriate range (the population and samples of interest) to gather data
Gathering the data related to the purpose
Determining and explaining the attributes of concept
Determining the basis and contextual fundaments of concept (including sociocultural, interdisciplinary variables, and concept-associated antecedents and outcomes)
Analyzing the data with reference to the concept attributes
If possible, giving an example appropriate for the concept
Setting hypotheses and reasoning for analysis for further evolution of the concept

evolutionary concept analysis, the scientific databases such as EMBASE, PsycINFO, CINAHL, and Reviews and the Cochrane Database of Systematic Medline were searched for the relevant texts, and the search engine Google Scholar was used to achieve this purpose.

Initially, the words self-care and cancer, and then a combination of them were used to search for the relevant texts. Then, to obtain more detailed findings, the inclusion criteria were set for the articles to be included in the study. The articles published in English language from 1980 to 2015 on nursing and non-nursing disciplines were included in the analysis (health, medicine, etc.). In addition, the available textbooks and references were examined for further investigation of the concept.

## RESULTS

All articles were reviewed and examined. In the initial search, about 305 articles were retrieved. After applying to the inclusion criteria and deleting the duplicate articles, we had 135 articles left. Finally, 85 articles, an MSc thesis, and a PhD thesis containing the key words within nursing and non-nursing (health, medicine, etc.) disciplines with full text accessible were included in the analysis. Furthermore, four textbooks on nursing were included in the analysis to cover the concept-related subjects. The concepts and articles were meticulously reviewed and studied, and the data on attributes, antecedents, and outcomes of the concept as well as surrogate and related words were summarized and categorized. By means of thematic analysis and iterative processes, the main themes were extracted and then categorized based on the concept attributes. To ensure neutrality and reliability and to reduce bias, the analysis was audited by two experts on concept analysis.

## Attributes

Attributes are the key and repeated characteristics of the concepts which are found in the relevant literature or articles.<sup>[20]</sup> Moreover, identifying the concept attributes is the first step of analysis leading to an actual definition of the concept.<sup>[17]</sup> In the present study, the concept of self-care in patients with cancer was revealed as a process with the attributes of education, interaction, self-control, and self-reliance.

## Education

According to the data, there were some contents related to the education and the nursing and non-nursing articles on education-emphasized self-care. Some articles recommended face-to-face training and some others group training.<sup>[21]</sup> Self-care education is the essence of self-management and self-monitoring so that the patients without self-care training are hospitalized more frequently, and self-care education leads to increased healthcare literacy and information.<sup>[22]</sup> When self-care education is inadequate, healthcare team has to deliver more healthcare services and function with more staff, which is practically problematic because of insufficient facilities and personnel. Clinically, self-care education leads to the patients' participation in self-care. The findings of other studies have also indicated that the education is directly correlated with self-care. Patients with higher education did self-care more frequently and had a higher quality of life compared to those with lower or no education.<sup>[23]</sup>

## Interaction

Interaction is the basis of self-care. This interaction may be between patient and family, friends, and nurses.<sup>[24]</sup> Nursing and non-nursing studies, for example, sociological, have shown that the client is on one side of the interaction and his/her interaction with the healthcare team to do self-care is an important and vital issue.<sup>[10]</sup> Through the client's interaction with the healthcare team, healthcare planning is run collaboratively and the patients are actively involved in this healthcare plan.<sup>[25]</sup> The study findings have indicated that the client's interaction with healthcare team is essential to satisfy the client's needs.<sup>[26]</sup> Furthermore, another study has indicated that no mental, psychological interaction among heart failure patients in self-care education leads to defective self-care.<sup>[22]</sup> By means of interaction, clients can manage their problems and do self-care more efficiently.<sup>[25]</sup> Furthermore, the results of other studies show that the interaction between the clients and primary healthcare-delivering team is vital to develop the self-care

concept so that collaborative approaches have led to high efficiency of self-care in patients with chronic diseases.<sup>[27]</sup>

### Self-monitoring

Self-monitoring is an attribute which is associated with self-care. Wilde and Garvin in a study using evolutionary concept analysis argued that self-care and self-monitoring are two-way processes. From other perspectives, self-monitoring is essentially a method of self-care.<sup>[28]</sup> A study on the conception and significance of self-management indicated that the processes of self-monitoring and self-regulation led to health promotion in the elderly.<sup>[29]</sup> Another study of self-monitoring concept analysis in patients with type 2 diabetes demonstrated that the life experiences and cultural background contributed fundamentally to self-monitoring in patients with diabetes.<sup>[30]</sup> Sometimes, self-monitoring and self-care are used interchangeably.<sup>[31]</sup> Richard and Shea in a qualitative, analytical study concluded that self-monitoring concept was very extensive and a method of self-care which addressed individuals holistically and involved certain elements including diet, health, and exercise.<sup>[32]</sup>

### Self-reliance

The concept of self-reliance, alongside chronic conditions (cancer), is so much entrenched in our thinking that it is incorporated into developing and delivering healthcare services.<sup>[33]</sup> Many studies have highlighted the application and efficacy of the self-reliance concept.<sup>[34,35]</sup> A main concern regarding self-reliance is the observance of ethics and ethical considerations. Other concerns include inadequate sources for clients, no primary preparation, and lack of the skills to do nursing and medical care.<sup>[34,36]</sup> Self-reliance is closely associated with the concept of self-care, and socioeconomic and political factors affect self-efficacy concept.<sup>[37]</sup> Self-reliance results in the participation of clients and their families in nursing, research, and clinical practices.<sup>[38]</sup>

### Antecedents of self-care in cancer patients

The subsequent iterative process in the cycle of evolutionary concept analysis is to set the concept antecedents.<sup>[39]</sup> Antecedents are the events that take place before self-care.<sup>[40]</sup> Three types of antecedents in the present study were found to be client-related (self-efficacy, self-esteem), system-related (adequate sources, social networks, and cultural factors), and healthcare professionals-related (participation). Self-efficacy is referred to as the client's ability to act which is an important factor affecting self-care. For example, a study on patients with

diabetes indicated that self-efficacy was associated with doing diabetes-related self-care practices which were directly related to glycemic control.<sup>[41]</sup> Furthermore, self-efficacy is effective on the antecedents and outcomes of self-care so that patients with chronic hepatitis can influence their welfare, functional ability, or self-efficacy, and the disease course through acquiring self-care skills.<sup>[42]</sup> Self-efficacy helps relieve stress and promote domains of quality of life.<sup>[43]</sup>

Self-esteem: An important factor in self-care practices in patients with chronic diseases is self-esteem. In this regard, Bandura conducted a study on three groups of patients with chronic diseases and found the group with higher self-esteem and self-efficacy needed less support in doing self-care.<sup>[44]</sup> In addition, a study indicated that patients with hepatitis had lower self-esteem and therefore a minimal role in doing self-care practices due to hopelessness, depression, and psychophysical problems.<sup>[9]</sup> Therefore, patients with cancer should obtain further information on their disease conditions and healthcare programs and be persuaded to assume the responsibility for their own health. Adequate sources, social networks, and cultural factors contribute significantly to predicting social supports, sources, and the effect of cultural factors on self-care practices.<sup>[45]</sup> The study findings have indicated that the social support and adequate sources lead to enhancement of motivation for self-care training and self-esteem, promotion of health, and decrease in psychophysical problems.<sup>[46]</sup>

### Review of literature on the effects of caring for a patient with cancer

Better healthcare provider–patient communication, social support, and higher self-efficacy were associated with performing diabetes self-care behaviors. These behaviors were directly associated with glycemic control.<sup>[41]</sup> Lack of individual and social support and caregiver stress can lead to psychological and sleep disturbances and changes in caregivers' physical health, immune function, and financial well-being.<sup>[47]</sup> Cultural factors have an important effect on self-care; therefore, the culture of health promotion and high-quality care should be set as a goal for healthcare professionals and therefore they should make efforts to realize it.<sup>[12,40,45]</sup>

### Participation

The healthcare professionals' support of and cooperation with the clients play an important role in the process of self-care among clients with chronic diseases. The studies have shown that if the client and healthcare professionals assume the responsibility for treatment and the client is

supported by healthcare team in doing self-care, he/she feels more qualified and seeks to actively cooperate in self-care.<sup>[48]</sup> Active participation of the client in self-care leads to the promotion of his/her quality of life.<sup>[49]</sup> As the important principle in self-care is the participation and assumption of the responsibility by the patients, many of the adverse consequences of cancer may be managed by self-care behaviors.<sup>[50]</sup> Moreover, the participation and enhancement of self-care skills in cancer patients cause a change in behavior and promotion of health among these patients.<sup>[51]</sup>

### Outcomes of self-care in patients with chronic hepatitis

The outcomes of the self-care concept in this study were relief of stress, promotion of quality of life, change in lifestyle, enhancement of knowledge and awareness, increase in adjustment with disease, and acceptance of disease.<sup>[11]</sup> The findings of this study indicated that self-care education caused quality of life to enhance among patients with cancer, the patients learned well how to protect themselves and prevent the disease from being transmitted to others and regulated their life plan according to their disease, and since they accepted their disease and family, support institutions, and counseling centers supported them, their stress relieved and they did their jobs routinely.<sup>[51]</sup> Moreover, other studies have indicated that the quality of life enhances in patients with chronic diseases and numerous psychophysical problems if they are supported by friends, family, healthcare team, and community, participate in self-care training sessions, and receive satisfactory training; as a result, their dependency on healthcare team is reduced.<sup>[48]</sup>

### Context

Regarding the context, this study indicated that at primary healthcare and community health centers, the self-care concept is the main and/or pivotal concept. However, this concept can be also applicable to emergency and/or acute healthcare or treatment centers (hospitals). Over the past few years, the self-care concept has been used frequently, and its role, range, and function have led to the change in role and function of primary healthcare professionals in community. Self-care including psychophysical care is performed at acute step of diseases within primary healthcare, at clinics as well as in cities and villages. Several studies have addressed the self-care concept, including theoretical studies, review articles, and meta-analysis as well as nursing and non-nursing research. The findings have indicated that the clients' self-care practices may be

enhanced by offering primary healthcare programs because primary healthcare is more economical and convenient than the treatments for chronic diseases, particularly cancer. As previously stated, different studies have been conducted on patients with chronic diseases such as cancer. These studies have shown that if the self-care process is implemented in the social context surrounding the disease, it helps enhance the quality of life in the clients. The findings have also indicated that nursing studies have considerably caused the development and evolution of the concepts and theory as compared to the non-nursing studies. This knowledge is referred to as evidence-based.

### Surrogate terms and related concepts

Surrogate terms and related concepts help to understand the differences and similarities, to explain the meanings, and to describe the concept and term under study.<sup>[52]</sup> In this study, the surrogate terms and related concepts are self-management, self-monitoring, and self-regulation which have appeared in all nursing and non-nursing articles although these terms are more frequently seen in nursing articles than non-nursing ones.<sup>[40]</sup> The term "self-management" has appeared in nursing and non-nursing articles instead of "self-care" more frequently than other terms.<sup>[28]</sup> However, some studies have shown that self-monitoring has been used instead of self-care more frequently than self-management.<sup>[28]</sup>

## DISCUSSION

Over the past years, several factors such as time and context or background have been reported to be effective on self-care chronic disease patients in nursing and non-nursing studies.<sup>[29]</sup>

Overall, the attributes of self-care concept can be determined through problem-solving, setting purposes, and assessment.<sup>[8,16]</sup> For self-care concept in nursing and non-nursing disciplines, inconsistent arguments have been offered, which is due to the function, education, experience, role, and scope of each discipline.<sup>[32]</sup> In the present study, self-care concept was revealed as a process and involving self-empowerment, self-monitoring, education, and interaction in the cancer patients. The findings of this study indicated that several nursing and non-nursing studies emphasized self-care education. Both face-to-face and group training have been recommended. Training self-care is essential for self-management and self-treatment so that patients with no self-care education may be hospitalized more frequently. Moreover, health literacy and information

lead to efficient self-care.<sup>[7,22]</sup> Regarding the education, the findings have indicated that health literacy, knowledge, and information contribute fundamentally to self-empowerment and result in enhanced self-empowerment in patients with chronic diseases.<sup>[11,23]</sup> Furthermore, other studies have shown that in large health systems, the health literacy developed by education is a significant and effective factor for self-empowerment which greatly helps do self-care practices.<sup>[24]</sup> The findings of some studies indicate that the educational strategies may be independent of age and socioeconomic status so that any individual at any age and socioeconomic status is able to obtain necessary information on health issues.<sup>[53]</sup> Several factors, including sociocultural, play a role in education, client, and family.<sup>[11]</sup> Overall, other studies have reported similar findings to the present study. Another attribute in this study was interaction. The findings indicated that interaction was the basis of self-care and might take place between the patients and family, friends, and nurses. The interaction between the clients and healthcare team is vital to do self-care. Through the clients' interaction with healthcare team, their requirements are satisfied and they can do self-care more efficiently. The studies have shown that nurses frequently relate to and/or cooperate with the clients to resolve the problems.<sup>[54]</sup> Moreover, regarding planning for the clients, relationship-participation is a basic and important issue so that if this relationship is not established, it is difficult and even impossible to care for the patient. Without relationship-participation, planning for healthcare is difficult to conduct.<sup>[25]</sup> As observed, these findings are in agreement with and confirm the present study. Another important attribute which is associated with self-care is self-monitoring. The findings have indicated that self-care and self-monitoring are two-way processes and self-monitoring is essentially a method of self-care and life experiences and cultural background of the patients play a significant role in self-monitoring.<sup>[28]</sup> Furthermore, self-monitoring concept is very extensive and a method of self-care which considers people holistically and involves certain elements such as diet, health, and exercise.<sup>[55]</sup> This argument is consistent with other studies. Self-monitoring is applicable to nursing and non-nursing studies and the present study obviously demonstrated the use of self-monitoring alongside self-care. However, Wilde and Garvin study was inconsistent with the present study.<sup>[28]</sup> In that study, the findings indicated that the self-monitoring was applied more frequently than self-care in nursing, which is inconsistent with the present study.<sup>[28]</sup> Another attribute in this study was self-reliance. The results demonstrated that this concept was used in developing and delivering healthcare, reducing self-care-related problems,

decision-making, problem-solving, cooperating with treatment team to relieve clinical outcomes, promoting health and quality of life, and generally any activity contributing to prevention, treatment, and rehabilitation. This is consistent with another study.<sup>[34]</sup>

## CONCLUSION

In this study, analysis of self-care concept was conducted by Rodgers' evolutionary concept analysis and the published literature on nursing and non-nursing disciplines. The attributes reflected by self-care were education, interaction, self-monitoring, and self-reliance. The findings have indicated that the self-care has considerably evolved among patients with chronic diseases, particularly cancer, over the past 35 years, and nurses have managed to enhance their knowledge about self-care for the clients remarkably so that the nurses in healthcare teams have become highly efficient to assume the responsibility for self-care teams. As a result, the authority and independence of nursing profession and consequently nursing knowledge have been promoted.

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## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Siegel R, Ma J, Zou Z, Jemal A. Cancer statistics, 2014. *CA Cancer J Clin* 2014;64:9-29.
2. Taghavi A, Fazeli Z, Vahedi M, Baghestani AR, Pourhoseingholi A, Barzegar F, *et al.* Increased trend of breast cancer mortality in Iran. *Asian Pac J Cancer Prev* 2012;13:367-70.
3. Heydarnejad MS, Hassanpour DA, Solati DK. Factors affecting quality of life in cancer patients undergoing chemotherapy. *Afr Health Sci* 2011;11:266-70.
4. Dehkordi A, Heydarnejad MS, Fatehi D. Quality of life in cancer patients undergoing chemotherapy. *Oman Med J* 2009;24:204-7.
5. Roiland RA, Heidrich SM. Symptom clusters and quality of life in older adult breast cancer survivors. *Oncol Nurs Forum* 2011;38:672-80.
6. Pinquart M, Duberstein PR. Depression and cancer mortality: A meta-analysis. *Psychol Med* 2010;40:1797-810.

7. John LD. Self-care strategies used by patients with lung cancer to promote quality of life. *Oncol Nurs Forum* 2010;37:339-47.
8. Qian H, Yuan C. Factors associated with self-care self-efficacy among gastric and colorectal cancer patients. *Cancer Nurs* 2012;35:E22-31.
9. Mohammadi N, Hassanpourdehkordi A, NikbakhtNasrabadi A. Iranian patients with chronic hepatitis struggle to do self-care. *Life Sci J* 2013;10:457-62.
10. HassanpourDehkordi A, Mohammadi N, NikbakhtNasrabadi A. Hepatitis-related stigma in chronic patients: A qualitative study. *Appl Nurs Res* 2016;29:206-10.
11. Ridner SH, Dietrich MS, Kidd N. Breast cancer treatment-related lymphedema self-care: Education, practices, symptoms, and quality of life. *Support Care Cancer* 2011;19:631-7.
12. Sheikh MA, Islam R. Cultural and socio-economic factors in health, health services and prevention for indigenous people. *Med Anthropol*;2010;263-73.
13. Hanna KM, Decker CL. A concept analysis: Assuming responsibility for self-care among adolescents with type 1 diabetes. *J Spec Pediatr Nurs* 2010;15:99-110.
14. Holzapfel N, Löwe B, Wild B, Schellberg D, Zugck C, Remppis A, *et al.* Self-care and depression in patients with chronic heart failure. *Heart Lung* 2009;38:392-7.
15. Chinn P, Kramer M. *Integrated Theory and Knowledge Development in Nursing*. Mosby. 8<sup>th</sup> ed. USA: Mosby; 2011.
16. Wilkinson A, Whitehead L. Evolution of the concept of self-care and implications for nurses: A literature review. *Int J Nurs Stud* 2009;46:1143-7.
17. Coetzee SK, Klopper HC. Compassion fatigue within nursing practice: A concept analysis. *Nurs Health Sci* 2010;12:235-43.
18. Toftagen R, Fagerström LM. Rodgers' evolutionary concept analysis – A valid method for developing knowledge in nursing science. *Scand J Caring Sci* 2010;24 Suppl 1:21-31.
19. Butt G. Stigma in the context of hepatitis C: Concept analysis. *J Adv Nurs* 2008;62:712-24.
20. Broome M, Rodgers B, Knafel K. *Concept development in nursing: foundations, techniques and applications*. 2<sup>nd</sup> ed. New York: Saunders; 2000.
21. Dehkordi AH, Heydarnejad MS. The impact of problem-based learning and lecturing on the behavior and attitudes of Iranian nursing students. A randomized controlled trial. *Dan Med Bull* 2008;55:224-6.
22. Dickson VV, Buck H, Riegel B. A qualitative meta-analysis of heart failure self-care practices among individuals with multiple comorbid conditions. *J Card Fail* 2011;17:413-9.
23. Hassanpour-Dehkordi A. The Effect of self-care program education based on Orem's theory on mental aspect of quality of life in multiple sclerosis patients. *Nurs Midwifery* 2014;12:477-90.
24. Kravits K, McAllister-Black R, Grant M, Kirk C. Self-care strategies for nurses: A psycho-educational intervention for stress reduction and the prevention of burnout. *Appl Nurs Res* 2010;23:130-8.
25. Bolster D, Manias E. Person-centred interactions between nurses and patients during medication activities in an acute hospital setting: Qualitative observation and interview study. *Int J Nurs Stud* 2010;47:154-65.
26. Hayes B, Bonner A, Pryor J. Factors contributing to nurse job satisfaction in the acute hospital setting: A review of recent literature. *J Nurs Manag* 2010;18:804-14.
27. Becker G, Gates RJ, Newsom E. Self-care among chronically ill African Americans: Culture, health disparities, and health insurance status. *Am J Public Health* 2004;94:2066-73.
28. Wilde MH, Garvin S. A concept analysis of self-monitoring. *J Adv Nurs* 2007;57:339-50.
29. Doyle N. Cancer survivorship: Evolutionary concept analysis. *J Adv Nurs* 2008;62:499-509.
30. Clark DO, Frankel RM, Morgan DL, Ricketts G, Bair MJ, Nyland KA, *et al.* The meaning and significance of self-management among socioeconomically vulnerable older adults. *J Gerontol B Psychol Sci Soc Sci* 2008;63:S312-9.
31. Tan MY, Magarey J. Self-care practices of Malaysian adults with diabetes and sub-optimal glycaemic control. *Patient Educ Couns* 2008;72:252-67.
32. Richard AA, Shea K. Delineation of self-care and associated concepts. *J Nurs Scholarsh* 2011;43:255-64.
33. Mansbridge J. Clarifying the concept of representation. *Am Polit Sci Rev* 2011;105:621-30.
34. Fonchingong CC, Fonjong LN. The concept of self-reliance in community development initiatives in the Cameroon grassfields. *Nordic J Afr Stud* 2003;12:196-219.
35. Lundman B, Aléx L, Jonsén E, Norberg A, Nygren B, Santamäki Fischer R, *et al.* Inner strength – A theoretical analysis of salutogenic concepts. *Int J Nurs Stud* 2010;47:251-60.
36. Fonchingong C, Fonjong L. The concept of self-reliance in community development initiatives in the Cameroon grassfields. *GeoJournal* 2002;57:83-94.
37. Smith MJ, Liehr PR. *Middle range theory for nursing*. 3<sup>rd</sup> ed. New York: Springer Publishing Company; 2013.
38. Sarason IG. *Social support: Theory, research and applications*. Dordrecht/Boston: Springer Science & Business Media; 2013.
39. Cowden TL, Cummings GG. Nursing theory and concept development: A theoretical model of clinical nurses' intentions to stay in their current positions. *J Adv Nurs* 2012;68:1646-57.
40. Dudas KI. Cultural competence: An evolutionary concept analysis. *Nurs Educ Perspect* 2012;33:317-21.
41. Gao J, Wang J, Zheng P, Haardörfer R, Kegler MC, Zhu Y, *et al.* Effects of self-care, self-efficacy, social support on glycemic control in adults with type 2 diabetes. *BMC Fam Pract* 2013;14:66.
42. Jones F, Riazi A. Self-efficacy and self-management after stroke: A systematic review. *Disabil Rehabil* 2011;33:797-810.
43. Moattari M, Ebrahimi M, Sharifi N, Rouzbeh J. The effect of empowerment on the self-efficacy, quality of life and clinical and laboratory indicators of patients treated with hemodialysis: A randomized controlled trial. *Health Qual Life Outcomes* 2012;10:115.
44. Bandura A. The primacy of self-regulation in health promotion. *J Appl Psychol* 2005;54:245-54.
45. Ryan RM, Deci EL. A self-determination theory perspective on social, institutional, cultural, and economic supports for autonomy and their importance for well-being. *Human autonomy in cross-cultural context*. New York: Springer; 2011. p. 45-64.
46. Song Y, Song HJ, Han HR, Park SY, Nam S, Kim MT. Unmet needs for social support and effects on diabetes self-care activities in Korean Americans with type 2 diabetes. *Diabetes Educ* 2012;38:77-85.
47. Northouse L, Williams AL, Given B, McCorkle R. Psychosocial care for family caregivers of patients with cancer. *J Clin Oncol* 2012;30:1227-34.
48. Holm LV, Hansen DG, Vedsted P, Larsen PV, Kragstrup J, *et al.* Participation in cancer rehabilitation and unmet needs: A population-based cohort study. *Support Care Cancer* 2012;20:2913-24.
49. Galway K, Black A, Cantwell M, Cardwell CR, Mills M, Donnelly M. Psychosocial interventions to improve quality of life and emotional wellbeing for recently diagnosed cancer patients. *Cochrane Database Syst Rev* 2012;11:CD007064.
50. Cockle-Hearne J, Faithfull S. Self-management for men surviving prostate cancer: A review of behavioural and psychosocial interventions to understand what strategies can work, for whom and in what circumstances. *Psychooncology* 2010;19:909-22.
51. McCorkle R, Ercolano E, Lazenby M, Schulman-Green D, Schilling LS, Lorig K, *et al.* Self-management: Enabling and empowering patients living with cancer as a chronic illness. *CA Cancer J Clin* 2011;61:50-62.
52. Stoltz P, Andersson EP, Willman A. Support in nursing – An evolutionary concept analysis. *Int J Nurs Stud* 2007;44:1478-89.
53. Sørensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z, *et al.* Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health* 2012;12:80.
54. Aiken LH, Sermeus W, Van den Heede K, Sloane DM, Busse R, McKee M, *et al.* Patient safety, satisfaction, and quality of hospital care: Cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ* 2012;344:e1717.
55. Lupton D. The digitally engaged patient: Self-monitoring and self-care in the digital health era. *Soc Theory Health* 2013;11:256-70.