Effectiveness of Self-Care Training Program based on Empowerment Model on Quality of Life among Hemodialysis Patients in the City of Sari, Iran

Ghoncheh Raheb (1)
Sedigheh Verig Kazemi (1)
Fardin Alipour (1)
Samaneh Hosseinzadeh (2)
Robab Teymouri (3)

(1) Department of Social Work, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran
(2) Department of Biostatistics, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran
(3) Pediatric Neurorehabilitation Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

Corresponding author:
Robab Teymouri
Pediatric Neurorehabilitation Research Center,
University of Social Welfare and Rehabilitation Sciences,
Tehran, Iran
Tel: +98 21 22180083 (internal Code: 2840)
Email: robab.teymouri@yahoo.com

Abstract

Background: The purpose of the study was to examine the effectiveness of self-care training program based on empowerment model on quality of life in patients undergoing hemodialysis in the city of Sari, Iran.

Materials and Methods: This experimental research had a pre-test/post-test control group design. The study sample included 60 hemodialysis patients at Hazrat Fatemeh Zahra (SA) Hospital in the city of Sari selected by random sampling method and assigned to two groups: experimental and control. To collect the data and examine the quality of life among patients receiving hemodialysis, a demographic questionnaire and the Kidney Disease Quality of Life Short Form (KDQOL-SF 1.3) were applied. The intervention program of self-care skills training based on empowerment model was administered on the experimental group in 12 sessions; each one lasting 30-45 minutes. Two months after the final session, the form was recompleted and the data were analyzed using SPSS Version 22.

Results: The results showed that self-care training program could improve the aspects of quality of life (general health, physical functioning, emotional role-playing, social functioning, mental health, employment status, sexuality, and family satisfaction) and also a significant difference was observed in the scores of the aspects of quality of life among hemodialysis patients before and after the given intervention.

Conclusions: The self-care skills training program based on empowerment model had an effect on quality of life among patients undergoing hemodialysis. Therefore, using this method in hemodialysis centers could prevent or reduce problems among patients with hemodialysis and improve their quality of life.

Key words: Empowerment, Quality of Life, Hemodialysis Patients

Please cite this article as: Robab Teymouri, et al. Effectiveness of Self-Care Training Program based on Empowerment Model on Quality of Life among Hemodialysis Patients in the City of Sari, Iran World Family Medicine. 2018; 16(2):16-23. DOI: 10.5742/MEWFM.2018.93236

Introduction

Chronic kidney diseases are among the known problems within health systems (1). In this respect, Alvares (2012) shed light on the problems of hemodialysis patients in the domains of functional capacity, physical aspect, as well as social aspect (2). Patients suffering from kidney diseases are also encountered by a sharp decline in quality of life as well as quality of social relationships and social supports (1). Moreover, research studies have shown that part of health that is dependent on quality of life index is lower in hemodialysis patients than that in the general population or even in patients with kidney transplantation (2-6).

Accurate assessment of quality of life in hemodialysis patients and adoption of effective interventions to improve quality of life among these patients are of utmost importance in terms of evaluating and improving the treatment process (2,4,7). According to the definition provided by the World Health Organization (WHO), quality of life refers to individuals' perceptions of their positions in life in terms of culture, value system in which they live in, goals, expectations, as well as standards and priorities (8). Nowadays, improving quality of life in patients receiving hemodialysis is considered as one of the most important therapeutic goals in the domain of working with this target group.

Given multiple drug therapies, special diets, and necessity to acquire the ability to cope with physical and mental disabilities; hemodialysis patients are in need of special and continuous education (9). Thus, it seems that self-care training programs are of importance. Self-care is also recognized as one of the health-promoting behaviors. Such health-promoting behaviors as well emphasize positive patterns of life that can increase health status and quality of life (10), so participation of patients in the processes of treatment and care can be effective in reducing the problems of patients with renal failure and promote their quality of life. Such participations require an increase in patients' awareness of self-care. In this regard, Orem (2005) considered self-care as consciously learned and objective activities performed by an individual to sustain life and promote one's health and those of their families (11,12). The results of various investigations have similarly indicated that poor compliance with self-care behaviors has been associated with a rise in the number of patient re-hospitalizations. Therefore, most chronic renal failure management programs put more emphasis on promoting self-care behaviors as a key to success in improving quality of life and reducing mortality as well as healthcare costs for such patients(13).

Among the self-care training models that can be used by health professionals is a training program based on empowerment model. The empowerment program is an applied tool that can lead to growth and development in individuals' knowledge and skills (11,12). Accordingly, the results of a study by Atashpeykar (2012) suggested that empowerment-based intervention could have a significant impact on improvement of awareness, knowledge, self-esteem, and self-efficacy in patients and in their in-home caregivers in terms of care for patients with chronic diseases (14).

The empowerment components have been also simulated to a triangle whose sides are an individual's behavioral system, an individual's value system, and the social environment in which an individual is living. The behavioral system includes self-care behaviors and the value system for an individual is based on the value given by an individual to oneself which can lead to self-care and controlled living conditions. According to this index, a patient has a sense of responsibility for one's health status and does not evaluate it as affected by external factors such as chance. In the given triangle, the environmental factor involves an individual's social environment and living environment whose essential roles in self-care are a supportive role in personal and social dimensions and an encouraging role in self-care behaviors (15-17).

The purpose of this study was to improve quality of life in hemodialysis patients in aspects such as general health, mental health, physical functioning, social functioning, emotional role-playing, employment status, sexuality, as well as family satisfaction. In order to fulfill this objective, a self-care training program focused on the three-side empowerment triangle including an individual's behavioral system, value system, and social environment, was implemented.

Materials and Methods

This experimental research had a pre-test/post-test control group design. The statistical population of the study included all hemodialysis patients in Hazrat Fatemeh Zahra Hospital in the city of Sari in Iran. The inclusion criteria for the study samples were age range between 20 and 65 years with at least middle school education. The study samples did not suffer from any mental disorders requiring urgent treatments (epilepsy), severe depression, suicidal ideation, types of psychosis, and personality disorders (antisocial). Besides, they were not diagnosed with severe physical disabilities such as liver, heart, and pulmonary failures. Moreover, the sampling was in the form of simple random sampling method in which 60 patients meeting the inclusion criteria were recruited for this study out of the 110 patients selected and then they were randomly divided into two groups of 30 individuals.

The research instrument was the Kidney Disease Quality of Life Short Form (KDQOL-SF 1.3). The given questionnaire is a special tool to assess quality of life in patients with hemodialysis whose reliability and validity had been calculated by Yakaninejad et al. (18,19).

The reliability of the questionnaire for all its dimensions was higher than 0.70. In this regard, all the dimensions of the questionnaire had acceptable internal correlation coefficients. To validate the questionnaire, it was submitted to three faculty members in the field of healthcare and working on quality of life of hemodialysis patients and thus

they confirmed the face validity and the content validity of the questionnaire. The intervention was also administered with a pre-test on experimental and control groups. It should be noted that the intervention was held in 12 sessions and each session lasted about 45 minutes. At the end of the training sessions, a post-test was administered on both groups.

The materials that were taught in the intervention sessions were taken from an information package (1. individuals' empowerment components for self-care; 2. self-care training and information package; and 3. self-care training and information package for self-care). These training and information packages were provided and developed at the Office for Health Education and Promotion in the Ministry of Health and Medical Education of Iran in 2014.
The data were analyzed using SPSS Version.22 using descriptive statistics such as mean, frequency, and standard deviation as well as inferential statistics including Levene's test, Kolmogorov-Smirnov test, and analysis of covariance. The SPSS Software was used for data analysis in which the descriptive statistics included frequency and percentage tables as well as mean and standard deviation and the inferential statistics were comprised of analysis of covariance (ANCOVA).

Results

Considering the descriptive indices of the present study, the demographic characteristics of the samples were as follows.

In terms of gender; 63% of the participants in the study were male and 37% were women. In addition; 11% of the participants were aged between 20 and 35 years, 43% of them were in the age range of 36 to 50 years, and 46% of the given individuals aged between 51 and 65 years. Regarding the level of education, 18.3% of the participants had primary school education, 38.3% of them had middle school education, 36.6% of such participants had high school diploma, and 6.6% of them held a bachelor's degree. Considering the marital status; 56.6% of the samples were married, 13.3% of them were single, 11.6% of these individuals were divorced, and 18.3% of these individuals had deceased spouses.

Table 2 (page 20) illustrates descriptive indices of quality of life components for experimental and control groups in the pre-test and post-test stages with a focus on means and standard deviations.

Using parametric tests in the inferential statistics section, the Kolmogrov-Smirnov test was used to calculate the normal distribution of the data. Since the probability levels in all the variables of the study were larger than the 0.10 error level, the test results of the study indicated the normal distribution of the data.

In order to test the research hypotheses, the mean scores for the pre-test/post-test differences in the experimental and control groups were examined through the ANCOVA.

According to the results of Levene's test indicating equality of variances in all the variables, the ANCOVA was used for the assumptions of the study to test the 3 research hypotheses.

Hypothesis 1: Self-care training program based on empowerment model has an effect on general health in hemodialysis patients.

As seen in Table 3 (page 20) (Eta=0.70, p=0.00, F (1.60) = 0.71), a significant difference was found between both study groups. In other words, there was a significant difference between the general health post-test results in the experimental group and those in the control group. The size of the Eta=0.70 also indicated that 0.70% of the improvement in the general health of the individuals participating in the experimental group was attributed to the effect of self-care training program based on empowerment model on general health.

Hypothesis 2: Self-care training program based on empowerment model has an effect on physical functioning of hemodialysis patients in the city of Sari.

According to ANCOVA (Eta=0.75, p=0.002, F (1.60) = 10.52), a significant difference was observed between both study groups. In other words, there was a significant difference between the physical functioning post-test results in the experimental group and those in the control group. The size of the Eta=0.75 also suggested that 75% of the improvement in the physical functioning of those participating in the experimental group was associated with the impact of self-care training program based on empowerment model on physical functioning of patients receiving hemodialysis in the city of Sari.

Hypothesis 3: Self-care training program based on empowerment model has an effect on emotional role-playing of hemodialysis patients in the city of Sari.

According to ANCOVA (Eta=0.64, p=0.00, F (1.60) = 20.43), there was a significant difference between both study groups. In other words, a significant difference was found between the emotional role-playing post-test results in the experimental group and those in the control group. Moreover, the size of the Eta=0.64 revealed that 64% of the improvement in the emotional role-playing of the participants in the experimental group was attributed to the effect of self-care training program based on empowerment model on emotional role-playing in hemodialysis patients in the city of Sari.

Hypothesis 4: Self-care training program based on empowerment model has an effect on social functioning of hemodialysis patients in the city of Sari.

According to ANCOVA (Eta=0.79, p=0.00, F (1.60) = 21.52), a significant difference was observed between both study groups. In other words, there was a significant difference between the social functioning post-test results in the experimental group and those in the control group.

Table 1: Description of Intervention Sessions

Sessions	Goals	Description
one	familiarity with group members familiarity with patients' problems delineation of training goals for the group	The session began with the introduction of the members, each group member talked about their problems concerning treatment and care, and then the training goals were explained by the social workers to the group.
two	familiarity with self-care and its benefits	The need for self-care among hemodialysis patients was discussed; then the physical, emotional, psychological, social, and spiritual dimensions of self-care were explained; and finally the group members discussed the cases that had been used before the given sessions or how to apply these dimensions.
three	making individuals acquainted with empowerment dimensions with an emphasis on an individual's value system	Understanding self-concept and the value system that a person has about oneself, changing a person's attributes from risky attributes to low-risk ones in order to improve mental health and create a positive attitude towards oneself by which a person can perceive oneself valuable and gain a sense of competence and responsibility about oneself
four	making individuals familiarized with empowerment dimensions with a focus on self-efficacy	Explaining an individual's self-efficacy in terms of self-care dimensions and displaying self-efficacy patterns in self-care, or introducing effective experiences by group members about self-care, expressing negative experiences of members and self-care barriers, and trying to provide solutions or how to resolve such barriers
five	familiarizing individuals with empowerment dimensions with an emphasis on self-regulation	Illustrating self-regulation and its dimensions in self-care, introducing effective self-regulatory patterns
six	making individuals acquainted with empowerment dimensions with a focus on self-management and changing the locus of control from outside to inside	Self-management with an emphasis on cognitive, emotional and behavioral dimensions; individual's perceptions of the disease and what the patient should be aware of, explanation of high-risk behaviors and alternative safe ones, and explanation of the emotional needs of individuals and how to manage emotions
seven	practical work and practice with self-efficacy and self-regulation	Each member of the group was asked to plan on promoting methods for self-efficacy and self-regulation aimed at self-care, identify obstacles and positive points, and provide practical work in group.
eight	practical work and practice with self-management in cognitive, emotional, and behavioral dimensions	Each group member was asked to plan on self-management methods concerning behavioral, cognitive, and emotional self-care; identify positive points and obstacles, and provide practical work in group
nine	identifying effective and facilitating environmental factors and preventive environmental ones in self-care and how to use and apply them	Each member was asked to discuss effective and preventive environmental factors and also how to apply positive factors and eliminate negative ones
ten	introduction of social and therapeutic support networks	Environmental support networks such as associations, community health centers, and healthcare centers were introduced to patients and the family networks affecting treatments were also recognized.
eleven	writing self-care program	Everyone was asked to set a self-care program and then the given program was reviewed and revised by the social worker.
twelve	wrap-up and evaluation	The materials were repeated in brief and summarized and then the results of the sessions were evaluated through interviews.

Table 2: Pre-test/post-test mean scores of control and experimental groups

Variables / groups		Mean	Standard deviation
general health	pre-test (experimental)	66.60	17.25
	post-test (experimental)	64.5	27.61
	pre-test (control)	66.20	16.9
	post-test (control)	65.1	20.28
physical functioning	pre-test (experimental)	16.76	7.75
	post-test (experimental)	32.60	12.38
	pre-test (control)	17.70	7.25
	post-test (control)	18.10	6.32
emotional role-playing	pre-test (experimental)	20.60	5.46
	post-test (experimental)	28.66	6.21
	pre-test (control)	21.43	5.2
	post-test (control)	20.56	7.8
social functioning	pre-test (experimental)	25.30	4.66
	post-test (experimental)	29.36	4.27
	pre-test (control)	23.96	5.02
	post-test (control)	24.40	3.6
mental health	pre-test (experimental)	15.93	7.34
	post-test (experimental)	17.60	5.63
	pre-test (control)	14.13	5.58
	post-test (control)	16	5.003
employment status	pre-test (experimental)	19.60	6.26
	post-test (experimental)	24.93	7.22
	pre-test (control)	18.80	4.85
	post-test (control)	19.33	6.43
sexuality	pre-test (experimental)	19.86	7.78
	post-test (experimental)	23.26	7.70
	pre-test (control)	19.01	6.91
	post-test (control)	19.70	7.80
family satisfaction	pre-test (experimental)	21.50	6.43
	post-test (experimental)	26.03	5.46
	pre-test (control)	21.93	6.01
	post-test (control)	22.96	6.42

Table 3: Summary of ANCOVA for general health in experimental and control groups via removal of interaction effect

Source	Sum of squares	Degree of freedom	Mean squared	F	Significance level of P	Eta
pre-test	64.43	1	64.43	0.10	0.74	0.12
between-groups	1.75	1	1.75	0.71	0.00	0.70

Table 4: Summary of ANCOVA for mental health in experimental and control groups via removal of interaction effect

Source	Sum of squares	Degree of freedom	Mean squared	F	Significance level of P	Eta
pre-test	23.40	1	33.40	1.005	0.32	0.23
between-groups	28.44	1	28.44	73.96	0.00	0.70

Besides, the size of the Eta=0.79 indicated that 79% of the improvement in the social functioning of the individuals participating in the experimental group was attributed to the impact of self-care training program based on empowerment model on social functioning among hemodialysis patients in the city of Sari.

Hypothesis 5: Self-care training program based on empowerment model has an effect on mental health of hemodialysis patients in the city of Sari.

According to Table 4, (Eta=0.70, p=0.00, F (1.60) = 73.96), there was a significant difference between both study groups. In other words, a significant difference was found between the mental health post-test results in the experimental group and those in the control group. As well, the size of the Eta=0.70 showed that 70% of the improvement in the mental health of those participating in the experimental group was associated with the effect of self-care training program based on empowerment model on mental health of hemodialysis patients in the city of Sari.

Hypothesis 6: Self-care training program based on empowerment model has an effect on employment status of hemodialysis patients in the city of Sari.

According to ANCOVA (Eta=0.47, p=0.003, F (1.60) = 9.55), there was a significant difference between both groups. In other words, there was a significant difference between the employment status post-test results in the experimental group and those in the control group. The size of the Eta=0.47 suggested that 47% of the improvement in the mental health of the individuals participating in the experimental group was attributed to the impact of self-care training program based on empowerment model on employment status of hemodialysis patients in the city of Sari.

Hypothesis 7: Self-care training program based on empowerment model has an effect on sexuality of hemodialysis patients in the city of Sari.

According to ANCOVA (Eta=0.41, p=0.00, F (1.60) = 29.86), a significant difference was found between both groups. In other words, there was a significant difference between the sexuality post-test results in the experimental group and those in the control group. The size of the Eta=0.41 indicated that 41% of the improvement in the sexuality of participants in the experimental group was associated with the effect of self-care training program based on empowerment model on sexuality among hemodialysis patients in the city of Sari.

Hypothesis 8: Self-care training program based on empowerment model has an effect on family satisfaction of hemodialysis patients in the city of Sari.

According to ANCOVA (Eta=0.79, p=0.001, F (1.60) =7.74), there was a significant difference between both study groups. In other words, a significant difference was observed between the family satisfaction post-test results in the experimental group and those in the control group. Moreover, the size of the Eta=0.79 indicated that 79% of the improvement in the family satisfaction of those participating in the experimental group was attributed to the impact of self-care training program based on empowerment model on family satisfaction among hemodialysis patients in the city of Sari.

Discussion

The results of this study revealed that social work intervention using empowerment approach aimed at self-care could lead to an increase in the scores of quality of life indices among patients undergoing hemodialysis. In this respect, Cha suggested that hemodialysis patients were better able to cope with their stress associated with their disease and thus the treatment of the disease will be better as the result of learning self-management and self-regulation methods as empowerment indices (20). In another study, Yun demonstrated that improvement of self-management and self-efficacy could significantly influence promotion of quality of life (21). Germin-Petrovic also argued that self-care training for hemodialysis patients and mental-social supports were effective in the improvement of quality of life in patients receiving hemodialysis (22).

Moreover, Naji et al. showed that the use of Orem's self-care model could result in improved quality of life among hemodialysis patients in the city of Zahedan (23). In addition, Goudarzi showed that self-care training could lead to improved self-efficacy in orthopedic immobilized patients (24). As well, Royani concluded that patient empowerment program as an effective program aimed at self-care training could bring about increased self-efficacy and quality of life in patients (25).

In 2005, Esmaieli suggested a significant relationship between self-efficacy and quality of life in patients (26). Shahriari also showed that effective self-care training could influence quality of life in patients receiving hemodialysis (26).

The results of Schron also demonstrated that proper self-care could lead to increased quality of life, prevent recurrence of disease, and reduce number of hospitalizations (27).

Furthermore, Gibson suggested that self-care training could lower concerns such as hospitalization, visits in emergency departments, and impairment of daily functioning. The results of this study also revealed that social work intervention based on empowerment model aimed at self-care could bring about improvements in general health in hemodialysis patients (28). In addition, Buck concluded that self-care training to the elderly could lead to a rise in general health (29).

Besides, the social work intervention model had impacts on reduced depression rates and improved patient ability in terms of emotional role-playing. In a systematic study on 38 investigations of chronic patients, Garina (2014) argued

that mental and physical stress could significantly affect quality of life in patients (30). Pereira also showed that interventions based on training and psychological-social supports could lead to increased power in an individual to adapt to the environment, reduce patients' problems, and improve mental health status in patients (30).

Iyasere et al. in a study on quality of life in patients undergoing hemodialysis showed that the scores of such patients from the depression scale were high. In this study in which social work model based on empowerment approach was employed, an individual's attitude to oneself and their disease was of utmost importance and there were attempts to change patient's attitudes to oneself, the disease, and the surrounding environment in order to improve self-efficacy, self-concept, and quality of life (31). Mau et al. also concluded that quality of life in hemodialysis patients depended on their attitudes towards themselves and their diseases which could be improved through interactions with multiple factors such as social support and care quality (32). Moreover, the results of Habibzadeh et al. suggested that patients' expectations of treatment as well as their attitudes towards ability to manage their health interacted with physical therapy (33).

The model used in the current research study could result in improving mental health among subjects and significantly contribute to improvement in employment status, sexuality, and family satisfaction among patients undergoing hemodialysis. Besides, Brody et al. considered the use of self-care model for the elderly patients as a factor leading to increased mental health (34).

Furthermore, Hassanpour argued that implementation of a training program based on empowerment model would improve mental health (knowledge, attitudes, self-esteem, and self-efficacy) (35). Sahebalzamani et al. also suggested that self-care training could lead to improved physical and mental quality of life in patients (36).

The results of the present study showed that the application of the social work intervention model could result in improved physical and social functioning among patients with hemodialysis. Furthermore, Harris et al. suggested that physical functioning in patients undergoing hemodialysis had dropped (37) and Aliloo (2006) concluded that self-care training program could lead to improved physical functioning in patients and reduce the possibility of complications and recurrences. Raheb et al. in a research study showed that systematic intervention of social work based on group and case work was effective on general health (38).

Conclusion

Self-care training based on empowerment model could assist a patient to overcome the stress and the problems affecting them and the society. The use of this model could enable a patient to have more control over their life and also deal with the negative emotions and stress caused by the disease. This model could also lead to fulfillment of cognitive and behavioral changes in patients along with improvements in behavioral system, self-value, and effective environmental relationships. Moreover, this model led to broadened insight towards life and its events, growth in life management skills, and establishment of communications with the environment and others. The application of the given model also resulted in improvements in social skills, source of inner control, and positive self-concept which could ultimately lead to improved quality of life.

Limitations of the Study

1. The low number of the patients who met the inclusion criteria in this study with the ability to participate in the study sessions
2. The absence of the participants in the study sessions due to their illnesses and physical disabilities

Acknowledgements

We hereby appreciate and express thanks to University of Social Welfare and Rehabilitation Sciences and the Public Hospital of Sari for their cooperation in the present study.

References

1. Kang SH, Do JY, Lee S-Y, Kim JC. Effect of dialysis modality on frailty phenotype, disability, and health-related quality of life in maintenance dialysis patients. PloS one. 2017;12(5):e0176814.
2. Alvares J, Cesar CC, Acurcio FA, Andrade EI, Cherchiglia ML. Quality of life of patients in renal replacement therapy in Brazil: comparison of treatment modalities. Qual Life Res. Aug 2012;21(6):983-991.
3. Liem YS, Bosch Jl Fau - Arends LR, Arends Lr Fau - Heijenbrok-Kal MH, Heijenbrok-Kal Mh Fau - Hunink MGM, Hunink MG. Quality of life assessed with the Medical Outcomes Study Short Form 36-Item Health Survey of patients on renal replacement therapy: a systematic review and meta-analysis. Value Health. Vol 10:390-397.
4. Kalantar-Zadeh K, Kopple Jd Fau - Block G, Block G Fau - Humphreys MH, Humphreys MH. Association among SF36 quality of life measures and nutrition, hospitalization, and mortality in hemodialysis. J Am Soc Nephrol. Vol 12:2797-2806.
5. Lopes AA, Bragg-Gresham Jl Fau - Satayathum S, Satayathum S Fau - McCullough K, et al. Health-related quality of life and associated outcomes among hemodialysis patients of different ethnicities in the United States: the Dialysis Outcomes and Practice Patterns Study (DOPPS). Am J Kidney Dis. Vol 41:605-615.
6. Lowrie EG, Curtin RB, LePain N, Schatell D. Medical outcomes study short form-36: a consistent and powerful predictor of morbidity and mortality in dialysis patients. American journal of kidney diseases : the official journal of the National Kidney Foundation. Jun 2003;41(6):1286-1292.
7. Mozes B, Shabtai E, Zucker D. Differences in quality of life among patients receiving dialysis replacement therapy at seven medical centers. Journal of clinical epidemiology. Sep 1997;50(9):1035-1043.
8. Bonomi AE, Patrick DL, Bushnell DM, Martin M. Validation of the United States' version of the World Health

Organization Quality of Life (WHOQOL) instrument. Journal of clinical epidemiology. Jan 2000;53(1):1-12.
9. Haidarzadeh M, Menri S, Atashpakar S. Relationship between Quality of life and self-care ability in Hemodialysis Patients. Third Congress of Patient and Selfcare. Tehran, Iran2014:214.
10. Ghaffari G, Omidi R. Quality of life: indicator of social development. Tehran: Shiraze Publications. 2009.
11. Orem D. Nursing. Concepts of Practice. St Louis: Mosby. Inc Google Scholar. 2001.
12. Orem DE, Taylor SG, Renpenning KM. Nursing concepts of practice. 1995.
13. Dickson VV, Deatrick JA, Riegel B. A typology of heart failure self-care management in non-elders. European journal of cardiovascular nursing : journal of the Working Group on Cardiovascular Nursing of the European Society of Cardiology. Sep 2008;7(3):171-181.
14. Atashpeikar S, Jalilazar T, Heidarzadeh M. Self-care ability in hemodialysis patients. Journal of caring sciences. 2012;1(1):31.
15. Education MoHaM. Training protocol of self-care Tehran, Iran2014.
16. Education MoHaM. Indicator of empowerment in self-care. Tehran, Iran2014.
17. Education MoHaM. Individual program for self-care. Tehran, Iran2014.
18. Yekaninejad MS, Mohammadi Zeidi I, Akaberi A, Golshan A, pakpour A. Validity and reliability of the Kidney Disease Quality of Life-Short Form (KDQOL-SF™ 1.3) in Iranian patients. Journal of North Khorasan University of Medical Sciences 2012;4(2):261-272.
19. Pakpour AH, Yekaninejad M, Molsted S, Harrison AP, Hashemi F, Saffari M. Translation, cultural adaptation assessment, and both validity and reliability testing of the Kidney Disease Quality of Life--Short Form version 1.3 for use with Iranian patients. Nephrology (Carlton, Vic.). Jan 2011;16(1):106-112.
20. Cha J. [Structural Equation Modeling of Self-Management in Patients with Hemodialysis]. Journal of Korean Academy of Nursing. Feb 2017;47(1):14-24.
21. Yun KS, Choi JY. [Effects of Dietary Program based on Self-efficacy Theory on Dietary Adherence, Physical Indices and Quality of Life for Hemodialysis Patients]. Journal of Korean Academy of Nursing. Aug 2016;46(4):598-609.
22. Germin-Petrovic D, Mesaros-Devcic I, Lesac A, et al. Health-related quality of life in the patients on maintenance hemodialysis: the analysis of demographic and clinical factors. Collegium antropologicum. 2011;35(3):687-693.
23. Naji A, Naroie S, Abdeyazdan G, Dadkani E. Effect of applying self-care Orem model on quality of life in the patient under hemodialysis. Zahedan Journal of Research in Medical Sciences. 2012;14(1):8-12.
24. Goudarzi M. The effect of self- care education in self-efficacy of orthopedic patients in Imam Khomeini Hospital. Tehran, Iran: Islamic Azad University 2011.
25. Royani Z, Rayyani M, Vatanparast M, Mahdavifar M, Goleij J. The relationship between self-care and self-efficacy with empowerment in patients undergoing hemodialysis. Military Caring Sciences. 2015;1(2):116-122.
26. Esmaieli M, Illkhani M, Qolamaraqi M, Hossaini F. The relationship between self-efficacy and quality of life in hemodialysis patients affiliated to Iran University of Medical Sciences, MSc Dissertation]. Iran Univ Med Sci; 2005.
27. Schron EB, Exner DV, Yao Q, et al. Quality of life in the antiarrhythmics versus implantable defibrillators trial: impact of therapy and influence of adverse symptoms and defibrillator shocks. Circulation. Feb 05 2002;105(5):589-594.
28. Gibson MH. The quality of life of adult hemodialysis patients. 1996.
29. Buck H, Pinter A, Poole E, et al. Evaluating the older adult experience of a web-based, tablet-delivered heart failure self-care program using gerontechnology principles. Geriatric nursing (New York, N.Y.). May 26 2017.
30. dos Santos Pereira B, da Silva Fernandes N, de Melo NP, Abrita R, dos Santos Grincenkov FR, da Silva Fernandes NM. Beyond quality of life: a cross sectional study on the mental health of patients with chronic kidney disease undergoing dialysis and their caregivers. Health and quality of life outcomes. 2017;15(1):74.
31. Iyasere OU, Brown EA, Johansson L, et al. Quality of Life and Physical Function in Older Patients on Dialysis: A Comparison of Assisted Peritoneal Dialysis with Hemodialysis. Clinical journal of the American Society of Nephrology : CJASN. Mar 07 2016;11(3):423-430.
32. Mau LW, Chiu HC, Chang PY, Hwang SC, Hwang SJ. Health-related quality of life in Taiwanese dialysis patients: effects of dialysis modality. The Kaohsiung journal of medical sciences. Sep 2008;24(9):453-460.
33. Habibzade H, Davarpanah M, Khalkhali H. The study of the effect of Orem self care model on self efficacy in hemodialysis patients in Urmia medical science hospitals during 2011. Journal of Urmia Nursing And Midwifery Faculty. 2012;10(2):0-0.
34. Brody BL, Williams RA, Thomas RG, Kaplan RM, Chu RM, Brown SI. Age-related macular degeneration: a randomized clinical trial of a self-management intervention. Annals of behavioral medicine : a publication of the Society of Behavioral Medicine. Fall 1999;21(4):322-329.
35. Hassanpour M, Delshad A, Alami A. Effect of an Educational Intervention Based on Empowerment Model on Awareness, Attitudes, Self-esteem and Self-efficacy of Men in Preventing Prostate Cancer. Preventive Care in Nursing & Midwifery Journal 2014;4(1):9-18.
36. Sahebalzamani M, Zamiri M, Rashvand F. The effects of self-care training on quality of life in patients with multiple sclerosis. Iranian journal of nursing and midwifery research. 2012;17(1):7.
37. Harris LE, Luft FC, Rudy DW, Tierney WM. Clinical correlates of functional status in patients with chronic renal insufficiency. American journal of kidney diseases : the official journal of the National Kidney Foundation. Feb 1993;21(2):161-166.
38. Raheb G, Khaleghi E, Moghanibashi-Mansourieh A, Farhoudian A, Teymouri R. Effectiveness of social work intervention with a systematic approach to improve general health in opioid addicts in addiction treatment centers. Psychology research and behavior management. 2016;9:309-315.