ORIGINAL ARTICLE

Effects of Continuous Care Model on Depression, Anxiety, and Stress in Iranian Elderly in Shiraz

Sakineh Gholamzadeh[1], PhD; Elahe Pourjam[2], MS; Majid Najafi Kalyani, PhD[3]

[1]Community Based Psychiatric Care Research Center, School of Nursing and Midwifery , Shiraz University of Medical Sciences, Shiraz, Iran;
[2]Department of Geriatric nursing, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran
[3]Department of Medical-Surgical Nursing, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran

Corresponding Author:
Majid Najafi Kalyani, PhD; Department of Medical-Surgical Nursing, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran
Tel: +98 71 36474251; **Fax:** +98 71 36474252; **Email:** majidnajafi5@yahoo.com

Received: 5 April 2018 **Revised:** 14 September 2018 **Accepted:** 17 September 2018

Abstract

Background: Psychological disorders such as depression, anxiety, and stress are among the most common health problems in old age. Continuous care and support can be effective and help elderly people to adapt to successive losses, especially if provided within the framework of a model. The present study aimed to determine the effects of the continuous care model (CCM) on depression, anxiety, and stress (DAS) in the Iranian elderly in Shiraz.

Methods: The present quasi-experimental study was performed on older adults who attended the Soroush elderly day care center in Shiraz (Iran) from September 2014 to June 2015. A total of 50 eligible elderly participated in the study and were randomly assigned to an intervention group (N=25) and a control group (N=25). The CCM was implemented in the intervention group, whereas the control group received the routine care as offered by the day care center. CCM involves four stages, namely orientation, sensitization, control, and evaluation. The data were collected using the depression, anxiety, stress Scale (DASS-21) questionnaire and a demographic data sheet. The data were analyzed using the SPSS software (version 22.0) with the independent sample *t* test, paired sample *t* test, Chi-square test, fisher exact test, multivariate analysis of covariance and the Pearson correlation coefficient. $P<0.05$ was considered statistically significant.

Results: The majority of the participants were women, 44 (88%), with the mean age of 63.4±2.96 years. Following the implementation of the CCM, there was a statistically significant difference in the mean DAS scores between the intervention and control group ($P<0.001$).

Conclusion: The implementation of CCM not only reduced psychological problems (DAS) in the elderly, but also improved and strengthened their psychological condition.

Keywords: Contentious care model, Elderly, Depression, Anxiety, Stress

Please cite this article as: Gholamzadeh S, Pourjam E, Najafi Kalyani M. Effects of Continuous Care Model on Depression, Anxiety, and Stress in Iranian Elderly in Shiraz. IJCBNM. 2019;7(1):13-21. doi: 10.30476/IJCBNM.2019.40842.

Introduction

Improved living conditions and health care have increased the life expectancy of people, which in turn has resulted in the phenomenon of the aging population.[1] According to the World Health Organization (WHO), worldwide, the number of people aged ≥65 years is estimated to increase from 524 million (8%) in 2010 to approximately 1.5 billion (16%) in 2050.[2] According to the national census data in Iran, the population aged ≥60 years accounted for 5.2% of the total population in 1986, 7.3% in 2006, and is estimated to increase to 14.5% by 2036.[3, 4]

The older people get, the more they are mentally and physically prone to diverse illnesses and disabilities.[5] A study carried out in Iran reported that one-third of the elderly outpatients suffered from psychological disorders.[6] Depression is one of the most prevalent psychiatric problems among the elderly and is the main risk factor for suicide in this age group with approximately 24.2 % successful suicides.[7] Although aging alone is not the principal factor for depression, the contributing factors are the loss of loved ones (particularly the spouse), being away from the family (children), chronic diseases, intake of various drugs, and the decline of cognitive abilities.[8] If untreated, geriatric depression can significantly reduce the quality of life (QoL) as well as that of their families.[9] Many depressed elderly, instead of being concerned with the psychological symptoms of depression, focus on their physical problems which may lead to incorrect diagnosis and treatment.[10] Depression and anxiety are the symptoms of stress, which negatively affect the mental health of the elderly. A study in Iran reported that 1.3% of the elderly people suffer from severe stress, 1.3% from severe depression, and 3.1% from severe anxiety.[11] Another study reported that 10% of the Iranian elderly suffer from severe depression and anxiety.[12] Geriatric anxiety and depression are of major concerns to the health care system because they are associated with increased mortality, health care utilization, and low QoL.[13] A study in Iran also reported that depression is one of the important risk factors in the development of cognitive disorders.[14]

Stress is also among the psychological factors that affect the physical and mental health of elderly people. They are exposed to various kinds of stress due to the alteration in the family hierarchy, physiological status, and deterioration of physical health. Social impacts such as retirement, the death of friends, and reduced social activities often cause additional stress.[15] Given the vulnerability of the elderly against the negative effects of these factors, this group of people require more attention and proper care than any other group in the community. Since the geriatric problems are typically chronic and continuous, there is a need for an appropriate care model.[16] Of the several care models available, CCM (designed and evaluated by Ahmadi) is prominent in Iran. This model involves four stages, namely orientation, sensitization, control, and evaluation. Continuous care is an ongoing process to achieve effective, interactive, and reliable communication between the elderly (recipient) and a nurse (provider) with the aim to align the characteristics of chronic diseases with the dynamics of various problems.[17] The application of CCM has produced positive outcomes in several studies. A study used this model to examine the readmission rate due to chest pain in patients with coronary artery disease. It was shown that the average frequency of hospitalization prior to the implementing of CCM was 57% and 51% in the control and intervention group, respectively. However, following its implementation, the frequency reduced to 34% and 11% in the control and intervention group, respectively.[18] Various studies have shown that the implementation of CCM has had positive effects on QoL, sleep, and other physical and psychological aspects of patients' health.[19-21] However, to the best of our knowledge, there have been no studies on the effect of CCM on DAS in the elderly. Given the fact that both the way

in which nurses perform their duties and the way in which research studies are conducted are primarily based on nursing theories and models, the implementation of a geriatric nursing care model is an important step in achieving this goal.[22] Continuity of care is an integral part of high-quality health care, particularly in the elderly who suffer from numerous illnesses and problems. Without it, the provided care cannot be clinically efficient, reliable, evidence-based, and affordable.[23] Continuity of care is essential in all age categories, but it becomes more important in older adults. They suffer from various chronic illnesses, comorbidity, and health problems which increases their psychological and social vulnerability.[24] Hence research priority in the literature has been focused on improving the continuity of care.[25] Nonetheless, a systematic review reported on the scarcity of well-designed experimental studies on continuity of care for the elderly.[26] As a direct result, the present study aimed to evaluate the effects of implementing the CCM on DAS in Iranian elderly in Shiraz.

Materials and Methods

The present study had a two-group quasi-experimental design to evaluate the effect of the CCM on DAS in the elderly. The study was conducted from September 2014 to June 2015 at the Soroush elderly day care center, established in 2007, in Shiraz (Iran). The center admits older adults during the work hours and provides a variety of medical, rehabilitation, educational, recreational, and professional services. The elderly who registered for the training sessions at the day care center were selected to participate in the study. In accordance with a previous study[16] and based on the below formula (α=0.05 and β=0.2 and Power=0.8), a sample size of 50 was calculated.

$$n = \frac{2(5)^2}{(4)^2}\left(\frac{1}{96} + 0.84\right)^2 = 24.5$$

The inclusion criteria were age ≥60 years, willingness to participate in the study, ability to read and speak, and no history of cognitive disorders. The exclusion criteria were absent from training sessions (maximum of 2), partially completed questionnaires, and withdrawal from the study for any reason. After the initial evaluation of the characteristics of the samples, 50 eligible elderly people were selected using the convenience sampling method. The participants were divided into 6 clusters of 8 to 9 persons, based on their referral to the elderly center. Three clusters were assigned to a control group (N=25) and the remaining clusters were assigned to an intervention group (N=25). The objectives and stages of the study were explained and a written informed consent was obtained from all participants. Prior to the intervention, the DASS-21 questionnaire and the demographic data sheet were filled in by all participants. CCM was implemented in the intervention group, whereas the control group received the routine services from the day care center.

CCM consisted of four stages, namely orientation, sensitization, control, and evaluation. Overall, the first three stages of the model were implemented during seven weekly sessions from the start of the intervention. The duration of each session varied from a minimum of 30 minutes up to 90 minutes. The eighth session (last session) was conducted two months after the intervention and was dedicated to the evaluation phase.

Orientation: The first session was an orientation meeting of 30-45 minutes. The main purpose of the meeting was to develop and create a dynamic therapeutic relationship with the participants with the aim of establishing continuous interaction. The objectives of the study, the importance of continuous care, and their full participation in all sessions were described in order to motivate the participants and to develop a sense of mutual trust and expectation. The possibility of contacting the elderly by phone was also agreed upon.

Sensitization: The second to fifth sessions focused on sensitization; each lasting 45-90 minutes. In these sessions, the participants

were sensitized to acknowledge health problems, accept responsibility for their health, and implement the proposed solutions. Additionally, the received care and educational needs were evaluated. Adequate information was given regarding the physiological and psychological age-related changes, healthy aging and lifestyle, positive thinking, and the essence of DAS and preventive measures. These sessions were in the form of group discussion, lectures, question and answer, and individual sessions (if needed).

Control: In the sixth and seventh sessions, the continuation of appropriate health behavior was checked. Based on the needs of the elderly, the continuity of care was checked through weekly counseling (in-person or by phone). Additionally, two group counseling sessions of 60-90 minutes were held at a specific location.

Evaluation: The final session was held 2 months after the intervention to evaluate the continuous care process and changes in the behavior of the elderly. The DASS-21 questionnaire was completed again by the participants in both groups.

The data collection tools consisted of the DASS-21 questionnaire and a demographic data sheet. Demographic characteristics included age, sex, marital status, occupation, income, and educational level, history of chronic disease, health insurance coverage, and living conditions. The DASS-21 self-reporting questionnaire was developed by Lovibond and Lovibond in 1995.[27] The questionnaire was validated as a screening tool to measure the symptoms of DAS in both the community setting and under clinical conditions. The exploratory factor analysis revealed three underlying factors which explained 41.3% item variance. Confirmatory factor analysis (CFA) of the questionnaire was also performed and showed strong evidence on the stability of the scale over time.[28]

The DASS-21 questionnaire has shown appropriate psychometric properties and excellent internal consistency (ranging from 0.904 to 0.97) in numerous studies on elderly people. It is reported to be very suitable for a survey among elderly people due to its briefness.[29] The DASS-21 questionnaire contains three scales (depression, anxiety, stress) and each scale contains seven items. The depression scale examines the level of hopelessness, self-esteem, and positive affect. The anxiety scale determines autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale measures tension, agitation, and negative feeling. The questionnaire was scored based on a 4-point Likert scale from 0 (did not apply to me at all) to 3 (applied to me almost always). The score for each scale ranged from 0 to 21.

The results of a study strongly supported the convergent validity of the DASS-21 questionnaire by asking the elderly to mark the extent to which each statement was applicable to them.[29] Asghari et al. (2008) translated the DASS-21 questionnaire and validated the Persian version in a sample Iranian population. In their study, a 3-factor model was supported by CFA data. Convergent and divergent validity were performed and the validity of the Persian version of the DASS-21 questionnaire was confirmed. The internal consistency (Cronbach alpha=0.94) and test-retest reliability (ICC=0.77) suggested satisfactory reliability.[30]

The present study was approved by the Ethics Committee of Shiraz University of Medical Sciences, Shiraz, Iran (CT-9378-7148).

The data analysis was performed using the SPSS software (version 22.0). Descriptive results such as frequency, mean and standard deviation were presented in tabular format. The analytical results were analyzed using the independent sample *t* test, paired sample *t* test, Chi-square test, fisher exact test, multivariate analysis of covariance and the Pearson correlation coefficient. $P<0.05$ was considered statistically significant.

Results

The mean age of the participants was 63.4±2.96

years (intervention group: 63.8±3.37 years, control group: 63.4±2.53 years). There was no statistical difference between the groups in terms of the mean age of the participants (P>0.05). The majority of the participants were women 44 (88%), married 38 (76%), and had an academic diploma 27 (54%). Moreover, 42 (84%) participants lived together with others and 37 (74%) had no history of chronic disorders (Table 1).

As shown in Table 1, the distribution of the demographic variables in the samples was normal, and there was no significant difference between the groups prior to the intervention (P>0.05). Therefore an independent sample t test was applied to compare the mean score between intervention and control group before and after the intervention. The results showed that there were no significant differences in the mean score of depression and anxiety in both groups prior to the implementation of CCM (P>0.05). However, a significant difference was observed in the average score of stress (P=0.007) (Table 2).

The multivariate analysis of covariance was used based on which the mean score of stress was adjusted. The results of multivariate analysis of covariance tests showed that with regard to the pretest scores of stress, the groups were significantly different in stress, anxiety and depression after applying the continuous care model (P<0.001). On the other hand, with regard to the pretest scores of stress, intervention has resulted in significant difference between the intervention and control groups in stress, anxiety, and depression(P<0.001) (Table 2).

A paired sample *t* test was applied to compare the mean score of DAS of the participants in both groups before and after the intervention.

Table 1: Demographic variables in both the intervention and control groups.

Variables \ Groups		Intervention N (%)	Control N (%)	Total N (%)	P value
Gender	Male	4 (16)	2 (8)	6 (12)	0.384*
	Female	21 (84)	23 (92)	44 (88)	
Marital status	Single	0	1 (4)	1 (2)	0.326**
	Married	21 (84)	17 (68)	38 (76)	
	Widowed	4 (16)	7 (28)	11 (22)	
Education	Unqualified	4 (16)	3 (12)	7 (14)	0.478*
	Diploma	15 (60)	12 (48)	27 (54)	
	Higher education	6 (24)	10 (40)	16 (32)	
Living alone	Yes	3 (12)	5 (20)	8 (16)	0.44*
	No	22 (88)	20 (80)	42 (84)	
Chronic disorders	Yes	7 (28)	6 (24)	13 (26)	0.747*
	No	18 (72)	19 (76)	37 (74)	

*Chi-square test; **Fisher exact test

Table 2: Comparison of depression, anxiety, stress mean scores of the participants in both groups before and after the implementation of continues care model.

Variables \ Groups		Control Mean±SD	Intervention Mean±SD	P between
Depression	Before	14.8±2.88	13.4±6.09	0.318*
	After	16±2.36	1.76±1.48	<0.001**
	***P within	0.001	0.001	
Anxiety	Before	5.68±4.27	4.36±2.91	0.208*
	After	6.44±4.81	1.28±1.2	<0.001**
	***P within	0.001	0.001	
Stress	Before	14.5±2.81	12.6±2.08	0.007*
	After	16.5±1.47	3.24±2.04	<0.001**
	***P within	0.003	0.001	

*Independent sample *t* test; **Multivariate analysis of covariance; ***Paired sample *t* test

The results showed a statistically significant difference between mean score of the variables before and after the implementation of CCM ($P<0.05$). As shown in table 2, DAS mean scores in the intervention group significantly decreased after the intervention, whereas they significantly increased in the control group ($P<0.05$).

The Pearson correlation coefficient and Chi-Square test were used to investigate the relationship between the demographic variables and DAS mean scores. The results indicated that there was only a significant direct relationship between the depression score and the "living alone" variable ($P<0.05$). There was no statistically significant correlation between DAS scores and other demographic variables ($P>0.05$).

Discussion

The findings of the present study showed that the implementation of CCM resulted in decreased psychological problems of the elderly. Consistent with other studies, a significant decrease in DAS mean score was observed after the implementation of CCM in the intervention group compared to the control group. A previous study examined the effects of implementing the CCM on DAS in dialysis patients. They reported that the continuous care of dialysis patients resulted in the reduction of DAS mean scores.[31] Another study reported that the implementation of a home-based continuous care program significantly increased the mean score of patients' QoL and its emotional, physical, and social dimensions at the end of the sensitization stage.[19] Since one of the dimensions of QoL is the psychological dimension, the above-mentioned results are consistent with the present study and affirms that a follow-up care model can strengthen the mental health of individuals. Furthermore, improvement in the psychological status of elderly people can be attributed to the aspect of follow-up care in this model. The results of a previous study showed that telephone follow-up led to positive statistical changes in physical and psychological performance, self-care, and blood lipid levels of the patients.[32]

CCM supports educational contents as well as follow-up care that are essential for elderly people.[33] A previous study reported that educating patients, provided that it is done on a continuous basis, under supervision, with well-managed care, and based on CCM might influence patients' self-efficacy and improve their health.[34]Educational support and follow-up care are a major feature of CCM.[18] Educational and psychological support of patients and follow-up care can be used as a care plan to reduce psychological problems of patients.[35] Moreover, based on this model, establishing a therapeutic and care relationship with the elderly can reduce their stress level. A previous study reported that a therapeutic relationship reduced the psychological problems of the patients.[36] In another study, it was shown that the follow-up of symptoms in psychosis patients improved the symptoms.[37] These findings are consistent with the results of the present study and confirm the effectiveness of continuous follow-up in improving the mental health of the elderly. Given that CCM resulted in reduced psychological symptoms in other age groups, its implementation to monitor and follow-up the elderly is recommended.

In the present study, we additionally examined the relationship between demographic variables and DAS mean scores; no significant relationship was found. Nor did other studies find a significant association between demographic variables and depression.[38] However, inconsistent with our results, a study demonstrated a statistically significant relationship between the depression score and some socio-economic and personal factors (educational level, employment, being a female, and increasing age).[39] The reason for such difference might be related to the small sample size, study design, and the studied population.

The relationship between DAS and living arrangements of the elderly was also examined. The results indicated that there was

only a significant direct relationship between the depression score and living alone (i.e. elderly who live alone have higher depression scores). This finding was consistent with studies indicating that older adults who lived alone were more prone to depression than those who lived with their spouse or other family members.[40]

The present study had some limitations which should be noted. Using a self-reporting questionnaire to assess DAS may not be as accurate as other types of tests for psychological parameters (e.g. clinical examination, interview, and blood parameters). In addition, the study was carried out at one elderly day care center and cannot be generalized to other populations. The use of the convenience sampling method also reduced the generalization potential of the study results.

Conclusion

Based on the results of the current study, the implementation of CCM reduced DAS levels in the elderly. As the aging population increases, there is a need for more attention to the mental health of the elderly. CCM should be considered as an appropriate framework for the provision of geriatric nursing care. Moreover, the model can be used in the fields of nursing education and management in order to enhance the quality of care for the elderly. Implementation of this model as a non-pharmacological intervention for the elderly is one of the strengths of CCM which has not been fully investigated yet. Further studies are required to evaluate the impact of this model on other aspects of mental health in older adults.

Acknowledgment

The present manuscript was extracted from the MSc thesis by Elahe Pourjam. The study was financially supported by Shiraz University of Medical Sciences, Shiraz, Iran (grant number: 93-7148). We would like to express our gratitude to the participants for their contribution to the study. The support of the Research Deputy of Shiraz University of Medical Sciences is very much appreciated.

Conflict of Interest: None declared.

References

1 Bloom DE, Luca DL. The global demography of aging: facts, explanations, future. In: Piggott J, Woodland A, editors. Handbook of the Economics of Population Aging. Netherlands: Elsevier; 2016. p. 3-56.
2 World Health Organization. Global Health and Aging. Geneva: World Health Organization; 2011.
3 Noroozian M. The elderly population in Iran: an ever growing concern in the health system. Iran J Psychiatry Behav Sci. 2012;6:1-6.
4 Kiani S, Bayanzadeh M, Tavallaee M, Hogg RS. The Iranian population is graying: are we ready? Archives of Iranian Medicine. 2010;13:333-9.
5 World Health Organization. Mental health and older adults.Geneva: World Health Organization; 2017. [Cited 12 December 2017]. Available from: http://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults
6 Foroughan M, Ghaem Magham Farahani Z, Akbari Kamrani AA. Prevalence of mental disorders in the outpatient clinic clients dynamically. Journal of Aging. 2003;1:106-11. [In Persian]
7 Takeuchi T, Nakao M. The relationship between suicidal ideation and symptoms of depression in Japanese workers: a cross-sectional study. BMJ Open. 2013;3:e003643.
8 Sohrabi MB, Zolfaghari P, Mahdizade F, et al. Evaluation and comparison of cognitive state and depression in elderly admitted in sanitarium with elderly sited in personal home. Knowledge & Health. 2008;3:27-31. [In Persian]
9 Unützer J. Late-life depression. New England Journal of Medicine.

2007;357:2269-76.
10 Sadock BJ, Sadock VA. Kaplan & Sadock's synopsis of psychiatry, behavioral sciences, clinical psychiatry. Philadelphia: Lipincott Williams & Wilkins; 2007.
11 Babazadeh T, Sarkhoshi R, Bahadori F, et al. Prevalence of depression, anxiety and stress disorders in elderly people residing in Khoy, Iran (2014-2015). Journal of Analytical Research in Clinical Medicine. 2016;4:122-8.
12 Alizadeh-Khoei M, Mathews RM, Hossain SZ. The role of acculturation in health status and utilization of health services among the Iranian elderly in metropolitan Sydney. Journal of Cross Cultural Gerontology. 2011;26:397-405.
13 Zisberg A. Anxiety and depression in older patients: the role of culture and acculturation. International Journal for Equity in Health. 2017;16:177.
14 Gholamzadeh S, Heshmati B, Mani A, et al. The Prevalence of Alzheimer's Disease; its Risk and Protective Factors Among the Elderly Population in Iran. Shiraz E-Medical Journal. 2017;18:e57576.
15 Burström K, Johannesson M, Diderichsen F. Health related quality of life by disease and socioeconomic group in elderly population in Sweden. Health Policy. 2001;55:51-69.
16 Rahimi A, Ahmadi F, Gholyaf M. Effects of applying continuous care model on quality of life in hemodialysis patients. Razi Journal of Medical Sciences. 2006;13:123-34. [In Persian]
17 Ahmadi F, Ghofrani Pour F, Abedi HA, et al. Design of continuous care model in control of coronary artery problems. Journal of Modarres Medical Sciences. 2002;4:97-103. [In Persian]
18 Ahmadi F, Ghofranipour F, Abedi H, et al. Effect of continuous consultation care model on rehospitalization and chest pain in patients with coronary artery disease. J Qazvin Univ Med Sci. 2005;35:99-103. [In Persian]
19 Kerman Saravi F, Navidian A, Ebrahimi Tabas E, et al. Effect of home-based continuous care model on the quality of life of patients with myocardial infarction. Medical-Surgical Nursing Journal. 2017;6:17-27. [In Persian]
20 Borji M, Tarjoman A, Seymohammadi R, et al. Effects of continuous care model on blood pressure in patients with type II diabetes. Journal of Clinical and Diagnostic Research. 2018;12:JC07-JC10.
21 Hojat M, Karimyar Jahromi M, Karami Z. Effect of continuous care model on sleep quality and dialysis adequacy of hemodialysis Patients: a clinical trial study. Medical-Surgical Nursing Journal. 2015;4:31-8. [In Persian]
22 Sadeghi Sharmeh M, Alavi Zerang F, Ahmadi F, et al. Effect of follow-up care model on quality of life of patients with heart failure. Journal of Behavioral Sciences. 2008;3:9-13. [In Persian]
23 Cornwell J, Levenson R, Sonola L, Poteliakhoff E. Continuity of care for older hospital patients. London: Kings Fund; 2012.
24 Freeman G, Hughes J. Continuity of care and the patient experience: An inquiry into the quality of general practice in England. London: King's fund; 2010.
25 Haggerty JL, Roberge D, Freeman GK, Beaulieu C. Experienced continuity of care when patients see multiple clinicians: a qualitative metasummary. Ann Fam Med. 2013;11:262-71.
26 Worrall G, Knight J. Continuity of care for older patients in family practice: How important is it? Canadian Family Physician. 2006;52:754-5.
27 Lovibond SH, Lovibond PF. Manual for the Depression anxiety Stress Scales. 2nd ed. Sydney: Psychology Foundation of Australia; 1995.
28 Brown TA, Chorpita BF, Korotitsch W, Barlow DH. Psychometric properties of the Depression Anxiety Stress Scales (DASS) in clinical samples. Behaviour Research and Therapy. 1997;35:79-89.
29 Gloster AT, Rhoades HM, Novy D, et al.

Psychometric properties of the Depression Anxiety and Stress Scale-21 in older primary care patients. Journal of Affective Disorders. 2008;110:248-59.
30 Asghari A, Saed F, Dibajnia P. Psychometric properties of the Depression Anxiety Stress Scales-21 (DASS-21) in a non-clinical Iranian sample. Int J Psychol. 2008;2:82-102.
31 Rahimi A, Ahmadi F, Gholiaf M. The effect of continuous care model on stress, anxiety and depression in hemodialysis patients. Research in Medicine. 2006;30:361-9. [In Persian]
32 Furuya RK, Mata LR, Veras VS, et al. Telephone Follow-Up for Patients After Myocardial Revascularization A Systematic Review. American Journal of Nursing. 2013;113:28-31.
33 Salehi Z, Taghadosi M, Afazel MR. An investigation on the effect of continuous care model on depression, anxiety and stress among renal transplant patients. Biomedical & Pharmacology Journal. 2015;8:131-7.
34 Akbari O, Vagharseyyedin SA, Saadatjoo SA, Kazemi T. Effect of continuous care model on the self-efficacy of patients with myocardial infarction in controlling disease complications. Medical-Surgical Nursing Journal. 2015;3:185-94. [In Persian]
35 Sharif F, Mohebbi S, Tabatabaee HR, et al. Effects of psycho-educational intervention on health-related quality of life (QOL) of patients with chronic liver disease referring to Shiraz University of Medical Sciences. Health and Quality of Life Outcomes. 2005;3:81.
36 Vaghee S, Sepehrikia M, Saghebi SA, et al. Comparison of the effect of face-to-face and multimedia education on the anxiety caused by electroconvulsive therapy in patients with mood disorders. Evidence Based Care Journal. 2017;7:25-34.
37 Depp CA, Ceglowski J, Wang VC, et al. Augmenting psychoeducation with a mobile intervention for bipolar disorder: a randomized controlled trial. Journal of Affective Disorders. 2015;174:23-30.
38 Peltzer K, Phaswana-Mafuya N. Depression and associated factors in older adults in South Africa. Global Health Action. 2013;6:1-9.
39 Sengupta P, Benjamin AI. Prevalence of depression and associated risk factors among the elderly in urban and rural field practice areas of a tertiary care institution in Ludhiana. İndian Journal of Public Health. 2015;59:3-8.
40 Stahl ST, Beach SR, Musa D, Schulz R. Living alone and depression: the modifying role of the perceived neighborhood environment. Aging & Mental Health. 2017;21:1065-71.