

# The Effects of a Self-Care Educational Program Based on Orem's Theory on the Quality of Life of Elderly People Residing in Nursing Homes

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## Abstract

**Background:** Given the growing population of elderly individuals, developing strategies for improving their quality of life seems crucial. Quality of life improvement is the essence of all healthcare activities. Quality of life has a negative relationship with age. Elderly people lose their abilities and become vulnerable and thus, need special attention and support.

**Objectives:** The present study was designed and undertaken to examine the effects of a self-care educational program based on Orem's self-care theory on the quality of life of nursing home residents.

**Methods:** This quasi-experimental study was performed on 50 elderly individuals, who resided in nursing homes located in Urmia, Iran. The participants were conveniently selected and randomly allocated to the control and the experimental group, 25 to each group. For the elderly people in the experimental group, a self-care educational program was implemented with four to six, 30- to 45-minute sessions. Educational contents were developed based on the participants' educational needs. Quality of life assessment was performed before and one month after the intervention using the world health organization quality of life questionnaire. The data were analyzed by employing the SPSS (v. 16.0) software and independent-sample t, Chi-square, Wilcoxon, and Mann-Whitney U tests

**Results:** The Mann-Whitney U test showed a significant difference between the groups regarding the posttest values of quality of life total score and the scores of the physical and the psychological health domains of quality of life ( $P = 0.001$ ). In other words, the implemented self-care educational program significantly improved the participants' quality of life.

**Conclusions:** Implementing the self-care educational program was effective for improving elderly people's quality of life. Such programs can be used as effective strategies to improve nursing home residents' quality of life. Given the progressive nature of age-related problems, using self-care models is of grave importance.

**Keywords:** Orem's Self-Care Model, Quality of Life, Elderly People

## 1. Background

According to the United Nations, once the population of people older than 60 years exceeds 7% in a community, that community is considered as aged. The last statistics provided by the Iranian ministry of health and medical education in 2011 indicated that with an elderly population of about 8.2%, Iran is an aged country. It is estimated that the Iranian elderly population will reach 10.5% and 21.7% by years 2025 and 2050, respectively (1, 2).

Healthy aging is the absolute right of all humans. Such a right adds to the importance of the aging phenomenon and the prevention of age-related problems. Because of their great physical weaknesses and vulnerability, elderly people need more comprehensive care (3).

Some elderly people reside in nursing homes. nursing homes residents (NHR) have special needs and problems,

which increase healthcare costs (4). Studies have shown that aging increases healthcare costs exponentially (5, 6).

Aging reduces mobility and income and increases the prevalence of physical and mental problems (7). Numerous physical and mental problems during aging impair the quality of life (QOL) of elderly people (8). The world health organization defined QOL as "individuals' perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (9). Consequently, health-promoting behaviors assume an added importance during aging due to their potential effectiveness in maintaining elderly people's functionality and independence and improving their QOL (8).

Simmons (2009) noted that individuals' active participation in maintaining their own health improves their health and QOL (10). Demura and Sato quoted Coil et al.

(2003), saying that compared with people, who have a sedentary lifestyle, people with active lifestyle are at lower risk of depression and have greater life satisfaction, more positive social interactions, more confident relationships, and better QOL (11). Physical activity and mental health are two significant predictors of elderly people's QOL (11). Osada et al. (1995) mentioned that elderly people, who are able to perform activities of daily living, physical activities, and recreational and leisure-time activities, have lower levels of depression and higher levels of QOL (12).

About 58% of people aged 65 or more need help for doing activities of daily living (13). Educational and supportive strategies and programs are needed to maintain their independence and improve their self-care ability. Conceptual models, which guide nurses' practice, have a significant role in supporting patients' self-care ability. Orem's self-care theory (OSCT) is among the most coherent self-care theories. It provides a clear clinical guideline for planning and implementing self-care programs (14). Orem considered humans as self-care agents, who perform all health-related activities in order to protect their health and lives and gain a sense of persistent well-being. Given the rapid medical advances, increased healthcare costs and inadequate recreational and healthcare facilities for the growing global population, the concept of self-care assumes a paramount importance (15). Elderly people need help for doing their self-care activities (16). On the other hand, healthcare professionals need to pay special attention to elderly people's QOL. In other words, healthcare programs are considered beneficial only when they can improve elderly people's QOL (17). Consequently, developing effective programs and strategies is essential to improve elderly people's QOL and cut healthcare costs.

One of the factors, which can dramatically affect elderly people's QOL, is their place of residence (18). Nursing Homes Residents are less self-confident and have poorer self-care status compared with elderly people, who live in private houses (19). Sil et al. (2003) reported that the general health of elderly people, who live in private houses, is significantly better than NHRs (20).

Although improvement of elderly people's QOL is among the primary goals of health promotion initiatives, great doubts still exist about the positive effects of physical ability enhancement on the improvement of other aspects of QOL (13). Besides, there is no credible information concerning the effects of OSCT on the QOL and health problems of NHRs in Iran.

## 2. Objectives

The present study was designed and undertaken to examine the effects of an OSCT-based self-care educational

program on NHRs' QOL.

## 3. Methods

This was a pretest-posttest controlled quasi-experimental study. The study setting was all four nursing homes located in Urmia, Iran. In total, 98 elderly people resided in these nursing homes at the time of the study. We recruited a convenient sample of 50 NHRs from Al-Zahra, Khaneye Sabz, Araa, and Ferdows nursing homes (with sixteen, seventeen, eight, and nine individuals, respectively). The inclusion criteria were age of 65 or older and having neither dementia nor hearing and visual impairments. They were excluded if they failed to attend two consecutive educational sessions or one fourth of all sessions.

Primarily, written consent was obtained from all participants. Then, they were asked to complete a need assessment questionnaire (NAQ). Thereafter, they were allocated to two 25-person groups. The groups were matched with each other regarding the type of nursing homes (private or public), participants' gender and educational status, and their scores on the NAQ. After that, the groups were randomly allocated to either an experimental or a control group through tossing a coin.

Three questionnaires were used for data gathering. The first was a demographic questionnaire, which consisted of items on participants' age, gender, educational and marital status, job, type of nursing home, length of stay in nursing homes, source of income and number of visits. The second questionnaire was a researcher-made 44-item NAQ, which was developed based on Orem's self-care theory and through performing a literature review on elderly people's needs. This questionnaire included three domains of universal, developmental, and health-deviation self-care requisite. Each item was scored dichotomously as zero or one. Therefore, the total score of the NAQ ranged from 0 to 44. According to our statistical adviser, the participants, who obtained scores of 0-15, 16-30 and 31-44, were categorized as, respectively dependent, semi-dependent, and independent for performing self-care activities. The face validity of the NAQ was assessed through asking ten elderly people to assess the simplicity, clarity and wording of its items. On the other hand, we evaluated the content validity of the NIQ through inviting fourteen experts to carefully read its items and write their comments in detail. The items were then revised accordingly. The Cronbach's alpha of the NAQ was 0.89.

The third questionnaire was a brief version of the world health organization quality of life questionnaire (WHOQOL-BREF). It comprises of 26 items, from which two items assess general QOL. The remaining 24 items of the

scale fall into four domains including physical health, psychological health, social relationships and environment (21). Nejat et al. (2006) translated the WHOQOL-BREF to Persian and assessed its psychometric evaluation. They reported that the Persian WHOQOL-BREF had optimal validity. Moreover, they found that the test-retest correlation coefficients for the physical health, psychological health, social relationships, and environment domains of the scale were 0.77, 0.77, 0.75, and 0.84, respectively. Besides, they reported that the Cronbach's alpha values of the WHOQOL-BREF domains were up to 0.84 (22). We also found that the Cronbach's alpha of the scale was 0.92.

After identifying the participants' self-care needs, an OSCT-based self-care educational program was developed and implemented to fulfill the identified needs. The content of the program was obtained from medical and nursing textbooks. The program consisted of partially compensatory and supportive-educative nursing systems and helped the participating elderly engage in and perform self-care activities independently. In the supportive-educative nursing systems, counseling and educational services were provided to the participants based on their needs while in the partially compensatory system we helped the participants perform self-care activities and fulfill their self-care needs. Education was provided for the participants through using lectures, Power-point presentations, face-to-face personal education, and role-play methods. The number of educational sessions depended on the educational status of the participants and ranged from four to six. The sessions lasted 30 to 45 minutes (23). At the end of the program, a booklet containing the information was provided to the participants and the staff of the study setting. The staff could use the content of the booklet to support the participants. After the intervention, the elderly people in the experimental group performed self-care activities based on the education they had received for one month (24). During this one-month period, we attended the study setting or made telephone contacts with the participants in order to supervise and support their engagement in self-care activities and also to answer their questions. In the control group, the participating elderly people obtained no self-care education and only received routine care services provided to all elderly people, who resided in the study setting. Finally, a posttest was given to the participants in both groups. After the study, we provided the elderly in the control group with the same educational sessions provided for the participants in the experimental group for the sake of ethical considerations.

The gathered data were analyzed using the SPSS (v. 16.0) software and the independent-sample t, Chi-square, Wilcoxon, and Mann-Whitney U tests at a significance level of less than 0.05.

#### 4. Results

Most of the participants in the control and the experimental groups were female (88% and 84%, respectively). The means of their age were  $73.28 \pm 9.15$  and  $73.8 \pm 10.2$  years, respectively. The results of the chi-square test illustrated that there was no significant difference between the groups regarding the participants' age, length of stay in nursing homes, number of visits, gender, source of income, and educational, employment and marital status ( $P > 0.05$ ; Table 1).

In the control group, 48% of the elderly people had minimal self-care needs, 44% had moderate needs, and 8% had considerable needs. These values in the experimental group were 44%, 52% and 4%, respectively. The chi-square test showed that the difference between the groups regarding self-care needs was not statistically significant ( $P = 0.76$ ; Table 2).

The results of the Wilcoxon test showed that in the control group, there was no significant difference between the pretest and the posttest values of QOL and its domains. However, in the experimental group, the posttest values of the total QOL score and the scores of the physical and the mental health domains of QOL were significantly higher than the corresponding pretest values (Table 3). The Mann-Whitney U test also showed that after the study, the difference between the study groups regarding total QOL score and the scores of the physical and mental health domains was statistically significant (Table 3).

#### 5. Discussion

Given the increasing longevity of the global population, the greatest healthcare challenge in the present century is to live a life of higher quality. The findings of the present study revealed that our OSCT-based self-care educational programs were effective in improving elderly people's total QOL score and the scores of the physical and the psychological health domains of QOL. This is in agreement with the findings reported by Mirsaedi et al. (2013). They found that the mean scores of the physical and the psychological health domains of elderly people's QOL significantly increased after their self-care program (25). Baraz et al. (2009) also found that their self-care educational program was effective in improving all aspects of QOL among elderly people, who lived in Masjed Soleyman, Iran (23). The difference between our findings and the findings reported by Baraz et al. (2009) (23) can be attributed to the fact that their participants lived in private houses while our study was done on NHRs. Compared with elderly people, who lived in private houses, NHRs usually experience more problems. Heidari and Shahbazi (2012) also reported

**Table 1.** Comparison of the Study Groups Regarding the Participants' Demographic Characteristics

Variable	Control Group		Experimental Group		The Results of the Independent-Sample t Test
	Mean	Standard Deviation	Mean	Standard Deviation	
Age	73.28	9.15	73.8	10.2	P = 0.84
Length of stay in nursing homes	3.3	2	3.2	1.7	P = 0.8
Number of visits	9.8	13	12.8	12.6	P = 0.52
Variable	No.	%	No.	%	The results of the Chi-square test
<b>Gender</b>					$\chi^2 = 0.17$ , df = 1, P = 0.68
Male	3	12	4	16	
Female	22	88	21	84	
<b>Marital status</b>					$\chi^2 = 3.2$ , df = 3, P = 0.37
Married	3	12	6	24	
Single	1	4	2	8	
Divorced	4	16	1	4	
Spouse's death	17	68	16	64	
<b>Nursing homes</b>					$\chi^2 = 0.25$ , df = 3, P = 0.97
Al-Zahra	9	36	9	36	
KhaneyeSabz	10	40	9	36	
Araa	4	16	4	16	
Ferdows	2	8	3	12	
<b>Educational status</b>					$\chi^2 = 0.23$ , df = 2, P = 0.89
Illiterate	14	56	15	60	
Below diploma	8	32	8	32	
Diploma and higher	3	12	2	8	
<b>Employment status</b>					$\chi^2 = 0.67$ , df = 2, P = 0.72
Housewife	9	36	9	36	
Unemployed	11	44	13	52	
Retired	5	20	3	12	
<b>Source of income</b>					$\chi^2 = 0.15$ , df = 2, P = 0.93
Charities	9	36	9	36	
Family	12	44	13	48	
Personal income	5	20	4	16	

**Table 2.** Comparing the Groups Regarding Their Self-Care Needs

The Level of Needs	Control Group, No. (%)	Experimental Group, No. (%)	The Results of the Chi-Square Test
Minimal, Dependent	12 (48)	11 (44)	0.76
Moderate, Semi-dependent	11 (44)	13 (52)	
Considerable, Dependent	2 (8)	1 (4)	
Total	25 (100)	25 (100)	

**Table 3.** Comparing the Groups Regarding the Scores of World Health Organization Quality of Life Questionnaire (WHOQOL-BREF) and its Subscales

Domains		Before, Mean $\pm$ SD	After, Mean $\pm$ SD	The Results of the Wilcoxon Test
Experimental group	Physical health	22.12 $\pm$ 5.38	23.50 $\pm$ 5.21	0.009
	Psychological health	19.20 $\pm$ 3.48	20.12 $\pm$ 3.35	0.02
	Social relationships	8.08 $\pm$ 1.88	8.12 $\pm$ 2.04	0.86
	Environment	27.37 $\pm$ 4.14	28.29 $\pm$ 4.12	0.08
	Total QOL	76.79 $\pm$ 10.72	80.04 $\pm$ 11.29	0.02
Control group	Physical health	21.88 $\pm$ 5.68	21.80 $\pm$ 5.64	0.69
	Psychological health	18.26 $\pm$ 3.80	17.84 $\pm$ 3.62	0.07
	Social relationships	8.50 $\pm$ 2.28	8.58 $\pm$ 2.24	0.56
	Environment	25.84 $\pm$ 4.75	26.38 $\pm$ 4.43	0.06
	Total QOL	74.50 $\pm$ 13.84	74.61 $\pm$ 13.70	0.95

that their self-care training program was effective in improving elderly people's QOL (26). It seems that our self-care educational intervention enhanced elderly people's QOL through improving their self-control and empowering them for doing self-care activities. The insignificant effect of the study intervention on social relationships and environmental domains of QOL may be due to the participants' residence in nursing homes and thus, their limited participation in social activities and their limited control over their immediate environment.

Our findings are also consistent with the findings of studies conducted in other parts of the world. Dickson et al. (2012) did a study in New York and found that self-care program, physical exercise and engagement in work-related activities significantly improved QOL. They also noted that increased self-care ability can enhance treatment adherence and alleviate physical and psychological symptoms (27). In addition, Lord and Castal (2004) found that self-care program and physical exercise boosted muscular strength, improved body balance, and enhanced all domains of QOL (28).

Our findings revealed that self-care education was effective in improving the psychological and the physical aspects of QOL while it had no significant effect on its social relationships and environmental domains. Quality of life is affected by many factors, most of which are out of the individuals' control. These findings are due to the fact that elderly people, who live in nursing homes, have limited control over their social relationships and environment. Kane (2010) also reported that compared with elderly people, who live in private houses, NHRS have lower psychosocial status, experience more health problems, and have limited self-care ability (29).

One of the study limitations was the effects of the par-

ticipants' physical and psychological status on their ability to complete the study questionnaires. Furthermore, the participants might have had poor adherence to the provided educations and self-care activities.

### 5.1. Conclusion

The findings of this study indicate the effectiveness of self-care education in improving QOL and its physical and psychological health domains. When there is no option but to take elderly people to nursing homes, it is necessary to implement measures to improve their QOL. From the results of this study, it can be suggested that self-care programs need to be developed based on elderly people's educational needs and status as well as their ability to comprehend and use intended educations. Programs, which are developed in this way, are more likely to promote elderly people's participation in self-care activities, to improve their QOL, and to help them have a calm and pleasant life.

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