



## Relationship between Self-Care Needs and Self-Care Abilities of the Retired Elderly Based on Orem's Model

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### Abstract

**Background:** Having self-care abilities based on the needs of the elderly promotes health in these individuals and minimizes the complications associated with aging. This study aimed to determine relationship between self-care needs and self-care ability in retired elderly based on Orem's model.

**Methods:** This cross-sectional study was done on 120 older people who had been referred to the Civil Servants Pension Organizations in east of the Guilan Province (north of Iran) in 2017. Subjects were selected through simple random sampling method. Data were gathered using a questionnaire of elderly's self-care needs and self-care abilities based on the Orem's model. Data were analyzed in SPSS (version 16) using the t-test, analysis of variance, Tukey's test, and Pearson correlation coefficient.

**Results:** The participants obtained an average self-care score of  $19.80 \pm 6.44$  and an average self-care ability score of  $132.41 \pm 15.92$ . Most subjects were semi-dependent (73.33%) and had high self-care abilities (81.66%). Self-care needs and self-care abilities were significantly associated with variables of age, marital status, education level, occupation status, and monthly income. In addition, there was a significant relationship between self-care needs and self-care abilities of the elderly ( $P=0.0001$ ).

**Conclusion:** Our results indicated a significant inverse relationship between self-care needs and self-care abilities of the elderly. It is recommended to design self-care program based on the needs of the elderly while considering their individual-social conditions to improve self-care abilities and minimize injuries.

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### Highlights:

#### What is current knowledge?

Given the importance of self-care in the elderly as well as the lack of any pertinent studies in the Guilan Province, the present study aimed to determine relationship between self-care needs and self-care ability among retired elderly based on the Orem's model.

#### What is new here?

Our results indicated a significant inverse relationship between self-care needs and self-care abilities of the elderly.

### Introduction

The world's older population continues to grow given the advances in medical care and public health services (1). Today, there are 590 million people aged 60 years and older in the world (2). According to statistics, these individuals will make up 21% of the world's population by 2050 (3). As the life expectancy of the elderly increases, maintaining quality of life and physical health of the elderly becomes essential (4). Contrary to adults who are capable of self-care, vulnerable individuals such as children, elderly, and patients with disabilities require assistance (5). According to the United States National Health Interview Survey, 20.7% of adults aged 85 years or older, 7% of those aged 75-84 years, and 3.4% of those aged 65-74 years need help with activities of daily living (6). As the elderly population increases, health demands, along with other social requirements, are also set to increase (7). Population aging has been accompanied with a shift in non-communicable diseases, increased level of disability, and lowered physical and cognitive functioning (8, 9). Thus, there is a need for developing effective care models for prevention of accidents during old age.

Self-care is recognized as a health-promoting behavior (10). Advances in healthcare costs has allotted greater significance to the concept of self-care under

individual's responsibility regarding one's own health (11). Orem's self-care model can help individuals have a role in their own self-care (12). The Orem's model enables individuals to carry out their own self-care activities (13). Educational and supportive strategies and programs are needed to maintain independence and improve self-care ability. Conceptual models, which guide nurses' practice, have a significant role in supporting patients' self-care ability (14). According to Orem, healthy individuals' ability and requirements for self-care vary in proportion to the individuals' growth, which is determined by age, since individuals' ability for self-care diminishes as they grow older (15). Considering the above points, application of self-care programs, such as the Orem self-care program, seems necessary. The Orem self-care program is a standard, safe, non-pharmaceutical, non-aggressive, and low-cost self-care method for controlling psychological and physical problems, which can easily be trained to clients.

According to previous studies, the majority of individuals start their self-care activities upon illness or when they feel their health is threatened, while self-care behaviors prior to the illness are of prime significance ensuring individuals' health (16, 17). In Iran, it has been estimated that the elderly makes up 9.3% of the country's population (18). According to the national census in 2017, the elderly population is rapidly rising in the Guilan Province (19). Given the importance of self-care in the elderly as well as the lack of any pertinent studies in the Guilan Province, the present study aimed to determine relationship between self-care needs and self-care ability among retired elderly based on the Orem's model.

### Methods

This cross-sectional study was conducted on retired older people who had been referred to the retirement centers in cities of Roudsar, Langroud, Lahijan, and Astaneh in the Guilan Province, North of Iran, in 2017. Subjects were enrolled via random sampling method. Inclusion criteria were age of  $\geq 60$  years and lack of dementia or any disability, including blindness or deafness. Overall, 120 individuals were enrolled based on the below formula:

$$N \geq \frac{Z_{1-\frac{\alpha}{2}} \times s^2}{d^2} = \frac{(1.96)^2 \times (25.66)^2}{(5)^2} \quad N \geq 101(14)$$

Data were collected using a three-part questionnaire. The first part evaluated demographic characteristics, and the second part comprised of 44 questions on self-care needs of the elderly based on the Orem's model. Based on the overall score, the subjects were categorized into independent with low self-care needs (score of 31-44), semi-dependent with moderate self-care needs (score of 16-30), and dependent with high self-care needs (score of 0-15). The content validity ratio and content validity index were assessed to confirm quantitative validity of the questionnaire (Cronbach's alpha coefficient: 86%). The third part of the questionnaire comprised of 40 questions designed for assessment of the elderly's self-care ability. The answers were scored based on a 4-point Likert scale varying between often (score=1), sometimes (score=2), rarely (score=3), and never (score=4). Overall scores of 40-80, 81-120, and 141-160 indicated low, moderate, and high self-care ability, respectively. The questionnaire was developed by Hemmati Maslak Pak et al. in 2017 to measure a psychological perspective (20). For the purpose of this psychometric measurement, the statements and preliminary categories of the new tool were extracted according to literature while conforming to the Orem's theory. The psychometric properties of the questionnaire were evaluated using face validity, content validity, construct validity, and internal consistency. A Cronbach's alpha coefficient of 0.864 was obtained for the questionnaire.

After obtaining approval from the local ethics committee, written consent was taken from all participants. The questionnaires were completed via interviews.

Data were analyzed in SPSS v.16 using descriptive statistics and the t-test, analysis of variance, Tukey's test, and Pearson correlation coefficient. Multivariate regression model was also employed to determine the predictive factors of self-care abilities. A P-value of less than 0.05 was considered as statistically significant.

## Results

Most subjects were male (70.8%), aged 61-70 years (71.7%), married (80%), and retired (67.5%), with under-diploma education level (28.3%) and a monthly income of 5-10 million Rials (27.5%) (Table 1).

**Table 1: The distribution of demographic characteristics among the subjects**

Variable		Number	Percent
Sex	Female	35	29.2
	Male	85	70.8
Age (Years)	61-70	86	71.7
	71-80	27	22.4
	81 ≥	7	5.8
Marital status	Married	96	80
	Single	5	4.2
	Divorced	2	1.7
	Widowed	14	11.7
Level of education	Under diploma	34	28.3
	Diploma	27	22.5
	Higher than diploma	19	15.8
	Illiterate	32	26.7
Occupational status	Retired worker	81	67.5
	Unemployed	22	18.3
	Housewife	12	10
	No Response	5	4.2
Monthly income (million Rials)	5<	8	6.7
	5-15	59	49.2
	>15	28	23.2
	No Response	25	20.8

Based on the results, the frequency of elderly with low, moderate, and high self-care needs was 0.84%, 73.33%, and 25.83%, respectively (Table 2). The subjects obtained an average self-care score of 19.80±6.44. Among all types of self-care needs, the lowest score was obtained for evolutionary self-care needs with an average score of 1.49±1.27. This indicates that evolutionary self-care needs were among the greatest self-care needs of the participants.

The self-care ability level was low, moderate, and high in 1.66%, 16.66%, and 81.66% of the subjects, respectively (Table 2). An average self-care ability score of 132.41±15.92 was obtained, and the highest score was recorded for self-care during illness with an average of 34.15±5.70.

**Table 2. Frequency distribution of the elderly's self-care needs and self-care ability**

Variable	Category	Number	Percent
Self-care needs	Dependent (score=0-15)	31	25.83
	Semi-dependent (score=16-30)	88	73.33
	Independent (score=31-44)	1	0.84
Self-care ability	Low (score=40-80)	2	1.66
	Moderate (score=81-120)	20	16.66
	High (score=121-160)	98	81.68

There were significant relationships between the elderly's self-care needs and age (P=0.032), marital status (P=0.001), education level (P=0.001), occupational status (P=0.003), and monthly income (P=0.019). Subjects who were widowed, single, and illiterate, with monthly income of less than 5 million Rials had higher level of needs, and belonged to the dependent group.

There were also significant relationships between the older people's self-care ability and age (P=0.003, r=-0.296), marital status (P=0.003), education level (P=0.0001), occupational status (P=0.001), and monthly income (P=0.05). Subjects who were younger, married, employed, and with post-diploma degrees and monthly income of 10-15 million Rials had higher self-care abilities. There was a significant inverse relationship between self-care ability and self-care needs of the subjects (P=0.0001).

Moreover, marital status was a predictive factor for the elderly's self-care needs. In other words, the elderly's self-care needs increased as one moved from being married toward being a widower/widow. Occupational status was found as a predictive factor for self-care ability.

## Discussion

The present research investigated the relationship between the self-care needs and self-care ability of older people in the east of Guilan according to the Orem's model. The results showed that the majority of subjects had a moderate level of self-care needs. In the present study, the majority of subjects had high level of self-care ability. In line with this finding, in a study by Dale et al., 74.28% of the older subjects had high self-care abilities (21). In a study conducted by Sundsli et al., 83.3% of the older subjects had high self-care ability. In addition, older people aged ≥85 years had lower self-care abilities compared with younger counterparts (22). Based on the results, self-care needs of the elderly increased with age, while their physical and social self-care abilities decreased. In a previous study, Pourghane reported that older people were highly dependent in activities of daily living and had low ability to apply effective strategies (23). In this regard, Soderhamna et al. also indicated that age negatively affects individuals' self-care capabilities (24).

In our study, illiterate subjects had higher level of self-care needs, particularly during illness, while elderly with post-diploma education had greater daily, physical, emotional, and social self-care abilities. In line with these findings, Luo et al. reported education level as a predictive factor for self-care ability (25). Pourghane et al. revealed that the frequency of arbitrary drug use rises with increase in individual's academic literacy (26). Knowledge affects individual emotions and cognitive perceptions, which in turn influence self-care (27). It has been reported that high level of education increases life satisfaction in older people, while low level of education correlates with sadness, poor social relations, and emotional problems in these individuals (28).

The results showed that the elderly who were idle after retirement had higher general and during-illness self-care needs, while those who were working after retirement had greater physical, emotional, and social self-care needs during illness. In fact, an individual's occupation has a direct relationship with his/her self-care abilities as a better vocation requires a higher education level and yields a better income (16). In our study, married older people had the lowest level of self-care needs and the highest level of self-care abilities compared with single or widowed counterparts. The sense of belonging and emotional support plays an important, positive role in the elderly's quality of life. Compared with single or widowed older people, married individuals suffer a lower level of stress (29). Social support is also critical for assisting older people to maintain normal functioning and quality of life (30), and family is considered as one of the most important sources of social support and interpersonal relations (31).

In our study, the elderly with monthly income of less than 5 million Rials had the highest level of general and during-illness self-care needs, while those with a monthly income of above 15 million Rials had the highest level of physical and during-illness self-care abilities. In a previous study, older people with a suitable income level had adequate self-care abilities (30). Suh et al. also stated that economic status had a consistently important influence on life satisfaction of older people in a way that those with a higher monthly allowance had higher life satisfaction (32).

## Conclusion

Our results indicated a significant inverse relationship between self-care needs and self-care abilities of the elderly. In addition, most subjects were found to be semi-dependent, with high self-care abilities. It is recommended to design self-care program based on the needs of the elderly while considering their individual-social conditions to improve self-care abilities and minimize injuries.

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### Ethical statement

Written consent was obtained from all participants. The study was approved by the ethics committee of Guilan University of Medical Sciences in Iran (ethical code: IR.GUMS.REC.2017.500).

### Conflict of interest

The authors declare that there is no conflict of interest regarding publication of this article.

### Author contributions

Pourghane, Abdi, and Yaghoobi contributed to the conception and design of the study. Abdi collected the data. Atrkar- Roushan performed data analysis. Pourghane and Abdi performed data interpretation. Pourghane evaluated and edited the manuscript.

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