

# Self-Care and related factors with it in patients with epilepsy in isfahan

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## Abstract

**Introduction:** Self-care is an important process in the control of chronic diseases especially epilepsy. The aim of this study was to investigate the self-care situation and the affecting factors on it in patients with epilepsy living in Isfahan.

**Methods:** In this sectional study, 320 patients were chosen with large seizures clientele by simple random sampling from hospitals (Hospitals that accept patients with epilepsy), neurologists' clinics, and epilepsy associations in Isfahan. The inclusion criteria in this study was comprised of epileptic patients living in Isfahan and its suburbs, having a medical record, at least one year history of the disease, and the patient's willingness to participate in the study. The data collection tools was a researcher questionnaire (validity and reliability of the tool was approved by experts in this issue and its Cronbach's alpha coefficient was estimated to be 0.80). This questionnaire evaluated the self-care status and the influencing factors on it in patients. Data were analyzed by using independent t-test and a one way variance analysis were analyzed.

**Results:** The average scores for self-care in patients ( $0.39 \pm 13.26$ ) and self-care situation was undesirable. Knowledge of the disease with average ( $4.34 \pm 12.86$ ) was desirable but skill ( $0.8 \pm 8.24$ ) and ability ( $10.70 \pm 25.98$ ) were undesirable and half favorable. Self-care scores based on age, sex, education and marital status did not differ significantly. Regression analyses revealed that self-care behaviors and a total of 21% of behavior variance was predictable.

**Conclusion:** In order to improve the health of patients with epilepsy and appropriate disease control, teaching programs with the aim of empowering patients in the field of self-care should be considered. Patients with higher education and those who are symptomatic, may be more likely to engage in self-care than those who are poorly educated or asymptomatic. Epilepsy self-care is both a process and a set of behaviors that helps people care about their epilepsy. Self-care encompasses the process and the behaviors needed to manage a wide range of skills.

**Keywords:** Self-Care, Epilepsy, Isfahan

## Introduction

Epilepsy is the most common chronic neurologic disorder characterized by recurrent attacks of headache after the seizure. This disease is a severe brain disorder seen in all races, social classes and nationalities [1]. Epilepsy is not only a physical disease but it also affects the person's physical, mental and social life [2] and has deleterious socio-economic effects. As epilepsy is a chronic neurological disease [3], it interferes with everyday life as well as other chronic diseases and needs self-care programs. Since 2003, self-management has been identified as the core of the treatment of epilepsy [4]. It should be considered that the harmful effects of the disease can be prevented with appropriate control of epileptic seizures and the best way to control the attacks is training patients. For an appropriate patient education, the educational needs of the patient should be considered and the nursing care patterns should be used [5]. Identifying potential abilities of patients and encouraging them to take advantage of this ability and self-care activities are one of the

factors affecting self-care. In fact, self-care is a self-impulsive, deliberate and purposeful activity that is related with the health and well-being [6].

Orem believes that human beings are capable of self-care [7]. Orem Self Care Model is one of the most complete theories of self-care that provides an appropriate clinical guide for planning and implementing the self-care principles [4]. Proper self-care, reduces the frequent recurrence of the disease and the number of admissions and this increases the quality of life and reduces the cost of living [8]. Thus, appropriate patient education reduces the numbers of re-hospitalization by increasing patients' ability in making decisions and self-care [9, 10]. Training self-care and follow-up of patients with epilepsy has an important role in their rehabilitation [11]. Most of this training may include an emphasis on the correct use of medication, appropriate exercise, nutrition, ways to fight stress, safety measures, and etc. Knowledge and awareness of the attack symptoms, risk factors, the ability and the practical application of the trainings is very important in this disease.

*Escoffery* and colleagues classified 11 factors for self-care in patients with epilepsy in a study entitled "Analysis of factors affecting self-care of adult patients with epilepsy in 2015". These factors were health communications, management of treatment, social support, life style, coping with the disease, life with joy, safety, stress management, invasive cases, seizure follow-up, and medication adherence. They indicated that self-care is related to measures of health care, quality of life, depression, and seizure. Social support, stress management and life joy are among the factors affecting self-care [12]. *Nobel* showed in his study entitled "Cost effectiveness of hospitalization of epileptic patients and the role of nurses in self-care of these patients in 2014" that 95% of the hospitalization costs in the treatment of epileptic patients decreases with training self-care skills. He also mentioned that patient satisfaction increases while training patients. Nurses can also be prepared to teach skills and enhance their ability through several months [13, 14].

*Edward* suggests in a study entitled "Integrated evaluation of benefits of self-care in adult epileptic patients in 2015" that epilepsy is a disease with limiting effects on patients. Self-care and seizure control highly depends on the ability of the individual and his autonomy. Epilepsy has psychological effects on the individual and his family. Interventions such as training and education of lifestyle is very important to improve self-mastery and the quality of life in these patients. The standard self-care practices are not necessarily integrated in different people. Self-care in these patients include the management of psychosocial problems, improving and controlling seizure and increasing the quality of life. Self-care interventions should be provided to patients in various formats and the inclusion of these programs should be a part of comprehensive care for patients suffering from this disease [15]. *Begley* implies in a study entitled "self-care help in the epilepsy clinics in 2014" that self-care is a clinical tool to help patients and health care

providers in epilepsy. Identifying and prioritizing issues related to self-care is very important in these patients. In this regard, patients should be monitored and the changes should be tracked and monitored in these patients. Also, the feasibility of self-care should be examined and self-care goals should be established for each group [16].

*Azadbakht* conducted a study entitled "health promoting self-care behaviors and related factors among the elderly in 2014" and estimated the self-care behaviors of the elderly poor with higher mean self-care behaviors in men (1.86) compared to women (1.71). He also stated that the self-care behaviors in the elderly was higher in patients with higher than high school education [17].

With regard to the necessity of identifying and taking measures to control debilitating problems and potential side effects of epilepsy and improving their self-care ability, it is very important to know the abilities, knowledge and skills of these patients. Since studies about self-care in patients with epilepsy is limited, there is a need for research on the design and implementation of training programs based on the needs of these patients to enhance their self-care ability. Also, inadequate knowledge of patients from the nature of the disease causes improper health behavior, inadequate care, recurrent epileptic attacks, and therefor increases re-hospitalization and is thus considered a major problem in the treatment of patients with epilepsy. Therefore, the aim of this study was to assess self-care and related factors in patients with epilepsy in Isfahan.

## Method

This cross - sectional study was conducted in the first quarter of 2015 with the aim of investigating self-care and related factors in patients with grand mal seizure in patients referring to the Epilepsy Clinic of Isfahan, neurologists' clinics and hospitals. The study population was 2,000 active medical records of the patients and 320 patients suffering from grand mal seizure were included according to Morgan's table by using a simple random sampling method based on the inclusion criteria.

The inclusion criteria in this study was comprised of epileptic patients living in Isfahan and its suburbs, having a medical record, at least one year history of the disease, and the patient's willingness to participate in the study. The data collection tool was a three-part researcher-designed questionnaire. The first part of this tool contained demographic characteristics such as age, sex, education. The second part contained self-care measures that will enable them to report the self-care activities based on the real world. Finally the third part consisted of factors associated with self-care in three categories: knowledge, skills and ability for self-care in epilepsy, based on a Likert scale (never, rarely, sometimes, often, and always) which examined the factors associated with self-care. The three factors associated with self-care were selected by a systematic review of studies. The validity and reliability of the tool was approved by experts in this issue and its Cronbach's alpha coefficient was estimated at 0.80. To determine the usefulness of self-care, in addition to

comparisons of the mean scores for each question, the range of the obtained scores which was between 0-46 was divided into three parts; patients with a self-score of 0-15 were considered as undesirable situation, 16-31 as semi-desirable and scores of 32-46 were considered as desirable. To describe the data, descriptive statistics and to assess the relationship between independent and dependent variables, independent t-test, one-way ANOVA, Pearson correlation and multiple linear regression were used.

For ethical considerations, in addition to considering religious and cultural norms of the community, a written informed consent was obtained from all patients participating in the study and the information was kept confidential and anonymous during the data collection and analysis.

**Result**

In this study, 320 patients with grand mal seizure were evaluated for self-care and related factors. The mean age of patients was 36.20±14.39. Among the patients, 162 (50.64%) were female. The majority of the patients (49.40%) were married and the educational status of most were high school graduates (36.25%). Regarding the income status, 55.32% of the patients were dependent to others and 36.25% of them were the children of the family. The mean duration of the disease was 12.31±10.36. The cause of the disease was unknown in 47.82% and hereditary in 26.56%. The significance level was 0.05 in all three demographic variables, suggesting that these three variables have no significant difference. (Table 1)

The results of the self-care and its influencing factors are shown in Table 2.

**Table 1.** Distribution of demographic characteristics of patients with epilepsy

Variable	No (%)	P-value
Gender		
Male	158 (49.39)	0.839
Female	162 (50.64)	
Age		
0-32	139 (43.43)	0.493
33-65	156 (47.75)	
>66	25 (7.82)	
Marital status		
Single	125 (39)	0.983
Married	158 (49.40)	
Widow	11 (3.48)	
Separated	26 (8.12)	

**Table 2.** Mean and standard deviation of self-care scores and its related factors in patients with epilepsy in Isfahan

Factors affecting self-care	Mean±SD	The obtainable range of scores*
Patients' knowledge from the disease	4.34±12.86	0-18
Patients' ability in self-care	10.70±25.98	0-55
Patients' skill in self-care	0.80±8.24	0-65

\* The obtainable range of scores included the scores from zero to four in each part of the questionnaire with questions related to the scope

According to table 2, the factors affecting self-care of the studied patients, according to the obtainable range of

scores, resulted that the patients' knowledge of disease was desirable, patients' ability in self-care was semi-desirable, and patients' skill in self-care was undesirable and generally, self-care in patients with epilepsy was undesirable.

Also according to Table 1, the mean self-care scores were not significantly different in men and women. No difference was seen in the mean scores of different age groups. No significant relationship was observed regarding other variables (marital status and education) with the self-care status of patients, according to one-way ANOVA.

While investigating the relationship between duration of epilepsy and self-care status, based on the Pearson correlation coefficient, no linear correlation was found between the variables. (P-value=0.65, r=0.03)

In order to find the predictors of self-care, according to the findings from bivariate analysis, stepwise multiple linear regression method was used. In this analysis, self-care behavior was considered the dependent variable and education (categorized into two academic and non-academic education), living network (categorized into two living alone and living with spouse, children, or others), duration of illness, level of knowledge, skill, and ability as a predictor variable (independent). In the final model, the predictor variables were factors associated with self-care behaviors and a total of 21% of behavior variance was predictable. (P<0.05). Results from multiple linear regression analysis are presented in Table 3.

The linear regression equation is shown below.

$$Y = a + bX$$

$$b = \frac{N \sum XY - (\sum X)(\sum Y)}{N \sum X^2 - (\sum X)^2}$$

**Discussion**

The aim of this study was to review the status of self-care and its related factors in patients with epilepsy living in Isfahan and its suburbs. According to scientific studies, 40% of referral to general practitioners, 17% of referral to specialist physicians, 50% of admission to emergency centers, and 50% occupational absenteeism can be reduced by self-care. Epilepsy provides an example of perceptions and factors that are important to support self-care of chronic conditions.

Chronic diseases have been proposed as the main health systems' challenge in the twenty-first century. Today, the epidemic of non-communicable diseases is responsible for 60% of deaths in the world. About 80% of outpatient visits in the UK and 75% of the costs of the health care system in the United States is associated with chronic diseases. England has estimated that by 2030, the incidence of chronic diseases in the population over 65 years will be more than doubled in their country. Today, responsiveness to such volume of services expected in the care of chronic diseases is a key priority for the health sector and supporting self-care in chronic diseases is the main section of this issue.

**Table 3.** Results of stepwise regression analysis to predict self-care behavior

Model	Index	B	Beta	R2	Adjusted R2	P-Value
1	Duration of the disease	8.89	0.34	0.08	0.07	0.01
2	Duration of the disease	8.70	0.32	0.11	0.10	0.02
	Educational level	8.95	0.15			0.05
3	Duration of the disease	8.53	0.33	0.12	0.11	0.03
	Educational level	9.02	0.16			0.05
	Living network	7.48	0.22			0.01
4	Duration of the disease	7.95	0.33	0.16	0.14	0.03
	Educational level	9.12	0.17			0.05
	Living network	9.02	0.26			0.01
	Knowledge level	6.66	0.14			0.02
5	Duration of the disease	7.63	0.32	0.19	0.16	0.04
	Educational level	9.17	0.17			0.05
	Living network	9.13	0.26			0.01
	Knowledge level	7.99	0.19			0.02
	Skill level	5.45	0.12			0.03
6	Educational level	7.22	0.32	0.21	0.19	0.01
	Living network	9.23	0.17			0.05
	Knowledge level	9.29	0.26			0.01
	Skill level	8.06	0.19			0.02
	Ability level	5.33	0.11			0.03
			4.22			0.09

Support might help the people with epilepsy to maintain their self-care routines, but might not have a large impact on seizure control. The results of the current research showed that self-care is generally undesirable in these patients. This finding is consistent the studies of other researchers. *Khosh-Tarash* and *Ghotbi* reported the self-care status in chronic diseases as moderate and weak, respectively [18, 19].

In this study, no significant difference was observed between the mean scores of demographic factors such as age, sex, marital status and education with self-care status in patients that is contrary to *Morowati's* study and *Daryasari's* study [20, 21]. The reasons for this discrepancy may be due to different distribution of chronic diseases requiring self-care among different age groups and genders.

In this study, patients' knowledge was desirable and evidently, the three variables of knowledge, attitude and self-the efficacy were predisposing factors of self-care behavioral changes. Where there is knowledge, it is expected to have better self-care performance in patients.

Self-care education in patients with epilepsy reduces the seizure attacks and patients can receive better social care, higher satisfaction from treatment, and experience better control of the disease by self-care education. Also, patients having knowledge, changes in wrong attitudes and omission of perceived barriers can have stronger self-care behavior. Patients' skills in self-care was undesirable in epileptic patients. Communicational, educational skills and psychological social and communicational adjustment with the patient results in better control of the attacks and increased quality of life of patients [13].

The patients' ability in self-care was semi-desirable that was similar to *Adward's* study and *Daryasari's* study [15, 21]. So, it can be said that in addition to providing education, patients' skills and their abilities should be enhanced, and self-care status should reach the desired level. The establishment of courses and

workshops, meeting successful people with the same disease and training nurses to provide full information to patients, empowerment of people to take care of their health, skills and ability in people to have an active role in improving and maintaining the individual, familial, and social health and selecting the most appropriate services that expresses the relationship between the three factors of ability, knowledge and skill will be a great help to the patients suffering from this disease. Ability and acceptance of self-care are personality factors that affect the patients' condition and will increase their ability to deal with problems such as diseases.

## Conclusion

Since a large portion of the daily care of patients with epilepsy is provided through the patient or a family member, using appropriate methods for knowledge, skills and empowering patients can relieve their symptoms and control the disease in addition to reducing health care costs for patients. In fact, complete and implicational education on self-care behaviors are the main part of appropriate disease control for all patients; on the other hand, success in such behaviors requires adequate knowledge of the disease and its complications and empowering the patient and his family in disease control.

Studies have specified that strengthening self-confidence and emphasizing their high ability for self-care, empowering families, raising patients' awareness about the disease and devoting adequate time to educate patients in regards to the health services are among the factors facilitating the process of self-care in these patients. In conclusion, it seems that the use of efficient and well-trained staff to improve patients' health and enhance their self-care is extremely essential.

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