Designing a Epileptics Patients Services Management Model for Iranian Health System

Ebrahim Koochaki¹, Monika Motaghi²

¹Department of Neurology, Medical Faculty, Kashan University of Medical Sciences, ²Clinical Research Center, Kashan University of Medical Sciences, Kashan, Iran

ORCID:
Monika Motaghi: https://orcid.org/0000-0002-5181-2821
Ebrahim Kouchaki: https://orcid.org/0000-0003-2942-5304

Abstract

Aim: Epilepsy is increasingly developed worldwide, considered as one of the most important healthcare problems in the second half of 12th century. **Methodology:** This study is a quantitative-qualitative/cross sectional-practical method research. The conceptual model was derived from comparative studies of the United States, Australia, United Kingdom, Canada and the relevant experts' perspectives. The study population consisted of all professionals related to the healthcare management of epilepsy in all geographical regions of Iran. The obtained data were analyzed using software SPSS 16 and AMOS. Exploratory and confirmatory factor analysis were also performed, and the final model was obtained and its fitness was confirmed. **Results:** Nine factors were entirely identified for the final model of healthcare management of epileptic patients: Organizational structure of the leading policy, makers, methods of governmental interventions in financing resources, types of services necessary to provide patients, instances of epilepsy, monitoring, and controlling epilepsy healthcare services among which methods of governmental interventions in financing resources and monitoring and controlling epilepsy healthcare services had the minimum and maximum factor load value, respectively. **Conclusion:** As it can be observed from the study data, training and raising the public awareness toward epilepsy in the country is an essential tool to prevent these types of diseases, as identifying the initial main risks aiming at prohibition of epidemic diseases and also proper healthcare services in case of development are the most important initiations to be taken.

Keywords: Control, financing, healthcare services management, organizational structure, planning, policy making

Introduction

Epilepsy as the most common neurological disease[1] is a chronic neurological disorder, the Latin equivalents of which include seizure, convulsion, and epilepsy, all of which signify abnormal brain neuronal discharges and may be with or without clinical symptoms.[2] Species are seizure attacks and more than 40 million people in the world are affected. Seizure is an uncontrollable attack, an abnormal sensory, motor, or psychic action that is caused by abnormal brain activity and occurs at all ages. The cause of seizure is an electrical disruption of the brain and a sudden discharge of electrical energy in an area that may be released into the brain.[3]

About 0.5%–3% of the world's population is affected. However, in 20%–30% of patients with a population of 10–15 million people in the world, despite recurring therapies, they have recurrent seizures.[4,5] Clinical symptoms may be slightly more common in the form of generalized or localized epilepsy,

autonomic impairment, disturbances in the brain's complexion, or transient sensory impairment and abnormalities in men. Due to the very diverse forms of the disease, it causes occupational, social, and even death if diagnosed or treated improperly. Although the best way to diagnose is to see an epilepsy attack, the most valuable and routine preclinical diagnosis of epilepsy is the electroencephalography, in which the neural function of the brain is taken as an electrical set and recorded after amplification.[2,6,7]

Epilepsy can occur at any age, race, or social class. The onset of new epilepsy cases has been reported in children and older people, and the incidence of epilepsy has risen with age.[8-10]

Address for correspondence: Dr. Monika Motaghi,
Clinical Research Center, Kashan University of Medical Sciences,
Kashan, Iran.
E-mail: monika3005@yahoo.co.uk

How to cite this article: Koochaki E, Motaghi M. Designing a epileptics patients services management model for Iranian health system. Int Arch Health Sci 2018;5:120-5.

In 20% of patients with epilepsy, depression is observed, and suicide is 2 times that of normal population.[11] Patients with epilepsy also have other psychological and social problems in addition to their own physical problems. Fear of mental retardation, fear of dying during seizure, deprivation of some basic social rights, such as driving and finding a suitable job, and even maintaining it, is one of those problems. The occurrence of these psychosocial issues in patients with epilepsy is subject to a variety of psychiatric disorders including depression and anxiety. Recruitment, social exchanges, family relationships, and social activities have been identified as the key factors affecting the quality of life of patients with epilepsy.[12] Chronic epilepsy with serious social, psychological, and physical consequences that affects their patients and even their families greatly reduces the quality of life of the patients. Epilepsy affects all aspects of everyday life of the individual, and uncontrolled seizures can lead to reversible changes.[13] Studies have shown that patients with epilepsy are more likely to have epilepsy than other patients with chronic diseases such as asthma and diabetes.[14-24] Often, quality of life decreases in the elderly population based in large part on their foot health. There is a progressive reduction in health in general and foot health with increasing severity of hallux valgus deformity which appears to be associated with the presence of greater degree of HV, regardless of gender.[25]

Quality of life in patients with epilepsy has a direct and significant relationship with their health status. So that patients with better health status have a higher quality of life score and not much difference with normal people.[26] Despite the progress made in controlling this disease, psychosocial burden is still associated with the word "epilepsy" in many societies of the affected person. Affects more than the disease itself or its side effects.

METHODOLOGY

This is a descriptive-comparative, cross-sectional study. In addition, the logic of the implementation of the research was the document that eventually led to the presentation of the model and theorizing. Moreover, considering the nature of the data and the use of statistical techniques, the findings and the final model of the quantitative research are considered; however, the research has also benefited from a qualitative approach. Since the results of the research in the form of the final model for the target research community can be used; hence, in the later stage, the result is considered as applied research.

The research is from two communities. The first population consisted of 30 specialists who were in some way associated with epileptic patients, and the second one, which included 5–10 times the number of questionnaire items approved. The items were 60, so there were 600 people who were active in the healthcare system in the country.

The stages of research implementation were as follows:
1. Comparative study of the resources of the US, Australia, Canada, and the United Kingdom in the field of research through library studies, Persian and Latin journals, scientific papers, dissertations, website of leading organizations in The field of service provision, information resources and internal and external information banks such as Irandoc, Science Direct, Iranmedex, Medline, PubMed, Scope, Elsevier, etc., and search engines such as Scholar Google, as well as search for reputable organizations in this field. Such as (NHS, WHO, ICAHO) official reports and other documentation

At this stage, due to the nature of the subject and the lack of a unique and comprehensive pattern for the countries, there was no comparative study of the local Arabs, in contrast to all variables and measures related to the subject in the health system with the qualitative analysis of content were counted. Consequently, the conceptual model was formed

2. Extracting their comparative information by flickering and information forms
3. Extracting the conceptual model of the management of epileptic patients in the above-mentioned countries. The conceptual model extracted from the comparative study
4. Designing and modifying the conceptual model based on the documentation of the above-mentioned countries [Figure 1]
5. Establishing a 30-member expert group on the proposed model of Iran expert panel
6. Designing questionnaire questions
7. Confirmation of face validity of the questionnaire based on the opinions of two experts and experts
8. Content Validation Based on the opinions of 30 experts regarding the necessity of each question, simplicity, clarity and relevance, and calculating CVI and CVR for each question. For all questions, the score is 1 = nonexistent, 2 = small, 3 = moderate, 4 = totally, in all four, necessity, simplicity, clarity and relevance will be measured

CVI = Total evaluators/number of evaluations that have scored 3 and 4

CVR = Total assessors/masters evaluated the total score in the total

If CVR <0.33 was considered as a necessary question, <0.7 < CVI, it was introduced as an appropriate question, otherwise it was revised or deleted

The reliability of the questionnaire was evaluated using the comments of 30 experts including health departments of universities, professors of health services management, and health policy department and head of several general hospitals in the country, using the test-retest method. The correlation coefficient was 85/0 was a sign of high reliability of the questionnaire, and the Spearman-Brown equation was 0.918. Which showed the internal consistency of the questionnaire

A 600-item questionnaire should be submitted (5–10 times the items of the questionnaire). The final approved questionnaire was equivalent to 61 items. One of the experts and professors of health services and health policy management and health departments of

universities of seven metropolitan areas of the country were: Tehran, Isfahan, Kashan, Ahvaz, Kerman, Birjand, and Tabriz, in health education, and training in the country

9. Data entry into SPSS 16 (SPSS Inc., Illinois, USA) (Leland Stanford Junior University) software and use of AMOS (Analysis of MOment Structures IBM SPSS Amos - United States) software for designing the final model [Figures 2 and 3].

Entry and exit criteria of the study:
1. Work in the healthcare system
2. Having specialized education related to the subject
3. Interested in participating in the study.

The researcher started the implementation phase after receiving the letter and necessary permissions from the faculty of education and research.

Respect for trust, honesty, and avoiding any bias and suppression in the findings were considered by the researcher as the primary principles of ethical research.

The questionnaires lacked the name of the respondents, and they were given the confidentiality of the information and the publication of the name of confidence.

Freedom of respondents was asked to answer questions.

Ensuring that the research findings are available to respondents on request.

The high workload of the research community and the problems of access to the community of experts and throughout the country are the most important problems in conducting research.

RESULTS

To achieve a good model of the management of the epidemiologic systems of health systems of selected countries with the view of policy-making and planning, the organizational structure and the status of pediatric diseases, the mechanisms of performance control, and finally, how to provide and allocate financial resources. In this chapter, this comparison and comparative analysis were carried out to finalize the conclusions regarding the selection of the best indigenous options according to the conditions and requirements of the Iranian health system.

In this section, each of the selected countries is discussed according to the specific objectives of the research.

The final tool was provided to 600 experts. After collecting questionnaires, 490 questionnaires were completely completed. The demographic information of the respondents is given in the Table 1.

In this study, Kaiser-Meyer-Olkin (KMO) sampling adequacy index was used to determine the existence of necessary conditions for performing factor analysis. Serni and Kaiser

Table 1: Demographics of respondents to the questionnaire

Variable	Mean
Sex	
Female	290 (59.2)
Male	200 (40.8)
Degree	
Bachelor	160 (32.6)
Master of Science (MSc)	125 (25.5)
Ph.D	50 (10.2)
General physician	46 (9.38)
Specialist physician	78 (15.9)
Specialty	28 (5.7)
Unanswered	3 (0.61)
Place of activity	
Hospital	324 (66.1)
Centers University of Medical Sciences	118 (24)
ETC	48 (9.8)

The mean and standard deviation of the responder's age was 38.55±8.78 years

Table 2: Preliminary examination of Kaiser-Meyer-Olkin factors analysis, Bartlett

KMO and Bartlett's Test		
Kaiser-Mayer-Olkin Measure of Sampling		0.863
Bartlett's Test of Sphericity	Approx. Chi-Squqre	12669.461
	df	1830
	Sig.	.000

argue that when the KMO value is >0.6, the sample's adequacy for factor analysis is feasible, and factor analysis is possible. The result was 0.863 [Table 2].

In this study, using two SPSS 16 and AMOS software, descriptive and inferential statistics were used to analyze the data. At the descriptive level, using statistical characteristics, such as frequency, percentage, mean, standard deviation, plotting, and data analysis, the data were analyzed. Factor analysis tests were used at the inferential level proportional to the level of data assessment and the basic assumptions of the statistical tests.

Confirmatory factor analysis of help patient health services management factors.

Confirmatory factor analysis of the healthcare providers of epileptic patients was performed based on standardized and meaningful coefficients. Finally, the final model was extracted as follows [Table 3].

Final model

Two important model fitting models (root mean square error of approximation [RMSEA]) and (CMIN/df) are in Table 3. The value (CMIN/df) is 1.15. The amount (CMIN/df) is smaller than the number 3. The model has better fit.

Table 3: Goodness indicators of model fit

Fitness index	CMIN/DF	SRMR	Root mean square error of approximation	Goodness-of-fit index	Adjusted goodness of fit index	Normed fit index	Non-normed fit index	Incremental fit index
Acceptable values	<3	<0.05	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9
Calculated values	1.58	0.03	0.04	0.97	0.91	0.9	0.98	0.91
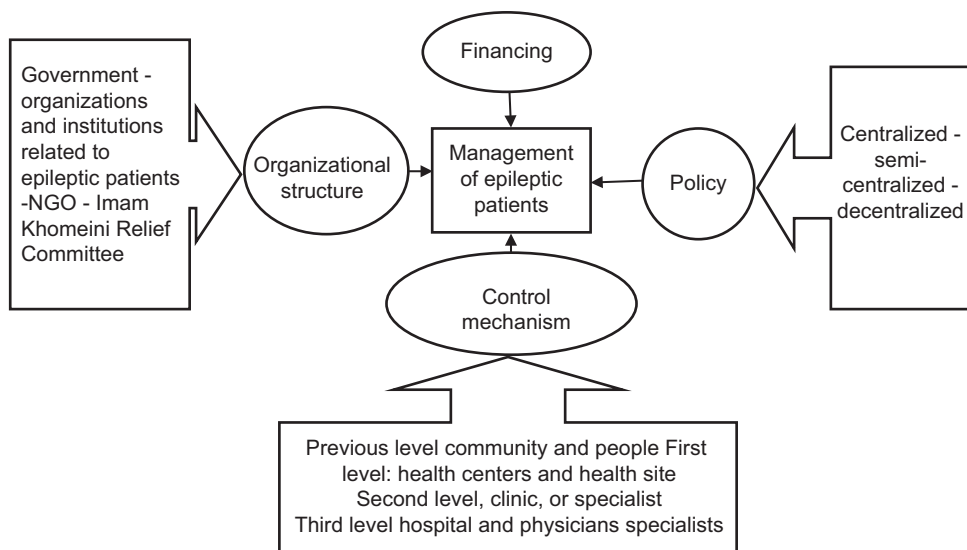
Figure 1: The proposed conceptual model of the researcher

The RMSEA index is the mean square error of the model, which is estimated to be 0.006. This index is based on model errors. The permissible limit of this value is 0.88, that is, the values below 0.08 is acceptable and also below 0.05 is very good. Other indicators are within acceptable limits so that the model can be fitted appropriately.

The priorities of the variables are as follows:
1. Service type can be provided free of charge
2. Government assistance to the epileptic patients.

Types of epilepsy:
1. Criteria for the coverage of services to epileptic patients
2. The combination of health committee members epileptic patients
3. Level of policy-making and planning and services providing
4. Organizations participating in surveillance, monitoring, and control services
5. Financing services epileptic patients
6. Organizational structure.

DISCUSSION

In one study,[27] the quality of life in the epileptic group was more unfavorable than the healthy group. In addition, the ultimate effect factor Quality of life in patients with epilepsy reported education and employment. The consistency of this study with previous studies in this area is likely to be due to the fact that people with higher education are more likely to pay attention to medical care and the level of education to some extent can affect the quality of life. In the present study, the majority of patients with university education had a higher level of education alone, an effective factor on increasing the quality of life of patients with epilepsy.

According to Jafarian *et al*.,[28] considering the importance of absence Epilepsy, its high prevalence and the possibility of converting this type of epilepsy to other types of epilepsy, it seems necessary to pay attention to the definitive treatment of these patients. However, according to the results of various studies, several factors are the underlying cause of this disease. Therefore, for the treatment of these patients, attention should be paid to all aspects of the disease. In the present study, major malignant epilepsy has high importance.

The results of the study in Yazd[29] indicated that a significant percentage of mothers believed that many foods were effective on seizure and that it was necessary to extract foodstuffs and test them on animal and human models in education Nutrition in patients with epilepsy. In the present study, we also present healthy lifestyle education, distribution of booklets, and books and pamphlets to the public. This is in the context of the remark[30] that the lack of compliance with the medication regimen in patients with epilepsy leads to an increase in mortality in these patients and suggests that nurses can use
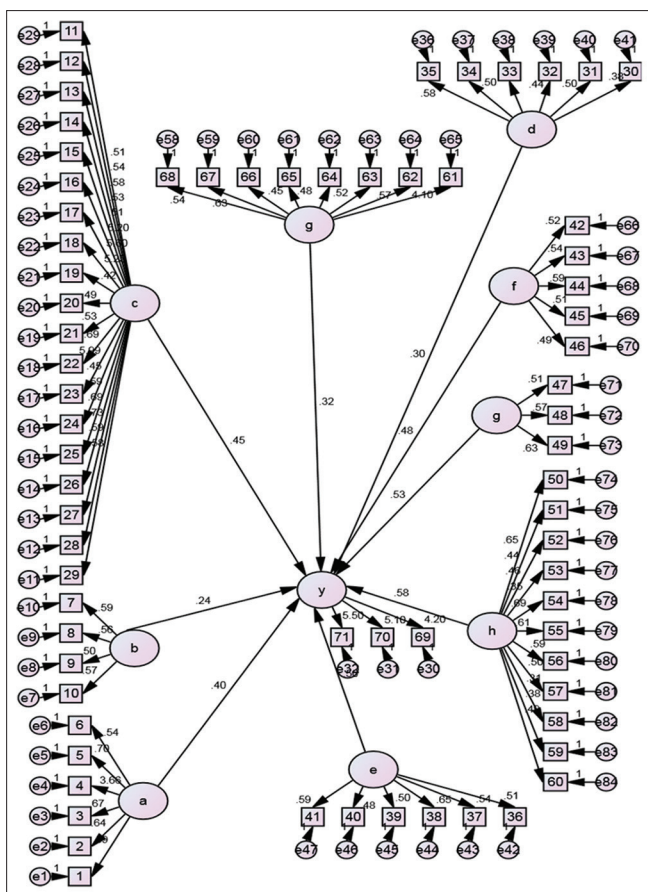
Figure 2: Structural model of relationships between research variables based on standardized coefficients
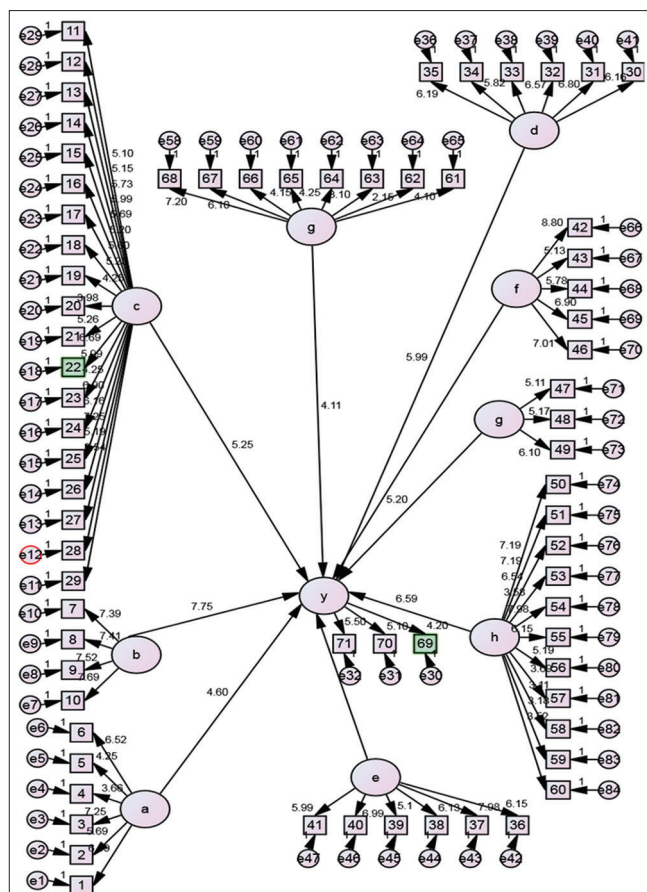
Figure 3: Structural model of relationships between research variables based on meaningful coefficients

group training that is a simple and very simple method low cost; self-management of patients with epilepsy in the field of drug use and thereby preventing many of these problems and helping them to improve their health, confirming the need for education for patients.

Many people with epilepsy in the Third World suffer from disastrous accidents due to lack of proper knowledge and education. They can live like other people in the community if they receive adequate care and resume their daily activities and suffer from physical and psychological complications. Due to the disease.

Self-care education for epileptic patients increases their knowledge and function, and also saves time, energy, encourages the patient to take care of themselves and prevents repeated admission and the need for continued treatment.[31]

The present study has been of great importance to the teaching position and recommended the provision of all educational services and periodic health checkups and preventive services for Levels 1, 2, and 3.

Conclusion

The present study was conducted on the basis of expert opinion in the field of neurological diseases and management

of health services and health policy, as well as health deputies of the universities of the country. The areas studied in the management of psychiatric patients include policy and planning, organizational structure, composition of committee members, financial resources, examples of epilepsy, coverage of services, government assistance to patients, types of health services and control mechanisms, monitoring and monitoring of services In the healthcare system, the patients were epileptic. Considering the increasing trend of epilepsy burden in the country, and considering that the basis of prevention of epilepsy is to identify the primary and most risk factors and to prevent and control these factors with the aim of preventing epidemics and providing appropriate services in case of occurrence. Therefore, it is hoped to be effective with the application of the proposed framework to improve the health management of epileptic patients in the country. According to the findings of this research, it is suggested that this model can be used by the Ministry of Health and Medical Education with the aim of improving the health management of patients with epilepsy. In view of the increasing incidence of this disease in Iran, it seems that the relevant organization could, in the proposed framework of the present study, be more effective in policy-making and planning to improve the organizational structure with the approach of providing financial and human

resources with regard to the local and regional conditions. Sustainable prevention and control of epilepsy will make more effective efforts to grow and develop in a shadow of a healthier society.

Financial support and sponsorship
Nil.

Conflicts of interest
We appreciate from clinical research unit of Kashan Shahid Beheshty hospital

REFERENCES

1. Thomas R, Gregory LB. Holmes Epilepsy: Definitions and Background in Handbook of Epilepsy. 2nd ed. New York: Lippincott Williams & Wilkins; 2000. p. 1-17.
2. Robert H, Brown MD, Allen H, Ropper MD. Epilepsy and other Seizune Disorders in Adams and Victor's Principles of Neurology. 8th ed. New York: McGraw-Hill; 2005. p. 11-41, 271-301.
3. Maurice V, Ropper AH. Epilepsy and other seizure disorders. Adams and Victor, Principles of Neurology. 7th ed., Vol. 1. USA: McGraw-Hill Companies; 2001.
4. Kelly PJ, Lim LL. Survival analysis for recurrent event data: An application to childhood infectious diseases. Stat Med 2000;19:13-33.
5. Wang MC, Qin J, Chiang CT. Analyzing recurrent event data with informative censoring. J Am Stat Assoc 2001;96:10.1198/016214501753209031.
6. Bazil CW, Marthu J, Morrel A, Timothy A. Pedly, epilepsy. In: Lewis P, Rowland MD, editors. Merritt's Neurology. 11th ed. Philadelphia: Lippincott Williams & Wilkins; 2005. p. 990-1014.
7. Shirzadei M, Ziyaei J. Neurologic Disease. Tehran: Kankash Publication; 2002. p. 121-51.
8. Stephen LJ, Brodie MJ. Epilepsy in elderly people. Lancet 2000;355:1441-6.
9. Browne TR, Holmes GL. Management. In: Browne TR, Holmes GL, editors. Handbook of Epilepsy. 4th ed. Philadelphia: Lippincott Williams and Wilkins; 2008. p. 151-75.
10. Wyllie E, Cascino GD, Gidal BE, Goodkin HP. Wyllie's Treatment of Epilepsy: Principles and Practice. 5th ed. Philadelphia: Lippincott Williams and Wilkins; 2010.
11. Kanner AM. Depression and epilepsy: A new perspective on two closely related disorders. Epilepsy Curr 2006;6:141-6.
12. Katzung BG, Masters SB, Trevor AJ. Basic & Clinical Pharmacology. 10th ed. Lange: McGraw-Hill Medical; 2007.
13. Hills M. The psychological and social impact of epilepsy. Neurol Asia 2007;12:10-2.
14. Norris J, Bladin C, Johnston P, Alexandrov A, Smurawska L. The occurrence of seizures after stroke. Neurology 1994;44:A327.
15. Al-Rajeh S, Awada A, Bademosi O, Ogunniyi A. The prevalence of epilepsy and other seizure disorder in an Arab population: A community-based study. Seizure 2001;10:410-4.
16. Onal AE, Tumerdem Y, Ozturk MK, Gurses C, Baykan B, Gokyigit A, et al. Epilepsy prevalence in a rural area in Istanbul. Seizure 2002;11:397-401.
17. Brown RH, Ropper AH. Adams and victor's principles of Neurology. 8th ed. 2005; New York: McGraw-Hill; 2005. p. 331.
18. Frank RH, Cook PJ. The Winner-Take-All Society: Why the Few at the Top Get so Much More than the Rest of us. Random House; 2010.
19. Bank G. Annual Report, 2007. Tallahassee, Florida: Grameen Bank; 2009. p. 13.
20. Available from: http://www.ihcs.ac.ir/UploadedFiles/2/4/17238.pdf.
21. Shayanmehr M, Yahyapour E, Kahrarian M, Lafooraki EY. An introduction to Iranian Collembola (Hexapoda): An update to the species list. Zookeys 2013;(335):69-83. doi: 10.3897/zookeys.335.5491. eCollection 2013.
22. Afshari A. Globalization challenges in Iran. J UMP Soc Sci Technol Manage 2015;2015:3.
23. Jacobson NS, Gottman JM, Waltz J, Rushe R, Babcock J, Holtzworth-Munroe A, et al. Affect, verbal content, and psychophysiology in the arguments of couples with a violent husband. J Consult Clin Psychol 1994;62:982-8.
24. Licinio J, Mantzoros C, Negrão AB, Cizza G, Wong ML, Bongiorno PB, et al. Human leptin levels are pulsatile and inversely related to pituitary-adrenal function. Nat Med 1997;3:575-9.
25. Beattie PE, Lewis-Jones MS. A comparative study of impairment of quality of life in children with skin disease and children with other chronic childhood diseases. Br J Dermatol 2006;155:145-51.
26. Rowan AJ, Ramsay RE, Collins JF, Pryor F, Boardman KD, Uthman BM, et al. New onset geriatric epilepsy: A randomized study of gabapentin, lamotrigine, and carbamazepine. Neurology 2005;64:1868-73.
27. Afzalaghaee M, Dehghani M, Alimi R, Mehdinejad M. Predictors of quality of life in patients with epilepsy. J Knowl Health 2015;10:11-8.
28. Jafarian M, Karimzadeh F, Kazemi H, Divanbeigi A, Gorji A. A review on absence epilepsy with focus on basic sciences. RJMS 2013;20:24-35.
29. Fallah R, Kaseb F, Rajaee M. Is there a relation between food intake and epileptic seizures in children?. JSSU 2011;19:75-83.
30. Yadegary MA, Dehghan-Naeyeri N, Aliasgharpoor M, Naseh L. The effect of educational program on drugs self-management in patient with epilepsy – A randomized clinical trial. J Clin Nurs Midwifery 2013;2:86-94.
31. Sahebolzamani M, Shakuri A, Aliloo L, Rashidi A. The efficacy of self-care education on knowledge and performance of epileptic patients who referred to selected educational hospitals of Tehran university of medical sciences in 2008. J Urmia Univ Med Sci 2010;20:284-9.