

Quality of Life of Epileptic Patients Compared to General Population in Tehran

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Abstract: Epilepsy is a chronic disease that affects different aspects of life; so we studied the quality of life of epileptic patients and compared it with general population of Tehran. We collected clinical and demographic data and studied quality of life by using the Iranian translation of Short Form 36 questionnaire version 2 (SF-36). The questionnaires were filled out by 200 patients with epilepsy referred to the Epilepsy Institute as outpatients. The mean age of our patients was 32.6 years. 54.5% were male. More than 60% of our patients had generalized tonic clonic seizures and seizure frequency was more than once a month in about 40% of them. Patients had lower scores in all subscales of SF-36, which were significantly lower than the general population. Mental health and vitality were the most affected by the disease and physical functioning was the least. Age, marital status, number of children, type of seizure and duration of disease had no effect on quality of life, but gender, educational level, occupation and income did influence quality of life. Clinical factors with significant effects on quality of life were as follows: number of taken drugs, number of adverse effects of drugs, frequency of seizures, and the time passed from last seizure. So we recommend treating patients using least number of drugs with minimum side effects. Striving for seizure free patients is very important and it is vital that we regard quality of life as an important factor in selecting appropriate treatment for patients.

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Introduction

Epilepsy is a chronic disease with worldwide distribution that occurs in different groups of people. About 45 million patients all over the world are suffering from epilepsy. The effects of epilepsy on patients are those caused by recurring epileptic seizures, physical limitations due to neurological disorders, psychosocial factors and adverse effects of drugs(1). The International League Against Epilepsy (ILAE) and World Health Organization (WHO) emphasize on the removal of barriers to a better life for those with this disease (2). There are different definitions for quality of life (QOL) and health which relate these two together. Happiness and satisfaction with life are usually considered as the definition of QOL. It is obvious that QOL bears different meanings to different people. Nowadays, patients self-assessment of their health status is considered as the basis for evaluation of QOL using the standard questionnaire(3). There

are numerous studies that have evaluated QOL in patients with epilepsy in different countries. They show that there are similarities in these patients, but there are differences between different countries' QOL(4, 5).

Clinical variables such as frequency and severity of seizure, drug usage and adverse effects of drugs are related to QOL (6, 7). Demographic variables are also related to QOL (8, 9).

However there are little studies done in the Middle East and the only data in Iran is from a study done in several countries in our region by Baker et al(10) .

'Medical outcomes Study'- Short Form 36 (SF-36), designed in 1993 by Ware et al is a brief, multifunctional one comprising 36 questions that can be used in general public as well as specific populations(11) and numerous studies have proved its validity and reliability in epileptic patients(12, 13). So we used the translated version of the questionnaire which has been standardized in Iran for assessing QOL.

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Patients and Methods

This is an analytic cross-sectional study. We used the convenience sampling method. All epileptic patients aged 16 and above referred to the Epilepsy Center of Tehran were included in the study. Among the patients, those with other chronic illnesses (diabetes mellitus, hypertension, etc.) or disability (multiple sclerosis, cerebral palsy, physical disability, etc.) and those with epileptic seizures as recent as 24 hours were excluded. Sample size was estimated by using the mean comparison formula with data from the general population of Tehran and epileptic patients from other studies and was 200 patients. After selecting individuals and obtaining their consent for inclusion in the study, data was collected using the SF-36 questionnaire. Then our data was analyzed using the SPSS software. Initially, we performed linear transformation to increase the accuracy of comparison of different subscales. Afterwards, we tested the means with ANOVA and t-test. Correlations were assessed with correlation coefficient.

Results

In this research we studied 200 patients with epilepsy. The mean age was 32.6±11 years old. 54.5% of patients were male. The majority of the patients had high school education (43.5%) and 24% had academic educational levels. About 60% were single. Unemployment was the most frequent occupational status seen (29%). 67% of patients had generalized tonic clonic seizures and seizure frequency was more than once a month in 40.5% of the patients. The most common drug used was carbamazepine (52%) followed by sodium valproate (37.5%), lamotrigine (28%) and phenytoin (27.5%).

About one third of the patients were treated with two drugs and only 29.5% received monotherapy. The most common adverse effects were nervousness (59%), drowsiness (57%) and tremors (47.5%). Half of the patients experienced 3 to 7 adverse effects. The SF-36 results are displayed in table-1 and figure-1.

Table 1. SF-36 scores in patients with epilepsy

95% confidence interval	Standard deviation	Mean	Scales
79.92-85.58	20.29	82.75	Physical functioning
67.13-60.72	22.99	63.93	Role Physical limitations
56.08-51.85	15.19	52.97	Bodily pain
61.81-55.56	22.38	58.69	General health
48-52.81	17.25	50.41	Vitality
73.17-66.7	23.14	69.93	Social functioning
50.13-62.52	22.93	53.33	Role emotional limitations
50.02-45.13	17.56	47.58	Mental health
57.58-53.04	16.37	55.31	Mental component score
62.63-66.54	14.10	64.58	Physical component score
61.92-57.97	14.14	59.95	QOL total

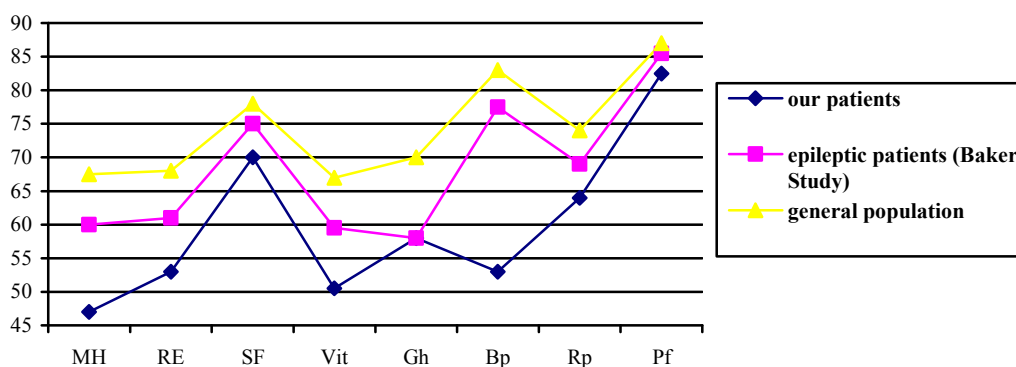


Figure 1. SF-36 means of patients with epilepsy compared with the general population and Iranian epileptic patients in Baker’s study

MH, mental health; RE, role emotional limitations; SF, social functioning; VIT, vitality; GH, general health; BP, bodily pain; RP, role physical limitations; PF, physical functioning

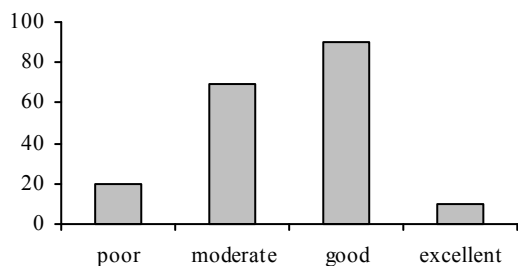


Figure 2. Frequency of groups of quality of life in patients with epilepsy

Poor, total quality of life score less than 40; Moderate, total quality of life score between 40 – 60; Good, total quality of life score between 60-80; Excellent, total quality of life score more than 80

Figure-2 shows qualitative grouping of the total quality of life score. As shown in the figure, 77% of patients had medium and good QOL. Age showed no statistically significant differences in QOL. Females had better scores in the physical component score (PCS; $P=0.043$), but their mental component score (MCS) and total score of QOL had no statistical significant difference from those of men's.

As shown in figure-3, increasing in educational levels caused a significant increase in PCS, MCS and QOL ($P<0.001$). The influence of occupation on QOL is shown in Figure-4. Unemployment was a factor that worsened all indexes of QOL alarmingly ($P<0.001$).

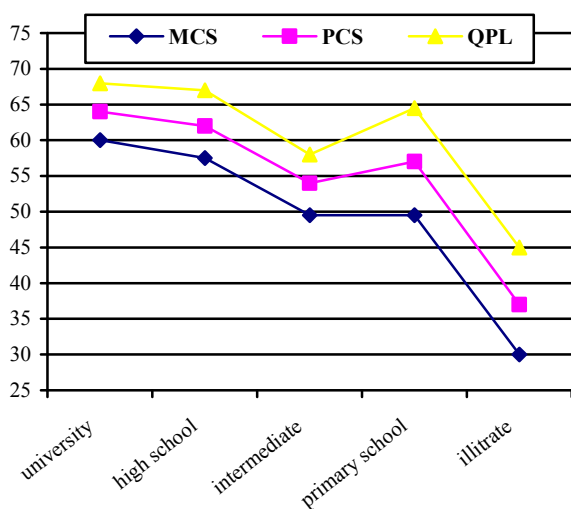


Figure 3. Relationship between quality of life and educational level in patients with epilepsy

QOL, Total quality of life score; PCS, Physical component score; MCS, Mental component score

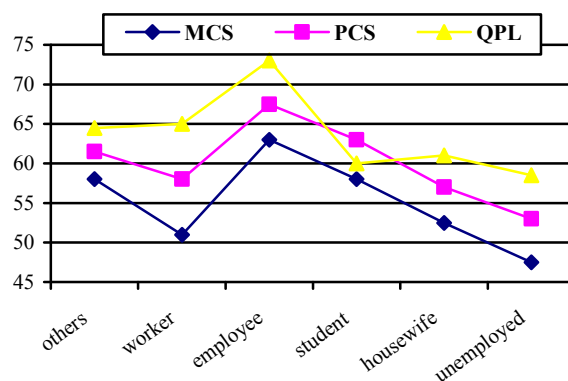


Figure 4. Relationship between quality of life and occupation in patients with epilepsy

QOL, Total quality of life score; PCS, Physical component score; MCS, Mental component score

Using Pearson's correlation test, increasing in monthly income showed a positive correlation with PCS, MCS and QOL ($P<0.001$). Our study showed that patients under monotherapy and patients with no seizures during the last year had better PCS, MCS and QOL ($P=0.021$, $P<0.001$). Pearson's correlation coefficient showed a significant positive correlation between the number of adverse effects and PCS, MCS and QOL ($P<0.001$).

Discussion

Our findings on demographic and clinical characteristics of patients were similar to other studies. However, our patients had different characteristics such as higher educational level, higher unemployment, and about 10-15% higher frequency of seizures(10, 14, 15) .

The patients had lower scores in all Sf-36 subscales and total QOL score as compared to the general population of Tehran and Iranian epileptic patients in Baker's study(10, 13). The general population scores were not in the 95% confidence interval of our patients' scores and this shows a significant difference between them. Such finding was similar to other studies, but in some researches, physical aspects had not been affected by epilepsy(16, 17). As for this difference, a satisfactory explanation is cultural and social differences between countries. Large studies in multiple countries have assessed and proven these differences(18, 19) .

Our finding regarding better PCS in females was similar to findings of Pugh MG et al and Leidy NK et al in the USA(6, 18).

As our study and other similar studies show, an improvement of socioeconomic status will help pa-

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tients(20). We must take this into consideration when trying to help patients with epilepsy.

The impact of frequency of seizures and time passed from the last seizure on QOL has been proven in many studies(7, 21, 22).

Obviously, type of the drug used has no effect on QOL, but monotherapy will help patients to improve their QOL. Multiple drugs resulting in multiple adverse effects have negative effects on QOL(10, 14, 23).

The following will undoubtedly help epileptic patients enhance their QOL: to manage patients with epilepsy to become seizure free through treatment with minimal side effects, to gain acceptance and validity from the community, to secure satisfying occupations and to pursue higher-paid careers. Therefore, it is our solemn duty to take into account the quality of life as a determinant for better care and treatment.

References

1. Cecil RL, Bennett JC, Goldman L, editors. Cecil's Textbook of Medicine. 21st ed. Philadelphia, PA: W.B. Saunders; 2000.
2. Meinardi H, Scott RA, Reis R, Sander JW; ILAE Commission on the Developing World. The treatment gap in epilepsy: the current situation and ways forward. *Epilepsia* 2001; 42(1): 136-49.
3. Machin D, Fayers PM. Quality of Life: Assessment, Analysis and Interpretation of Patient Reported Outcomes. 2nd ed. New York: John Wiley & Sons; 2007.
4. Doughty J, Baker GA, Jacoby A, Lavaud V. Cross-cultural differences in levels of knowledge about epilepsy. *Epilepsia* 2003; 44(1): 115-23.
5. Jacoby A. Stigma, epilepsy, and quality of life. *Epilepsy Behav* 2002; 3(6S2): 10-20.
6. Leidy NK, Elixhauser A, Vickrey B, Means E, Willian MK. Seizure frequency and the health-related quality of life of adults with epilepsy. *Neurology* 1999; 53(1): 162-6.
7. Stavem K, Loge JH, Kaasa S. Health status of people with epilepsy compared with a general reference population. *Epilepsia* 2000; 41(1): 85-90.
8. el-Hilu SM. Social aspects of epilepsy in Kuwait. *Int J Soc Psychiatry* 1990; 36(1): 68-73.
9. Alwash RH, Hussein MJ, Matloub FF. Symptoms of anxiety and depression among adolescents with seizures in Irbid, Northern Jordan. *Seizure* 2000; 9(6): 412-6.
10. Baker GA, Jacoby A, Gorry J, Doughty J, Ellina V; SIGN Group. Quality of life of people with epilepsy in Iran, the Gulf, and Near East. *Epilepsia* 2005; 46(1): 132-40.
11. Leone MA, Beghi E, Righini C, Apolone G, Mosconi P. Epilepsy and quality of life in adults: a review of instruments. *Epilepsy Res* 2005; 66(1-3): 23-44.
12. Jacoby A, Baker GA, Steen N, Buck D. The SF-36 as a health status measure for epilepsy: a psychometric assessment. *Qual Life Res* 1999; 8(4): 351-64.
13. Montazeri A, Goshtasebi A, Vahdaninia M, Gandek B. The Short Form Health Survey (SF-36): translation and validation study of the Iranian version. *Qual Life Res* 2005; 14(3): 875-82.
14. Mrabet H, Mrabet A, Zouari B, Ghachem R. Health-related quality of life of people with epilepsy compared with a general reference population: a Tunisian study. *Epilepsia* 2004; 45(7): 838-43.
15. de Weerd A, de Haas S, Otte A, Trenité DK, van Erp G, Cohen A, et al. Subjective sleep disturbance in patients with partial epilepsy: a questionnaire-based study on prevalence and impact on quality of life. *Epilepsia* 2004; 45(11): 1397-404.
16. Argyriou AA, Papapetropoulos S, Polychronopoulos P, Corcondilas M, Argyriou K, Heras P. Psychosocial effects and evaluation of the health-related quality of life in patients suffering from well-controlled epilepsy. *J Neurol* 2004; 251(3): 310-3.
17. Hermann BP, Vickrey B, Hays RD, Cramer J, Devinsky O, Meador K, et al. A comparison of health-related quality of life in patients with epilepsy, diabetes and multiple sclerosis. *Epilepsy Res* 1996; 25(2): 113-8.
18. Pugh MJ, Copeland LA, Zeber JE, Cramer JA, Amuan ME, Cavazos JE, et al. The impact of epilepsy on health status among younger and older adults. *Epilepsia* 2005; 46(11): 1820-7.
19. Buck D, Jacoby A, Baker GA, Ley H, Steen N. Cross-cultural differences in health-related quality of life of people with epilepsy: findings from a European study. *Qual Life Res* 1999; 8(8): 675-85.
20. Baker GA, Jacoby A, Buck D, Stalgis C, Monnet D. Quality of life of people with epilepsy: a European study. *Epilepsia* 1997; 38(3): 353-62.
21. Birbeck GL, Hays RD, Cui X, Vickrey BG. Seizure reduction and quality of life improvements in people with epilepsy. *Epilepsia* 2002; 43(5): 535-8.
22. Malmgren K, Sullivan M, Ekstedt G, Kullberg G, Kumlien E. Health-related quality of life after epilepsy surgery: a Swedish multicenter study. *Epilepsia* 1997; 38(7): 830-8.
23. Wagner AK, Bungay KM, Kosinski M, Bromfield EB, Ehrenberg BL. The health status of adults with epilepsy compared with that of people without chronic conditions. *Pharmacotherapy* 1996; 16(1): 1-9.