

Research Paper: Quality of life Differences between Patients with Epilepsy and Psychogenic Non-Epileptic Seizure



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Citation Sahraian A, Moghimi Sh, Asadi-Pooya A, Ashjazadeh N, Mani A. Quality of life Differences between Patients with Epilepsy and Psychogenic Non-Epileptic Seizure. Journal of Research & Health. 2019; 9(7):575-580. <http://dx.doi.org/10.32598/JRH.292.2>

<http://dx.doi.org/10.32598/JRH.292.2>



Article info:

Received: 25 Nov 2017

Accepted: 05 Mar 2018

Publish: 01 Nov 2019

Keywords:

Life Quality, Epilepsy, Psychogenic, Seizure

ABSTRACT

Background: Epilepsy is a neurological disease that is associated with recurrent seizures that can be caused by abnormal brain activity. Psychogenic Non-Epileptic Seizures (PNES) have psychological bases and their clinical behavior is similar to epileptic attacks. Both patients with seizure and PNES often suffer from psychiatric problems. The aim of this study was to compare the quality of life among patients with epilepsy and PNES.

Methods: This cross-sectional study was conducted on 30 epileptic patients and 30 PNES patients who referred to Namazi and Imam Reza Hospitals of Shiraz University of Medical Sciences between 2014 - 2015 and were selected based on convenient sampling method. The quality of life was measured by the demographic questionnaire and Short Form (36) Health Survey. Statistical analysis was performed by SPSS Software.

Results: The mean score of physical functioning, role physical, vitality, the mental component in the epilepsy group was higher. Moreover, the physical pain score was higher in the PNES group.

Conclusion: This study showed that the quality of life in patients with PNES is lower than that in patients with epilepsy.

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Introduction

Medically Unexplained Symptom (MUS) refers to numerous terms describing people who seek medical care because of the experience of physical symptoms which cannot be explained by organic disease [1]. This term consist of several diagnoses such as hysteria, conversion disorder, somatization, hypochondrias and dissociative disorder that can be described as psychosomatic or non-organic [2]. Studies reported that it is a worldwide epidemic phenomenon [3]. Others reported that about 25% of physical complaints are related to organic or biological causes [1]. Besides some related evidence indicate that these symptoms are more common in women [4]. It was reported that up to 50% have persisting symptoms and it was hard to manage these patients, so it is one of the considerations leading to poor quality of life [5-6]. One of the known MUS is Psychogenic Non-Epileptic Seizures (PNES). Patients with PNES show sudden changes in responsiveness, behaviors, feelings and/or movements which lack a neurobiological origin similar to epileptic seizures and are not associated with electrophysiological epileptic changes [7, 8]. On the other hand, epilepsy occurs as a neurological disease associated with recurrent seizures caused by abnormal brain activity [9].

Epilepsy is still considered as stigma regardless of society increasing knowledge about the disease [10-13]. Negative public attitudes towards the patient's leads to problems that it would affect the quality of life of these patients. Some of these problems include low self-esteem, stress and anxiety, difficulty in social relationships, unemployment and marriage [11]. In Austria, researches have shown that just 15% of families were agreed with their children's marriage with an epileptic patient [14]. 29% of Czech citizens considered epilepsy as a form of madness [15]. Because of the mentioned problems, suicide rate among these patients is about 5 times more than normal people [16]. In addition to specific aspects of environmental and socio-cultural factors, studies have shown that the quality of life in patients with epilepsy is also linked to the disease [17]. In various studies, some factors affecting the quality of life of patients with epilepsy, are the same (such as the severity of seizures and mental co morbidities), but some factors are still different (such as gender and number of seizure) [10,11].

Both PNES and epilepsy could affect the patients' quality of life and are often associated with other psychological disorders [18-19]. It is important to investigate the quality of life among affected patients and de-

termine the associated factors in different populations.

The aim of the current study was to evaluate the quality of life in patients with PNES and compare it with that in patients with epilepsy in south of Iran. The main research question according to previous study described as; quality of life questionnaire and subscale can differ between epileptic and PNES patients?

Methods

This cross-sectional study was conducted on 60 patients who referred to Namazi and Imam Reza Hospitals affiliated to Shiraz University of Medical Sciences during 2014-2015.

Patients were selected by using convenience sampling and after evaluation by the neurologist and psychiatrist. Two groups of patients were studied; 30 patients with epilepsy and 30 patients with PNES. Patients with other concomitant medical or known mental problems were not included in this study.

The sample size in each group, according to biostatistics consult and based on the research done by Szaflarski et al [20] evaluates by the sample size formula by these parameters: power 80%; $\alpha=0.05$; $\beta=0.2$; $z=1.96$ and means \pm SD extracted from the table 1 of Szaflarski's research.

All the patients completed two separate questionnaires as follows:

Demographic Questionnaire

Which evaluated age, gender, marital status, employment status, place of living, duration of disease and number of children.

The Short Form (36) Health Survey

Which is a 36-item (SF-36), patient-reported survey of patient health, which is commonly used to evaluate quality of life. This scale has acceptable psychometric characteristics according to Montazeri, et al. (2005) in Persian, official language of Iran [21]. SF-36 evaluates eight factors including vitality, physical functioning, bodily pain, general health perceptions, physical role functioning, emotional role functioning, social role functioning, and mental health. [21]. Patients answered the scale in five-point Likert from 0 to 5 and in each section that the higher scores mean a better quality of life [21]. In scoring system of the scale, each patient had 2 total sores for Mental Component Summary (MCS) that included; vitality, emotional role function-

ing, social role functioning and mental health. The other factors computed as Physical Component Summary (PCS).

The study protocol was approved by Shiraz University of Medical Sciences research ethics committee (EC-P-9361-6371). The researcher gave verbal information about the study to the patients; they were ensured about the confidentiality of the data and signed written informed consents.

All data were analyzed by using SPSS-18 software. The results are reported as descriptive indices such as frequency (percentage) and mean \pm standard deviation. The difference between demographic factors (nominal variables) was tested by chi-square and other variables' correlation was estimated by Pearson correlation coefficients. The student's t-test was used to determine

the score differences between SF-36 subscales among two groups. In this study, the p-value was considered less than 0.05 as significant level. Before running this t-test, normality assumptions were checked by Kolmogorov –Smirnov test.

Results

The mean ages of the patients with epilepsy (34.03 \pm 13.53) and patients with PNES (31.76 \pm 11.30) were not significantly different (P=0.4). Frequency distributions of other demographic factors such as gender (P=0.6), marital statues (P=0.4), employment status (P=0.6) and place of living (P=0.7) were not significantly different between the two groups, so the groups were matched according to demographic factors. Table 1 shows these findings in detail.

Table 1. Demographic characteristics of the participants

Age (Mean \pm SD)		Epilepsy	PNES*	P
		34.03\pm13.53	31.76\pm11.30	0.48
Gender	Male	16 (53.3%)	13 (43.3%)	0.60
	Female	14 (46.7%)	17 (56.7%)	
	Total	30 (100%)	30 (100%)	
Marital status	Single	14 (46.7%)	11 (36.7%)	0.47
	Married	16 (53.3%)	19 (60%)	
	Total	30 (100%)	30 (100%)	
Employment status	Unemployed	12 (40%)	14 (46.7%)	0.62
	Self-employed	9 (30%)	5 (16.7%)	
	Other	9 (30%)	11 (36.6%)	
	Total	30 (100%)	30 (100%)	
Residence	County town	12 (40%)	14 (46.7%)	0.72
	City	13 (43.3%)	10 (33.3%)	
	Village	5 (16.7%)	6 (20%)	
	Total	30 (100%)	30 (100%)	

Mean scores of the SF-36 subscales demonstrated that bodily pain, physical functioning, physical role and vitality were significantly different between the two groups. The mean scores of physical functioning, physical role, vitality, mental component were higher in the epilepsy group. Moreover, physical pain score was higher in the PNES group (p<0.001). In other domains, there were no significant differences between the two groups (Table 2).

Other than physical health, which was significantly better in women with epilepsy (p = 0.04), and physical pain which was better in men with PNES (p = 0.001) there was no other significant difference between two genders.

In terms of gender and quality of life, there was no difference between the two groups.

Correlation between duration of disease and questionnaire scales showed no significant relationship between them. However, there was a significant positive relationship between duration of disease and social function in the PNES group (r=0.41, P=0.023).

Correlation between age and questionnaire's subscales showed a significant negative relationship between age and role physical (p=0.03, r=-0.27) and role mental (p=0.02, r=-0.29). Moreover, a negative relationship was found between the number of children with physical role (p=0.05, r=-0.25), and social func-

tioning ($p=0.04$, $r=-0.25$).

After assessing the correlation of educational level

with questionnaire's subscales, there was significant negative relationship between role of education in psychiatric and mental health.

Table 2. Mean scores of SF-36 domains and components

	Epilepsy (Mean±SD)	PNES (Mean±SD)	P
Physical functioning	82.6624.86±	67.2127.16±	0.02
Physical role	59.1644.27±	25.0034.74±	0.002
Mental role	52.2544.32±	34.4439.61±	0.10
Vitality	53.5513.58±	45.2211.63±	0.01
Mental health	55.7611.09±	50.7613.85±	0.12
Social functioning	46.6613.90±	46.2518.90±	0.92
Physical pains	26.7528.24±	55.3327.88±	0.001
General health	56.6614.46±	59.8316.89±	0.43
Physical Component Summary	56.3113.96±	51.8412.14±	0.19
Mental Component Summary	52.0613.07±	44.1711.36±	0.015

Discussion

In this study, we investigated the quality of life of patients with epilepsy compared to that in PNES. Of the eight domains of the Short Form [36] Health Survey, the differences among the mean scores of three domains were significant among two groups. Physical functioning and physical role were better in the epilepsy group while physical pain was better in the PNES group. Previous studies revealed similar results [20,22].

One of the possible reasons for lower quality of life among patients with PNES in comparison with in epilepsy is the more prevalent mental disorders among patients with PNES. The number of seizures may also have an impact on the quality of life in patients. Although this study did not investigate the number of seizures, previous studies demonstrated that the number of seizures was significantly higher in patients with PNES compared with that in patients with epilepsy. This could be a reason to lower the quality of life of patients with PNES [20-23].

In this study, we also investigated the relationship between quality of life with gender. Generally, any of the eight domains and two components of the questionnaire were not related with gender. However, intra-group analysis in the epilepsy group showed that women's mental health component was better compared with men. The analysis in the PNES group showed that physical pain in men was better than women and other components were not related to gender.

In some previous studies, there was no difference in

quality of life and its components between men and women [20,24,25]. However, some others reported that the quality of life in women was worse than that in men with epilepsy [26,27].

In this study, age had an inverse correlation with some domains of quality of life such as physical role, mental role, and mental health in both patients with epilepsy and PNES. Previous studies showed conflict results about the relation between age and quality of life [24,28,29].

In general PNES usually diagnosis with some year delay and confused with epilepsy [30]. The etiology and population base epidemiology is not clear. It is estimated that this a stress related problem [31]. The treatment plan has been referred to mental health specialist such as psychiatrist and psychologist [32]. Somehow, this might occur is the context of epilepsy or other psychiatric problems so it is heterogeneous problem not pure psychiatric or neurologic [33,34]. Considering these situation such as stress related, diagnosis with delay and not being pure problem, lead it to be effective is quality of life t the patients suffer from PNES.

On the other hand, PNES, known as an orphan disorder [30]. In each specialty, psychiatrist and neurologists consider that this problem is related to the other specialty [35] and this might cause poor quality of life rather to epileptic patients or other psychiatric problem which is not alone!

Conclusion

Finally, our study's results showed that the quality of

life in patients with PNES was lower than the epileptic patients. To generalize the results, it should be considered that sampling method was restricted to one clinic affiliated to Shiraz University of Medical Sciences.

Ethical Considerations

Compliance with ethical guidelines

The study protocol was approved by Shiraz university of medical sciences research ethics committee (EC-P-9361-6371). The researcher gave verbal information about the study to the patients; they were ensured about the confidentiality of the data and signed written informed consents.

Funding

The first author received financial support by the Grant number 6371 from Shiraz University of Medical Sciences.

Authors' contributions

Study design: Ali Sahraian, Ali Asadi-Pooya, Nahid Ashjazadeh, Arash Mani; Data collection and analysis: Shirin Moghimi, Nahid Ashjazadeh, Arash Mani; Manuscript preparation: Ali Sahraian, Shirin Moghimi, Ali Asadi-Pooya, Nahid Ashjazadeh, Arash Mani.

Conflict of interest

The authors declared no conflict of interest.

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