Frequency of depression in patients with seizure referring to the Urmia neuromedical clinic

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ABSTRACT

Depression is a type of mental disorder being characterized by mood disorders; it is one of the most common disorders which usually concurs with other chronic diseases and is mostly observed in women, people living in poverty, and people with lower education. The aim of this study is to determine the frequency of depression in patients with seizure in Urmia, Iran. This descriptive applied study was performed on 256 patients suffering from epilepsy. The demographic characteristics of the patients were collected by some questionnaires designed beforehand. Descriptive analytic methods were used to survey the demographic characteristics of the respondents, and the data was presented by the use of mean, standard deviation or percent. The results of this study showed that the prevalence of major depression in patients referring to the Urmia neuromedical Clinic was 2.9%. It was shown that there is a significant relationship between the level of education as well as the type of diet therapy and the simultaneous presence and severity of depression. There was also a significant relationship between the last seizure and depression; however, this relationship was not observed in terms of the severity of depression. Education can have a significant impact on the severity and prevalence of depression. In addition, the effect of the last seizure on the depression shows that better control of seizure attacks can have a significant effect on reducing the frequency of post-seizure depression in the society.

Keywords: Depression, seizure, risk factor, epilepsy, demographic characteristics

Introduction

Epilepsy is a chronic disorder that may be associated with devastating consequences such as depression and social isolation. Due to the misconceptions about the causes of epilepsy, people suffering from this disease are faced with many problems, such as not being able to continue one's studies, losing jobs, and being pushed out of the society; these situations can exacerbate the disease and cause the patient to tend to isolate [1-11]. The International league against epilepsy defines epilepsy as a type of neurological disorder characterized by recurrent seizure and associated with neurobiological, cognitive, psychological, and social complications [2, 3,12]. Epilepsy is the fourth most common neurological disorder after migraine, brain stroke, and Alzheimer's disease [4,13-20]. Depression in epileptic seizures is associated with inappropriate methods of treatment, poor quality of life, unemployment and inadequate educational status. Epilepsy is associated with the highest prevalence of depression in various types of neurological diseases; various studies indicate depression being associated with the quality of life of people suffering from epilepsy [5, 6,21-25].

Depression, being a type of mental disorder marked by mood disorders, is one of the most common disorders which usually concurs with other chronic diseases and is mostly observed in women, people living in poverty, and people with lower education. There are several therapies for this disorder, and in many cases, if treated appropriately, the complications of the disease can be reduced to a minimum [6, 7,26-30]. On the other hand, the manifestations of these mood disorders are different in different individuals and may not be detected with existing diagnostic criteria [8,31-36]. Unfortunately, the lack of timely diagnosis of the disease or the lack of treatment resulting from the lack of patients' attention paid to the disease can lead to an increased mortality rate usually related suicidal tendency [7-9,37,38]. The rate of suicide being reported as a symptom of depression in patients with epilepsy is higher than normal in the society. However, the diagnosis of depression, even in epilepsy patients who are usually under medical care, is much lower than the actual prevalence of this disease in the community of people with epilepsy [10,11,12,39,40]. Studies conducted by Xu et al. indicated that psychological depression is common in epileptic patients, and those with psychological, mental and family

problems are put at higher risk for such an adverse condition [11,13,14,15,41-45]. According to the studies that have been conducted specifically for this purpose, various risk factors have been raised regarding the incidence of depression in patients with epilepsy, the most important of which are status in employment, the severity of seizure, seizure recurrence, and the type of seizure [12,16,17,46-50]. The most important way for seizures treatment is through drugs; however, these drugs usually have complications; one of the most important of which is learning disability [13,18,51]. The purpose of this study was to determine the prevalence of depression in epileptic patients in Urmia Neuromedical Clinic and the association of some risk factors with depression.

Materials and Methods

This descriptive study was performed on 256 epileptic patients. Data was collected in two separate stages using urban and rural patients. Patients with seizure in urban areas who were under medical treatment referring to the internal clinic of Imam Khomeini Hospital in Urmia were evaluated by filling in a questionnaire on depression. 14 rural health centers were selected through cluster and random (geographically) sampling to collect the data on patients living in rural areas. Then, the list of patients with epilepsy was extracted under the supervision of each center; after that, the number of patients in each center was selected randomly. Then, referring to the health houses[1] of each patient, the address or phone number of the patient to be invited to the health house was extracted and the questionnaire was completed at the health house or the patient's house. The questionnaire was self-assessment in both stages; however, the questionnaire was completed with the help of a paramedic only if the patient was not literate or fluent in Persian. Patients with mental retardation or the patients whose last seizure interval was less than one week prior to the interview, as well as the patients who experienced discontinued treatment or were under 16 years of age were excluded from the study. The descriptive analytic methods were used to examine the demographic characteristics of the referents, and the data were presented as + mean, standard deviation or percentages. The Chi Square test was used to assess the relationship between risk factors and depression prevalence.

Results

The aim of the present study was to determine the frequency of depression and its relation with some other factors; 256 rural and urban patients with epilepsy were included in the study. 100 patients were selected from urban areas and 156 patients were selected from rural areas of Urmia. The median age of the patients participating in this study was 47.35 ± 15.12 years. The minimum age for patients was 16 years and the maximum age was 85 years. 135 subjects (52.7%) were male and 121 patients (47.3%) were female; 121 patients (47.3%) were single and 135 (52.7%) were married. None of the participants mentioned the divorce history. Of the 200 patients studied, 91

subjects were employed (35.5%), 36 patients (14.1%) were students, and 128 (50%) patients were unemployed or housewives. In addition, 88 (34.4%) patients were illiterate, 140 (54.7%) patients had not high school diploma and 28 (11.7%) had degrees higher than diploma. 219 patients (85.5%) suffered from Tonic Clonic Generalized epilepsy, 29 (11.3%) patients had partial epilepsy and 8 (3.1%) patients had other types of epilepsy, 65 (25.4%) subjects mentioned family history of epilepsy. Furthermore, 64 (25%) patients mentioned the history of seizure during the last month, 91 (35.9%) patients had their last seizure in the last 1 to 12 months, 68 (26.6%) patients reported to have seizure in last 1-5 months, 26 (10.2%) subjects had seizures in the last 5-10 years and 7 people (2.7%) mentioned their last seizure in more than 10 years ago. 133 (52%) people of the patients who filled in the questionnaire had no symptoms of depression (Beck score 0-9), 43 (16.8%) had borderline depression (Beck score 10-14), 49 (19.1%) patients experienced mild depression (Beck score 15-20), 24 patients (9.4%) had moderate depression (Beck score 21-30), 6 people (2.3%) had severe depression (Beck score 31-40), and 1 patient (0.4%) had major depression (score 63-41). In this study, Beck score 15 and above was considered as positive for depression. The relationship between depression and some other factors (age, sex, and marital status, the level of education, occupation, family history and diet treatment) were evaluated in this study. The relationship with the presence or absence of symptoms of depression was evaluated based on the Beck questionnaire in the first stage and in the next stage, the severity of depression was assessed. There was not a significant relationship between depression and age (p = 0.055) (Table 1), sex (p = 0.258) (Table 2), marital status (p = 0.303) (Table 3), the status in employment (p = 0.05), the place of living (p = 0.389) (Table 5), seizure type (p = 0.616) (Table 6) and family history (p = 0.301) (Table 7) in the present study. However, there was a significant relationship between depression and the time of the last seizure (p = 0.019) (Table 8); although this relationship was not observed in case of the severity of seizure (p = 0.134) (Table 8). Regarding the studied demographic factors, there was a significant relationship between educational level and depression, which was also consistent with depression (p = 0.008) and its severity as well (p = 0.015) (Table 9). The increase in the level of education reduced the prevalence of depression and its severity. Different diets were used for the patients, which were combined with carbamazepine, benzodiazepine, sodium valproate, phenobarbital, phenytoin and lamotrigine. Treatment was performed in 67% of patients in monotherapy and 33% in multitherapy. In this study, there was no significant relationship between the use of any of these drugs and the frequency of depression or its severity (p> 0.05); however, there was a significant relationship (Table 10) between depression (p = 0.026) and its severity (p = 0.005) and the type of diet (monotherapy vs multitherapy).

Table 1: the relationship between age factor and the presence and severity of depression

Age	P value
The presence of depression	0.258
The severity of depression	0.995

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[1] Introduced in Iran in 1980, health houses are the basic unit of the rural health care structure, with responsibility for family health and wellness, census taking, public education, disease monitoring and control, environmental health, and the collection and reporting of health data.

Table 2: the relationship between sex factor and the presence and the severity of depression

Sex	P value
The presence of depression	0.055
The severity of depression	0.663

Table 3: the relationship between marital status factor and the presence and the severity of depression

Marital status	P value
The presence of depression	0.303
The severity of depression	0.523

Table 4: the relationship between the status in employment factor and the presence and the severity of depression

Employment	P value
The presence of depression	0.5
The severity of depression	0.414

Table 5: the relationship between the place of living factor and the presence and the severity of depression

The place of living	P value
The presence of depression	0.389
The severity of depression	0.371

Table 6: the relationship between the type of seizure factor and the presence and the severity of depression

The type of seizure	P value
The presence of depression	0.616
The severity of depression	0.063

Table 7: the relationship between the family history of seizure and the presence and severity of depression

Family history	P value
The presence of depression	0.301
The severity of depression	0.521

Table 8: the relationship between the time interval from the last seizure and the presence and the severity of depression

The time interval from the last seizure	P value
The presence of depression	0.019
The severity of depression	0.134

Table 9: the relationship between the educational level and the presence and the severity of depression

Educational level	P value
The presence of depression	0.008
The severity of depression	0.015

Table 10: the relationship between the type of diet treatment and the presence and the severity of depression

Monotherapy- multitherapy	P value
The presence of depression	0.026
The severity of depression	0.005

Discussion

The studies conducted before the current study have clearly shown that epilepsy is associated with a higher prevalence of psychiatric disorders in society [19]. Depression and anxiety are two common issues in relation to the psychology of people having epilepsy; their prevalence varies between 10-50% to 5-60% depending on the sample selection and other methodological factors [20]. Depression is one of the major causes of disability and one of the major health problems in the world, which is expected to be the second in terms of the burden of disease in the 2030-2020 [21, 22]. Several studies have been conducted to determine the effective factors associated with reduction of the burden of the disease, for example, in the study of Resinger and Delorio, have regarded the stigma of the disease, support of others and occupational status as the three main factors affecting the incidence of depression in patients with epilepsy [23]. This is consistent with the findings of Lee et al. [24]. In this study, there was a significant relationship between the occupational status and the frequency of depression. A study carried out by Grabowska-Grzyb et al. on 203 patients with depression showed that the lack of clarity of the patient's employment status as well as the lack of a good job were related to the frequency of depression. These results were consistent with our studies [25]. In a study conducted by Schmitz et al., the data also showed a significant relationship between the occupational status of patients and the frequency of depression [26]. Although in the present study, there is no significant relationship between marital status and the incidence of depression in patients with epilepsy, Thomson concluded in his study that being single leads to an increased risk of depression in epilepsy patients [6]. Thomson's findings, although consistent with the findings of studies on depression in a normal society, as acknowledged in the study, may be biased due to the higher prevalence of married people in the control group [6]. In the present study, there was no significant relationship between age, sex and the frequency of depression. These findings, while contrary to the findings of the normal society, are consistent with other studies on patients with epilepsy [6, 27]. However, in other studies such as Fuller Thompson's study being conducted on 781 patients with epilepsy in Canada, it has been identified that sex (females) and age have predisposing factors for depression in patients. Nine types of seizure, especially regarding the involvement or non-

involvement of temporal and frontal lobes, can be effective in the frequency of depression in these patients [28]. In the present study, there is no significant relationship between family history of seizure and frequency of depression. Although there is not enough data on the relationship between family history of epilepsy and the frequency of depression, family history of depression seems to have a significant relationship with depression in patients suffering from seizure [29]. This finding can be related to the impact of environmental or genetic factors, or simply because of an increase in the rate of diagnosis in people who are relatively familiar with symptoms due to the family history. In the present study, there was a significant relationship between the presence of depression and the type of diet (monotherapy versus multitherapy). (p = 0.026). This relationship was also significant in the type of diet therapy and depression (p = 0.005). In general, although the prevalence of severe depression in people with seizure was lower in the present study than in an ordinary society (2.7% versus 4.1%), based on the systematic review of Dr. Sadeghi Rad [30-36] due to the lack of a similar study on the normal population of our study area, the value of this data may be questioned. On the other hand, the role of education in reducing the rate of depression in this study is clearly visible, and also the effect of the last seizure on the existence of depression reveals the fact that better control of seizure can significantly reduce the frequency of depression in the community.

Conclusion

The results of this study showed that the prevalence of major depression in the patients referring to the clinic was 2.9 %. Considering the studied factors, it was shown that there was no significant relationship between depression symptoms and age, sex, marital status, occupational status, place of living, type of seizure, and family history. However, simultaneously there is a significant relationship between the level of education and the type of diet (monotherapy versus multitherapy) and the presence and the severity of depression. There was also a significant relationship between the last seizure and depression, but this relationship was not observed in the severity of depression.

Suggestions

Although there was no significant relationship between type of seizure and the prevalence of depression, due to the low number of people suffering from other types of epilepsy other than generalized tonic-clonic, further studies in this regard can have different results. Moreover, considering the nature of Beck test, which is used as a method of depression screening in the community, it is recommended that in the next stage, studies on the exact incidence of depression in epilepsy patients be combined with a questionnaire and an interview to better identify this problem.

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