

## Frequency of Psychiatric Comorbidities in Epilepsy in an Iranian Sample

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**Objective:** Considering reports on the comorbidities of some psychiatric disorders with epilepsy and in view of some variability in results and lack of needed data in the Iranian population, this study aimed at a further systematic evaluation of various major psychiatric disorders in epileptic patients and compared the results with a control group.

**Method:** In this study, to assess mood, anxiety, and psychotic disorders in patients with epilepsy, 60 patients diagnosed with epilepsy and 60 control individuals matched on age and sex were selected. The case group was conveniently selected from the patients referring to the Iranian Epilepsy Association and the clinic of neurology in Rasoul Akram Hospital, Tehran. A control group whose age and gender were matched with the case group was also selected. Both groups underwent the Structured Clinical Interview for DSM-IV (SCID-I).

**Results:** Each group included 30 males and 30 females. The mean age was 31.0±8.97 in patients and 31.2±8.21 in controls. The lifetime prevalence of major psychiatric disorders including mood, anxiety and psychotic disorders, was 68.3% in individuals with epilepsy and 36.7% in controls (OR=0.28, 95%CI=0.12-0.57, p<0.05). Among mood disorders, major depressive disorder (MDD) (OR=2.57, 95%CI=1.1 to 5.9, p<0.05) and depressive disorder not otherwise specified (NOS) (p<0.05) prevailed significantly more in patients. Among anxiety disorders, only the frequency of obsessive-compulsive disorder (OCD) was statistically significant (OR=5.2, 95%CI=1.4 to 19, p<0.01).

**Conclusions:** MDD is the most prevalent comorbidity while OCD and depressive disorder NOS are in the second and third ranks. Therefore, in addition to the main psychiatric disorders, clinicians should pay enough attention to the significance of depressive disorder NOS. Further studies on community based samples, may result in more accurate findings concerning the target population.

### Key words:

*Anxiety disorders, Comorbidity, Epilepsy, Mood disorders, Obsessive-compulsive disorder*

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Since ancient times, epilepsy has always been one of the most tumultuous neurological disorders. The importance of this disorder is due to its chronic nature and high prevalence, ranging from 4 to 18 per 1000 population in different studies (1-3). Another noticeable feature of epilepsy has been the comorbidity of psychiatric disorders and concomitant emotional and behavioral problems.

A body of studies investigated the impact of epilepsy on the quality of life through its psychiatric comorbidities. However, no accurate estimation is available due to several methodological differences such as sampling and diagnostic instruments (4).

The prevalence of patients with epilepsy who have been admitted to psychiatry wards is more than its

prevalence within the community. For instance, among the patients who were admitted to psychiatric wards in UK and the U.S, %4.7 and %9.7 suffered from epilepsy respectively. This is while admission for psychiatric problems was reported in %30 of epileptic patients referring to out-patient clinics (5).

Several studies have revealed that the most frequent psychiatric disorders based on axis-I of the Diagnostic and Statistical Manual of Mental Disorders-fourth edition-Text Revision (DSM-IV-TR) criteria (6) are depressive (%11-75), anxiety (%10-25) and psychotic disorders (%2-12) (4,7,8). Although some studies on psychiatric assessment of patients with epilepsy have been carried out in Iran (9-10), only one study has utilized a diagnostic instrument (3). The aforementioned study which was an epidemiological evaluation, indicated that evaluation, indicated that the most

common psychiatric disorders among patients with epilepsy were major depressive disorder (MDD) and obsessive-compulsive disorder (OCD). However, controlled studies with standardized valid diagnostic instruments have been suggested.

The current study has investigated the comorbidity of major psychiatric disorders in patients suffering from epilepsy in Tehran (Iran) who were not hospitalized for their disorder (outpatients). The Structured Clinical Interview for DSM-IV (SCID-I) (11), and standard DSM-IV based interview have been used as the diagnostic instruments.

**Materials and Methods**

**Participants**

Participants included 60 patients diagnosed with epilepsy and 60 control individuals matched on age and sex. The case group was conveniently selected from the patients referring to the Iranian Epilepsy Association and the clinic of neurology in Rasoul Akram Hospital. The diagnosis of epilepsy was confirmed by a neurologist and other neurological problems were ruled out. Participants with the history of any systemic medical problems, substance use disorder and mental retardation based on DSM-IV-TR criteria were excluded.

**Materials**

Data were gathered, using a questionnaire and arranging a semi-structured interview:

- 1- Demographic questionnaire included information about age, sex, marital status, education, employment, onset of epilepsy, onset of taking antiepileptic drugs and type of medication.
- 2- SCID is a semi-structured DSM-IV based diagnostic interview, developed by Spitzer et al. in 1992 for the diagnosis of psychiatric disorders (11) and it has two versions: the first is a clinician version (SCID-CV) which covers most of psychiatric diagnoses and is modified for use in clinics and research studies and the second is a research version (SCID-R) which is longer and more complete and it covers all diagnoses and sub-diagnoses. SCID-CV includes SCID-I for the axis-I and SCID-II for the axis-II defined disorders. SCID-I is the most popular diagnostic interview in psychiatric studies because of its strong validity and reliability (12-14). The reliability and feasibility of the Farsi version were found acceptable by Sharifi et al. (15). In this study, the Farsi version of the SCID-I, clinician version was used.

**Procedure**

Consent was obtained from the participants after informing them about the study purposes and procedures. Demographic characteristics were obtained by a questionnaire designed for this study and are provided in Table 1. A chief resident in psychiatry performed the SCID-I interview with the participants. SPSS-14 software was used for data processing.

**Table 1. Demographic characteristics of patients and Controls**

		Frequency (%)	
		Case (%)	Control
Sex	Male	30 (50)	30 (50)
	Female	30 (50)	30 (50)
Marital Status	Single	46 (76.7)	24 (40)
	Married	12 (20)	32 (53.3)
	Divorced	2 (3.3)	2 (3.3)
	Widow	0 (0)	2 (3.3)
Education	High school & lower	31 (51.7)	12 (20)
	Diploma	21 (35)	22 (36.7)
	College	8 (13.3)	26 (43.3)
Employment	Employed	21 (35)	46 (76.7)
	Unemployed	19 (31.7)	5 (8.3)
	Housewife	18 (30)	1 (1.7)
	Student	2 (3.3)	8 (13.3)

The frequencies of the variables were compared using chi-square test at the significance level of 0.05 (p<0.05).

**Results**

The number of participants in each group was 60. Table 1 demonstrates the demographic data. There were equal number of males and females in both groups. The two groups were also matched by age; the mean difference was not significant by t-test. The mean age was 31.0 (SD=8.97; range=18-58) in patients and 31.2 (SD=8.21; range=18-55) in controls.

In the case group, the age at the onset of epilepsy and at the time of antiepileptic treatment was 12.67±9.41 (range=1-49) and 17.49±9.69 (range=1-49) respectively. The lifetime frequency of seeking treatment and receiving medication for psychiatric problems, and history of admission to the psychiatry wards in the two groups are compared in Table 2. In general, the above mentioned variables which are indicators of psychiatric problems are significantly more prevalent in patients than in controls.

Studying mood disorders, we found that 36.7% of the cases were diagnosed to suffer from MDD at different times in their lives while the frequency of the disorder in the control group (18.3%) was significantly lower using the chi-square test (p=0.025). The difference is also prominent in depressive disorder not otherwise specified (NOS) (p=0.02). But no difference in the frequency of dysthymic disorder or bipolar disorder was revealed (Table 3).

Among the anxiety disorders, only OCD was significantly more prevalent in patients (p=0.007). However, the frequencies of generalized anxiety disorder, social phobia, panic disorder and anxiety disorder NOS were also higher in the case group even though the difference was not significant (Table 4). There was no case of posttraumatic stress disorder or agoraphobia without panic disorder. There were two patients with Psychotic disorder in the case group and none in the control group. This study

**Table 2. Frequency (%) of general psychiatric problems**

	epileptic	control	P-value	OR <sup>+</sup>	CI <sup>++</sup>
major psychiatric disorders	68.3	36.7	0.001	0.28	0.12-0.57
Seeking psychiatric treatments	51.7	25.0	0.003	3.2	1.4 to 6.9
Taking psychiatric medication	45	26.7	0.036	2.25	1.04 to 4.8
Admission in psychiatry wards	13.3	0	0.003	-----	-----

+ Odds Ratio

++ Confidence Interval (95%)

**Table 3. Frequency (%) of mood disorders**

	epileptic	control	P-value	OR <sup>+</sup>	CI <sup>++</sup>
major depressive disorder	36.7	18.3	0.025	2.57	1.1 to 5.9
Depressive Disorder NOS	8.3	0	0.02	-----	-----
Dysthymic Disorder	5	8.3	0.72	0.5	0.1 to 2.5
Bipolar Disorder	1.7	0	0.5	-----	-----
Bipolar Disorder NOS	3.3	0	0.49	-----	-----

+ Odds Ratio

++ Confidence Interval (95%)

**Table 4. Frequency (%) of anxiety disorders**

	epileptic	control	P-value	OR <sup>+</sup>	CI <sup>++</sup>
generalized anxiety disorder	3.3	1.7	0.55	2.3	0.1 to 23
obsessive-compulsive disorder	21.7	5	0.007	5.2	1.4 to 19
specific phobia	6.7	0	0.1	-----	-----
social phobia	6.7	8.3	0.7	0.7	0.2 to 3
panic disorder	3.3	1.7	0.55	2.3	0.1 to 23
anxiety disorder NOS	8.3	1.7	0.2	5.3	0.6 to 47

+Odds Ratio

++ Confidence Interval (95%)

could not reveal a significant difference in the frequency of psychotic disorders.

## Discussion

The study demonstrates that the lifetime prevalence of major psychiatric disorders such as mood, anxiety and psychotic disorders is 68.3%. This frequency is higher than its equivalent in the control group and it is also noticeably higher than the prevalence of psychiatric disorders in the Iranian general population that has been found to be 21% in a study by Noorbala et al. (16). In detail, 45% of epileptic patients had sought psychiatric treatments, 41% continually used psychiatric medication and 8% were admitted for psychiatric problems; the difference of each item with the control group was significant.

Among the studied disorders, major depressive disorder

was the most prevalent comorbidity (33%) while obsessive-compulsive disorder (20%) and depressive disorder NOS (13.3%) were in the second and third ranks. Other studies also found depression as the most prevalent psychiatric comorbidity with epilepsy (17,18). In addition, psychiatric assessments on the Iranian general population indicated that MDD, OCD, and panic disorder are the most prevalent disorders among patients with epilepsy (3).

Our patients with depressive disorder NOS are defined in two groups: the first group includes those who did not fully meet the DSM-IV-TR criteria of major depressive disorder and the second group includes those whose depression could not be distinguished as primary or secondary to epilepsy. However, the definition of depression in patients with epilepsy has been always a matter of debate. Prueter & Norra (18) and Swinkle et al. (4) implied that common depressive syndromes in

epilepsy are not compatible with those defined in DSM-IV-TR and the International Classification of Diseases-10 (ICD-10) (19). Therefore, "interictal dysphoric disorder" is suggested as a more proper term to describe the problem. Preictal and postictal depression are the terms to define depression before and after convulsions. However, other specific instruments may be required to diagnose interictal dysphoric disorder. A similar problem of high prevalence of NOS is present in other neurological disorders as well. In a study on 85 patients with multiple sclerosis, Attari Moghadam and colleagues (20) reported that the frequency of depressive disorder NOS was 15.6% while the frequency of MDD was 5.9%. Therefore, more attention must be given to diagnosis of depressive syndromes in neurology clinics to avoid missing those patients who do not fully meet the MDD criteria.

Our study demonstrated a very low frequency of bipolar disorder in epileptic patients and no difference in the controls. This study is congruent with other studies that introduce unipolar depressive disorders as the main mood disorder in epilepsy (4,21). However, bipolar disorder has a noticeable prevalence and is clinically important in some neurological disorders such as multiple sclerosis (20,21).

In a controlled study, Monaco et al. (22) used SCID-I as the diagnostic instrument and found that OCD is more common in epileptic patients than in the general population. Furthermore, they revealed that depression is more prevalent when epilepsy occurs with OCD. Our study demonstrated similar findings; 75% of the patients who had OCD reported the history of depression and 58% had OCD and depression simultaneously. Moreover, based on the present study, among anxiety disorders only the higher frequency of OCD in the epilepsy group proved to be statistically significant. The high prevalence of OCD has been reported in other neurological disorders such as Parkinson's disease (23), multiple sclerosis (24-25), and Sydenham's chorea (26).

In this study, patients were selected from two clinical centers and they may not be considered as representatives of the target population of epileptic patients. Since the data source mostly consisted of individual reports, recall bias should be considered. In addition, there were limitations in matching the two groups on variables other than age and sex.

Further studies on community based samples in comparison of control group may result in more accurate findings concerning the target population. In addition, to restrict any probable confounder, well controlled studies are recommended. The types of epilepsy were not identified in this study. Discriminating different types of epilepsy and investigating the comorbidities within the subtypes may be achieved by increasing the sample size.

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