



Psychiatric disorders comorbid with epilepsy in a prison sample



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ABSTRACT

Purpose: Epilepsy is an extremely widespread and serious neurological disease. Although comorbidities of psychiatric disorders are prevalent in epilepsy patients, quite often this coexistence could be overlooked. Studies in this area demonstrated that depression, anxiety disorders and schizophrenia are the most common psychiatric disorders accompanying epilepsy. Mental health problems are known to be more common in prisoners compared to general population. The present study aims to demonstrate the psychiatric comorbidities in prisoners diagnosed with epilepsy.

Method: In this study, demographic data and the psychiatric comorbidity of 200 patients who were diagnosed with epilepsy by a neurologist at Ankara Penal Institution Campus State Hospital between January 2013 and January 2014 were analyzed retrospectively.

Results: The mean age of study population was 32.6 ± 10.1 years. 181 of these patients were male (90.5%). 81 of 200 patients (40.5%) had a comorbid psychiatric disorder. The most common comorbid psychiatric disorders were depression (18.5%), anxiety (11%), and personality disorders (11%), respectively.

Conclusion: The most common psychiatric comorbid disorders among prisoners diagnosed with epilepsy were depression and anxiety as general population with epilepsy whereas some disorders, personality disorder, substance dependence and bipolar affective disorders, were found to be more common among prisoners compared to the general population with epilepsy. It is crucial to question psychiatric symptoms and comorbidities while evaluating the patients with epilepsy, especially among prisoners.

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Introduction

Epilepsy is an extremely widespread and serious neurological disease [1]. Psychiatric disorders have been observed in epilepsy patients, decreasing their quality of life and negatively affecting the course of illness [2]. Although comorbidities of psychiatric disorders are prevalent in epilepsy patients, quite often, this coexistence can be overlooked [1,2]. Studies in this field have demonstrated that depression, anxiety disorders and schizophrenia are the most common psychiatric disorders comorbid with epilepsy [3]. The prevalence of psychiatric disorders has been found to be higher in epilepsy patients than in the general

population, but the rates vary in most studies. This variation in prevalence may have originated from methodological differences, such as type of seizure, response to treatment, duration of disease, scales used for evaluating the psychiatric disorder and patient group from which the study sample was selected [4]. Contrary to the widespread belief that epilepsy patients are more prone to violence and crime, prison studies have demonstrated that epilepsy prevalence in prisons is similar to that in the general population [5,6]. On the other hand, in terms of mental health, it has been known for a long time that psychiatric problems are more frequent in prison samples [7]. Previous studies have reported that one out of every seven people was found to have a serious mental illness, and one out of every two prisoners was reported to have a personality disorder. This implies two to four times more prevalence for serious mental illnesses and ten times more prevalence for personality disorders than those in the general population [8]. It has also been documented that the point

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prevalence of psychiatric disorders is almost 63% in arrestees and prisoners [9]. A study conducted in Brazil in 2014 has found that the most common mental illnesses among arrestees and prisoners were depression and anxiety disorders [10].

The present study aimed to demonstrate psychiatric disorders comorbid with epilepsy in a prison sample.

Method

This study was conducted in Ankara Penal Institution Campus State Hospital (APICSH), the only hospital providing health services for approximately 4000 prisoners settled in Ankara Penal Institution Campus (APIC). APIC contains seven different prisons. All prisoners in APIC apply to APICSH for their health problems. For our study, the medical files of all prisoners aged between 18 and 65 years and diagnosed with epilepsy between January 2013 and January 2014 at APICSH were extracted. The diagnosis of epilepsy was based on both the patient's clinical history and electroencephalogram results. Epilepsy patients not diagnosed by a neurologist were excluded. Demographic data, psychiatric applications and comorbid diagnoses of the remaining patients were retrospectively investigated. In the evaluation of psychiatric comorbidities, only the diagnoses made by a psychiatrist based on Chapter V-Mental and behavioral disorders (F00–F99) in the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10)-WHO Version were taken into consideration. Psychiatric diagnosis was independent of epilepsy diagnosis. Psychiatric diagnostic entries made by emergency physicians, neurologists and internists were excluded. When there were multiple psychiatric diagnoses for a patient, each diagnosis was included. This retrospective study was conducted with the permission of the ethical commission, in accordance with the Declaration of Helsinki.

Results

The investigation of records taken during January 2013–January 2014 at APICSH revealed that 213 patients were diagnosed with epilepsy, of which 13 were excluded because their diagnosis was not made by a neurologist. Data of the remaining 200 patients were included. Among these, 181 were men (90.5%). The mean age of the patients was 32.6 ± 10.1 years. The mean age of the men and women was 32.3 ± 10.0 and 35.3 ± 11.2 years, respectively.

Psychiatric comorbidity was found in 90 patients. Nine of them were not included because their diagnoses were made by an emergency physician or internist. Of these nine patients, four had a diagnosis of conversion disorder and five were diagnosed with depression. Thus, psychiatric comorbidity was found in 81 of 200 patients (40.5%). The mean age of the patients with psychiatric comorbidity was 32.4 ± 8.8 years. In this group, there were 76 males (94.0%) and 5 females (6.0%). The number of patients and gender distribution are shown in Table 1.

It was found that, within a year, these 81 patients applied 523 times to the psychiatry outpatient clinic (average, 6.46/year) and received 181 (average, 2.23/year) different ICD-10 diagnoses. When these diagnoses were rearranged according to the diagnostic

Table 1
Distribution of mean age and sex of the study sample and the group with psychiatric comorbidity.

	Male	Female
Number of patients	181	19
Mean age (years)	32.3 ± 10.0	35.3 ± 11.2
Number of psychiatric comorbidity patients	76	5
Mean age (years)	32.4 ± 9.3	32.8 ± 9.6

Table 2
Numbers and percentages of epilepsy patients with psychiatric disorders.

Comorbid psychiatric disorder(s)	n	%
Depressive episode & recurrent depressive disorder (F32–F33)	37	18.5
Other anxiety disorders (F41)	22	11
Disorders of adult personality and behaviour (F60–F69)	22	11
Mental and behavioural disorders due to psychoactive substance use (F10–F19)	18	9
Dissociative [conversion] disorders (F44)	12	6
Non-organic sleep disorders (F51)	12	6
Manic episode & bipolar affective disorder (F30–F31)	11	5.5
Schizophrenia, schizotypal and delusional disorders (F20–F29)	9	4.5
Conduct disorders & mixed disorders of conduct and emotions (F91–F92)	8	4
Reaction to severe stress and adjustment disorders (F43)	6	3
Obsessive compulsive disorder (F42)	2	1

groups, it was observed that they received diagnoses for 159 different diagnostic groups.

The patients' ICD-10-based psychiatric diagnoses were evaluated in the diagnostic groups, and the most prevalent diagnosis was found to be depressive disorders ($n = 37$, 18.5%). Anxiety disorders ($n = 22$, 18.0%), personality disorders ($n = 22$, 18.0%) and substance abuse disorders ($n = 18$, 9.0%) were also prevalent in epilepsy patients. Table 2 lists all psychiatric comorbidities.

Conclusion

Although two studies did not find any significant difference in the prevalence of psychiatric disorders between epilepsy patients and healthy controls [11,12], more recent studies have shown a higher prevalence of psychiatric disorders in epilepsy patients than in the general population [13]. Population-based studies have indicated comorbidity rates of between 32% and 35.5% [14,15]. Here we found a comorbidity rate of 40.5%. This higher rate may be due to our sample, which consisted of arrestees and prisoners. The prevalence of psychiatric disorders in prison samples is known to be higher than that in the general population [14]. In addition, this comorbidity rate is consistent with the those in referral epilepsy centres, particularly those that serve indigent populations with a comorbidity rate of between 25% and 50% [16]. Our study demonstrated that prisoners who have a psychiatric disorder as well as an epilepsy diagnosis frequently applied to the psychiatry outpatient clinic. The average time between psychiatric follow-ups of the patients with epilepsy was less than 60 days. This duration is quite short for standard psychiatric controls. This situation could stem from the dual diagnosis per patient as well as conditions of the prison environment that may lead to more applications to the psychiatric outpatient clinic.

Some studies have also indicated that the frequency of dual diagnosis increases with age and is particularly higher in people aged above 40 years. In our study, although this age group was a minority ($n = 51$, 25.0%), the frequency of dual diagnosis was higher than that reported in the literature. Once again, this may be due to the characteristics of the sample [14,17].

In the literature, studies have reported the prevalence rates of depression to be 6%–19% for the general population and 9%–37% for epilepsy patients [15,18–20]. The present study found the prevalence of depression in epilepsy patients to be 18.5%, which is compatible with that in the existing literature. Compatible results with the existing literature are important to demonstrate that epilepsy patients in prisons have similar rates of depression comorbidity in comparison to the general population because depression as a mood disorder is one of the most frequent and leading psychiatric disorders in prisoners [10].

The prevalence rates of anxiety disorders have been reported to be 7%–11% in the general population and 11%–25% in epilepsy patients. The present study obtained similar results, with a comorbidity prevalence of 11.0% [15,19,20], which is compatible with that in the existing literature.

A diagnosis of bipolar affective disorder is rare in epilepsy patients, with a frequency reported to be 1.3–2.8% [21]. In our study, we found a frequency of 5.5%, which is consistent with studies that report a diagnosis of bipolar affective disorder to be seven times more frequent in prison populations than in the general population [22].

A recent meta-analysis reported the prevalence of comorbidity of psychosis in epilepsy to be 5.6% [23]. The present study is important because it provides parallel results, indicating that psychiatric disorders comorbid with epilepsy were not affected by imprisonment.

The prevalence rates of personality disorders have been reported to be 5.9%–13.4% in the general population and 4%–38% in epilepsy patients [24]. The 11% prevalence in this study was consistent with that reported in the literature. However, considering that the prevalence of personality disorders is 10-times higher than that in the general population, a higher ratio could have been expected [8]. The lower-than-expected results could be due to multiple diagnoses of the patients in our sample because this could complicate the evaluation of personality disorders. Another point is that the diagnoses of mental disorders due to known physiological condition were missing. These findings suggest that the psychiatric evaluation of prisoners is not sufficiently detailed to determine the personality disorder; in addition, it seems to be oriented to results against causality.

In a prison sample, most prevalent psychiatric disorders comorbid with epilepsy are depression and anxiety disorders, similar to that in the general population; it was also found that psychiatric disorders, such as personality, substance abuse and bipolar mood disorders, were more prevalent in epilepsy patients in the prison sample. This draws attention to the importance of a detailed evaluation of psychiatric symptoms in the treatment of arrestees and prisoners with epilepsy.

The present study has some limitations. Our study is not a prevalence study. Instead of epileptic seizure and epilepsy syndrome classifications, our study used existing data of patients under regular evaluation. In addition, the retrospective nature of the study resulted in the exclusion of some epilepsy-related variables such as epilepsy type, intractability rates and medication use. In the existing literature, age at onset, number of seizure types, lateralisation and medication type have been reported to affect the prevalence of psychiatric comorbidity [4]. Another limitation of the present study was the lack of information about the duration of imprisonment. Controversial results exist in the literature with regard to the negative effects of imprisonment. While some studies did not find a relationship between imprisonment duration and mental state, others have stated that the mental state deteriorates in the acute phase after the first admission to prison but that it gets better after a while. Among these studies, some that the largest deterioration of mental health occurs in the first 3 days after admission to prison, while others found that this duration is as long as 12 weeks [25]. Because this was a retrospective survey study, such information could not be accessed.

The present study has a special importance among all other studies that investigated psychiatric comorbidity in epilepsy patients because it is the only one that included arrestees and prisoners in the sample.

Conflicts of Interest

The authors have no **conflict** of interests to disclose

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