

Prevalence of Depression and Generalized Anxiety Disorder in the Epileptic Adults: A Case-Control Study

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ABSTRACT

Aims: The present study aims the determination the frequency of generalized anxiety disorder (GAD) and depression in epileptic individuals and its association with the duration of the disease and frequency of episodes of seizures.

Study type: A case-control study

Place and Duration: This study was conducted at Ghulam Mohammad Mahar Medical College Sukkur SMBBMU Larkana from February 2021 to February 2022

Methodology: A total of 110 individuals were considered in the study. All of them were young males with a mean age of 23.2±2.5 years. A total of 55 participants were diagnosed with cases of epilepsy and 55 participants were healthy. The healthy individuals were allocated to the control group. Out of the epileptic 55 participants, 15 had temporal lobe epilepsy (TLE) and 40 had extra-temporal lobe epilepsy (ETLE). All the participants had to complete Beck Anxiety Inventory (BAI) and Beck Depression Inventory (BDI).

Results: The frequency of GAD in the epileptic group was 14 (25.45%) and the frequency of depression was 19 (34.55%) which was higher, compared to the control group. The frequency of depression and GAD was more in the TLE group ($p < 0.276$) compared to the ETLE group despite no statistical significance. There was no remarkable correlation between the duration of the disease with depression inventory score and anxiety inventory score. However, a correlation between the frequency of seizures with the BDI and BAI was found in the TLE group.

Conclusion: The frequency of depression and GAD seems to be higher in epileptic individuals. An interdisciplinary and multidisciplinary approach is helpful in the treatment of such patients.

Keywords: Epilepsy, Generalized Anxiety Disorder, Frequency, Depression, males

INTRODUCTION

Epilepsy is a chronic neurological condition with a 2-3% of mortality rate. It has been a common experience that epilepsy is associated with several other psychological challenges in young adults. Social stigma and educational underachievement are significant factors causing those challenges [1]. Psychiatric researchers are taking more interest in the significance of psychiatric disorders (PD), especially depression and GAD, in young adults suffering from epilepsy [2]. They both had a strong association with medical outcomes and poor psychosocial outcomes of the disease in a patient with epilepsy [3]. A recent study shows that psychiatric factors are strong contributors to the quality of life (QOL) of young adults with epilepsy rather than the frequency of seizures and anti-epileptic drugs [4].

The frequency of anxiety in general youth is 6.5%. Similarly, the prevalence of depression in the general youth is 2.6% [5]. The youth with epilepsy is at a higher risk of attaining these psychiatric disorders (PDs). Agoraphobia and GAD are especially higher in these individuals [6]. Some studies also support that the severity of depression and similar disorders in epileptic patients is more in comparison with the general population [7]. These patients are less likely to disclose such issues contributing to the failure or lesser effectiveness of the antiepileptic medication. This directly affects the outcomes of the disease and the QOL of the patient [8].

The symptoms of depression and other such disorders are often left unnoticed and neglected by the physician treating an epileptic patient. The suicide risk is five times more in patients with epilepsy and 25 folds more in patients with temporal lobe epilepsy (TLE) [9]. The possibility of suicidal attempt is 4-10 times more in individuals with epilepsy compared to the general population. It is also noticed that patients with chronic epilepsy and PDs are mostly reluctant to undergo surgical treatment [3].

Our study aims at the identifying the incidence of GAD and depression in individuals with epilepsy and their correlation with TLE, ETLE, seizures frequency, and duration of epilepsy.

METHODOLOGY

This case-control study was conducted after the approval of the ethical review committee of the institute. A total of 55 participants were included in the epilepsy group. All the participants in this group were young males. The mean age of the participants is 23.2±2.5 years. The group had 40 patients with ETLE and 15 patients with TLE according to the classification of the ILAE. A total of 55 participants were included in the control group. The patients included in the control group were healthy individuals. All the participants were examined by a psychiatrist. After that, they were administered BDI and BAI by a psychologist.

The results of the control group and epilepsy group were compared. The correlation between GAD and depression with epilepsy, the duration, and the incidence of seizure attacks were also analyzed in the epilepsy group. Each of the BDI and BAI consisted of 21 questions. Each question had a score between 0 and 3. The BAI was created by using Beck for the measurement of the severity of GAD symptoms in an individual and BDI was meant to determine the severity of the symptoms of depression [10]. The cut-off score considered was 17. The statistical analysis was done by using IBM SPSS version 26. The results were represented as median, maximum and minimum values. The difference in the frequencies of depression and GAD were tested using Chi-square.

RESULT

The frequency of GAD in the epilepsy group was 14 (25.45%) and it was 3 (5.45%) in the control group. The frequency of depression in the epilepsy group was 19 (34.55%) and 4 (7.27%) in the control group. The frequencies of GAD and depression were much higher in the epilepsy group compared to the control group. The frequency of GAD in the TLE patients was 6 (40%) and ETLE was 9 (22.5%). The depression frequency in the TLE patients was 8 (53.33%) and in the ETLE patient was 10 (40%). The results of depression and GAD frequencies have been summarized in table 1 and table 2.

The scores of BDI and BAI in the epilepsy group were much higher compared to the control group. The median score of BAI was 10 in the epilepsy group and 3 in the control group. The BDI score of the control group was 5 and the epilepsy group was 13. Their difference was statistically significant as given in table 3.

There was no correlation between the frequency of seizure attacks and BDI or BAI score. Likewise, the duration of the disease also had no association with BDI or BAI score. However, a correlation between the frequency of seizures with the BDI ($p < 0.025$) and BAI ($p < 0.063$) was found in the temporal lobe epilepsy group. The correlation results have been mentioned in table 4.

Table 3: Comparison of BDI and BAI scores in epilepsy and control group

Variables	Control group (n=55)			Epilepsy group (n=55)			p-value
	Minimum	Maximum	Median	Minimum	Maximum	Median	
BAI score	1	35	3	0	50	10	<0.063
BDI score	1	34	5	0	31	13	<0.025

Table 4: Correlation of BDI and BAI scores with duration and seizure attacks in TLE and ELTE patients

	ELTE (n=40) p-value	TLE (n=15) p-value
Duration and BAI	0.395	0.463
Duration and BDI	0.536	0.364
Seizure attacks incidence and BAI	0.342	0.063
Seizure attacks incidence and BDI	0.791	0.025

DISCUSSION

The co-existence of PDs such as depression and GAD is a common situation in chronic diseases. The rate of GAD and depression is especially higher in such cases. This also leads the patient to social problems and affects normal mental functions and treatment outcomes of anti-epileptic drugs. The present study reports the frequency of depression and GAD in epilepsy patients and its comparison with normal healthy individuals.

According to the study by Matsuura et al, the incidence of anxiety and depression is even higher in patients with epilepsy that have been diagnosed more recently [10]. The present study is consistent with the study of Matsuura et al in terms of incidence, however, the duration of disease did not significantly show any correlation with the incidence of depression or GAD in our study. The study of Bragatti et al concluded that the temporal region is more commonly associated with psychiatric disorders in patients with TLE [11]. This perspective of our study is consistent with the study of Bragatti et al. whereas, some other studies show no difference between ETLE and TLE concerning the incidence of PDs [12].

The present study shows no difference between ELTE and TLE in terms of BDI and BAI scores. Nonetheless, the frequency of GAD and depression were reported more in TLE compared to ETLE. It is generally assumed that the frequency of seizures and duration of epilepsy is strongly associated with the development of PDs in patients with epilepsy [10]. The present study shows no significant association between duration and frequency of seizures with depression and GAD.

Most of the time, patients with epilepsy do not talk about an ongoing psychiatric condition because of fear of stigmatization. They create a negative impact on the QOL of the patient and also make it tougher for them to control the disease. Careful questioning about the symptoms can help in early diagnosis and affect positively the treatment outcomes.

CONCLUSION

A higher frequency of depression and GAD is present in epileptic patients. Psychiatric comorbidities are more common in TLE patients. The duration of epilepsy and incidence of seizure attack is not significantly associated with the frequency of depression and GAD in epileptic patients.

Table 1: Frequency of GAD and depression in control and epilepsy group

Variable	Control group (n=55)	Epilepsy group (n=55)	p-value
Frequency of GAD	3 (5.45%)	14 (25.45%)	<0.003
Frequency of depression	(7.27%)	19 (34.55%)	<0.001

Table 2: Frequency of GAD in depression in TLE and ETLE patients

Variable	ETLE group (n=40)	TLE group (n=15)	p-value
Frequency of GAD	9 (22.5%)	6 (40%)	<0.276
Frequency of depression	10 (40%)	8 (53.33%)	<0.083

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