Original Research Article

Depression and anxiety in patients with epilepsy

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ABSTRACT

Background: Anxiety and depression are commonly found in epileptic patients. However, the etiology behind the mechanism remains multifactorial, mostly because of variability in study settings. In order to fill the knowledge gap, we investigated the prevalence of anxiety and depression among epileptic patients and their correlation with certain demographic variables.
Methods: In this cross sectional outpatient based study, a total of 147 patients with epilepsy were recruited and evaluated them for inclusion and exclusion criterion. Participants who met the inclusion criterion were assessed using standardized rating scales HARS (Hamilton Anxiety Rating Scale) and HADS (Hamilton Depression Rating Scale) rating scale for anxiety and depressive symptoms respectively.
Results: 100 participants were included with mean age of 33.63 years for men and 30.16 years for females. 27% showed mild to severe anxiety and 21% had mild to moderate depression. Prevalence of both anxiety and depression was found more among females, those who were single, participants from urban background and having partial epilepsy. Significantly (p-0.020*) higher anxiety was seen in patients with partial epilepsy than those with generalized epilepsy.
Conclusions: Individuals with partial epilepsy are more prone to get affected from comorbid disorder like anxiety and depression, especially females, singles and those from urban domicile.

Keywords: Anxiety, Depression, Demographic factors, Prevalence

INTRODUCTION

Depression and anxiety are common psychiatric disorders worldwide and they are even more common in individuals suffering from chronic disease, such as epilepsy.[1] There is a strong link between, depression, anxiety and epilepsy with nearly half of individuals with epilepsy experiencing depression while around 20% of these individuals experience generalized anxiety disorder.[2,3]

Depression and anxiety both significantly lower the quality of life, yet it is an eminently treatable condition.[4,5] Epilepsy may become more difficult to manage, as depression is sometimes known to induce seizures more frequent probably through the mechanism of sleep deprivation and also can take away the motivation to manage epilepsy which may even lead to suicide.[6,7] Also depression often worsens concordance with antiepileptic medication.[6] Doctors in epilepsy clinics often fail to diagnose depression in their patients and even when they

do. So, many remain inadequately treated. Mental health of people with epilepsy is often ignored.[6]

The etiology of both anxiety and depression is multifactorial including both neurobiological and psychosocial factors.[8-10] Earlier Indian studies had shown lower prevalence of depression in individuals with epilepsy as compared to those in other countries.[11-12] These variations may be explained by the different study settings, criteria, and instruments used to diagnose depression. To address this knowledge gap, authors carried out the present study to evaluate the prevalence of depression and anxiety among patients with epilepsy and also to assess the role of certain demographic variables in prevalence of depression and anxiety in epilepsy.

METHODS

A cross sectional out-patient based study was designed wherein, patients with epilepsy were recruited, all attending the Out-Patient Epilepsy Clinic at Department of Psychiatry, Era's Lucknow Medical College and Hospital in Lucknow.

Authors examined 147 patients during the tenure of study out of which 100 were included in the study and 47 were excluded.

Patients included in the study were 57 males and 43 females, with idiopathic epilepsy, aged between 18-60 years, without any other somatic or neurological comorbidity at the time of the psychiatric evaluation. The duration of epilepsy had to be medically proven for more than 12 months and patients had to be seizure-free for the last 72 hours before entering the study. Those who were excluded, 13 were associated with substance abuse, 16 were seizure free for less than a year, 6 had other psychiatric illness, 2 required urgent medical attention, 2 had prior diagnosis of depression and rest were less than 16 or more than 60 years of age. Patients having depression/ anxiety prior to diagnosis of epilepsy or associated substance use disorder or have any other psychiatric illness, those with any serious illness requiring urgent medical attention or any chronic medical/surgical illness and those who were on proconvulsant medication were excluded from the study.

Evaluation for anxiety and depression

All subjects were then evaluated on Hamilton rating scale for depression (HDRS) and on Hamilton rating scale for anxiety (HARS) for anxiety.[13,14] Seizures were classified according to international classification of epileptic seizures.[15] A specially designed questionnaire for assessment of demographic variables was also completed.

Hamilton rating scale for depression (HDRS)

HDRS (also known as the Ham-D) contains 17 items (HDRS17) pertaining to symptoms of depression experienced over the past week. It was originally developed for hospital inpatients, thus the emphasis in this rating scale is on melancholic and physical symptoms of depression. Each item is scored with a value between 0 and 4, yielding a total score between 0 and 68.[13] Authors used cut-off points to identify patients with 'no depression' (score 0-7) versus 'mild to severe depression' (8-68).[13] The validity of these subscales has recently been reevaluated.[16]

Hamilton rating scale for anxiety (HARS)

HAM-A was developed to measure the severity of anxiety symptoms. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety).

Each item is scored on a scale of 0 to 5, with a total score range of 0-56, where <17 indicates mild severity, 18-24 mild to moderate and >25 moderate to severe anxiety.[14] The validity of these subscales has recently been reevaluated.[17]

Statistical analysis

The results were analysed using descriptive statistics and making comparisons between groups with respect to parameters. Discrete (categorial) data were summarized as in proportions and percentages (%) while quantitative data were summarized as mean and SD. Proportions were compared using chi-square (x^2) test. A two-sided ($\alpha = 2$) p <0.05 was considered statistically significant. Software's MS-Excel and SPSS v 18 were used for analysis.

RESULTS

Sociodemographic variables

Table 1 shows that most of the patients were male (57%) having mean age of 33.63 years in contrast to females who accounted 43% of study participants having mean age of 30.16 years.
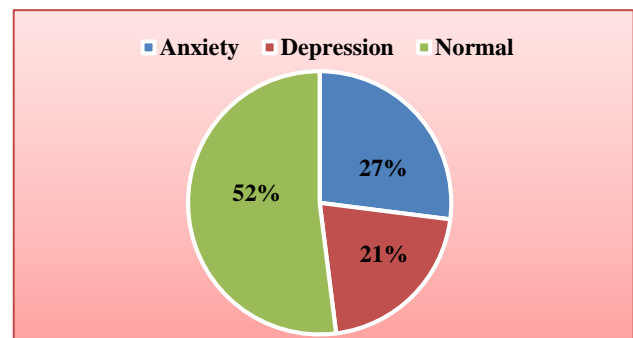

Figure 1: Anxiety and depression in patients with epilepsy.

Table 1: Sociodemographic variables.

Gender	Number (n = 100)
Male	57
Female	43
Mean age	**In Years**
Male	33.63
Female	30.16
Marital status	
Single	21
Married	71
Separated/divorced/ widow (ER)	8
Domicile	
Rural	38
Semi urban	22
Urban	40
Seizure type	
Partial	63
Generalized	37

Majority of the patients under study were married. Almost similar percentage of participants were from urban and rural background 40% and 38% respectively, and 22% were from semi-urban region.

Participants with partial seizures were 63% and that of Generalized seizures were 37% (Table 1).

Out of 100 participants, 27% of patients showed above normal range of anxiety with varying range from mild to severe on HARS scale.

However, there was only 21% patients who reported of mild to moderate depression on HDRS scale. Rest of the 52% participants did showed some symptoms of depression or anxiety but were within the normal range as per HADS and HARS scale (Figure 1).

Table 2: Correlation between prevalence of anxiety and depression according to gender, marital status, domicile and seizure type.

Socio-demographic Variable	HARS	p-value	HDRS	p-value
Gender				
Male (n-57)	14 (24.56%)	0.527	10 (17.54%)	0.329
Female (n-43)	13 (30.23%)		11 (25.58%)	
Marital status				
Married (n-71)	30 (42.25%)		20 (28.16%)	
Single (n-21)	11 (52.38%)	0.662	7 (33.33%)	0.870
Divorce/widow (n-8)	3 (37.5%)		2 (25%)	
Domicile				
Rural (n-38)	8 (21.05%)		7 (18.42%)	
Semi-urban (n-22)	5 (22.72%)	0.879	5 (22.72%)	0.688
Urban (n-40)	14 (35%)		9 (22.5%)	
Seizure type				
Partial (n-63)	22 (34.92%)	0.020*	14 (22.22%)	0. 695
Generalized (n-37)	5 (13.51%)		7 (18.91%)	

Prevalence of anxiety and depression

In accordance to gender

It was observed that female patients showed more prevalence of both depression (25.58%) and anxiety (30.23%) in comparison to male patients in whom prevalence was 17.54% and 24.56% of depression and anxiety respectively (Figure 2). Most of the patients had mild to moderate grades of depression and anxiety. None of the patients showed severe grade of depression however, 6.97% of females (n= 3) showed anxiety of severe grade.
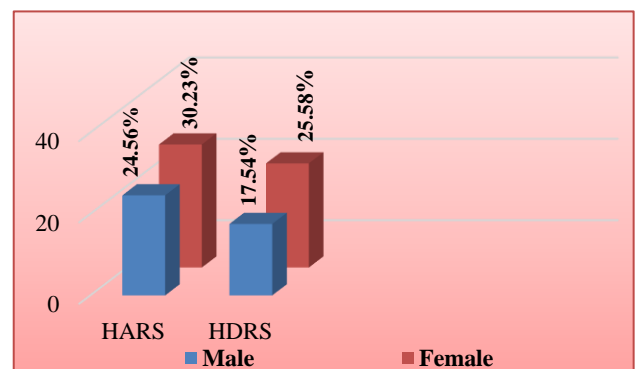
Figure 2: Prevalence of anxiety and depression according to gender.

However, no significant association was observed based on gender either in depression (p-0.329) or anxiety (p-0.527) and gender (Table 2).

In accordance to marital status

Upon analyzing the results based on marital status, prevalence of anxiety was found high both in married and single patients which was 42.25% and 52.38% respectively. Depression also more common in single (33.33%) than married people (28.16%). Divorce/Widowed participants also had anxiety and depressive symptoms with prevalence of 37.5% and 25% respectively (Figure 3).
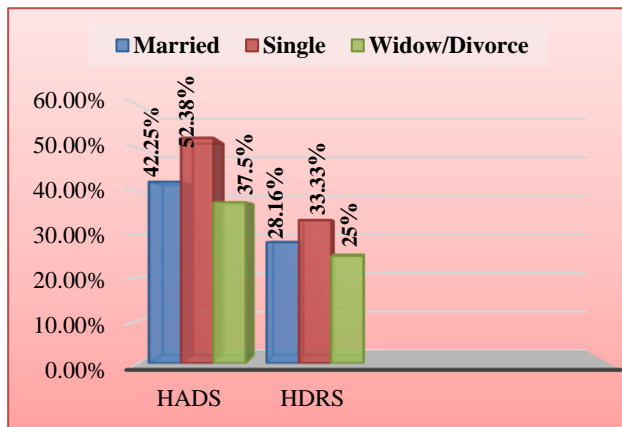

Figure 3: Prevalence of anxiety and depression according to marital status.

Here also, no significant correlation was observed between anxiety (p-0.662) and depression (p-0.870) in relation to marital status of the patients (Table 2).

In accordance to domicile

Results according to domicile showed that both anxiety and depression was highly prevalent among those from urban background.
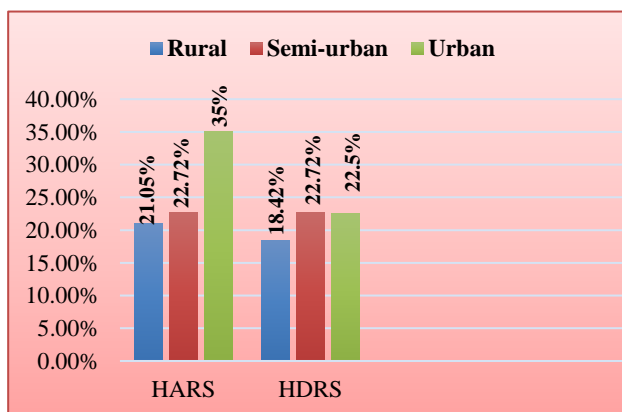

Figure 4: Prevalence of anxiety and depression according to domicile.

However, anxiety (35%) was more than depression (22.5%). Similar results were seen in patient from rural background in whom also anxiety (21.05%) was more prevalent than depression (18.42%). Epilepsy patients from semi-urban background shows similar rates of anxiety and depression that is 22.5% (Figure 4).

No significant correlation was observed between anxiety (p-0.897) and depression (p-0.688) and patient with epilepsy according to their domicile (Table 2).

In accordance to seizure type

Upon depicting the results according to seizure type, it was observed that patients with partial seizures had more prevalence of both anxiety (n=22, 34.92%) and depression (n=14, 22.22%) than those with generalized epilepsy. Most of the patients with partial epilepsy had mild to moderate anxiety (n=20, 31.74%) and only 3.17% (n=2) had severe grade of anxiety. In contrast, partial seizures patients scored mild to moderate depressive symptoms on HDRS scale. Most of the patients with generalized epilepsy had mild to moderate anxiety (n=4, 10.81%) and depression (n=7, 18.91%) on HARS and HDRS scale respectively (Figure 5).
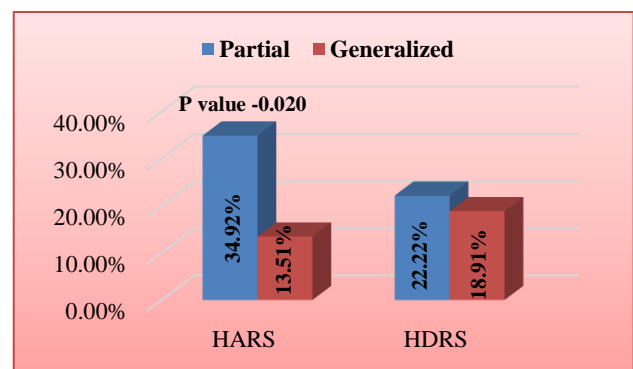

Figure 5: Prevalence of anxiety and depression according to seizure type.

Significantly (p-0.020*) higher anxiety was seen in patients with partial epilepsy than those with generalized epilepsy. However, in contrast no significant correlation was observed between depression (p-0.695) and between the two-epilepsy types (Table 2).

DISCUSSION

In present study, the prevalence of anxiety among epilepsy patients was 27% and the prevalence of depression was 21%. The prevalence of anxiety among epilepsy patients is variable in different studies, from as low as 15% to as high as 28%.[18] Also, the prevalence of depression among epilepsy patients is also variable in different studies, from as low as 9% to as high as 55%.[19-22] In present cross-sectional out-patient based study, authors found higher prevalence of anxiety than depression. Anxiety symptoms were higher on severity

grades, while depression mainly composed of mild to moderate grades. Angeli et al, and Fiordeli et al, reported the same finding in their studies.[23,24] However, these results were contrary to evidence found in several studies conducted by Ettinger et al, Gaitatziz et al, and Strine et al, who suggested that mood disorders particularly depression had higher prevalence than anxiety disorders.[25-27]

Females were affected more with comorbidities, both depression and anxiety than males and finding was in harmony with the study carried out by Toth et al, in 2010.[28] Females also exhibits higher severity grades on anxiety and depression scales than males. One of the reasons can be that male had predominance over females on this aspect as they are the earning member in the family and have more coping skills than females. Also, family members seek no treatment for female patients and were being suppressed.

It was observed that urban and semi-urban populations had more anxiety and depressive symptoms on contrary to rural populations. This finding advocated the role of less psychosocial support, unemployment/absenteeism from work, fears and comparatively lesser support in nuclear families in urban population. Also, people from rural background attribute their illness to fate and the will of god.

Moreover, several studies have emphasized that depression and anxiety occur more often among patients with partial epilepsy than among those with generalized epilepsy including work done by Perini et al, Dikmen et al, Rodin et al, and Shukla et al.[29-32] Present study's finding was in accordance to the above researchers as it was found that prevalence of co-morbid anxiety and depression was twice as more in partial epilepsy than generalized epilepsy. It was observed that involvement of temporal lobe may be associated with more affective changes. Due to this temporal lobe correlation in patients with partial epilepsy, there is a higher propensity of developing aura leading to anticipatory anxiety. This gives a plausible explanation of anxiety and depression in patients with partial seizures.

This study had several limitations. One limitation was that the collection of data from a tertiary epilepsy centre and a relatively small sample size. In addition, we have looked at the at the point prevalence rather than the lifetime prevalence rates of both psychiatric disorders, although it is unlikely that making the comparisons utilizing the life time prevalence would have yielded different results.

CONCLUSION

In conclusion, the present study showed that individuals with partial epilepsy are more prone to comorbid disorders like depression and anxiety, with females commonly affected more than males.

Such psychiatric morbidities like depression and anxiety frequently go unrecognized and untreated, while it should also be addressed while evaluating the patients with epilepsy. Advances in understanding the psychiatric comorbidity in epilepsy will improve the overall treatment and quality of life of patients with epilepsy.

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