

## Original Research Article

# Comparison of psychiatric co-morbidity in patients with psychogenic non-epileptic seizures and epilepsy at a tertiary care hospital in Kashmir

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### ABSTRACT

**Background:** objective of the study was to describe and compare frequency of psychiatric disorders in two groups of patients, one with psychogenic non-epileptic seizures (PNESs) and other with epilepsy.

**Methods:** We studied 64 patients in which 32 belonged to the group with PNESs and 32 belonged to group with Epilepsy, admitted in a video-EEG unit of tertiary care hospital in Kashmir in order to confirm epileptic diagnosis. This study was conducted from March 2019 to August 2019 in neurology department and the patients underwent neurological evaluation, inter ictal EEG, MRI, neuropsychological assessment and psychiatric diagnosis codified in DSM-5.

**Results:** Depression was found to be the most common diagnosis in the group with epilepsy-40% versus 15.75% of those with PNES, while as personality disorder (21.88%) was the common psychiatric disorder in group with PNES. Anxiety disorder was found to be the second leading psychiatric disorder and was almost common in both the groups, 13.33% in group with epilepsy and 18.75% in the group with PNES. It was also cited that Psychotic disorder (13.33%) was found only in the group with Epilepsy, while Personality disorder and PTSD was found only in the group with PNES. Bipolar disorder was more prevalent in group with epilepsy (13.33%) than in the group with PNES (3.13%). Somatic symptom disorder, dissociation and obsessive-compulsive disorder (OCD) was also found in both the groups.

**Conclusions:** Psychiatric disorder is more common in PNES than in epilepsy.

**Keywords:** Psychiatric disorder, PNES, EEG, MRI, DSM-5

### INTRODUCTION

Psychogenic non epileptic seizures (PNESs) are diagnosed in the presence of disruptive changes in behavior, thought, or emotions but are not related to ictal discharges in electroencephalography (EEG).<sup>1,2</sup> Most are mistakenly thought to have epilepsy and are exposed to long-term antiepileptic drug therapy, which is ineffective and may cause harmful side effects.<sup>3,4,5</sup> Following the implementation of video-EEG, recognition of PNESs has increased dramatically. During video-EEG, patient's behavior is recorded while electrical activity is detected

through EEG. It is also the gold standard for the differential diagnosis between epilepsy and PNESs.<sup>1,2,6</sup>

Because PNES are symptoms of underlying psychiatric disorders, an understanding of psychiatric co-morbidities is an important step toward developing effective therapies and could aid in early recognition.<sup>7,8</sup>

Both epilepsy and PNESs present high co-morbidity with psychiatric disorders. Patients with epilepsy present high prevalence of psychosis, depression and personality disorders and most PNESs cases are codified as somatic

symptom disorder (mainly functional neurological symptom disorder), anxiety and dissociative disorders as per DSM-5.<sup>9-13</sup>

## **METHODS**

This study was conducted at SMHS hospital of Jammu and Kashmir. This hospital in Srinagar is the major public referral center of Kashmir valley. This research was initiated following approval by institutional ethical committee.

In this study, we included patients with age group of 15-years to 65-years admitted in a video-EEG unit of territory hospital in order to confirm epileptic diagnosis. All patients who were admitted in hospital from March 2019 to August 2019 in neurology department underwent neurological assessment according to standardized clinical history were evaluated. Neurological evaluation, inter-ictal EEG, MRI with a temporal lobe epilepsy protocol neuropsychological and psychiatric assessment were done on each patient by neurologist and psychiatrist.<sup>9,14</sup> Psychiatric diagnosis was based on DSM-5.

### ***Inclusion criteria***

Two groups of patients were selected for this study, one group who were diagnosed as epileptic disorders and another group as PNEs.

Epileptic seizures were diagnosed if at least one characteristic clinical event was recorded with simultaneous ictal video-EEG abnormalities. The subtype of epileptic syndrome was diagnosed according to ILAE nomenclature. Whereas PNEs was diagnosed by detailed neuropsychological assessment and by excluded from epileptic disorder by video-EEG.

Psychogenic non-epileptic seizures diagnostic criteria were defined as follows: 1. Atypical paroxysmal behavior recorded by video-EEG monitoring without electroencephalographic ictal activity, and 2. No existing clinical, neuro-imaging evidence suggestive of epilepsy nor medical disorder explains the atypical behavior.

This study includes 64 patients, out of which 32-patients were diagnosed as epileptic disorder while as same number of patients were diagnosed as non-epileptic seizure disorder.

### ***Exclusion criteria***

Patients with both types of seizures (PNEs and epilepsy). Paroxysmal events of other medical etiology (sleep disorders, vasovagal syncope, non-epileptic myoclonus). History of mental retardation as per Wechsler's intelligence intellectual quotient (IQ < 70). Past history of trauma (only physical) was excluded from the study.

## ***Statistical analysis***

Data were organized in Microsoft excel sheet and was analyzed using SPSS version 20.0 and SYSTAT-13. Frequency and percentage distribution were used to describe the demographic variables.

## **RESULTS**

The above table (Table 1) represents the frequency and percentage distribution of subjects according to their demographic characteristics. As for as gender is concerned, males and females were found in almost equal number. As per age distribution, it was found that out of total (64), majority of the population among group with epilepsy (25%) belonged to age group of 36-45 years of age, among group with PNEs, majority (34.38%) belonged to 15-25years of age and in total most of the cases (23.4%) belonged to 15-35years of age. Among 64 study population concerning marital status, majority of the population were single in both the groups (epilepsy group=50%, PNEs=65.63%). About occupation, the study resulted that among the group with epilepsy most of the cases (56.25%) were unemployed, among group with PNEs most (56.25%) were students and in total unemployment was at peak (42.2%). 16 patients had trauma history (psychological) where 6 cases from epilepsy group suffered illness or loss of significant others, 10 cases from group with PNEs had trauma history and majority (80%) suffered illness or loss of significant others.

### ***Psychiatric co-morbidity (Table 2)***

The rates of psychiatric co-morbidity ranges from 3.13% to 100% and the risk of psychiatric co-morbidity was significantly higher in the group with PNEs. Equal number of patients (32) belonged to both the groups with epilepsy and PNEs. Regarding psychiatric disorder prevalence, 15 (46.88%) with epilepsy and 32 (100%) with PNEs met criteria for at least one disorder as per DSM-5.

Considering epileptic patients, the most frequent psychiatric disorder was found to be depression (40%), followed by anxiety disorder, psychotic disorder (found in group with epilepsy only) and bipolar disorder 13.33% each. All other disorders that is Somatic symptom disorder, dissociation and OCD each was found in 6.67% of Epileptic patients.

Considering the group of patients with PNEs, the most frequent psychiatric disorder codified according to DSM-5 criteria were Personality disorders (21.88%) which occurred only in the group with PNEs, followed by anxiety disorder (18.75%) and depression (15.75%). PTSD, found in the group with PNEs only, and dissociation was found in 12.5% each followed by Somatic symptom disorder (9.38%), OCD (6.25%) and bipolar disorder (3.13%).

**Table 1: Frequency and percentage distribution of subjects according to demographic variables and history of psychological trauma, if any.**

Variables		Epilepsy		PNES		Total	
		Frequency	%	Frequency	%	Frequency	%
<b>Gender</b>	Male	18	56.2	12	37.5	30	46.9
	Female	14	43.7	20	62.5	34	53.1
<b>Age (Years)</b>	15-25	4	12.5	11	34.38	15	23.4
	26-35	6	18.75	9	28.13	15	23.4
	36-45	8	25	5	15.63	13	20.3
	46-55	7	21.88	4	12.5	11	17.2
	56-65	7	21.88	3	9.38	10	15.6
<b>Marital status</b>	Married	12	37.5	10	31.25	22	34.4
	Single	16	50	21	65.63	37	57.8
	Divorce	4	12.5	01	3.13	05	07.8
<b>Occupation</b>	Students	4	12.5	18	56.25	22	34.4
	Employed	10	31.25	5	15.63	15	23.4
	Unemployed	18	56.25	9	28.13	27	42.2
<b>Trauma history (Psychological)</b>	Sexual abuse	0	0	2	20	2	3.1
	Illness or loss of significant other	6	100	8	80	14	21.9

**Table 2: Psychiatric comorbidity.**

Variables	Epilepsy (n=32)	Percentage (%)	PNESs (n=32)	Percentage (%)	Total (n=64) (%)	P value
<b>Psychiatric disorder</b>	15	46.88	32	100	47 (73.44)	0.08
<b>Depression</b>	06	40	05	15.63	11 (17.19)	1
<b>Anxiety disorders</b>	02	13.33	06	18.75	8 (12.5)	0.27
<b>Somatic symptom disorder</b>	01	6.67	03	9.38	4 (6.25)	0.61
<b>Dissociation</b>	01	6.67	04	12.5	5 (7.81)	0.36
<b>Personality disorders</b>	0	0	07	21.88	7 (10.94)	0.01
<b>PTSD</b>	0	0	04	12.5	4 (6.25)	0.12
<b>Psychotic disorders</b>	02	13.33	0	0	2 (3.13)	0.49
<b>Bipolar disorders</b>	02	13.33	01	3.13	3 (4.69)	1
<b>OCD</b>	01	6.67	02	6.25	3 (4.69)	1

## DISCUSSION

In this study, we determined the psychiatric co-morbidity in patients with epilepsy and PNESs in a population from Kashmir, J&K India. Similarities and differences of psychiatric profile between epilepsy and PNESs were also found. Our study includes almost equal number of male and female respondents, more patients were from 15-35 years of age, 57.8% of patients were single in their relationship, 42.2% were unemployed and 25% were having psychological trauma history.

In the present study, it was found that females outnumber males in case of PNES. This was in unison with study done by Thaman et al where female predominance

was found in PNES as compared to ES group.<sup>15</sup> More prevalence of females in PNES has both psychological and biological explanations. Higher incidents of sexual and emotional traumas as found in the present study and in other studies as well, along with inherent functional variability of neuro-circuits in brain which are responsible for cognitive and emotional processing make females more vulnerable to PNES in reaction to their stressors.<sup>16-18</sup>

Here, both the groups met some criteria for psychiatric disorders but frequency was significantly higher in the group with PNESs and the results are consistent with other data as in a study conducted by Turner et al, all patients with PNES had a psychiatric diagnosis.<sup>19</sup>

In this study, depression was found significantly more frequent in the group with Epilepsy. In contrary to this result, a recent review estimates that the prevalence rate of depression in adults with PNES is between 21% and 60%.<sup>20</sup> This rate is higher than in the general population and in patients with epilepsy.<sup>20,21</sup>

In the current study, personality disorders were more prevalent in patients with PNESs as compared to patients with epilepsy. Personality disorders and PTSD was found only in patients with PNESs and not in patients with epilepsy. Results are somewhat consistent with other studies where the prevalence of anxiety disorders (especially for PTSD) is higher in PNES than in the general population and in drug-resistant epilepsy.<sup>22,23</sup> More specifically, many patients who have PNES have features of PTSD and 22%-100% of patients with PNES fulfill the DSM-5 criteria for PTSD.<sup>24</sup> Personality disorder seems to be correlated with PNES as revealed by other studies.<sup>20,25</sup>

In this study, some patients with epilepsy were found to have psychotic disorder and none of the patient with PNES have psychotic disorder. Data on psychosis in PNES patients are scarce, but the prevalence of psychosis in PNESs seems to be the same or even lower than in the drug-resistant epilepsy.<sup>22,24</sup>

### Limitations

The sample size is limited to 64 patients only which limits the generalization of research findings.

### CONCLUSION

Psychiatric disorders were found in both the groups, with PNES and with epilepsy but more prevalent in patients with PNES.

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