

ORIGINAL RESEARCH

A comparison of the clinical profiles of epileptic patients with and without psychiatric comorbidity

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ABSTRACT

Aim: The aim of this study was to compare the clinical profile of patients with epilepsy based on the presence or absence of psychiatric comorbidity. **Material and methods:** This research was conducted at the Psychiatry Department of Rohilkhand Medical College & Hospital (RMCH), Bareilly, a tertiary care centre in Uttar Pradesh, India. The study included a total of 100 epileptic patients who met the inclusion and exclusion criteria. Purposive sampling was used to recruit patients aged 18 years or older, suffering from epilepsy, and in the inter-ictal period, approval for the study was taken from the Institutional Ethical Committee. **Results:** The mean age of patients with psychiatric comorbidity (32.67 ± 9.50 years) was significantly higher ($t = 2.931$, $df = 98$, $p < 0.05$) than those without psychiatric comorbidity (28.79 ± 9.21 years). Patients with epilepsy and psychiatric comorbidity had a significantly higher mean GHQ12 score (13.76 ± 8.191) than those without psychiatric comorbidity (10.51 ± 6.385), as shown by independent samples t-test ($p < 0.05$). A significantly higher number of patients with epilepsy with first or second degree relatives suffering from psychiatric disorder were found to be suffering from a psychiatric disorder ($\chi^2 = 9.82$; $df = 1$; $p < 0.05$). However, there was no significant group difference between patients with epilepsy with and without psychiatric comorbidity in terms of other clinical variables, such as age of onset of seizure, duration of epilepsy, type of seizures, etiology, age of onset (in years), duration of epilepsy (in years), seizure frequency, family history of seizure, and past history of mental disorder.

Conclusion: The study suggests that patients with epilepsy commonly experience mental comorbidity, including personality disorders. Therefore, it is essential to recognize the multifaceted nature of mental comorbidity in epilepsy patients to improve therapy, outcomes, and policy-making.

Keywords: Epilepsy, Psychiatric Co morbidity.

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INTRODUCTION

Epilepsy, despite contributing less than 1% to the total illness burden worldwide, affects about 70 million individuals and is responsible for over 17 million disability-adjusted life-years (DALYs) per year¹. The mortality rate is high, with standardized mortality rates for inpatients with epilepsy being over 10, and fatalities in those younger than 55 years accounting for it^{2,3}. Although up to 5% of all epilepsy deaths are attributed to suicide attempts, it is not clear whether epilepsy itself is linked to suicide attempts^{4,5}. After accounting for mental comorbidity, one research revealed that epilepsy is an independent risk factor for

suicide⁶, however studies from Canada⁷ and the United Kingdom⁸ found no such association. In addition, there is a lack of consensus on whether or not epilepsy alone increases the risk of suicide in the absence of mental comorbidities^{6,7}. Treatment recommendations and national suicide prevention efforts that target high-risk populations^{9,10} might be improved with more clarity. Moreover, up to 16% of epilepsy-related fatalities are attributable to other causes, such as car and non-vehicle accidents. The fatality rate from car accidents in some nations is not significantly greater than the general population due to restrictions placed on drivers with epilepsy. However, it is unclear

whether public health and education interventions have a role in lowering deaths in people with epilepsy resulting from events other than motor vehicle collisions, especially with regards to psychiatric problems¹¹.

MATERIAL AND METHODS

This research was conducted at the Psychiatry Department of Rohilkhand Medical College & Hospital (RMCH), Bareilly, India, with a total of 100 epileptic patients who met the inclusion and exclusion criteria recruited through purposive sampling. The study comprised individuals over the age of 18, epileptic sufferers, and patients in the inter-ictal period, while physically unfit or asleep patients, as well as those without a trustworthy informant, were excluded from the research. Ethical approval was obtained from the Institutional Ethics Committee (reference number: IEC/42/2014.)

METHODOLOGY

The methodology of the research included the following steps:

- 1. Patient selection:** The research was conducted on patients from the outpatient psychiatry department at Rohilkhand Medical College and Hospital in Bareilly. The patients either came to the hospital on their own or were referred from other departments for additional mental examination.
- 2. Screening:** The patients were screened according to inclusion and exclusion criteria, and a clinical diagnosis of epilepsy was made using the International League Against Epilepsy (ILAE) guidelines on seizure classification.
- 3. Physical examination and investigations:** After diagnosis, a thorough physical examination was performed, and other relevant investigations such as routine blood investigations, Computed

Tomography (CT) Scan (Head), MRI (Head), and EEG were performed as and when required.

- 4. Data collection:** After receiving informed permission, socio-demographic data were collected from the patients. The General Health Questionnaire (GHQ) Scale was used to determine their psychological health state. They were thoroughly evaluated for the existence of co-morbid mental illnesses on Axis I using Structured Clinical Interview for DSM-IV Axis I disorders (SCID-1).
- 5. Statistical investigation:** The IBM Statistical Package for Social Science (SPSS) version 22 for Windows 8.1 was used for the analysis. Descriptive statistics were used to summarise socio-demographic and clinical data. The distributions of clinical and experimental parameters were tested for normality using the Shapiro Wilks Test. The Chi-square (2) test was used to compare groups based on the presence or absence of mental illness, and Fisher's exact test was used where appropriate for categorical variables. The Independent t Test was used for normally distributed continuous variables such as age.

RESULTS

The threshold of significance evaluated for group comparison was $p < 0.05$. In table 1, the socio-demographic details of patients with epilepsy (PWE) were compared according to the presence or absence of psychiatric comorbidity. The mean age of the patients with psychiatric comorbidity was significantly higher than those without psychiatric comorbidity. However, there was no significant difference between the two groups in terms of other socio-demographic variables like gender, religion, marital status, education, occupation, residence, socioeconomic status, and family type.

Table 1: Comparison of Socio-demographic details of patients with epilepsy according to Presence or Absence of Psychiatric Comorbidity

Socio-demographic Variables	Patients with Epilepsy (N=100)	PWE with Psychiatric-Comorbidity (n%)	PWE without Psychiatric-Comorbidity (n%)	t/χ ²	df	p value
		Mean ± SD	Mean ± SD			
Age (in years)		32.67±9.50	28.79±9.21	2.931	98	0.004*
		n%	n%			
Gender	Male	55	26%	0.26	1	0.614
	Female	45	19%			
Religion	Hindu	77	35%	0.17	2	0.919
	Muslim	17	7%			
	Sikh	6	3%			
Marital Status	Single	40	17%	2.55	2	0.279
	Married	58	26%			
	Divorced	2	2%			
	Illiterate	8	3%			
	1 st -10 th Std.	53	26%			

Education	Pre-University	18	8%	10%	1.01	4	0.907
	Graduate	15	6%	9%			
	Postgraduate or above	6	2%	4%			
Occupation	Unemployed	10	4%	6%	0.42	3	0.807
	Unskilled Employment	52	25%	27%			
	Skilled Employment	38	16%	22%			
Residence	Rural	27	12%	15%	0.01	2	0.99
	Semi Urban	29	13%	16%			
	Urban	44	20%	24%			
Socio- economic Status	Low	20	8%	12%	0.27	2	0.876
	Middle	71	33%	38%			
	High	9	4%	5%			

Family type	Nuclear	64	29%	35%	0.01	1	0.933
	Joint	36	16%	20%			

Table 2 presents a comparison of the clinical characteristics of epilepsy patients based on the presence or absence of psychiatric comorbidity. Two variables showed a significant difference between the two groups: GHQ12 scores and family history of mental disorder. Patients with epilepsy who had psychiatric comorbidity had a significantly higher mean GHQ12 score (13.76±8.191) than those without (10.51±6.385) (Independent samples t test=2.23, p<0.05). Moreover, there were significantly more patients with epilepsy suffering from a psychiatric disorder ($\chi^2=9.82$; df=1; p<0.05) who had a psychiatric disorder in their first or second degree relatives. However, there was no significant difference between the two groups in terms of other clinical variables such as age of seizure onset, duration of epilepsy, type of seizures, etiology, age of onset (in years), duration of epilepsy (in years), seizure frequency, family history of seizure, and past history of mental disorder.

Clinical variables	Description	Patients with Epilepsy (PWE) (N=100)	PWE with Psychiatric-Comorbidity (n%)	PWE without Psychiatric-Comorbidity (n%)	t/ χ^2	df	p value
			Mean ± SD	Mean ± SD			
Age of onset of seizure (in years)			22.36±7.969	20.49±9.043	1.08	98	0.282
Total duration of epilepsy (in years)			6.00±4.151	5.51±3.910	0.61	98	0.545
GHQ12 Score			13.76±8.191	10.51±6.385	2.23	98	0.028*
			n%	n%			
Type of Seizures	Complex partial	45	20%	25%	2.67	3	0.445
	CPS with Secondary Generalization	17	8%	9%			
	Generalized Tonic-Clonic Seizures	35	17%	18%			
	Simple partial	3	0%	3%			
Etiology	Idiopathic	56	26%	30%	0.77	4	0.946
	Infections	33	15%	18%			
	Vascular	5	2%	3%			
	Traumatic	4	1%	3%			
	Tumour	2	1%	1%			
Seizure Frequency	1 or less per month	21	12%	9%	2.20	4	0.697
	2 - 4 per month	29	11%	18%			
	5 - 15 per month	25	12%	13%			

	16 - 30 per month	17	7%	10%			
	more than 30 per month	8	3%	5%			
Family History of Seizure	No	77	35%	42%	0.03	1	0.867
	Yes	23	10%	13%			
Family History of Mental Disorder	No	75	27%	48%	9.82	1	0.002*
	Yes	25	18%	7%			
Past History of Mental Disorder	No	87	37%	50%	1.65	1	0.199
	Yes	13	8%	5%			

*Significance at $p < 0.05$ (2-tailed); df= degree of freedom

DISCUSSION

The study aimed to indirectly evaluate the impact of psychiatric comorbidity on patients with epilepsy by dividing them into two groups based on the presence or absence of psychiatric comorbidity. The researchers found that patients with psychiatric comorbidity were significantly older on average than those without comorbidity. This could be due to a longer pathway of care for patients with epilepsy, as physicians may refer patients with epilepsy to psychiatrists when they identify features of psychiatric disorders.

The study also examined various socio-demographic variables, such as gender, religion, marital status, education level, occupation, residence, socioeconomic status, and family type, but found no significant differences between the two groups of patients. The mean age of patients in the study was 32.33 years, which is consistent with other studies from developed countries that show a higher incidence of epilepsy in older age groups. In contrast, the age distribution in other Indian studies was variable, but most patients were between the ages of 20-40 years^{12,13}.

Our study found that the majority of patients with epilepsy were male (55%), although this proportion was not significantly different from other studies reporting a male preponderance¹⁴. In terms of religion, 77% of patients were Hindu, while 17% were Muslim and 6% were Sikh, reflecting the prevailing communities in the catchment area of our institute where the study was conducted. Most patients were married, had an education level ranging from 1st to 10th standard, were employed in unskilled occupations, belonged to nuclear families, and had a middle socioeconomic status. Only 27% of patients were from rural backgrounds, while the remainder came from semi-urban or urban areas. These sociodemographic characteristics were similar to those reported in other Indian studies^{12,13,15}.

When we compared patients with and without psychiatric comorbidity, we found some differences in clinical details. Patients with psychiatric comorbidity had significantly higher GHQ 12 scores than those without psychiatric comorbidity. This is because the GHQ 12 is a screening tool designed to identify patients with psychiatric morbidity in the population, and therefore the group with psychiatric morbidity is

likely to have higher scores compared to the other group in this study. These findings are consistent with the studies of Saha et al¹⁴ and Kandeeban et al.¹³ Significantly more number of patients with psychiatric comorbidity had family history of mental disorders than those without psychiatric comorbidity. This further supports the notion that genetic loading plays a role in having psychiatric disorders and this finding is consistent with the study of Robertson et al¹⁶ and Qin et al.¹⁷

However, there were no significant differences between the two groups in terms of other categorical clinical variables such as type of seizures, etiology of seizures, seizure frequency, family history of seizures, and past history of mental disorders.

CONCLUSION

The conclusions drawn from this study support the existing anecdotal evidence that individuals with epilepsy frequently experience various mental illnesses, including personality disorders. The results underscore the importance of acknowledging the complex nature of psychiatric comorbidity in epilepsy patients, not only to enhance treatment outcomes but also to inform policy decisions. The findings from this study suggest that a more comprehensive approach to mental health care is needed for people with epilepsy, taking into account the potential co-occurrence of psychiatric disorders. By recognizing and addressing these comorbid conditions, healthcare providers can improve the overall well-being of epilepsy patients and enhance their quality of life. Furthermore, policymakers may need to consider the implications of these findings when allocating resources and designing healthcare policies to address the needs of this patient population.

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