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Depression and Perceived Stigma among Patients with Epilepsy in a tertiary center: a cross-sectional study

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Abstract

Background

Depression is one of the common psychiatric comorbidity in individuals with epilepsy and is associated with poor quality of life, increased suicidal ideation, social handicaps and increased morbidity. Epilepsy is a highly stigmatized condition even today leading to discrimination and marginalization with significant social limitations. The objective of the present study was to determine the prevalence of depression and perceived stigma in individuals with epilepsy along with identification of factors associated with it.

Methods

The study employed a descriptive cross-sectional observational design and was conducted among patients with epilepsy attending the Psychiatry and Internal Medicine outpatient departments (OPDs) of Devdaha Medical College over a 6-month period, from 1st Jan 2025 to 31st June 2025. Ethical approval was obtained from the Institutional Review Committee of the same institute (approval number: 23/2024). A convenience sampling technique was utilized. The Epilepsy Stigma Scale was administered to assess perceived stigma. Point estimates were calculated with a 95% Confidence Interval.

Results

Out of 195 total participants, 102 (52.2%) were males. The median age was 32 years. Depression was present in 92 (48.2%) patients, most of them had moderate depresssion (84.23%). Perceived stigma was present in 129(66.2%) patients with epilepsy according to epilepsy stigma scale where mean score was 4.83±2.07. Using the Chi-square test, significant associations were found between depression and several variables including gender, type of family, family income, occupation, duration of epilepsy, and perceived stigma ($p < 0.05$).

Conclusion

The prevalence of depression was almost half among individuals with epilepsy, and more than two-thirds experienced perceived stigma. These findings indicate the need to integrate mental health screening and support into epilepsy care in Nepal.

Keywords

Depression, epilepsy, Nepal, social stigma

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INTRODUCTION

Depression is one of the common psychiatric comorbidity in individuals with epilepsy.[1] Epidemiological studies have shown a diverse rate of depression in patients with epilepsy across study settings viz. 6 to 30% in population-based studies and up to 63.3% among patients followed in tertiary centers.[2,3] The prevalence of depression in epilepsy was found to be 31%, 37% and 55% in hospital based studies in Nepal.[4-6] Epilepsy is a highly stigmatized condition even today leading to discrimination and marginalization with significant social limitations. A cross-cultural European study found that more than half of people living with epilepsy reported feeling stigmatized.[7,8] In the Nepali context, several inter-related factors contribute to high levels of perceived stigma among persons with epilepsy, including inadequate community knowledge, cultural beliefs attributing the illness to supernatural causes, fears around marriage and productivity, and the structural barrier to accessing care.[9]

Although a few studies in Nepal have examined the prevalence of depression among individuals with epilepsy, there remains a scarcity of research exploring this topic in different provinces and healthcare settings. To date, no study has been conducted in Lumbini Province, and limited data are available on the psychosocial aspects, such as perceived stigma, among people with epilepsy in the Nepalese context. Given the regional and sociocultural differences in healthcare access, this study aimed to assess the prevalence of depression and perceived stigma among individuals with epilepsy in Lumbini Province.

METHODS

The study was a descriptive cross-sectional observational study conducted among patients with epilepsy who visited psychiatry and internal medicine outpatient departments (OPDs) of Devdaha Medical College over a period of 6 months from 1st Jan 2025 to 31st June 2025 after getting approval from Institutional Review Committee of the same institute (approval number: 23/2024). Patients were selected using a convenience sampling method based on their availability, willingness to participate and their accessibility at the time of data collection. Patients aged between 15 to 59 years irrespective of gender, all old and new diagnosed epilepsy, and patient giving informed written consent were included. Patients were excluded if they had had a seizure in the previous 48 hours, had secondary causes of seizures, or were using psychotropic medicines.

Total of 195 participants (considering the 10% drop-out rate) were enrolled in the study. The sample size was calculated using Cochran's formula, based on a 13% prevalence of depression among people with epilepsy reported in Canadian study.[10] Cochran formula n=(Z2*P*Q)/E2= (1.96)2*0.13(1-0.13)/(0.05)2 = 174, Critical value for 95% Confidence Interval (C.I) z=1.96 and margin of error (E) =5%. A semi-structured proforma was utilized to collect data, encompassing socio-demographic variables (such as age, gender, marital status, education, and occupation) and clinical details (including age at seizure onset, duration of illness, and seizure frequency). Depression was diagnosed according to the ICD-10 Diagnostic Criteria for Research (DCR). Perceived stigma was evaluated using the Epilepsy Stigma Scale (ESS), a validated 10-item instrument developed by DiIorio et al., which measures the extent to which individuals believe epilepsy is viewed negatively and affects their social relationships. Each item is rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), with 4 indicating neutrality. Higher scores reflect greater perceived stigma. The ESS demonstrates excellent internal consistency, with a Cronbach's alpha of 0.91.[11] SPSS version 24.0 was used to analyze the data, with descriptive statistics (frequency, percentage, mean, and standard deviation) for socio-demographic and clinical variables Chi square test was used to determine the association between different sociodemographic variables and clinical variables.

RESULTS

Socio-demographic characteristics

A total of 195 patients participated in the study, of whom 102 (52.2%) were male. The median age of participants was 32 years. As the age data were not normally distributed (Shapiro–Wilk test, $p < 0.05$), the median value was reported. Among them, 137 (70.3%) were married, 173 (88.7%) had an educational level below secondary school, and 119 (61.0%) were employed. Most participants 188 (96.45%) followed the Hindu religion, and 136 (69.7%) lived in joint families. The monthly household income was less than fifty thousand rupees for 119 (61.0%) of the patients. (Table 1).

Table 1: Sociodemographic characteristics of respondents (N=195)

Variable		Frequency	Percentage (%)
Age Group	15-24	75	38.5
	25-34	37	18.9
	35-44	63	32.3
	More Than 45	20	10.2
Gender	Male	102	52.3
	Female	93	47.7
Marital Status	Married	137	70.2
	Unmarried	53	27.2
	Separated	5	2.5
Occupation	Employed	119	61.0
	Unemployed	76	39.0
Education	Illiterate	12	6.1
	Below secondary level	173	88.7
	Above secondary level	10	5.1
Type Of Family	Nuclear	59	30.2
	Joint	136	69.7
Family Monthly Income	Less than Nrs 50000	119	61.0
	More than Nrs 50000	76	38.9
Religion	Hindu	188	96.4
	Christian	6	3.07
	Muslim	1	0.5

Clinical Profile of patients:

Among 195 patients included in the study, 104 (53.3%) sought medical treatment as their first option, while 86 (44.1%) initially consulted a faith healer. Twenty-four patients (12.3%) did not receive any treatment during the first year of their illness. The duration of epilepsy ranged from 1 to 5 years in 81 patients (41.5%), whereas nearly one-third had been living with the condition for more than 10 years. A total of 72 patients (36.95%) received treatment immediately after their first seizure episode (Table 2).

Table 2: Clinical profile of patients (N=195)

Variable		Frequency	Percentage (%)
Duration of Epilepsy	>10 years	68	34.9
	5-10 years	39	20.0
	1-5 years	81	41.5
	<1 years	7	3.5
Treatment first sought	Medical	104	53.3
	Faith Healer	86	44.1
	Others (Homeopathy, Ayurveda)	5	2.5
Duration after which treatment was Sought	Immediately	55	28.2
	Within One Month	111	56.9
	Six Month	5	2.5
	More than one year	24	12.3
Episode after which treatment was sought	One	72	36.9
	Less than 5	113	57.9
	More than 5	10	5.1
Depression	Present	94	48.2
	Absent	101	51.7

Prevalence of depression and perceived stigma

Among 195 patients with epilepsy, 94 (48.2%) were diagnosed with depression, with the majority (84.23%) falling into the moderate category (Figure 1). Perceived stigma was reported by 129 (66.2%) patients. The mean score on the Epilepsy Stigma Scale was 4.83 ± 2.07.

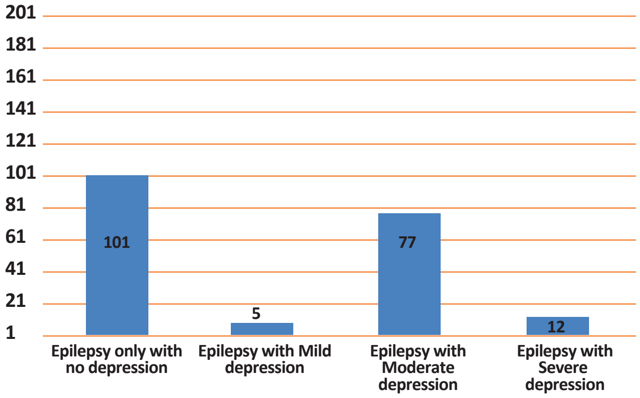

Figure 1: Patients with Epilepsy along with depression

Table 3 presents the association between depression and various demographic and clinical parameters. Religion and marital status were not significantly associated with depression (p > 0.05). In contrast, gender, type of family, family income, occupation, duration of epilepsy, and epilepsy-related perceived stigma were all significantly associated with the presence of depression (p < 0.05).

Table 3: Association of Depression with sociodemographic and clinical variables

Characteristics		Depression Present (n=94) N (%)	Depression Absent (n=101) N (%)	P value
Age group	15-24	44(58.7)	31(41.3)	<0.001**
	25-34	4(10.8)	33(89.2)	
	35-44	37(58.7)	26(41.3)	
	More Than 45	9(45.0)	11(55.0)	
Sex	Male	36(38.3)	66(65.3)	<0.001
	Female	58(61.7)	35(34.6)	
Religion	Hindu	94(100.0)	94(93.0)	0.09
	Others	0(0)	7(6.9)	
Type of family	Nuclear	21(22.3)	38(37.6)	0.02
	Joint	73(77.6)	63(62.3)	
Marital status	Married	72(76.5)	70(69.3)	0. 25
	Unmarried	22(23.4)	31(30.6)	
Income of family	Less than Rs50000	75(79.7)	44(43.5)	<0.001**
	More than Rs50000	19(20.2)	57(56.4)	
Occupation	Employed	38(40.4)	81(80.1)	<0.001**
	Unemployed	56(59.5)	20(19.8)	
Education	Illiterate	12(15.0)	0(0)	<0.001**
	Literate	82(87.2)	101(100)	
Duration of epilepsy	More than 3 yrs	89(94.6)	67(66.3)	<0.001**
	Less than 3 yrs	5(5.3)	34(33.6)	
Stigma	Present	80(85.1)	49(48.5)	<0.001**
	Absent	14(14.9)	52(51.4)	

*p-value significant at < 0.05, **p-value highly significant at < 0.001

There was a significant association between stigma levels and gender, as well as among patients living with epilepsy for more than three years (p = 0.003 and p = 0.001, respectively). However, the timing of treatment initiation was not significantly related to stigma (p = 0.62) (Table 4).

Table 4: Association of Stigma with sociodemographic and clinical variables

Characteristics		Stigma Present (n=129)	Stigma Absent (n=66)	P value
Sex	Male	58(45.0)	44(66.6)	0.003*
	Female	71(55.0)	22(33.3)	
Duration of Epilepsy	More than 3 yrs	112(86.8)	44(66.6)	0.001*
	Less than 3 yrs	17(13.2)	22(33.3)	
Treatment started	Within 6 months	117(90.7)	54(81.8)	0.62
	After 6 months	12(9.3)	12(18.1)	

*p-value significant at < 0.05, **p-value highly significant at < 0.001

DISCUSSION

Though there have been accumulating studies on depression in people living with epilepsy across the globe, very limited studies have been published from Nepal.[4-6] Our study demonstrated almost half 48.2% of individuals had depression. These findings are in line with the studies conducted in Ethiopia (48% and 45%) [12,13] Poland (49.2%)[13] and Nepal (55%).6 Study conducted in Canada had shown as low prevalence as 13%,[10] whereas some studies in India and Pakistan has shown 63.3% and 60% patient having depression respectively.[2,14] This wide variability could be due to inconsistencies in the heterogeneity of the study population, study design, inclusion criteria, and other factors that differ from study to study such as sample size and varying screening instruments.

In the present study there was a significant association between age and depression with the highest prevalence observed in the 15–24 age group which is also in line with earlier studies conducted at different study settings.[15] In community-based patients with epilepsy, younger age has been identified as a potential risk factor for comorbid depression [16], and similarly, in our hospital-based study, higher prevalence of depression was observed in younger age groups. This suggests that younger age may be an important factor associated with depression across different settings, although the magnitude of the association may vary between community and hospital populations. The findings of this study indicate that depression among female respondents was nearly one and half times higher (61.7%) as compared to male patients (38.29%). Similarly, females may have a higher risk of depression due to factors such as work-related stress, household responsibilities, and traditional gender roles in Nepal.[17] Studies have determined being female gender to be a significant risk factor for depression in individuals with epilepsy.[16,18]

Concerning the relation between duration of epilepsy and occurrence of comorbid depression, the results of a meta-analysis have reported that patients with shorter duration of epilepsy are less likely to suffer from comorbid depression,[18] which is in congruent with the findings of our study. This could be due to the high level of perceived stress among people with epilepsy who suffer from the disease for a long time. Our study contrasted with other studies from Nepal which showed no significant association between duration of epilepsy and depression.[4,6]

Furthermore, employment status was significantly associated with depression. This is consistent with the findings of Caetano et al., who reported that higher levels of depression were more common among unemployed patients with epilepsy.[19] This association may reflect the increased financial responsibilities faced by adults in supporting their families and livelihoods. Bifftu et al. demonstrated that depression is linked to lower educational status,[13] which aligns with the findings of our study as well as a study conducted in Ethiopia.[12] However, this finding contrasts with results from a study in Canada.[10] The discrepancy may be attributed to differences in study settings, population characteristics, and socioeconomic conditions between patients with epilepsy in Canada and those in developing countries such as Ethiopia and Nepal.

Perceived stigma was common among people with epilepsy, observed in 66.2% of patients, which is comparable to the findings of Rafel et al. and Prus et al., who reported perceived stigma in 68.7% and 69% of participants, respectively.[20,21] However, the prevalence of perceived stigma in our study was higher than that reported in studies from the Middle East, which found a prevalence of 33%.[22]

These differences in prevalence may reflect variations in societal attitudes toward epilepsy, differences in knowledge and perceptions regarding the illness and its treatment, or the presence of comorbid mental health conditions such as depression and anxiety. Despite these variations, the consistently high levels of perceived stigma across different cultural and resource-limited settings highlight that stigma remains a significant contributor to the illness burden worldwide.[23]

This cross-sectional study limits causal inference regarding the relationship between epilepsy and depression. Some depressive features, such as cognitive impairment, may overlap with epilepsy symptoms, potentially influencing assessment. As a single-center, hospital-based study using a convenience sampling method, the findings may not be generalizable to the broader population. Therefore, community-based longitudinal studies with larger sample sizes are recommended. The study did not examine the direct impact of depression on epilepsy management, such as treatment adherence or seizure control. Additionally, potential confounders—including past psychiatric history, chronic medical illnesses, substance use, and major life stressors—were not assessed, which may have contributed to the higher prevalence of depression observed.

CONCLUSION

Depression was observed in nearly half of the individuals with epilepsy, and over two-thirds reported perceived stigma. These findings underscore the importance of integrating routine screening and management of depressive symptoms into epilepsy care in Nepal. Furthermore, this study highlight the need for a comprehensive, multidisciplinary epilepsy care program that includes psychiatric support.

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CONFLICT OF INTEREST

The author declared no competing interests.

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