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Study to determine the Gender predominance in the occurrence of Depression among patients with Epilepsy at a Tertiary care Hospital located in the North-East Region of India.

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A B S T R A C T

Introduction: Epilepsy is defined as two or more unprovoked seizures. The incidence of epilepsy is approximately 0.3 – 0. 5 % in different populations throughout the world and the prevalence of epilepsy has been estimated at 5 – 10 persons per 1000. Epilepsy is a common neurological disorder that affects populations worldwide and leads to severe personal, familial and social impact. Depression is one of the most prevalent psychiatric disorders occurring in patients with epilepsy. Most of the time it is under recognized and has a huge impact on their quality of life. Although incidence and prevalence rates of psychiatric co-morbidities vary widely among studies, from 12% to 41%. Its life time prevalence has been estimated within a range of 6 to 30 % in population-based studies and up to 50 % among persons followed in tertiary care centers.

Aim of the study: This study aims is to find out the gender predominance in occurrence of depression among epilepsy patients in a tertiary care hospital of north-east region of India.

Materials and Methods: Cross sectional study was conducted on 100 patients those who have attended to psychiatry OPD and also the cases those who were referred from medicine OPD / IPD of AGMC & GBP Hospital, Agartala between January 2016 to December 2016.

Inclusion Criteria: All types of epilepsy cases between the age group of 12 years to 60 years irrespective of sex and socio-demographic status and cases must have confirmed diagnosis of epilepsy for at least six months.

Exclusion Criteria: Patient's age below 12 years and age above 60 years and patients those who were suffering from any other medical condition during the last one-month period before interview was excluded from the study.

Results: Out of 100 epileptic patients it was found that 50% were having depression. It was also found that amongst 100 epilepsy patients male (54%) followed by female (46%).

Conclusion: The study of prevalence of depression among epileptic patients has been a key area of research from psychiatry view point. In spite of knowing the fact that prevalence of depression is high amongst epilepsy patients but there are very few studies have been done for gender predominance in occurrence of depression amongst patients with epilepsy. In my study it was found that male (54%) has greater chances of development of depression than female (46%) with epilepsy. Differences of the prevalence of depression may be because of methodological differences and may be due to associated socio-economic factors in our society.

Keywords: BDI- Beck Depression Inventory, IPD - In Patient Department, ICD- International Classification of Disease, OPD- Out Patient Department.

INTRODUCTION

Epilepsy describes a condition in which a person has recurrent seizures due to chronic, underlying process. The definition implies that a person with a single seizure or recurrent seizures due to correctable or avoidable circumstances does not necessarily have epilepsy. Using the definition of epilepsy as two or more unprovoked seizures, the incidence of epilepsy is approximately 0.3 – 0. 5 % in different populations throughout the world and the prevalence of epilepsy has been estimated at 5 – 10 persons per 1000 [1]. Epilepsy is a common neurological disorder that affects populations worldwide and leads to severe personal, familial and social impact. Various studies have demonstrated that epilepsy has been associated with risk of various psychiatric disorders which ranges from 12% to 41%. The variation is largely due to methodological differences among the studies, selection bias, population under study, diagnostic methods used, anti-epileptic drugs numbers and dosages are some of the confounding factors that could have an effect on the prevalence rates [2.3.4.5]. Epilepsy has also been associated with increased risk of suicide, even after adjustments for various factors known to pose a risk for suicide in the general population [6.7.8.9]. At least 20-25% of persons with epilepsy have onset of seizure for the first time after the age of 25 years [10]. Adult-onset epilepsy was studied by different workers in different countries and found variations in their findings regarding sex preponderance and etiologic variability [11].

Depression is one of the most prevalent psychiatric disorders occurring in patients with epilepsy [12]. Most of the time it is under recognized and has a huge impact on their quality of life [13.14.15.16]. Its life time prevalence has been estimated at 6 to 30 % in population-based studies and up to 50 % among persons followed in tertiary care centers. The bidirectional interaction between depression and epilepsy is believed to be multifactorial and includes genetic, iatrogenic, endogenous and adaptive or maladaptive process [17]. Various studies have been done on prevalence of depression in epilepsy patients but less study focused on gender differences in occurrence of depression in epilepsy patients.

In this study, I sought to determine the gender variations in occurrence of depression in patients with epilepsy at Department of Psychiatry and Neurology clinic of Dept. Of Medicine at AGMC & GBP Hospital, Agartala.

MATERIALS AND METHOD

A cross-sectional study conducted on 100 patients attended to psychiatry OPD and referred from medicine OPD / IPD of AGMC & GBP Hospital, Agartala between January 2016 to December 2016.

1)**Inclusion Criteria**:

- Who have given informed consent for this study.
- All types of epilepsy cases between the age group of 12years to 60 years irrespective of sex and socio-demographic status.
- Cases must have confirmed diagnosis of epilepsy for at least six months.

2)**Exclusion Criteria**:

- Patients who have not given informed consent.
- Patient's age below 12 years and age above 60 years.
- Patients suffering from any other medical condition during the last one-month period before interview were excluded from the study.
- Patients with severe mental retardation.
- Patients with history of alcohol or other substance abuse.
- Patients with status epilepticus.
- Patients having history of mood disorders prior to the onset of epilepsy.

3)**Assessment Tools**:

- Socio-demographic variables.
- ICD-10 criteria for diagnosis of depressive disorder
- BDI (Beck Depression Inventory) scale

Analysis of Data: The data were analyzed by using SPSS-15. Cross tabulation and Chi square statistics were applied to assess the association between variables.

RESULTS:

Table 1: Distributions of gender differences among 100 patients with epilepsy.

Sex Distribution	Frequency (N)	Percentage (%)
Male	54	54%
Female	46	46%
Total	100	100%

In this table it was found that out of 100 epilepsy patients 54% male patients have epilepsy and 46% female patients diagnosed with epilepsy.

Table 2: Distributions amongst 100 epileptic patients 50% were having depression.

Prevalence of Depression	Frequency(N)	Percent (%)
Present	**50**	**50%**
Absent	**50**	**50%**
Total	**100**	**100%**

In this table it is shown that amongst 100 epileptic patients 50% of patients have depression.

Table 3: Distributions of gender differences among 50 patients of depression with epilepsy.

Sex distribution	Frequency(N) among 100 patients with epilepsy	Frequency(N) among 50 patients of depression with epilepsy	Percent (%)
Male	54	34	62.96%
Female	46	16	34.7%

In this table it is shown that amongst 50 patients of depression with epilepsy number of male patient with depression is 34 (62.96%) and female patients with depression is 16 (34.7%). Male have higher incidence of depression than female with depression amongst epilepsy patients.

TABLE 4: Difference between the gender and severity of depression among 100 epileptic patients in severity of depression amongst epileptic patients and sex by using Chi-square test.

Gender	Severity of depression					Fischer's Exact test
	Mild	Moderate	Severe	Nil	Total	
Male	20	8	6	20	54	0.042
Female	9	5	2	30	46	
Total	29	13	8	50	100	

In this table, Chi-square test is applied to identify the which shows that, there is significant statistical differences between severity of depression amongst different genders and reach the significance level(p=0.042) lower than "0.05".

DISCUSSION

This cross-sectional study was carried out on 100 epilepsy patients referred from Neurology clinics of Medicine dept. and patients from psychiatry OPD and the study was approved by Tripura University (central) and informed consent was taken from the participants. In this study depression was diagnosed by using ICD 10 followed by that BDI was applied for the assessment of severity of depression. The study shows that, males suffer more than females from the burden of epilepsy particularly in north eastern region and epilepsy causes unique sociocultural problems for male, that present as bar from marriage, prevent them from participating in many social activities, social isolation as a result of negative attitudes of others towards them, social embarrassment as a result of seizure in front of other or in public area and they also face difficulty in performing activities of daily living and find difficulties in decision making.

In my study, male gender with epilepsy was found to be positively more associated with depression and there is statistical significance difference between depression severity and sex (p=0.042), which is consistent with the study of Yousafzai et al. [18] which found male more significantly associated with depression, except Thomson & Brennenstuhl [19], Hayat Khan & Tahir [20], found that female significantly more. Study of Nidhinandana et al. [21], found no relationship between depression and gender.

In this study, the sample comprises of 100 epileptic subjects, 54 of them were male and 46 were female. The age of participants ranges from 12 to 60 years old. Study has shown that prevalence of depression among epileptic patients is 50% which reflects that a vast majority of epileptic patients having depression remain undiagnosed. Amongst 50 patients of depression with epilepsy number of male patient with depression is 34 (62.96%) and female patients with depression is 16 (34.7%). Male have higher incidence of depression than female with depression amongst epilepsy patients.

My study shows that prevalence of depression among epileptic patients is 50% which reflects that a vast majority of patients with epilepsy having depression remain undiagnosed. So, by early diagnosis and proper treatment of these hidden cases can improve their quality of living and they will be able to engage to their day-to-day activities properly.

Limitations of the study:

1) The present study was a hospital based cross-sectional study and so it may not reflect the actual scenario of the socio-demographic variables of the community.
2) There was no control group in the study.
3) Sample size of the study was small.

CONCLUSION:

Prevalence of depression among the presented epileptic patients was 50%, divided between mild (29%), moderate (13%) and severe (8%). Male gender was significantly associated with depression rate. In this state of Tripura, my study has been the first of this kind. I feel, more such studies need to be done with a view to detecting cases of depression at their early stage, so that treatment can be initiated early and the benefit to the patient can be maximized.

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Consent:

Ethical approval was taken from institutional ethical committee. All written informed consent for medical procedures and the patient's medical information study was obtained from the patient legal guardian/informants to publish this paper.

Competing interests:

The authors declare that they have no competing interests.

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