Noncompliance and its Determinants among Patients with Epilepsy in Neurology Outpatient Department, Medical College Hospital, Thiruvananthapuram

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Abstract: *Epilepsy is one of the most common neurological disorders. For almost all patients with epilepsy, long-term drug therapy is the only practical way of form of treatments and many factors that affect adherence to pharmacological treatment can lead to lack of control over seizure and recurrence. What we know about the depths of noncompliance and its relation with seizure control in vulnerable populations such as economically backward is very less. The present study was a quantitative study intended to assess the noncompliance and its determinants among patients with epilepsy attending Neurology Outpatient Department, Medical College Hospital, Thiruvananthapuram. The objective of the study is to assess the noncompliance, among patients with epilepsy and to identify the determinants of noncompliance related to therapy of epilepsy.Descriptive research design was used in this study. The sample consists of 280. Samples were selected consecutively and data were collected by interview method. The data were collected over a period of six weeks. The collected data was analysed by using SPSS version 17 and results were expressed in descriptive and inferential statistics. The following are the major findings of the study, 65.7% of the participants had medium compliance to drug, 25.4% had low compliance and 8.9% had high compliance to drug. After logistic regression, it was found that patient with below poverty line, no family history of epilepsy and patient with generalised seizure were more risky to be noncompliance with antiepileptic therapy.*

Keywords: Epilepsy; Noncompliance; Determinants

1. Introduction

Epilepsy is one of the most common neurological disorders. The word epilepsy is derived from Greek word means to "seize" or "take hold of", indicating the persons having a seizure is possessed or at least out of control. Epilepsy and seizure affect more than 50 million people worldwide.[1] The various consequences of epilepsy may be health related or social in nature. From health perspective, epilepsy has been associated with an increased risk of mortality and injury. [2]

The majority of people with epilepsy in developed countries are able to manage their condition by using one or more pharmacological therapies with anticonvulsant medication. [3]

For almost all patients with epilepsy long-term drug therapy is the only practical way of form of treatments and many factors that affect adherence to pharmacological treatment can lead to lack of control over seizure and recurrence.[4]

Eighty percentage of people with epilepsy live in the developing world.[5] An individual with epilepsy suffers recurrent seizure unprovoked by acute brain insults or metabolic derangement. Seizures are characterized by a brief period of involuntary shaking. They may be partial, involving only one part of the body or generalized involving the entire body and they may be accompanied by loss of consciousness and lack of bowel or bladder control. Some individuals continue to have frequent seizure with anti-epileptic drugs.
However more than 70% of patients, who are treated, achieve long-term remission or freedom from seizure, usually within 5 years of diagnosis.[6]

The majority of people with epilepsy have good prognosis if they receive appropriate treatment.[7] In the worldwide, 60-90% of people with epilepsy receive no treatment or are inadequately treated.[8]

Epilepsy is a chronic disorder of abnormal, recurrent, excessive and self-terminating discharge from neurons. Period between seizures can vary widely and can measure in minutes, hours, days, weeks, months or even years. However there is repetition of seizure activity at sometimes in the future, regardless of the interval.[9]

The long term anti convulsant therapy has potential morbidity. Therefore the possibility of discontinuing therapy should be balanced against the risk and danger of seizure recurrence.[10]

Patients who are on anti-epileptic drug should follow a correct order of medication and check-up but many people cannot follow the order and seizure can occur from anti-epileptic drug withdrawal.[11]

Objective
- To assess the noncompliance, among patients with epilepsy.
- To identify the determinants of noncompliance related to therapy of epilepsy

2. Methodology

Research approach: Quantitative approach

Research Design: Descriptive design

Setting: Neurology Outpatient Department, Medical College Hospital, Thiruvananthapuram.

Population: Patients who are diagnosed as epileptic and attending Neurology Outpatient Department for epilepsy, Medical College Hospital, Thiruvananthapuram

Sample: Sample will be selected consecutively where by the investigator picks up all the available subjects who satisfy inclusion criteria.

Sampling technique: Samples were selected consecutively

Inclusion criteria
Patients taking antiepileptic medication for at least one year
The patients who are willing to participate

Exclusion criteria
Patients having any type of psychiatric disease.

Sample size: - 280 patients

Tool

Tool 1: Proforma to assess socio personal and clinical data
Section A: Socio personal data.

The socio demographic variables in this study was sage, gender, education, occupation, marital status, socioeconomic status, place of residence, insurance benefits received, type of family, caregiver specify

Section B: Clinical data sheet

The clinical data sheet included diagnosis, family history of epilepsy, sage at which epilepsy diagnosed, duration of illness in years, type of seizure, frequency of seizure in last years, type of drug therapy, name of antiepileptic drugs in present treatment, adverse effects experienced due to drug intake, follow up visit, monthly expenditure for medicines.

Tool 2: Eight item Morisky medication adherence scale 17(MMAS), to assess the compliance pattern to antiepileptic regimen. The MMAS is a standardized 8 item questionnaire with seven yes or no questions and one question answered on a 5 point Likert scale. According to the scoring system for the MMAS, 8- high compliance, 6 to <8 = medium compliance and <6 = low compliance

The Techniques are,
- Interview
- Record review

Data collection process
The duration of the data collection period was from 2-1-2017 to 12-2-2017.The investigator obtained prior permission for the conduct of the study from the Superintendent and Head of the Neurology Department, Medical College Hospital, Thiruvananthapuram and clearance was obtained from Institutional Human ethics committee, Govt. College of Nursing, Thiruvananthapuram,

before the commencement of data collection. With the help of interview schedule the investigator collected the data from patients who attended Neurology Outpatient Department, Medical College Hospital, Thiruvananthapuram.

The study group consists of 280 patients who are attending Neurology Outpatient Department, Medical College Hospital, Thiruvananthapuram. At first rapport was established with the patients and purpose of the study was explained to them. It was assured to them, all data will be kept strictly confidential and used only for study purpose. After obtaining the verbal and written consent from the patients, they were interviewed using structured interview schedule. The investigator herself collected data regarding sociopersonal data, clinical data through structured interview and noncompliance was assessed by using Morisky medication adherence scale.

Data Analysis
Both descriptive and inferential statistics will be used for data analysis. Descriptive statistics (mean, standard deviation, frequency and percentages) will be used to describe the clinical and demographic variables of study participants. The determinants of noncompliance will be analyzed using Chi-square test.

3. Results

65.7% of the participants had medium compliance to drug, 25.4% had low compliance and 8.9% had high compliance to drug. The study identified that people belongs to below poverty line, people with no family history of epilepsy and patient with generalised seizure were the determinants of noncompliance related to therapy of epilepsy.

Table 1: Distribution of the participants according to drug compliance, N= 280

Drug Compliance	Frequency	Percentage
High Compliance	25	8.9
Medium Compliance	184	65.7
Low Compliance	71	25.4
Total	280	100

Table 1 reveals that 65.7% of the participants had medium compliance to drug, 25.4% had low compliance and 8.9% of the participants had high compliance to drug

Table 2: Logistic regression of significant variables with noncompliance of antiepileptic therapy

Variable	B	S.E.	P	OR (95% CI)	
				Lower	Upper
Socio economic status (BPL)	2.27	0.70	0.001	9.64	2.43	38.21
Family history of epilepsy (No)	1.26	0.55	0.023	3.53	1.19	10.45
	0.20	0.57	0.728	1.22	0.4	3.75
Type of seizure (Generalised)	2.37	0.95	0.013	10.75	1.67	69.34

Significant association
- Patient in BPL category was found to be 9.64 times more odds to have noncompliance.
- Patient with no family history of epilepsy were found to have 3.5 times more risk to have noncompliance of antiepileptic therapy.

- Patient with generalized seizure found to be 11 times morerisky to be noncompliance with antiepileptic therapy.

4. Discussion

There are many studies related to different aspects of drug compliance among patients with epilepsy. The present study emphasized to assess the self-reported compliance level and factors affecting compliance among patients with epilepsy. The findings of the present study were discussed below in relation to findings of other studies which the investigator had reviewed. After logistic regression, it was found that patient with below poverty line, no family history of epilepsy and patient with generalised seizure were more risky to be noncompliance with antiepileptic therapy.

Distribution of patients based on socio personal and clinical data

In the present study age wise distribution of patients showed that the majority of them (59%) were belonged to the age group of 21-30 yrs, and 51.4% of the patients were males

Prevalence and cost of nonadherence with antiepileptic drugs in an adult managed care population conducted by Davis K L et al in USA showed that 58% were female, mean age was 44 years. Variation in antiepileptic drug adherence among older patients with new-onset epilepsy conducted by Zeber J E stated that 98% were primarily male.

Present study showed that majority of the patients (30.7%) completed graduation and 56.1% of the participants were unemployed.

Factors associated with medication adherence in patients with epilepsy and recommendations for improvement conducted by Paschal A M showed that among the sample of 180 patients, most had some education beyond high school and most of the participants were unemployed.

An evaluation of factors affecting adherence to antiepileptic drugs in patients with epilepsy: a cross-sectional study conducted by Gurumurthy R stated that more than half of the patients with epilepsy (n = 237, 52.5%) were unemployed.

Present study revealed that 60.4% were belonged to BPL family ($\chi2 = 18.69$ and p =0.0001 and 85% were residing in rural area ($\chi2 = 13.46$ and p =0.001).A study conducted on An evaluation of factors affecting adherence to antiepileptic drugs in patients with epilepsy: a cross-sectional study showed that most of the patient (n = 198, 43.9%) belonged to the lower/upper-lower socioeconomic class.

Present study findings showed that 73.9% of the participants did not develop any adverse effects and 47.9% of the participants had focal seizures. A study conducted to determine the drug compliance among people with epilepsy attending the follow up clinic of SCTIMST stated that majority of sample-developed side effects (68.33%) and majority of sample had partial seizures (58.34%).

The present study findings stated that 65.7% had medium compliance to drug. Asawavichienjida reported a compliance rate of 57%; Ettinger A B reported as noncompliance rate was 41%. Gollwitzer S reported as one third of patient with epilepsy were poor adherent. Lusic and Tittic reported higher compliance level (62%) and satisfactory compliance (23%) had and 15% had unsatisfactory compliance level (15%).

5. Conclusion

This study showed that the 65.7% of the participants had medium compliance to drug, 25.4% had low compliance and 8.9% had high compliance to drug. The study shows that there was significant association of noncompliance of antiepileptic therapy with Educational status, Occupation, Socio economic status, Place of residence, Type of seizure, frequency of seizure in last years, Adverse effects developed due to drug intake.

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Author Profile

Anulekshmi B S completedgraduation and post-graduationin Nursing from Govt. college of Nursing, Thiruvananthapuram in 2013 and 2017 respectively. She worked as Junior Lecturer for 1 year in the same institution. Currently, she has been working as Nursing Tutor in Bishop Benziger College of Nursing, Kollam.