

A QUASI-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF ADVANCED TEACHING PROGRAMME VS TRADITIONAL TEACHING REGARDING THE ANTI-EPILEPTIC DRUGS ON KNOWLEDGE AND ITS DRUG COMPLIANCE AMONG PATIENTS WITH EPILEPSY IN MEDANTA HOSPITAL GURUGRAM, HARYANA : A QUANTITATIVE RESEARCH STUDY

Neurology

Shailja*

Lecturer, Neta Ji Subhash College of Nursing, Palampur, Himachal Pradesh.
*Corresponding Author

Ms. Amandeep Kaur

Assistant Professor, SGT University, Gurugram, India.

Dr. Atma Ram Bansal

Senior Consultant, Department of Neurology, Medanta Hospital, Gurugram, Haryana

ABSTRACT

Background : In an individual with epilepsy adherence to medication is crucial in preventing or minimizing seizure and there is cumulative impact on everyday life. **Methods:** A quantitative research approach and quasi-experimental pre-test and post-test research design was used with Convenience sampling technique. Total sample size was 100 adult patients with epilepsy to experimental group (50 sample) and control group (50 sample). Tool was consisting of structured knowledge questionnaire to assess the knowledge and Modified Morisky Medication Adherence Scale to assess the drug compliance of patients with epilepsy (PWE) regarding the anti-epileptic drugs. A information booklet was prepared for patients with epilepsy (PWE) to increase their knowledge and drug compliance regarding the anti-epileptic drugs. **Result:** The findings revealed that mean post-test knowledge score (84.36%) and drug compliance score (37.5%) in experimental group is higher than mean post-test knowledge score (69.36%) and drug compliance score (61.5%) in control group which projects 't' value of knowledge is 11.84 and for drug compliance 6.11 which was statistically significant at $p < 0.001$. **Conclusion:** Advanced teaching programme is effective in increasing the knowledge and drug compliance among patients with epilepsy regarding anti-epileptic drugs as compare to the traditional teaching.

KEYWORDS

Advanced teaching programme, Anti-epileptic drugs (AEDs), Effectiveness, , Patients with epilepsy (PWE), traditional teaching.

INTRODUCTION

Epilepsy is one of the most common neurological diseases characterized by recurrent seizures. ¹A seizure is a sudden surge of electrical activity in the brain. ²Epilepsy can have both genetic and acquired causes, with interaction of these factors in many cases. ³In about 6 out of 10 cases of epilepsy, the cause is unknown. ⁴Of the 70 million patients with epilepsy worldwide, nearly 12 million patient with epilepsy are expected to reside in India; which contributes to nearly one-sixth of the global burden. The overall prevalence is 3.0-11.9 per 1,000 population and incidence is 0.2-0.6 per 1,000 population per year in India. ⁵Onset is more common in older children and young adults in the developing countries. ⁶

The first line treatment of epilepsy is the administration of anti-epileptic drugs . 7 in 10 people with epilepsy could have their seizure completely controlled with Anti-epileptic drugs. ⁵Approximately 80% of patient benefit from anti-epileptic drugs therapy will be controlled with a single drug and 10-15 % with combination of two Anti-epileptic drugs. ⁷

The success of anti-epileptic drug therapy in the treatment of epilepsy depends upon patient ability to take his or her prescribed treatment regimen. In a survey of 55 patients, it was observed that for an average of 14 weeks the overall rate of compliance with dosing regimen was 75%. Compliance rates declines as the number of doses increased. Each day 86%, twice a day 80%, three times a day 76% and with a significant decrease to 53% in compliance for four times a day dosing. ⁷

Literature Survey:

Das MA et al conducted a cross-sectional survey to assess the barriers of drug adherence among patients with epilepsy in tertiary care hospital. 100 epilepsy patients in an outpatient unit were covered during the study period. Structured interview with pre-tested questionnaire and Morisky Medication Adherence Scale was used to collect the data. This study concluded that 71% of patients were not adherent to anti-epileptic treatment. Severity of seizure medications frequency and complexity of treatment were found to have significant association with the anti-epileptic drugs adherence status. So, as the medication adherence was observed to be low, services for adherences counseling and health educational interventions in the epilepsy clinics is recommended. ⁸

Stacy K et al (2014) conducted a prospective observational study in the department of neurology to assess the knowledge of epilepsy in epileptic patients attending tertiary care center. 105 patients were

covered during the study period. In this study 47.6% of patients feared from the side effects of Anti-epileptic drugs treatment and only 38% were knowledgeable about epilepsy and treatment options other than that with medications. The study concluded that patients had a basic understanding of epilepsy, but knowledge and treatment option were poor. Educational interventions by health care professionals should focus on epilepsy and Anti-epileptic drugs a part from the general aspects. ⁹

Mutabazi P conducted an exploratory descriptive study to assess the knowledge, attitudes and practices among family caregivers towards epileptic patients. 60 family caregivers of epileptic patients were enrolled in the present study. Data were collected by using a face to face interview questionnaire. This study concluded that 76.7% of family caregivers said that patients should not miss even one dose of Anti-epileptic drugs, more than 30% believed that taking Anti-epileptic drugs will impair the memory and effect brain function. The majority of the negative attitudes towards epilepsy were significantly associated with the misunderstanding of epilepsy. The attitude and practices towards people with epilepsy depend on the knowledge of this disease and the level of education. The findings of this study showed that health promotion interventions could aim at increasing awareness and knowledge of epilepsy and its management among family caregivers of epileptic patients. ¹⁰

Dash D et al conducted a randomized controlled study to assess the impact of health education on drug compliance and self-care in people with epilepsy with low education. Total 180 consecutive people with epilepsy were enrolled from the epilepsy clinic. Out of these 90 were randomized to the epilepsy health education group and 90 were in the comparison group. The modified Morisky Medication Adherence Scale and epilepsy self-efficacy scale were administered to assess the drug adherence and self-care of the patients. The pre-test mean score for epilepsy health education group was 6.58 whereas post-test score 7.53, which shows difference was significant. The mean score of comparison group pre-test and post-test score was 6.48 and 6.58 respectively which were not significantly different. The present study proves that the structured educational program is efficient in improving drug adherence of people with epilepsy with low education background ¹¹

Problem Statement:

A quasi-experimental study to assess the effectiveness of advanced teaching programme Vs traditional teaching regarding the anti-epileptic drugs on knowledge and its drug compliance among patients

with epilepsy in Medanta Hospital Gurugram, Haryana

OBJECTIVES:

To evaluate the effectiveness of advanced teaching program Vs traditional teaching regarding the antiepileptic drugs (Anti-epileptic drugs) among patients with epilepsy in terms of pre-test and post-test knowledge score and pre-test and post-test drug compliance score in both interventional group and comparison group.

Hypothesis

H₁: There will be significant difference in mean post-test knowledge score of interventional group and the mean post-test knowledge score of comparison group as assessed by structured knowledge questionnaire at 0.05 level of significance.

H₂: There will be significant difference in mean post-test drug compliance score of interventional group and the mean post-test drug compliance score of comparison group as assessed by modified Morisky Medication Adherence Scale at 0.05 level of significance.

METHODOLOGY

Research Approach – Quantitative approach

Research Design - A Quasi-experimental pre and posttest research design with interventional and comparison group was used.

Variables:

- **Dependent variable:** Knowledge and drug compliance of Anti-epileptic drugs
- **Independent variable:** Advanced teaching programme and traditional teaching.
- **Extraneous variables:** Age, sex, educational status, employment, monthly income of the family, duration of epilepsy diagnosed, duration of taking Anti-epileptic drugs, previous knowledge regarding Anti-epileptic drugs and source of information regarding Anti-epileptic drugs

Setting of the study:

Epilepsy clinic in Medanta hospitals in Gurugram

Population: All the patients with epilepsy

Sample:

All the adult patients with epilepsy attending epilepsy clinic in Medanta hospital Gurugram meeting the inclusion and exclusion criteria.

Sampling Technique: Convenience sampling.

Sample size: The sample size of the study comprises of 100 sample.

Interventional Group = 50 (Patient receiving advanced teaching programme)

Comparison Group= 50 (patient receiving traditional teaching)

Inclusion Criteria

• Adult patients with epilepsy in age group 18-60 years and who were willing to participate.

Exclusion Criteria

• Adult patients having single episode of seizure in their life time due to known cause like fever, brain infection and head injury.

Tools For Collection Of Data:

- **TOOL 1:** A structured questionnaire was prepared to assess the demographic profile consisted of 13 items.
- **TOOL 2:** A structured questionnaire to assess the knowledge of patients with epilepsy regarding the anti-epileptic drugs, consisted of 22 multiple choice questions. Each correct answer will be given 1 score and incorrect answer will be given 0 score.
- **TOOL 3:** Modified Morisky Medication Adherence scale was prepared to assess the drug compliance of patients with epilepsy regarding the anti-epileptic drugs. It consists of 8 items. The maximum score was 8 & minimum score was zero.
- **Tool 4:** Information booklet was prepared on the basis of review of literature on anti-epileptic drugs and opinion of the experts. Booklet was made in Hindi as well as in English. The information

booklet is titled “Anti-epileptic drugs “. It included introduction, a table of contents, general objectives, specific objectives, content, glossary and the references.

Validity And Reliability Of Tools

Content validity of structured knowledge questionnaire and drug compliance scale was done by a panel of 6 experts from medical (Doctors) and nursing field (Professors in Nursing). The tools were tested for the reliability among 10 patients with epilepsy taking anti-epileptic drugs and the internal consistency was computed using Pearson's correlation coefficient formula with split half technique. Reliability co-efficient was found to be 0.89.

Intervention

Advanced teaching programme	Traditional teaching
In advanced teaching information booklet was given and content was explained by researcher individually regarding AEDs among patients with epilepsy Information booklet focus on the epilepsy and AEDs Time duration- 15 minutes	It is general teaching which was given by epilepsy nurse in epilepsy clinic to the patients with epilepsy Traditional teaching only focuses on the epilepsy like precautions used during seizure, do and don'ts during seizure. It provided very little information regarding AEDs Time duration- 5-7 minutes

Ethical Consideration

Ethical permission was taken from ethical committee in IRB meeting in Medanta hospital. An informed consent was taken from the patient with epilepsy taking anti-epileptic drugs. Confidentiality and anonymity of the information given by the participants was maintained throughout the study period.

Pilot Study

The pilot study was done among 10 patients with epilepsy and study was found to be feasible.

Data Collection Procedure

Group	Pre-test	Intervention	Post-test (after 1 month)
Interventional group	OK1, OC1	X	OK2, OC2
Comparison group	Ok1, Oc1	Y	Ok2, Oc2

Method Of Data Collection

OK1 and Ok1- Pre-test knowledge score in interventional and comparison group respectively

OC1 and Oc1- Pre-test drug compliance score in interventional and comparison group respectively

OK2 and Ok2 – Post-test knowledge score after advanced teaching programme in interventional group and comparison group respectively

OC2 and Oc2- Post-test drug compliance score after advanced teaching programme in interventional group and comparison group respectively

X – Advanced teaching programme in interventional group (15 minutes to each patients)

Y – Traditional teaching in comparison group

RESULTS

Table 2. Comparison Of Pre-test And Post-test Knowledge Score Within The Interventional Group And Comparison Group N=100

INTERVENTIONAL GROUP (50)						COMPARISON GROUP (50)					
Group	Mean ±S.D	Range	Test value	df	P value	Mean ±S.D	Range	Test value	df	P value	
Pre-test Knowledge score	8.40±2.942	4-17	20.97	49	0.000***	8.44±3.85	4-18	10.85	49	0.00**	
Post-test Knowledge score	18.36±1.88	13-22				13.18±2.60	9-19				

***Statistically Significant at 0.001 level of significance
Maximum=22 Minimum=0

Table 1. Frequency And Percentage Distribution Of Patients With Epilepsy (PWE) According To Their Demographic Profile In Both The Groups And Their Comparability. N=100

S. No	Variables	Experimental Group (50) Frequency (%)	Control Group (50) Frequency (%)	Fisher Exact Test Value	df	P Value
1.	1. Age (in years)					
	a) 20-30	30 (60%)	35 (70%)	2.518	3	0.472
	b) 31-40	13 (26%)	12 (24%)			
	c) 41-50	06 (12%)	02 (4%)			
	d) 51-60	1 (2%)	01 (2%)			
2.	Gender					
	a) Male	28 (56%)	37 (74%)	2.813	1	0.094
	b) Female	22 (44%)	13 (26%)			
3.	Marital status					
	a) Married	29 (58%)	26 (52%)	1.641	2	0.440
	b) Un-married	21 (42%)	23 (46%)			
	c) Divorced	0 (0%)	1 (2%)			
	d) Widow-Widower	0 (0%)	0 (0%)			
4.	Educational status					
	a) Primary	4 (8%)	2 (4%)	4.977	3	0.173
	b) Secondary	6 (12%)	6 (12%)			
	c) Graduation	23 (46%)	33 (66%)			
	d) Post-graduation or above	17 (34%)	9 (18%)			
5.	Residence					
	a) Urban	31 (62%)	36 (72%)	1.380	2	0.502
	b) Rural	4 (8%)	4 (8%)			
	c) Semi-urban	15 (30%)	10 (20%)			
6.	Employment					
	a) Service sector	20 (40%)	5 (30%)	3.972	4	0.410
	b) Self-employed	14 (28%)	19 (38%)			
	c) Unemployed	3 (6%)	5 (10%)			
	d) Housewife	2 (4%)	0 (0%)			
	e) Student	11 (22%)	11 (22%)			
7.	Monthly income of family					
	a) <5000	3 (6%)	3 (6%)	0.474	2	0.789
	b) 5001-10000	4 (8%)	6 (12%)			
	c) 10001-20000	14 (28%)	14 (28%)			
	d) >20000	29 (58%)	27 (54%)			
8.	Duration of epilepsy diagnosed					
	a) <1 year	11 (22%)	12 (24%)	0.890	3	0.828
	b) 1-3 years	14 (28%)	16 (32%)			
	c) 4-6 years	11 (22%)	12 (24%)			
	d) >6 years	14 (28%)	10 (20%)			
9.	Duration of taking AEDs					
	a) <1 year	11 (22%)	12 (24%)	0.890	3	0.828
	b) 1-3 years	14 (28%)	16 (32%)			
	c) 4-6 years	11 (22%)	12 (24%)			
	d) >6 years	14 (28%)	10 (20%)			
10.	Drugs that are currently taken					
	a) Carbamazepine	40 (80%)	38 (76%)	0.764	4	0.96
	b) Valproic acid	42 (82%)	32 (64%)			
	c) Levipril	36 (72%)	40 (80%)			
	d) Fresium	34 (68%)	34 (68%)			

11.	Previous knowledge regarding AEDs					
	a) Yes	32 (64%)	34 (68%)	0.045	1	0.832
	b) No	18 (36%)	16 (32%)			
12.	Source of information regarding antiepileptic drugs					
	a) Mass media (T.V, newspaper)	0 (0%)	1 (2%)	2.712	2	0.258
	b) Friends	0 (0%)	0 (0%)			
	c) Family	0 (0%)	1 (2%)			
	d) Healthcare professionals	32 (64%)	32 (64%)			

Table 2 shows that in interventional group, the pre- test knowledge score was 8.40 ± 2.94 and the post- test knowledge score was 18.56 ± 1.88 which was statistically significant at $p < 0.001$ level. This shows that there was a significant increase in the level of knowledge in interventional group after advanced teaching programme.

In comparison group, the pre- test knowledge score was 8.44 ± 3.85 and the post- test knowledge score was 13.18 ± 2.60 which was statistically significant at $p < 0.01$ level. This shows that there was a significant increase in the level of knowledge in comparison group after traditional teaching.

Table 3. Comparison Of Post-test Knowledge Score Between The Interventional And Comparison Group N=100

Group	Mean± S.D	Range	Mean Diff.	't' value	df	P value
Post-test knowledge score in interventional group	18.56± 1.886	13-22	5.40	11.84	98	0.000***
Post-test Knowledge score in comparison group	13.18± 2.601	9-19				

***Statistically Significant, at $p < 0.001$ level of significance
Maximum=22 Minimum=0

In interventional group, post- test knowledge score was 18.56 ± 1.88 and in the comparison group post- test knowledge score was 13.18 ± 2.60 which was statistically significant at $p < 0.001$ level. This shows that there was a significant increase in the mean knowledge in interventional group as compared to comparison group.

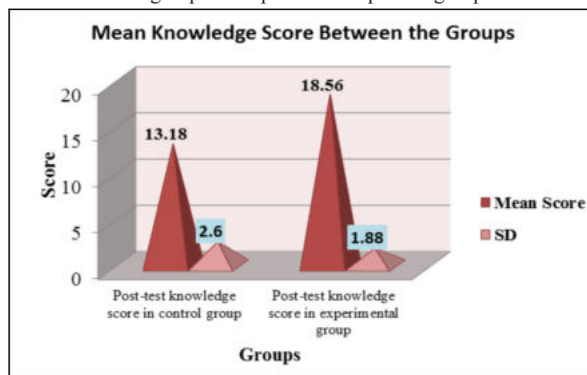


Fig 1: Pyramid bar diagram showing the mean score and SD of post-test knowledge score of patients with epilepsy (PWE) between the experimental and control group

Hypothesis Testing:

Research hypothesis H_1 is accepted concluding that advanced teaching programme is effective in increasing the level of knowledge as compared to traditional teaching regarding Anti-epileptic drugs among patients with epilepsy.

Table 4. Comparison Of Pre-test And Post-test Drug Compliance Score Within The Interventional Group And Comparison Group**N=100**

Group	INTERVENTIONAL GROUP (50)					COMPARISON GROUP (50)				
	Mean ±S.D	Range	Test value	Df	p value	Mean ±S.D	Range	Test value	Df	p value
Pre-test drug compliance score	4.80± 1.761	1-7	15.0 0	49	0.000 ***	4.92±1. 70	1-8	10.66	49	0.00* *
Post-test drug compliance score	1.50± 0.678	1-4				2.48±0. 90	1-4			

***Statistically Significant at 0.001 level of significance
Maximum=8 Minimum=0

In interventional group, pre- test drug compliance score was 4.80±1.76 and the post- test drug compliance score was 1.50±0.67 which was statistically significant at $p < 0.001$ level where as in comparison group pre- test drug compliance score was 4.92±1.70 and the post- test drug compliance score was 2.48±0.90 which was statistically significant at $p < 0.001$ level. This shows that there was a significant higher drug compliance in interventional group after advanced teaching programme and also in comparison group, after traditional teaching.

Table 5. Comparison Of Post-test Drug Compliance Score Between The Interventional And Comparison Group**N=100**

Group	Mean±S.D	Range	Mean Diff.	't' value	df	P value
Post-test drug compliance score in interventional group	1.50±0.67	1-4	0.98	6.11	98	0.000***
Post-test drug compliance score in comparison group	2.48±0.90	1-4				

***Statistically Significant, at $p < 0.001$ level of significance
Maximum=8 Minimum=0

In interventional group, the drug compliance score was 1.50±0.67 and in comparison group, the drug compliance score was 2.48±0.90, which was statistically significant at $p < 0.001$ level. This shows that there was a significant high drug compliance in interventional group as compared to comparison group.

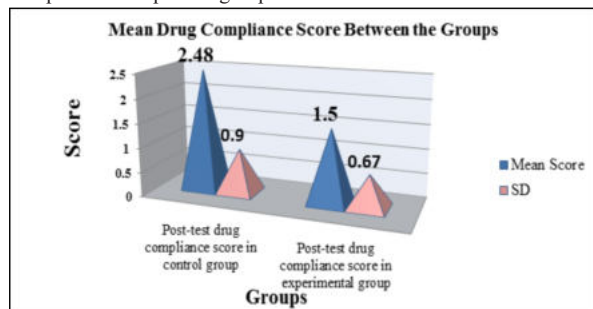


Fig 2: Pyramid bar diagram showing the mean score and SD of post-test level of drug compliance score of patients with epilepsy (PWE) between experimental and control the group.

Hypothesis Testing:

Research hypothesis H_2 is accepted concluding that advanced teaching programme is effective in increasing the level of drug compliance as compared to traditional teaching regarding Anti-epileptic drugs among patients with epilepsy.

MAJOR FINDING AND DISCUSSION

The major findings of the study were that although the mean post-test knowledge and drug compliance scores of both interventional and comparison group were higher than their respective pre-test knowledge and drug compliance scores but the mean post-test knowledge score 18.56±1.88 and drug compliance score 1.50±0.67 in interventional group was higher than mean post-test knowledge score 13.18±2.60 and drug compliance score 2.48±0.90 in comparison group.

The result of present study is in congruence with the result of a study done by **Wehedy EI et al (2016)** conducted a study to assess the effect of educational sessions for epileptic children mothers on their knowledge, adherence to Anti-epileptic drugs and seizure severity among their children. This study concluded that after intervention 44% of mothers have good knowledge and 95%-98% become adherent to drug administration and severity levels of seizure were also decreased. 91% of mothers reported that forgetfulness is the major cause of non-adherence to Anti-epileptic drugs.¹³

CONCLUSION

Advanced teaching programme on Anti-epileptic drugs is effective in increasing knowledge and drug compliance among patients with epilepsy.

Limitations

The study was small scale and confined to a specific area of setting which affects the generalization of the study findings.

REFERENCES

1. Fisher RS et al. ILAE official report: a practical clinical definition of epilepsy. *Epilepsia*. 2014 April; 55(4):475-482 Doi: 10.1111/ep.12550. PMID 24730690
2. Epilepsy Foundation. What is seizure. [Internet]. 2018 [cited 2018 Aug 12]. Available from: <https://www.epilepsy.com/learn/what-is-seizure>
3. Berkovic SF et al. Human epilepsies: interaction of genetic and acquired factors. *Trends in Neurosciences*. 2016; 29(7):391-397 Doi: 10.1016/j.tins.2006.05.009 PMID 16769131
4. World Health Organization. Epilepsy fact sheets. [Internet]. Feb 2019 [cited 2018 Aug 12]. Available from: <https://www.who.int/news-room/fact-sheets/detail/epilepsy>
5. Amudhan S et al. Epilepsy India I: Epidemiology and public health. *An Indian Acad Neurol* 2015; 18(3):263-277
6. Newton CR, Garcia HH. Epilepsy in poor regions of the world. *Lancet*. 2012 Sep; 380(9848):1193-1201
7. Vineetha JR. A study to determine the drug compliance among people with epilepsy attending the follow up clinic of SCTIMST (Phd Thesis). Sreechitra Tiruvandam for Institute of Medical Sciences and technology. 2011
8. Das MA et al. Barriers of drug adherence among patients with epilepsy: In tertiary care hospital. *Journal of caring sciences*. 2018 Dec; 7(4):177-181 Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6311624/>
9. Stacy K et al. Assessment of knowledge of epilepsy in epileptic patients attending tertiary care center. *International Journal of pharmacy and pharmaceutical sciences*. 2014; 6(7):64-67 Available from: <https://innovareacademics.in/journals/index.php/ijpps/article/view/1197>
10. Mutabazi P. Exploration of knowledge, attitudes and practices among family caregivers towards epileptic patients. *International Journal of sciences: Basic and applied research*. 2014; 13(2):140-146 Available from: <https://pdfs.semanticscholar.org>
11. Dash D et al. impact of health education on drug adherence and self care in people with epilepsy with low education. *Epilepsy ad behviour*. 2015; 44(3):213-217 Available from: <https://doi.org/10.1016/j.yehbeh.2014.12030>
12. Wehedy EI et al. Educational sessions for epileptic children mothers on their knowledge, adherence to Anti-epileptic drugs and seizure severity among their children. *Journal of Nursing and Health Science*. 2016; 5(5):81-89