

Effectiveness of multifaceted intervention on adherence, knowledge regarding side effects of drug, and prevention of complications among epilepsy patients in a selected hospital

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Abstract

Introduction: Adherence to treatment, side effects of epileptic drug, and complications of epilepsy are the major health problems faced by epileptic persons throughout the world. **Objective:** The study was undertaken with the objective of assessing the effectiveness of multifaceted intervention on adherence to treatment and knowledge regarding side effects to epileptic drug and prevention of complications of epilepsy among the patients with epilepsy. **Methods and Materials:** Pre experimental one group pretest and posttest design were adopted. Morisky medication taking adherence scale and a structured knowledge questionnaire was used to collect the data. A sample of 60 epileptic patients was selected by non-probability purposive sampling technique. **Results:** Majority of the epileptic patients had moderate level of adherence to the treatment and knowledge regarding side effects and prevention of complications of epilepsy. There was significant difference between the mean pre-test and posttest score of adherence to treatment and knowledge regarding side effects to epileptic drug and prevention of complications of epilepsy among patients with epilepsy. There was no correlation ($r = .022$) between the adherence to treatment and the knowledge regarding side effects and prevention of complications of epilepsy among patients with epilepsy. The knowledge was significantly associated with educational status (7.892, $df=3$) at 5% level ($p < .05$). **Conclusion:** Based on the above findings, the present study concluded that multifaceted interventions have an immense effect on improving adherence and knowledge regarding side effects, and prevention of complications of epilepsy.

Keywords: Multifaceted interventions, Adherence to treatment, Knowledge, Side effects, Epilepsy, Complications

Introduction

Epilepsy is a chronic disorder, which is characterized by recurrent seizures and knows no geographical, racial, or social boundaries. Global prevalence of epilepsy varies from 2.8 to 19.5 per 1,000 population. Epilepsy is more prevalent among children (Giuliano, et al., 2006). Effectiveness of therapy depends on medication adherence (Ogboi, Babajide, Ademola,

Olabunmi, & Agu, 2011). An understanding of patient behaviour along with wealth factors may influence taking medication. It is crucial to understand how to change the patient behaviour, which will further help to improve the adherence of medication (Horne, et al., 2005).

It is important to initiate treatment, once epilepsy is diagnosed. With modern medicines and surgical techniques, seizures can be controlled among about 80% of patients diagnosed with epilepsy (Cascino, 1994). Vagus nerve stimulator does not eliminate the need for the medication, but it can help reduce the risk of complications from severe or repeated seizures (Staven & Susan, 2011).

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Status epilepticus is a medical emergency and its management centres on stopping the seizure activity and preventing the occurrence of systemic complications. The other complication includes difficulty in learning, permanent brain damage, and aspiration pneumonia (Lewis, Heilkemper, Birksen, O'Brien, & Bucher, 2011).

In India, epilepsy is relatively a severe problem. Only 10% of people in rural India and 60% people in urban India consult a doctor after suffering a seizure. Epileptic patients need to take long term treatment, may be around two years, therefore the adherence to medications is very poor. Once the patients are seizure free for a few days, they discontinue taking medication until they suffer another episode (Kounteya, 2012). When a person with epilepsy has to manage his or her condition, may require overcoming many challenges. The seizures may cause some injury and, in some cases, death. Epilepsy treatment has its own drawbacks. Patients may experience side effects as well as complications (WHO, 2010).

Materials and Methods

The research design adopted for the study was Pre Experimental- One group pretest and posttest design. The study was carried out in Abhaya Hospital, Bangalore, a multispecialty hospital with 75 bed capacity. Samples were the patients who visited OPD and admitted the hospital. Non-probability purposive technique was used for selecting the study samples. The tools used for data collection were demographic profile, Morisky medication taking adherence scale, and structured interview schedule. Morisky medication taking adherence scale was used for assessing the adherence to treatment among patients with epilepsy. Scale was self-reported which consisted of eight items. A score scheme of "Yes" = 0 and "No" = 1. The items were summated to give a range of score from 0 to 8. Point 8 given for High adherence, 6 to below 8 for Average adherence and below 6 for Poor adherence.

A structured knowledge questionnaire was used with 26 items to assess the knowledge level of the sample. Score "1" was awarded for the correct response and "0" for the wrong response. Thus maximum possible score was 26. The scores were distributed as to interpret the level of knowledge, for inadequate knowledge score range was below 50%, for moderate knowledge

score range was between 50 and 75%, and for adequate knowledge score range was more than 70%.

The content validity of structured questionnaire and the Morisky medication taking adherence scales were established by submitting to five experts. The reliability (internal consistency) of the tools was established through split half method. The reliability of Morisky medication taking adherence scale was $r = 0.86$ and for the structured knowledge questionnaires was $r = 0.82$, tools were considered reliable. A pilot study was conducted among six subjects. The finding from the pilot study revealed the feasibility of the tool and practicability of the study. The ethical aspects of the research were maintained by getting formal permission from the medical authorities and consent from each sample.

Multifaceted intervention was given by the investigator through cognitive approach to improve memory and behavioural approach to improve to modify the act of learning multifaceted intervention. On the First day pretest was conducted followed by multifaceted intervention through cognitive approach provided through calendar method. Calendar method consisted of name of medication, day, time, and dose. The patients were asked to follow the medication pattern according to the calendar method for seven days. Teaching regarding the side effect of epileptic drug and complication of epilepsy through flash card was done for 25 minutes. On the second day, the behavioural approach was provided through motivation by giving incentive and counseling the patient for 25 minutes. On 3rd, 4th, and 5th day, reinforcement was provided with the help of a ward sister. On the 7th day, posttest was conducted.

Results

Sample characteristics

With regard to gender majority 45(75%) were males and only 15(25%) were females. With respect to religion, majority 44(73.3%) were Hindus, 13 (21.7%) were Christian and only 3 (5%) were Muslim. With regard to educational status, majority 28 (46.7%) of the patients had PUC level education, 22 (36.7%) of the patients had secondary education and 5 (8.3%) of the patients had both equally primary education and Degree level education. About the duration of using epileptic drugs, 27(45%) of the patients were taking epileptic drugs

for 6 months, 23(38.3%) of the patients were taking epileptic drugs for 12 months, 8(13%) of the patients were taking epileptic drugs for 18 months and 2(3.3%) of the patients were taking epileptic drugs for above 18 months.

Adherence to treatment

In the pretest, all 100% of patients had poor adherence to treatment whereas in posttest 66.77% of them had average level of adherence to treatment (Table 1)

Table 1:
Pre and Post - Test Level of Adherence to Treatment

Level of adherence to treatment (Max. possible score is 8)	Pretest (n = 60)		Posttest (n = 60)	
	f	%	f	%
Poor (score<6)	60	100	-	-
Average (score within 6-7)	-	-	40	66.7
High (score is 8)	-	-	20	33.3

The Table 1: shows the Frequency and Percentage distribution of patients with epilepsy according to pre and posttest level of adherence to treatment.

Table 2:
Pre and Posttest Level of Knowledge Patients with Epilepsy.

Level of knowledge	Pretest (n = 60)		Posttest (n = 60)	
	f	%	f	%
Inadequate knowledge (<50%)	18	30.0	-	-
Moderately adequate knowledge (50-75%)	38	63.3	5	8.3
Adequate knowledge (>75%)	4	6.7	55	91.7

The Table 2, shows that in pretest 38 (63.3%) the patients had moderately adequate knowledge whereas in posttest 55 (91.7%) had adequate knowledge.

Table 3:
Pre and Posttest Level of Adherence Patients with Epilepsy to Treatment

Adherence to treatment	Range	Mean \pm SD	Mean Percentage
Pretest (n = 60)	1-5	2.93 \pm 1.28	36.3
Posttest (n = 60)	6-8	7.27 \pm 0.57	90.8

Data presented in Table 3 shows that in the pretest the mean adherence score was 2.93 with SD of 1.28, whereas in posttest it was 7.27 with SD of 0.57.

Table 4:
Area Wise Level of Knowledge of Patients with Epilepsy Before and After Multifaceted Intervention

Knowledge	Max. Score	Pretest (n = 60)			Posttest (n = 60)		
		Mean	SD	Mean percentage	Mean	SD	Mean Percentage
General information	4	2.25	0.87	56.3	3.88	0.37	97.0
Effects of epileptic drug	11	5.80	1.54	52.7	8.60	1.07	78.2
Prevention of complications of epilepsy	11	6.55	1.99	59.5	8.95	0.96	81.4
Over all	26	14.60	3.36	56.1	21.43	1.58	82.5

The Table 4 shows the Range, Mean, SD, and Mean percentage of the pre and posttest level of knowledge before and after multifaceted intervention.

Table 5:
Paired t-test analysis for the significance of pre and posttest adherence to treatment among patients with epilepsy

Variable	Max. Score	Mean difference	SD of difference	percentage of mean difference	Paired t value	p value
Adherence to treatment	8	4.33	1.13	54.1	29.76*	p <.0.05

Note: * denotes significant at 0.05 level at 59 df (i.e., $p < .05$)

Table 5 Shows Paired t test analysis for the significance of pre and posttest adherence to treatment among patients with epilepsy.

Table 6:

Paired t test Analysis for the Significance of Pre and Posttest Knowledge

Aspects of knowledge	Max. Score	Mean difference	SD of difference	Percentage of mean difference	Paired t value	p value
General information	4	1.63	.86	40.7	14.66*	$p < .05$
Effects of epileptic drug	11	2.80	1.58	25.4	13.71*	$p < .05$
Prevention of complications of epilepsy	11	2.40	1.92	21.8	9.66*	$p < .05$
Over all	26	6.83	2.91	26.3	18.17*	$p < .05$

Note: * denotes significant at 0.05 level at 59 df (i.e., $p < .05$)Table 6 shows the paired *t* test analysis for the significance of pre and posttest Knowledge.

Table 7:

Correlation between Pre Intervention Adherence to Treatment and Knowledge Regarding Side Effects and Prevention of Complication of Epilepsy

Variables	Mean \pm SD	<i>r</i>	<i>p</i> value
Adherence to treatment	2.93 \pm 1.28	.022 ^{NS}	$p > .05$
Knowledge	14.60 \pm 3.36		

Note: NS- denotes not significant at 5% level (i.e., $p > .05$).

Measure strength of the relationship between two variables is provided by the coefficient of correlation, which is denoted by '*r*'. The above table 7 shows that there is no correlation between pre intervention adherence to treatment and knowledge regarding side effect and prevention of complication of epilepsy.

Discussion

The present study was conducted to assess the effectiveness of multifaceted intervention on adherence to treatment and knowledge regarding side effects to epileptic drug and prevention of complications of epilepsy among patients with epilepsy in a selected hospital. The findings of the study were consistent with the study which was conducted to evaluate the association of non-adherence to antiepileptic drugs and seizures, quality of life, and productivity. A cross-sectional online survey was conducted among adult patients with epilepsy. The coefficient of correlation between overall adherences to treatment vs. knowledge was 0.22. There was no correlation and the *p* value obtained was more than .05, hence it was considered that there was significant difference found between the overall adherence to treatment and knowledge regarding the side effects to epileptic drug and prevention of complications of epilepsy among patients with epilepsy.

Conclusion

The present study concluded that the multifaceted interventions have an immense effect on improving

the adherence to treatment and knowledge regarding the side effects and prevention of complications of epilepsy.

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