

Original Article

Evaluation of the Effectiveness of Structured Teaching Programme on Knowledge regarding First Aid Management of Epilepsy among Primary School Teachers

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ABSTRACT

Background and Objectives Children and youth represent one of the fastly growing populations affected by epilepsy, which is the most common childhood neurologic condition. The clinical spectrum of children and youth with epilepsy

(CYE) varies as some forms of epilepsy can have dramatic effects on brain development in early childhood and lead to poor functioning later in life. The aim of the study was to evaluate the effectiveness of structured teaching programme on knowledge regarding first aid management of epilepsy among primary school teachers.

Materials and Methods: A pre-experimental one group pre-test and post-test design was used for the study. A quantitative pre experiment method was used for this study. The sample consists of 60 primary school teachers of selected schools, Bangalore. They were chosen by a non-probability purposive sampling technique. A structured knowledge questionnaire was used to collect the data from the subjects. The obtained data was analyzed by using descriptive and inferential statistics and interpretation in terms of objectives and hypothesis of the study. The level of significance was set at 0.05 levels.

Results: In the pre-test, majority of the respondents had inadequate knowledge with mean knowledge score of 43.2 % where as in post-test there was a significant gain in mean

knowledge score of 85.3%. A significant association was found between demographic variables at 5% level of significance, the study shows there is the significant association of pre-test knowledge level with the demographic variables of respondents on Gender, marital status, Educational status, Know about first aid management of Epilepsy, teaching experience to an epileptic child, Experience in helping the epileptic child, ever observed student with epileptic attack in class room ($P < 0.05$). Further, not significant association between the knowledge level found with age, religion, teaching experience, sources of information ($p > 0.05$) at 5% of significant level.

Conclusion: The finding of the study shows that in the pre-test, majority of the primary school teachers had inadequate knowledge regarding first aid management of epilepsy where as in post-test majority of teachers had gained adequate knowledge after administration of structured teaching programme. The structured teaching programme was effective in enhancing the knowledge regarding first aid management of epilepsy among primary school teachers working in selected schools, Bangalore.

Keywords: Epilepsy, structured teaching programme, pre-experimental study, one group pre-test post-test design.

INTRODUCTION

Major health concern for modern times that has developed due to social and cultural change, the spread of urbanization, changes in dietary patterns, reduction in physical activity, and unhealthy lifestyle patterns [1]. Epilepsy is a chronic disorder of the brain that affects people of all ages. Approximately 50 million people worldwide have epilepsy, making it one of the most common neurological diseases globally. Nearly 80% of the people with epilepsy live in low- and

middle-income countries. People with epilepsy respond to treatment approximately 70% of the time. About three fourths of people with epilepsy living in low- and middle- income countries do not get adequate treatment they need. In many parts of the world, people with epilepsy and their families suffer from stigma and discrimination [2]. About 0.5 to 1 million new cases are added each year to the already existing large numbers in India – increasing the societal burden due to epilepsy [3].

WHO states "Epilepsy is also one of the oldest conditions known to mankind" [4]. A seizure occurs when a large number of the cells send out an electrical charge at the same time. This abnormal and intense wave of electricity overwhelms the brain and results in a seizure, which can cause muscle spasms, a loss of consciousness, strange behaviour, or other symptoms [5]. The clinical spectrum of children and youth with epilepsy (CYE) varies as some forms of epilepsy can have dramatic effects on brain development in early childhood and lead to poor functioning later in life [6-8]. As per WHO, 3 out of 4 people in the world with epilepsy do not receive treatment at all, mainly due to economic and social reasons [3].

Seizure can be disruptive to the process of normal life. Depression is common due to impaired social acceptance. Epilepsy there is often an association with reduced language skills language deficits may present with a wide variety of symptoms ranging from odd patterns of speech to complete aphasia of speech [9].

Teachers may employ strategies to accommodate and encourage a student with

epilepsy. It is a good to educate the child's teacher and other school personnel about your child's epilepsy. WHO play a role in supporting students with epilepsy and ensuring their safety. Most teachers are not always well informed about epilepsy. However, they need to be informed about epilepsy and how it affects the child in order to provide adequate support, help the child's healthy adjustment in the classroom, including healthy peer interactions. Teachers also play an important part in ensuring the child's safety, not only in the classroom but in the playground, on school trips, and during sporting activities. A knowledgeable and supportive teacher will potentially reduce your anxiety and hopefully prevent minor crises in children [10]. Therefore, the aim of the study was to evaluate the effectiveness of structured teaching programme on knowledge regarding first aid management of epilepsy among primary school teachers.

MATERIALS AND METHODS

Study design

The research design used in this study was pre-experimental one group pre-test and post-test design. In pre-experimental design, the investigators selected the sample by purposive sampling technique. In this study the base measure was structured knowledge questionnaire which was used to assess the knowledge regarding first aid management of epilepsy among primary school teachers working in selected schools, Bangalore.

Study settings

This study was conducted the study in selected school i.e. Lakshmi Memorial English High School, Shree Saraswathi Vidyalaya

Primary School, Royal Public high School of Bangalore in 2020 AD. The criteria for selection of the setting are the availability of subjects, feasibility of conducting the study. In this study, all the primary school teachers who have fulfilled the inclusion criteria were considered as sample and sample size was 60. Ethical clearance letter was obtained from Faran college of Nursing, Bangalore dated on 20-2-2020.

Sampling technique

Non- probability purposive sampling technique was used. Permission to conduct the study was obtained from concerned authorities of the respective schools and data was collected based on inclusion and exclusion criteria.

Scoring and interpretation

The questions were phrased with multiple choice questions with maximum four distracters and one correct answer. Each correct answer was given a score of "1" mark and each wrong answer was given the score of "0". Thus, the maximum possible score of structured knowledge questionnaire was 30. The resulting knowledge score ranged as follows:

Knowledge score	No. of items	Percentage
Adequate knowledge	21- 30	76-100%
Moderate knowledge	11- 20	51-75%
Inadequate knowledge	1-10	< 50%

Statistical Analysis

The collected data were organized, tabulated, analysed and interpreted using descriptive and inferential statistics. The level of significance for all inferential statistics was set at 0.05 level of significance.

RESULTS

Table 1 depicts the classification of respondents by their age in years and gender. The finding indicate that majority 22 (36.6%) of the respondents belongs to the age of 31-40 years, 22 (36.6%) of the respondents belongs to 41-50 years and remaining 16

(26.7%) of the respondents belongs to 21-30 years with relation to gender majority of samples 50 (83.3%) were female and 10 (16.7%) were male. Majority 54 (90%) of the respondents are married and remaining 6 (10.0%) of the respondents are unmarried with relation to majority of respondents 43 (71.7%) are graduate and other remaining respondents 17 (28.3%) are post graduate. Majority of respondents 31 (51.7%) were Hindu, 15 (25.0%) of respondents were Muslim and remaining 14 (23.3%) of respondents were Christian with the respect

Table 1: Socio-Demographic data of respondents (N=60)

Characteristics	Category	Respondents	
		Number	Percent
Age group (years)	21-30	16	26.7
	31-40	22	36.6
	41-50	22	36.6
Gender	Male	10	16.7
	Female	50	83.3
Total		60	100.0
Marital status	Married	54	90.0
	Unmarried	6	10.0
Educational Qualification	Graduate	43	71.7
	Post graduate	17	28.3
Total		60	100.0
Religion	Hindu	31	51.7
	Christian	14	23.3
	Muslim	15	25.0
Teaching Experience	< 5 years	22	36.7
	5-10 years	22	36.7
	11-15 years	16	26.6
Total		60	100.0

Table 2: Response on first aid management and source of information on epilepsy (N=60)

Aspects	Category	Respondents	
		Number	Percent
Know about first aid management of Epilepsy	Yes	41	68.3
	No	19	31.7
Source of information on Epilepsy	Mass media	28	46.7
	Health professional	23	38.3
	Colleagues	9	15.0
Total		60	100.0

to teaching experience 22 (36.7%) of the respondents were 5-10 years similar to <5years and 16 (26.6%) of the respondents were 11-15 years teaching experience.

Table 2 illustrates that the out of 60 respondents 41 (68.3%) had known about first aid management of epilepsy and other rest of 19 (31.7%) respondents had not known about first aid management of epilepsy with the aspects of sources of information on epilepsy whereas 28 (46.7%) have got from mass media, 23 (38.3%) have got from health professional and other remaining respondents 9 (15%) have got from colleagues.

Table3 shows that out of 60 respondents 42 (70%) have no teaching experience to an epileptic child whereas 18 (30%) have teaching experience to an epileptic child

with aspects of experience in helping the epileptic child 40 (66.7%) do not have any experience whereas 20 (33.3%) respondents have experience with relation to ever observed student with epileptic attack in class room 42 (70%) of the respondents never seen and other rest 18 (30%) of the respondents are seen.

Table 4 depicts that in pre-test out of 60 (100%) respondents, 41 (68.3%) subjects have inadequate knowledge level, 19 (31.7%) subjects have moderate knowledge level and none had adequate knowledge regarding epilepsy and its first aid management.

Table 3: Response on teaching experience, helping and observed student with epileptic attack (N=60)

Aspects	Category	Respondents	
		Number	Percent
Teaching experience to an epileptic child	Yes	18	30.0
	No	42	70.0
Experience in helping the epileptic child	Yes	20	33.3
	No	40	66.7
Ever observed student with epileptic attack in class room	Yes	18	30.0
	No	42	70.0
Total		60	100.0

Table 4: Classification of respondent pre-test knowledge level on first aid management of epilepsy (N=60)

Knowledge Level	Category	Respondents	
		Number	Percent
Inadequate	≤ 50 % Score	41	68.3
Moderate	51-75 % Score	19	31.7
Adequate	> 75 % Score	0	0.0
Total		60	100.0

Table 5: Aspect wise pre-test mean knowledge scores of respondents on first aid management of epilepsy (n=60)

No.	Knowledge Aspects	Statements	Max. Score	Knowledge Scores			
				Mean	SD	Mean (%)	SD (%)
I	General concept	4	4	1.82	0.93	45.4	23.2
II	Knowledge on Epilepsy	5	5	2.23	1.00	44.7	20.0
III	Causes, Sign and symptoms	7	7	2.72	1.18	38.8	16.9
IV	Diagnosis and Management	4	4	1.83	0.85	45.8	21.2
V	Preventive measure and First aid management	10	10	4.35	1.72	43.5	17.2
	Combined	30	30	12.95	2.97	43.2	9.9

Table 6: Classification of respondents of post-test knowledge level on first aid management of epilepsy (n=60)

Knowledge Level	Category	Respondents	
		Number	Percent
Inadequate	≤ 50 % Score	0	0.0
Moderate	51-75 % Score	18	30.0
Adequate	> 75 % Score	42	70.0
Total		60	100.0

Table 7: Aspect wise post-test mean knowledge scores of respondents on first aid management of epilepsy (N=60)

No.	Knowledge Aspects	Statements	Max. Score	Knowledge Scores			
				Mean	SD	Mean (%)	SD (%)
I	General concept	4	4	3.57	0.56	89.2	14.1
II	Knowledge on Epilepsy	5	5	4.12	0.90	82.3	18.1
III	Causes, Sign and symptoms	7	7	6.05	0.93	86.4	13.3
IV	Diagnosis and Management	4	4	3.43	0.74	85.8	18.6
V	Preventive measure and First aid management	10	10	8.42	1.25	84.2	12.5
	Combined	30	30	25.58	3.13	85.3	10.4

Table 5 reveals that the aspects wise pre-test mean knowledge score of respondents regarding first aid management of epilepsy. The highest pre-test mean score 45.8% was gained by respondent regarding diagnosis and management, 45.7% in general concept, 44.7% in knowledge on epilepsy, 43.5% was gained regarding preventive measure and first aid management, 38.8% was gained by

respondent regarding causes and sign and symptoms of epilepsy.

Table 6 shows that in post-test out of 60 (100%) respondents where as in post-test the majority that is 42 (70%) had adequate knowledge, 18 (30%) had moderate knowledge regarding first aid management of epilepsy.

Table 8: comparison of overall pre-test and post-test mean knowledge scores on first aid Management of epilepsy (N=60)

Aspects	Max. Score	Knowledge Scores				Paired 't' Test
		Mean	SD	Mean (%)	SD (%)	
Pre test	30	12.95	2.97	43.2	9.9	26.30*
Post test	30	25.58	3.13	85.3	10.4	
Enhancement	30	12.63	3.71	42.1	12.4	

* Significant at 5% level, t (0.05, 59df) = 1.96

Table 9: comparison aspect wise mean pre-test and post-test knowledge scores on first aid management of epilepsy (n = 60)

No.	Knowledge Aspects	Respondents Knowledge (%)						Paired 't' Test
		Pre test		Post test		Enhancement		
		Mean	SD	Mean	SD	Mean	SD	
I	General concept	45.4	23.2	89.2	14.1	43.8	27.5	12.34*
II	Knowledge on Epilepsy	44.7	20.0	82.3	18.1	37.7	23.6	12.38*
III	Causes, Sign and symptoms	38.8	16.9	86.4	13.3	47.6	22.6	16.31*
IV	Diagnosis and Management	45.8	21.2	85.8	18.6	40.0	24.0	12.91*
V	Preventive measure and First aid management	43.5	17.2	84.2	12.5	40.7	19.0	16.59*
	Combined	43.2	9.9	85.3	10.4	42.1	12.4	26.30*

* Significant at 5% level, t (0.05, 59df) = 1.96

Table 10: Classification of respondents on pre-test and post-test knowledge level on first aid management of epilepsy (n=60)

Knowledge Level	Category	Classification of Respondents				χ ² Value
		Pre test		Post test		
		N	%	N	%	
Inadequate	≤ 50 % Score	41	68.3	0	0.0	83.03*
Moderate	51-75 % Score	19	31.7	18	30.0	
Adequate	> 75 % Score	0	0.0	42	70.0	
Total		60	100.0	60	100.0	

* Significant at 5% level, χ² (0.05, 2df) = 5.991

The aspect wise post-test mean knowledge score of respondents regarding first aid management of epilepsy. The highest post-test mean knowledge score of respondent 89.2% knowledge was gained by respondent regarding general concept on epilepsy, 86.4% was gained in causes, sign and symptoms, 85.8% gained in diagnosis and management,

84.2% respondent was gained mean knowledge score in preventive measure and first aid management and 82.3% was gained in knowledge on epilepsy as shown in table 7.

Table 8 shows the mean post-test knowledge score was 85.3% and the mean pre-test knowledge score was 43.2%. When a paired' test was done, the obtained' value 26.30 was found to be significant.

Table 9 shows the obtained 't' value was 12.34 which is found to be significant at 0.05 level (t=1.96). Regarding knowledge on epilepsy the obtained 't' value was 12.38 which was found to be significant (t=1.96). In the knowledge aspect of causes, sign and symptoms the obtained 't' value was 16.31 which is found to be significant (t=1.96). Regarding diagnosis and management,

obtained 't' value was 12.91 which is found to be significant (t=1.96). Regarding preventive measure and first aid management, obtained 't' value was 16.59 which was found to be significant (t=1.96) and overall combined knowledge aspect the obtained "t" value was 26.30 which was found to be significant (t=1.96).

Table 11: Association between demographic variables and pre-test knowledge level on first aid management of epilepsy (N=60)

Demographic Variables	Category	Sample	Knowledge Level				χ ² Value	P Value
			Inadequate		Moderate			
			N	%	N	%		
Age group (years)	21-30	16	11	68.8	5	31.2	1.68	P>0.05 (5.991)
	31-40	22	17	77.3	5	22.7		
	41-50	22	13	59.1	9	40.9		
Gender	Male	10	10	100.0	0	0.0	5.56*	P<0.05 (3.841)
	Female	50	31	62.0	19	38.0		
Marital status	Married	54	39	72.2	15	27.8	3.97*	P<0.05 (3.841)
	Unmarried	6	2	33.3	4	66.7		
Educational qualification	Graduate	43	26	60.5	17	39.5	4.34*	P<0.05 (3.841)
	Post graduate	17	15	88.2	2	11.8		
Religion	Hindu	31	20	64.5	11	35.5	3.35	P>0.05 (5.991)
	Christian	14	8	57.1	6	42.9		
	Muslim	15	13	86.7	2	13.3		
Teaching experience	< 5 years	22	17	77.3	5	22.7	1.89	P>0.05 (5.991)
	5-10 years	22	15	68.2	7	31.8		
	11-15 years	16	9	56.3	7	43.7		
Know about first aid management of Epilepsy	Yes	41	24	58.5	17	41.5	5.74*	P<0.05 (3.841)
	No	19	17	89.5	2	10.5		
Source of information on Epilepsy	Mass media	28	20	71.4	8	28.6	0.24	P>0.05 (5.991)
	Health professional	23	15	65.2	8	34.8		
	Colleagues	9	6	66.7	3	33.3		
Teaching experience to an epileptic child	Yes	18	9	50.0	9	50.0	3.99*	P<0.05 (3.841)
	No	42	32	76.2	10	23.8		
Experience in helping the epileptic child	Yes	20	10	50.0	10	50.0	4.66*	P<0.05 (3.841)
	No	40	31	77.5	9	22.5		
Ever observed student with epileptic attack in class room	Yes	18	9	50.0	9	50.0	3.99*	P<0.05 (3.841)
	No	42	32	76.2	10	23.8		
Combined		60	41	68.3	19	31.7		

* Significant at 5% Level

Table 10 depicts that in pre-test out of 60 (100%) respondents, 41 (68.3%) subjects have inadequate knowledge level, 19 (31.7%) subjects have moderate knowledge and none had adequate knowledge regarding first aid management of epilepsy. Where as in post-test majority that is 42 (70%) had adequate knowledge and 18 (30%) had moderate knowledge and none had inadequate knowledge regarding first aid management of epilepsy.

The association between demographic variables and pre-test knowledge level on first aid management of epilepsy are as shown in Table 11. Therefore, there was association between gender, marital status, education qualification, first aid management of epilepsy, teaching experience to an epileptic child, experience in helping the epileptic child, ever observed student with epileptic attack in class room and knowledge of primary school teachers regarding first aid management of epilepsy. But, there was no association between religion, teaching experience, sources of information on epilepsy and knowledge of primary school teachers regarding first aid management of epilepsy.

DISCUSSION

The present study indicate that majority of sample 22 (36.6%) were in the age group of 31-40 years, followed by 22 (36.6%) were in the age group 41-50 years and remaining 16 (26.7%) were in the age group of 21-30 years. Regarding gender it was observed that majority of samples 50 (83.3%) were female and 10 (16.7%) were male.

Based on statement of know about first aid management of epilepsy that the out of 60 respondents, 41 (68.3%) have known about first aid management of epilepsy whereas 19 (31.7%) respondents have not known about first aid management of epilepsy with the aspects of sources of information on epilepsy out of 60 respondent 28 (46.7%) had heard about epilepsy from mass media, 23 (38.3%) had heard from health professional where as other remaining respondents 9 (15%) had heard it from colleagues. With regard to that out of 60 respondents 42 (70%) have no teaching experience to an epileptic child whereas 18 (30%) have teaching experience to an epileptic child with aspects of experience in helping the epileptic child 40 (66.7%) do not have any experience whereas 20 (33.3%) respondents have experience with relation to ever observed student with epileptic attack in class room 42 (70%) of the respondents never seen and other rest 18 (30%) of the respondents are seen.

It was observed that overall aspect wise pre-test knowledge score is 68.3% whereas post-test knowledge score is 85.3%. About 41% had inadequate knowledge score where as 31.7% had moderate knowledge score in pre-test. In post-test 30% had gain moderate knowledge score where as 70% had gain adequate knowledge score. The results are in accordance with a study conducted on Knowledge about Epilepsy among primary school teachers in selected primary schools at Chitradurga, Karnataka. During the pre-test 6% teachers said epilepsy is a contagious disease, 67% teachers said epilepsy is not a contagious disease and 27% of them did not know whether epilepsy is contagious or not. During the post-test, 80% of the teachers said

that epilepsy is not contagious, 15% said that epilepsy is contagious and 5% of the participants were still not aware whether epilepsy is contagious or not. In pre-test among 70 (70%) teachers said that they would allow their children play or sit in same class with epileptic child, 21 (21%) teachers said that they would not allow and 9 (9%) teachers did not know whether their children can mingle with an epileptic child but, during post-test 87% of them knew that they can allow their child to mingle with an epileptic child. 46% teachers said that they had performed first aid for epilepsy, 51% teachers said that they had not performed first aid and 3% said that they do not know about first aid management of epilepsy. The study concludes that overall aspect wise knowledge score of respondent regarding epilepsy was increasing in post-test than pre-test [11].

The mean post-test knowledge scores of primary school teachers after the administration of structured teaching programme was 85.3% and the difference between pre-test and post-test knowledge score was found statistically significant ($t=26.30$, $p<0.05$). The finding was supported by a study conducted on assess the knowledge regarding epilepsy in children among school teachers before and after the Structured Teaching Programme (STP) at Vijaynagar, Bangalore. This study result shows that the pre-test score 5 (8%) teachers had inadequate knowledge, 41(80%) had moderate knowledge and 4(12%) had adequate knowledge.

After structured teaching programme, the post test score all the subjects i.e. 50 (100%)

were under adequate knowledge category. The mean post test score 36.10 was higher than the mean pre-test score 25.38. The computed “t”value 23.321 indicated that there was a significant difference between pre-test and post-test knowledge score. This study revealed that the knowledge of teachers regarding epilepsy in children was inadequate and was increased after the administration of STP [12].

There was significant association between the pre-test knowledge score of primary school teachers regarding first aid management of epilepsy and their selected demographic variables on gender ($\chi^2= 5.56$), marital status ($\chi^2=3.97$), educational qualification ($\chi^2 = 4.34$), know about first aid management of epilepsy ($\chi^2 = 5.74$), teaching experience to an epileptic child ($\chi^2 = 3.99$), experience in helping the epileptic child ($\chi^2 = 4.66$), ever observed student with epileptic attack in class room ($\chi^2= 3.99$). The other demographic variables such as age, religion, teaching experience, sources of information did not show any significant association with pre-test knowledge score of primary school teachers regarding first aid management of epilepsy in 0.05 level of significance.

CONCLUSION

The majority of primary school teachers had inadequate understanding of first aid management of epilepsy in the pre-test, but the majority of teachers had acquired the necessary knowledge in the post-test. The structured training program was effective in improving knowledge of the primary school teachers' first aid and management of epilepsy knowledge.

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Author's Contribution

Involved in study design, data collection and analysis, involved in drafting all the drafts of manuscript-SS; reviewed literatures and drafted 2nd revision of manuscript-UY, RDP; Supervision, study design, 2nd draft and final revision of drafted revision of manuscript-SM. All authors read the final version of manuscript.

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