

Effect of Nursing Intervention on Improving Intellectual Education Teachers' Performance toward Students with Epilepsy

Samia Farouk

Community Health Nursing Department, Faculty of Nursing,
Zagazig University, Egypt.

*Correspondance:

Samia Farouk, Community Health Nursing Department, Faculty
of Nursing, Zagazig University, Egypt. farouk.samia@yahoo.com.

Received: 03 October 2017; Accepted: 22 October 2017

Citation: Samia Farouk. Effect of Nursing Intervention on Improving Intellectual Education Teachers' Performance toward Students with Epilepsy. Int J Nur Care. 2017; 1(5): 1-10.

ABSTRACT

Epilepsy is a major health problem frequently seen among intellectual schools. Students having seizures bother their teachers. The aim of this study was to evaluate the effect of nursing intervention on improving intellectual education teachers' performance toward students with epilepsy in Sharkia Governorate. A quasi-experimental design was used in this study. A purposive sample composed of 163 teachers from 13 intellectual schools working at least two years. Three tools were used: Tool (I): A self-administered questionnaire consisting of two parts: Part (A) was used to collect data pertaining to socio-demographic characteristics of the teachers. Part (B) involved questions regarding teacher's knowledge about epilepsy. Tool (II): An observational checklist to evaluate teacher's practices regarding management students with epilepsy. Tool (III): to assess attitudes of teachers toward students with epilepsy.

Results: *The most of studied teachers were married. Additionally, statistically significant improvements were detected in the teachers' knowledge, practices, and attitudes, from pre-sessions to immediately after and 3 months of post sessions where the total mean score of their knowledge increased from 9.61 ± 3.30 in pre-sessions, to 19.35 ± 1.73 immediately post sessions and 18.67 ± 2.61 , at 3 months of post sessions. The total mean score of their practices increased from 3.31 ± 5.081 pre-sessions to 26.72 ± 5.46 immediately post sessions and 24.83 ± 6.71 , at 3 months of post sessions. The total mean score of their attitudes increased from 13.62 ± 2.25 in pre-sessions, to 16.38 ± 1.83 immediately post sessions. Therefore, it is recommended that, in-service training educational sessions to be carried out periodically among all intellectual schools teachers'.*

Keywords

Epilepsy, Teachers, Intellectual education, Performance.

Introduction

Epilepsy is one of the most common secondary disabilities in students with mental retardation among intellectual schools; the prevalence is increasing with the severity of the intellectual disability. About 50% of those with profound learning disability and between 10 and 20% of those with mild disability have suffered from seizures at some time in life [1]. In the same line, epilepsy is one of the most common neurological disorders with a worldwide prevalence between 5 and 10 per 1000 [2]. Additionally, in Egypt, the prevalence was 6.98/1000 [3].

In Egypt, Mahmoud, [4] reported that seizures are the most frequent reason for visits to the pediatric neurologist clinic. Approximately 50% of cases of epilepsy begin in childhood or adolescent. The prevalence rate was 12.9 per 1000 and in children is 4-6 per 1000 child. Additionally, a study conducted by Khedr et al. [5], the prevalence rate of epilepsy is 9.3 per 1000, while the incidence rate is 1.5 /1000. Epilepsy is slightly high in male than in females. As well as the highest prevalence rate is recorded in the early and late childhood group.

Epilepsy knows no geographical, racial, or social boundaries. The etiology of seizures is multi factorial in any given person [3]. Epilepsy is chronic brain disorder characterized by recurrent

seizures. A seizure is a sudden, transient, disturbance of brain function, manifested by involuntary motor, sensor, autonomic, often accompanied by loss of consciousness [6]. Epilepsy can be caused by genetic, structural, metabolic or unknown factors. Among the structural factors, the most common causes in developing countries are infectious and parasitic disease. Prenatal brain damage, vascular disease, and head trauma. The prognosis of epilepsy depends on the etiology of the illness as well as early and sustained treatment. It is estimated that up to 70% of people with epilepsy can live normal life if they receive proper care [7].

Furthermore, Prevett & Brown [8] reported that seizures are divided into three basic groups based on clinical and electroencephalographic manifestations, focal, generalized and unknown. Focal epileptic seizures are those that originate within networks limited to one hemisphere [9]. In focal seizures the abnormal neuronal discharges start in a localized area of the brain so that clinical manifestations vary widely depending on anatomical localization and spread of these discharges [8]. In the same context, generalized seizures are those that originate within bilaterally distributed networks in which the abnormal neuronal discharges are widespread and involve both cerebral hemispheres from the onset [10]. Similarly, generalized seizures may be non – convulsive (such as absence seizures) or convulsive with bilateral tonic, clonic, or myoclonic movements.

Knowledge and practices about epilepsy are shown to be low in several studies from developing countries [11]. As well as, misconceptions have been associated with epilepsy since ancient times causing a great amount of stigma against its sufferers. Previous studies have shown the prevalence of incorrect perceptions on epilepsy and negative attitude towards epileptics among teachers even in resource-rich countries [12].

Teachers have the key role as educators and advisors in any society especially in a special education school than those in regular schools; hence the study was aimed to evaluate the effect of nursing intervention on improving of intellectual school teachers' performance toward students with epilepsy. Epilepsy nurses are modern day professionals, who play a pivotal role in providing coordinated care and education to teachers with complex uncontrolled epilepsy. Recently, investigations on the effectiveness of epilepsy nurses in primary care also suggest that epilepsy nurse interventions are highly useful [13].

Significance of the study

Currently, the rationale for conducting this study is that epilepsy affects 50 million people worldwide, and 80% of them live in the developing world. Life-threatening emergencies can happen at any school and at any time. Knowledge about epilepsy is an important issue in determining teachers' attitudes toward students with epilepsy. In general, teachers do not receive any formal instructions on epilepsy during their education and training despite the fact that as much as 40% of the student's developing life is spent at school [14]. In Egypt, teachers are considered as social leaders and role models, thus influencing the student's critical period of social and

psychological development. For that reason, studying teachers' performance about epilepsy is beneficial for promoting the future generations.

Aim of the study

The aim of this study was to evaluate the effect of nursing intervention on improving intellectual education teachers' performance toward students with epilepsy in Sharkia Governorate.

This was accomplished through the specific objectives:

- To assess teachers' knowledge and practices prior and after the nursing intervention sessions among intellectual education in Sharkia Governorate.
- To determine teachers' attitudes towards students with epilepsy among intellectual education in Sharkia Governorate.
- To investigate the relation between teachers' knowledge and attitudes regarding epilepsy.
- To plan, implement, and evaluate the effect of nursing intervention sessions on knowledge, attitudes and practices regarding epilepsy among intellectual schools.

Hypotheses

- Teachers' knowledge and practices toward students with epilepsy will be improved after nursing intervention sessions.
- Teachers' attitudes toward students with epilepsy will be improved after nursing intervention sessions.

Subjects and Methods

Study design

A quasi-experimental interventional design, with pre-post assessment was used to conduct this study.

Study setting

This study was conducted at all intellectual education teachers in Sharkia Governorate (13 schools), these were namely: DerbNegm, Menia-Elamah, Zagazig, Belbeis, Hihya, Abu-Kabir, Elasher of Ramadan, Abu-Hammad, Al-Qureen, Elashraf, Al –Maymunah Shanbara, Chiba, and the Daidamon.

Subjects

A purposive sample of 180 from 224 teachers, 17 teachers who shared in the pilot study was excluded from the sample. Therefore, the total numbers of teachers were 163. At the time of the study in Sharkia Governorate, which comprised 13 intellectual schools, A complete list of all intellectual education teacher' in Sharkia Governorate was prepared by the directorate. The study samples were selected according to both sexes, working at least two years, and accept to participate in the study.

Tools of data collection

Three tools were used to collect the necessary data for achieving the study objectives, and there are a number of different questions as MCQ, and essay.

Tool (I): A self-administered questionnaire, was adapted of Mecarelli et al. [15], it consisted of two parts:

- **Part (A):** For collecting data pertaining to socio-demographic characteristics of the teachers as; age, sex, marital status, residence, qualification, years of experience, and number of teachers dealing with epilepsy students (Q1-8).
- **Part B:** This involved questions regarding teacher's knowledge about epilepsy as; definition, contagious, causes, symptoms, age of epilepsy, doctor referral, types, triggered of epilepsy, diagnosis, prevention, precautions, treatment and source of information (Q9-22).

Scoring system

A complete correct answer was scored 2, while an incomplete correct answer was scored 1, and an incorrect answer was scored zero. For each area of knowledge, the scored items were summed up. The total score of knowledge was (37) points. The teacher's score 75% or more was considered satisfied and less than 75% considered unsatisfied.

- **Tool (II):** This tool was adapted of the Edmonton Epilepsy Association (2011) was intended to assess practices regarding epilepsy which included 30 items, and composed of three components namely;
- **Part A:** Covers practices during the focal seizure. It consists of three items, as do not blame the student, do not criticize the student ,and record the number of times.
- **Part B:** Covers practices during epilepsy fits. It consisted of 13 items, as; stay calm, register time of the seizure, protect from injury and place something soft under the head, loosen anything tight around the neck, don't restrain the person, don't put anything in the mouth, gently roll the person onto his or her side, Do not put onions, perfume in student's nose or mouth, avoid giving the student any food, drink or even medication during the seizure until he/she fully wakes up. Moreover, avoid spraying the student's face with water.
- **Part C:** It consisted of 10 items, covers practices when calling ambulance, such as; if it is a first-time seizure, the student is injured, or has diabetes, additionally, if a convulsive seizure lasts more than 5 minutes, if consciousness or regular breathing does not return after the seizure has ended, if seizure repeats without full recovery between seizures, and if a seizure occurs in water.
- **Part D:** Covers practices to be followed after epilepsy fits have been ended, teacher should register time post the seizure, reassure and comfort the student if confusion follows the seizure. Additionally, help to re-orient the student, allow the student to remain in the classroom until full awareness returns, allow rest if required, allow for the student to go to the restroom if the student lost bowel and provide a change of clothing if required. Moreover, help others to understand, what happened and proceed with regular class work.

Scoring system

Each step observed "done" was scored one and the " not done" zero. The practice was considered satisfied if total >75%, and unsatisfied. If <75% based on statistical analysis.

Tool (III): This tool was intended to assess teacher's attitudes toward students with epilepsy; it was adapted of Al-Hashemiet al. [14]. Teachers were asked to respond by any of 3 options: "Agree," "Disagree," or "Not sure," for each statement. Out of the 23 attitude statements, 8 indicated a positive attitude if answered by "Disagree," while the remaining 15 indicated a positive attitude if answered by "Agree." Hence, the attitude scale was considered positive if >75%, and negative if <75% based on statistical analysis.

Content validity and reliability of tools

The validity of data collection tools was tested by five experts two professors from the Community Health Nursing, one assistant professor from Psychiatric Health Nursing, Faculty of Nursing, Zagazig University, and 2 lecturers specialties in brain and nerves from the Faculty of Medicine, Zagazig University to assess clarity, relevance, application, comprehension, and understanding of the tools. All recommended modifications on the tools were done. Reliability of the proposed tools was done by Cronbach's Alpha test; it was 0.859 for tool (I), 0.780 for tool (II) and 0.848.

Field work

Data collection took a period of eight months; beginning of from October 2016 to end of May 2017. The researcher started the data collection for 3 days per week ranged from 10.00 a.m. to 12.00 noon during the 8 months. The execution of the study was through four phases: assessment, planning, implementation, and evaluation.

Assessment phase

This phase involved the pre-intervention data collection for baseline assessment. The researcher first introduced herself and explained the purpose of the research briefly to the directors of all the intellectual education in Sharkia Governorate and to the teachers. The Director of each school nominated Director of the School Training Unit to facilitate the administration of the questionnaires. The instructors served primarily as guide and helped in gaining access to teachers in each school and ensuring them that the research will not interrupt normal school activities. All the teachers were met and their verbal agreements for participation were obtained. The pretest knowledge, and attitude was distributed and then the same questionnaire was used after the sessions' implementation for post assessment (post-test). The time consumed for answering the study questionnaire ranged from 20-30 minutes and for the observational checklist ranged from 10-15 minutes. The data were preliminarily analyzed to provide the basis for designing the intervention sessions.

Planning phase

Based on review of literature, sample features and the results obtained from the assessment phase, the researcher designed the intervention sessions' content. The learning booklet was prepared by the researcher and its content was validated and then distributed to teachers to be used as a guide for self-learning.

General objective: The general objective of the teachers' sessions was to upgrade their knowledge, practices and attitude about

epilepsy.

Specific objectives: By the end of the sessions, the teachers should be able to:

- Identify the definition of epilepsy and list its causes.
- Discuss the symptoms of partial and generalized epilepsy.
- Identify of the common age, periods of treatment, and referral of doctors of epilepsy.
- List the triggering factors of epilepsy
- Recognize the diagnosis of epilepsy.
- Discuss the prevention measures of epilepsy.
- Describe the treatment of epilepsy.
- Explain the precautions of epilepsy.
- Explain the practice during the focal seizure
- Apply the practice during and after epileptic fit correctly.
- Demonstrate when to call ambulance for generalized epilepsy.

Implementation phase

The intervention was performed in the form of sessions; these were implemented in the library of schools. The educational training methods were lectures, group discussions and brain storming, role play, and demonstration. The sessions were aided by using video, pictures and posters through labtop data show to facilitate and illustrate teaching. To ensure that the teachers understand the content, each session was started by a summary about what was given through the previous one, followed by the objectives of the new one. The intervention was implemented in 3 sessions; the duration of each session was 25-35 minutes, the total sessions of all intellectual schools was 39 sessions. The number of teachers in each session was 5-10 teachers. The objectives of the sessions were as follows:

At the beginning of the first session an orientation to the session such as; the purpose, importance of the subject, contents, time and location were elaborated in order to establish good communication. The objective of the second session was the explanation the basic knowledge regarding epilepsy as definition, causes, symptoms and types, triggering factors, and diagnosis, as well, the types of treatment and the precautions.

The third session focused on applying the practice of the focal seizure epilepsy, as well as the practice during and after epileptic fit correctly emergency and finally, when to call ambulance for generalized epilepsy and global summarization and revision of the aim of the session and termination module sessions.

The last session was to evaluate the effect of health educational sessions on improving teachers 'knowledge practices and attitudes regarding epilepsy.

Evaluation phase

Evaluation of the nursing educational intervention was done immediately after its implementation of the sessions; as well a follow-up evaluation was performed after three months through applying the same tools of the pretest.

Pilot study

Before conducting the main study, a pilot study was carried out on 17 teachers who were excluded from the main study. The purpose

of the pilot study was to test the questions for any ambiguity, inapplicability, and feasibility of the tools. Accordingly the necessary modifications were done. It also helped the researcher to estimate the time needed for filling in the forms.

Administrative and ethical considerations

Permission to carry out the study was granted by submission of official letters from the Faculty of Nursing to the responsible authorities of the study settings to obtain their permission for data collection. All ethical issues were taken into consideration during all phases of the study.

Statistical Design

Data collected throughout teachers' history, basic clinical examination, laboratory investigations and outcome measures were coded, entered and analyzed using Microsoft Excel software. Data were then imported into Statistical Package for the Social Sciences (SPSS) version 20.0 for analysis. Data were collected and submitted to statistical analysis according to the type of data qualitative represented as numbers and percentages, and quantitative for continuous group represented by mean \pm SD, the following tests were used to test differences for significance. Differences between frequencies (qualitative variables) and percentages in groups were compared by Chi-square test paired by Mac namar or sign test. Differences between parametric quantitative independent groups by t test, paired by paired t. correlation by Pearson's correlation P value was set at <0.05 for significant results and <0.001 for highly significant results.

Socio-demographic Characteristics	Frequency	Percent	
Age (in years)	≤ 40	53	32.5
	> 40	110	67.5
Mean+SD	44.30+7.6		
Range	29-59		
Gender	Male	62	38.0
	Female	101	62.0
Residence	Rural	64	39.3
	Urban	99	60.7
Marital status	Single	5	3.1
	Widow	9	5.5
	Married	147	90.2
	Divorce	2	1.2
Education	Diploma 3 years	7	4.3
	Diploma 5 years	52	31.9
	University	46	28.2
	Post	58	35.6
Income	Sufficient & saving	19	11.7
	Sufficient	97	59.5
	Insufficient	47	28.8
Years of experience	≤ 20	87	53.4
	> 20	76	46.6
Mean+SD	20.07+8.2		

Range	3-40		
No of teachers dealing with students	No	51	31.3
	1-<10	103	63.2
	10-20	6	3.7
	>20	3	1.8

Table 1: Socio-demographic characteristics of studied teachers (n=163).

Table 1 indicates that, the mean age of the studied teachers was 44.30±7.6 years. In addition, 60.7% of studied sample reside urban areas, and 90.2% of them were married. Considering, teachers' education 35.6% were Post University. Moreover, only 11.7% of the studied teachers had sufficient and saving income. The same table also demonstrates that 46.6% of the study teachers reported previous experience in intellectual school more than twenty years. The percent of students that does not deal with teachers was 31.3%, while 63.2% of teachers dealing with students ranged from 1-<10.

Items		Frequency	Percent
Family	No	117	71.8
	Correct	46	28.2
Friends	No	116	71.2
	Correct	47	28.8
Health care professionals	No	92	56.4
	Correct	71	43.6
Social workers	No	154	94.5
	Correct	9	5.5
TV	No	93	57.1
	Correct	70	42.9
Internet	No	72	44.2
	Correct	91	55.8
	Total	163	100.0

Table 2: Sources of teachers' information for their knowledge about epilepsy.

Table 2 reveals that the sources of teachers' correct information for their knowledge about epilepsy were for most of them had their information from internet (55.8%), followed by health care professionals (43.6%), then TV (42.9%), friends (28.8%), and family of students with epilepsy (28.2%).

Items	Mean	Paired t	P
Pre practice regarding epilepsy	3.31 ± 5.08	-44.773	0.00**
post-practice regarding epilepsy	26.7 ± 5.46		
Pre practice regarding epilepsy	3.31 ± 5.08	-36.263	0.00**
Follow practice regarding epilepsy	24.83 ± 6.71		
post-practice regarding epilepsy	26.72 ± 5.46	9.788	0.00**
Follow practice regarding epilepsy	24.83 ± 6.71		
Pre attitude regarding epilepsy	13.62 ± 2.25	-13.453	0.00**
Post attitude regarding epilepsy	16.38 ± 1.83		
Pre Knowledge regarding epilepsy	9.61 ± 3.30	-43.388	0.00**
post Knowledge regarding epilepsy	19.35 ± 1.73		

Pre Knowledge regarding epilepsy	9.61 ± 3.30	-36.666	0.00**
Follow up Knowledge regarding epilepsy	18.67 ± 2.61		
Post Knowledge regarding epilepsy	19.35 ± 1.73	5.727	0.00**
Follow up Knowledge regarding epilepsy	18.67 ± 2.617		

Table 3: Comparison of Studied Teachers According to their performance about Epilepsy throughout the Intervention (n=163).

Table 3 clarifies that statistically significant improvements in the teachers knowledge, practices and attitudes from pre-sessions, immediately after and 3 months of post sessions where the total mean score of their knowledge increased from 9.61 ± 3.30 in pre-sessions, to 19.35 ± 1.73 immediately post sessions and 18.67 ± 2.61, at 3 months of post sessions. The total mean score of their practices increased from 3.31 ± 5.081 pre-sessions to 26.72 ± 5.46 immediately post sessions and 24.83 ± 6.71, at 3 months of post sessions. The total mean score of their attitude increased from 13.62 ± 2.25 in pre-sessions, to 16.38 ± 1.83 immediately post sessions.

Epilepsy adequate knowledge		Frequency	Percent
Pre intervention	No	152	93.3
	Yes	11	6.7
Post intervention	No	38	23.3
	Yes	125	76.7
At follow-up intervention	No	69	42.3
	Yes	94	57.7
X2	194.3		
P-value	0.00**		

Table 4: Satisfactory knowledge of the studied teachers about epilepsy throughout the intervention (n=163).

Table 4 reveals that the total knowledge scores of the studied teachers were scored as satisfactory knowledge level by 6.7% in preprogram implementation, which improved to 76.7% and 57.7% in post and follow up respectively after implementation of nursing intervention sessions. Meanwhile, 93.3% had unsatisfactory knowledge at preprogram implementation that reduced to 23.3% and 42.3% in post and follow up respectively (X2= 194.3, P=0.00).

Table 5 reveals relations of studied teachers' adequate knowledge about epilepsy and their socio-demographic characteristics. There were statistically significant differences between teachers' knowledge and their income (X2=6.45, P=0.04), while with other variables relations not significant.

Table 6, there were no statistical significance between teachers' adequate practice and age, years' experience, and number of student with epilepsy deals with teachers.

Table 7 indicates that statistically significant positive correlations were found between pre knowledge and post knowledge r=.500, pre knowledge and follow up knowledge r=.453, pre knowledge and post-practice r=.277, pre attitude and post attitude r=.205, post-practice and follow up practice r=.939, post knowledge and

Socio-demographic characteristics			Adequate knowledge		Total	X2	P
			No	Yes			
Gender	Male	Count	34	28	62	0.43	0.5
		% within gender	54.8%	45.2%	100.0%		
	Female	Count	50	51	101		
		% within gender	49.5%	50.5%	100.0%		
Residence	Rural	Count	36	28	64	0.93	0.33
		% within residence	56.2%	43.8%	100.0%		
	Urban	Count	48	51	99		
		% within residence	48.5%	51.5%	100.0%		
Marital status	Single	Count	3	2	5	3.22	0.35
		% within marital_status	60.0%	40.0%	100.0%		
	Widow	Count	3	6	9		
		% within marital_status	33.3%	66.7%	100.0%		
	Married	Count	76	71	147		
		% within marital_status	51.7%	48.3%	100.0%		
Divorce	Count	2	0	2			
	% within residence	100.0%	0.0%	100.0%			
Education	Diploma 3 year	Count	4	3	7	1.04	0.79
		% within education	57.1%	42.9%	100.0%		
	Diploma 5 years	Count	29	23	52		
		% within education	55.8%	44.2%	100.0%		
	University	Count	24	22	46		
		% within education	52.2%	47.8%	100.0%		
Post	Count	27	31	58			
	% within residence	46.6%	53.4%	100.0%			
Income	Sufficient and saving	Count	5	14	19	6.45	0.04*
		% within income	26.3%	73.7%	100.0%		
	Sufficient	Count	56	41	97		
		% within income	57.7%	42.3%	100.0%		
	Insufficient	Count	23	24	47		
		% within income	48.9%	51.1%	100.0%		
Total		Count	84	79	163		
		% within income	51.5%	48.5%	100.0%		

Table 5: Relation with adequate of studied teachers according to their knowledge about epilepsy and socio-demographic characteristics.

	Adequate	N	Mean	Std. Deviation	t	P
Age	Yes	79	44.73	7.063	0.705	0.482
	No	84	43.89	8.099		
years' experience	Yes	79	19.68	7.491	-0.576	0.566
	No	84	20.43	8.915		
number_student	Yes	79	4.06	7.513	0.804	0.423
	No	84	3.24	5.490		

Table 6: Relation with adequate practice and socio-demographic characteristics.

Items		post Knowledge	follow up Knowledge	Pre practice	post-practice	follow practice	Pre attitude	Post attitude
Pre Knowledge	R	.500**	.453**	.104	.277**	.233**	.187*	.138
	P	.000	.000	.185	.000	.003	.017	.079
post Knowledge	R	1	.832**	.136	.474**	.383**	-.013-	.175*
	P		.000	.084	.000	.000	.867	.025
Follow up Knowledge	R	.832**	1	.184*	.302**	.205**	.098	.089
	P	.000		.019	.000	.009	.212	.257
Pre management practice	R	.136	.184*	1	.200*	.198*	-.094-	-.026-
	P	.084	.019		.011	.012	.232	.746
post management practice	R	.474**	.302**	.200*	1	.939**	-.033-	.118
	P	.000	.000	.011		.000	.675	.134
Follow management practice	R	.383**	.205**	.198*	.939**	1	-.029-	.103
	P	.000	.009	.012	.000		.715	.189
Pre attitude	R	-.013-	.098	-.094-	-.033-	-.029-	1	.205**
	P	.867	.212	.232	.675	.715		.009
Post attitude	R	.175*	.089	-.026-	.118	.103	.205**	1
		.025	.257	.746	.134	.189	.009	

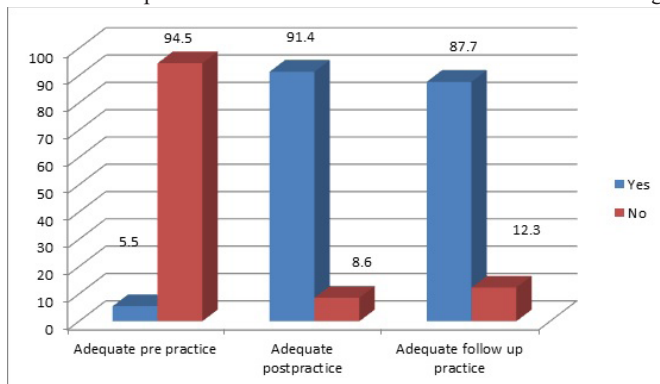
Table 7: Correlation matrix of teachers' scores of Knowledge, practice, and attitude in the study sample.

follow practice $r=.383$.

Table 8 describes the perception of intellectual school teachers' about strategies regarding student with epilepsy. The table shows that the most of the studied subjects 89.6% reported that the school has written instructions on management of epileptic students with epilepsy during epileptic seizures. The same percentage of the staff teachers reported that the school has file with names and telephone numbers of parents of students with epilepsy, and periodic workshops for teachers and parents provided

School strategies regarding students with epileptic	Teachers agreements (n=163)	
	No	%
Provision of: a written policy	152	93.3
Trainable nurses	140	85.9
Training teachers	155	95.1
Written instructions	146	89.6
File with names and telephone numbers of student with epilepsy	163	100
Arrange meetings between teachers and parents of epilepsy student	105	64.4
Periodic workshops for teachers and parents	163	100

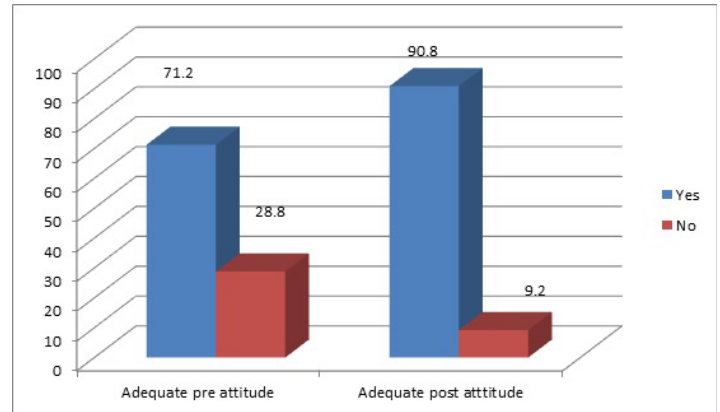
Table 8: Perception of intellectual school teachers about strategies



regarding students with epileptic.

Figure 1: Satisfactory practice of studied teachers about epilepsy throughout the intervention (n=163).

Figure 1 illustrates that, the total practice of the studied teachers was scored as adequate practice level by 5.5% in preprogram implementation, which improved to 91.4% and 87.7% in post and



follow up respectively after the educational implementation.

Figure 2: Adequate attitude of studied teachers about epilepsy throughout the intervention (n=163).

Figure 2 indicates that adequate attitude total scores about epilepsy were 71.2% in preprogram sessions' implementation, which improved to 90.8% post session.

Discussion

Epilepsy is a major health problem frequently seen among intellectual school students. The role of the teachers in the management of students with epilepsy and their families is most important. Teachers are highly valued for providing care, advice and support in explaining the social aspects of epilepsy [16].

Consequently, the present study aimed to evaluate the effect of nursing intervention on improving intellectual school teachers' performance toward students with epilepsy in Sharkia Governorate.

The targeted population in the current study was the teachers with age ranged from 29-59 years with a mean age of 44.30±7.6 years. These intellectual school teachers were selected because intellectual school students spend most of their day away from home and their parents' watchful eyes, and because students cannot be expected to understand their epilepsy treatment fully due to misinformation or lack of knowledge they may feel scared or awkward about the seizures. Epilepsy is one of the most common secondary disabilities in students with mental retardation among intellectual school. Hence, nursing intervention sessions were needed to support them at school. No such study was previously conducted in Sharkia Governorate, Egypt.

The current study result revealed that the teachers' age ranged between 29-59 years and their mean score was 44.30±7.6 years. The mean year of experience was 20.07±8.2, and more than three fifths of the studied teachers were female. These results were consistent with the known women nature which makes them take the major responsibility of caring students in the school. These findings are in line with those of the study of El-Zeftawy [17], in Tanta, Egypt, who found that the teachers age ranged 24-56 years and 65.8% of teachers were female and their mean years of experience was 19.76±2.31. In accordance the study done in Pakistan, by Akhtar et al. [18], which reported that females represent 61.5% and males 38.5%. The mean age of the respondents was 37.0±9.2 years:

Regarding the number of students with epilepsy ever dealt with, the present study result revealed that one third of teachers did not deal students with epilepsy. However, more than three fifths of teachers dealt with students with epilepsy from (1:<10). Additionally, the highest of teachers had their information from internet, followed by health care professionals, and an equal percentage of more than quarter from the public media (TV), friends, and parents of students with epilepsy. These findings contradicted with those of Al-Hashemi [14] in Kuwait found that 70.7% of teachers did not deal with any students. In addition, almost one-fifth of participants reported that they have dealt with one student with epilepsy, 4.9% of them dealt with 2 students, and 1.2% dealt with 3 students. The same author mentioned of three fifths of them (60.5%) had their information from public media, followed by the internet (41.3%), education (25.4%), and parents of students with epilepsy (19.2%), and health care professionals (19.3%).

Concerning the answering of the research hypothesis regarding the knowledge and practice about epilepsy among intellectual school teachers' in Sharkia Governorate, the findings of the present study revealed that minority of the teachers had satisfactory knowledge as well as adequate practices before implementation of nursing intervention. This might be due to lack of educational intervention in intellectual education teachers'. Additionally, no such study was previously conducted in Sharkia Governorate. This result was in

agreement with that of a study conducted in the United States by Bishop & Boag [19], who found that teachers' knowledge had significant deficits in basic knowledge about epilepsy. The result of the present study is supported by Rajan [20], in Bangalore which revealed that the most of the teachers had unsatisfactory knowledge and inadequate skills about epilepsy. In the same line, a study done by Akpan et al. [21], who assessed the knowledge and attitudes of school teachers towards children with seizure disorder, and the influence of urban residence on perception of seizure disorder by the teachers, in Nigeria mentioned that school teachers in both urban and rural schools exhibited poor knowledge.

Moreover, Abulhamail [22], who conducted a study in Saudi Arabia to assess primary school teachers' knowledge and attitudes toward children with epilepsy reported that primary school teachers' knowledge about epilepsy needs improvements. In this respect, Alkahil et al. [23] in Riyadh, KSA, study aimed to assess the awareness about the definition of epilepsy in pediatric ages, types of epilepsy, managing an epileptic fit in children and awareness about the impact of epilepsy on children's educational and social performance among education teachers', they found a critical issue that most of schoolteachers do not have satisfactory knowledge about epilepsy. In contrast with this Reyace et al. [24], who found the average level of teachers' knowledge was 13.9 out of 22. Overall, 70.9% of the teachers obtained average level of 17.7% as good level and 11.4% as weak level of knowledge. The contradiction with this study might be due to differences of settings.

Concerning the answering of the hypothesis regarding teacher's knowledge will be improved after implementation of nursing intervention sessions, the findings of the present study revealed that more than three quarters had good knowledge, as well; most of teachers had adequate practices and attitudes. This might be due to success of nursing intervention sessions. This result was in agreement with that of a study conducted in Tanta, Egypt by El-Zeftawy [17], who evaluates the effect of training program of elementary schools teachers about management of students with epilepsy, and mentioned that significant statistically improvements in the teachers knowledge, and practices from pre-sessions, to immediately after sessions the total mean score of their knowledge increased from 36.43 ± 20.60 in pre-sessions, to 75.46 ± 11.17 immediately post sessions and the total mean score of their performance increased from 5.72 ± 4.33 pre-sessions to 19.74 ± 1.99 immediately post sessions.

Additionally, The results of the present study were interpreted by Desai et al. [25], in a study to assess the effectiveness of planned teaching program on knowledge regarding epilepsy management in school children among primary school teachers working in selected primary schools at Malur, Kolar, Karnataka, they found that the mean posttest knowledge 16.72 ± 2.99 was higher than mean pretest knowledge scores (5.4 ± 2.69), and in post-test in the experimental group, 66% had satisfactory knowledge. This result was incongruent with that of Mohamed and Elalem [26], in Port Said University, Egypt, who assessed the effect of health educational

program on knowledge about epilepsy and its management among primary school teachers, the findings indicated that pre to post mean percent change of improvements were 55.46 ± 130.27 and 56.05 ± 135.40 . This study was supported by another study carried among school primary school teachers in Italy by Mecarelli et al. [15], which found that the educational intervention on epilepsy directed to 582 Italian primary school teachers has been successful in improving knowledge toward the disease.

Unfortunately, the improvements on the knowledge and management of epilepsy among intellectual school teachers in the next three months (follow up test) were reduced, this might be due to the long period between the implementation of the program and follow up test, where this might be normal because teachers tend to forget some of what they learn as long as time passes. So, this indicates the need to carry out a periodic nursing intervention about the disease at least every six months to guarantee that the teachers' knowledge and practices are good to deal with such students. This result was in agreement with that of a study conducted in the Port Said University, Egypt by Mohamed and Elalem [26], who found that the mean percent greatly changed from posttest to follow-up. This finding is in the same line with that of a study by El-Zeftawy [17], in Tanta, Egypt, which mentioned that unfortunately the improvements on the knowledge and management of epilepsy among teachers in the next three months were reduced from 75.46 ± 11.17 to immediately post sessions and 44.85 ± 5.51 , 3 months of post sessions. As well, the total mean score of their performance reduced from 19.74 ± 1.99 immediately post sessions to $18.36.85 \pm 2.66$, 3 months later.

The present study result revealed that there was a relation between teachers' knowledge and their income. This finding is congruent with that of Mohamed and Elalem [26], in Port Said, Egypt, who found that there was a strong significant correlation between teachers' knowledge about epilepsy and their income. In the other hand, findings of the present study indicated that there were no correlations between teachers' knowledge and their age, education, experience in post and follow up of the program. This finding is in the same line with Sharma et al. [27], who reported that age, gender; experience about epilepsy had no significant associations.

Concerning the answering of hypothesis which stated that teachers' attitudes toward students with epilepsy will be improved after nursing intervention sessions. As observed from the present study, the most of studied teachers' improvements on their attitude toward epilepsy from pretest scores, and in post-test, statistically significant improvements in the teacher's knowledge, attitudes, and practices from pre-sessions, immediately after and 3 months of post sessions this is in accordance with a study carried out by Al-Hashemi [14], in Kuwait, who found that high proportion (91.3%) of participants showed a positive attitude. This finding is in the same line with that of El-Zeftawy [17] in Tanta, Egypt, who revealed that the total mean score of their attitude increased from (39.68 ± 6.80) to (44.67 ± 5.65) immediately post sessions. In the same line a study done in Pakistan, by Akhtar et al. [18] found that the attitude of the teachers towards epilepsy was generally

positive.

Conclusion and Recommendations

The present study concluded that teachers' performance was greatly improved immediately after implementation of nursing intervention. Unfortunately, this improvement slightly declined in the next three months (follow up test) but was still good, Therefore, the researcher recommended that educational nursing intervention about epilepsy should be provided periodically and continually to all teachers to equip them with the necessary knowledge and skills for proper management of students with epilepsy in the school.

References

1. Corbett JA. Epilepsy and mental retardation. *The British Journal of Psychiatry*. 2000; 177: 473-474.
2. Saraceno B. The WHO World Health Report 2001 on mental health. *Epidemiol Psichiatr Soc*. 2002; 11: 83-87.
3. El-Tallawy HN, Farghaly WM, Metwaly NA, et al. Door-to-door survey of major neurological disorders in Al Kharga District, New Valley, Egypt: Methodological aspects. *Neuroepidemiology*. 2010; 35: 185-190.
4. Mahmoud NA. Prevalence of epilepsy in primary school children in El-Minia city, Egypt. *The Egyptian Journal of Neurology, Psychiatry, and Neurosurgery*. 2009; 46: 33-39.
5. Khedr EM, El-Fetoh NA, Thabit MN, et al. a community based epidemiological study of epilepsy in Assiut Governorate/ Egypt. *Epilepsy research*. 2013; 103: 294-302.
6. Bernard TJ, Knupp K, Yang ML, et al. Neurologic assessment and neurodiagnostic procedures. In: Hay, W., Levin, M., Deterding, R., and Abzug, M. Eds. *Current diagnosis and treatment pediatrics*, twenty. 2nd edn. USA. 2014; 793.
7. Perez EB. Epilepsy and related psychiatric comorbidities. *Pediatrics*; in: Rey, J.M., *Textbook of child and adolescent mental health*. Mosby. USA. 2012; 123.
8. Prevett MC, Brown I. Epilepsy. In: Palmer, K.T., Brown, I., and Hobson, J., Eds. *Witness for work: the medical aspects*. 5th ed. Oxford University Press, USA. 2013; 155-156.
9. Combs SE, Pearl PH. Classification and definition of seizures and epilepsy syndrome in childhood. In: Wheless, J.W., Clarke, D.F., McGregor, A.L., Pearl, P.L., Ng, Y Eds. *Epilepsy in children and adolescent*. Wiley & Blackwell, Oxford. 2013; 32.
10. Rudzinski LA, Jerry J, Shih JJ. New drug classes for the treatment for partial onset epilepsy: Therapeutic clinic. *Risk management. Epilepsy and behavior*. 2013; 9: 285-293.
11. Shafiq M, Tanwir M, Tariq A, et al. Epilepsy: public knowledge and attitude in a slum area of Karachi, Pakistan. *Seizure*. 2007; 16: 330-337.
12. Bhesania NH, Rehman A, Savul IS, et al. Knowledge, attitude and practices of school teachers towards epileptic school children in Karachi, Pakistan. *Pak J Med Sci*. 2014; 30: 220-224.
13. Hosking PG. The Specialist Nurse Role in the Treatment of Refractory Epilepsy. *Seizure*; 2004; 13: 303-307.
14. Al-Hashemi E, Ashkanani A, Al-Qattan H, et al. Knowledge about Epilepsy and Attitudes toward Students with Epilepsy

-
- among Middle and High School Teachers in Kuwait. *International Journal of Pediatrics*. 2016; 8: 1-15.
15. Mecarelli O, Messina P, Capovilla G, et al. An educational campaign about epilepsy among Italian primary school teachers. The results of a focused training program, *Epilepsy Behav*. 2015; 42: 93-97.
 16. Edmonton Epilepsy Association *Epilepsy: A guide for Teachers*. 2011.
 17. El-Zeftawy AMA, Gowayed BE, Maximos MHF, et al. Effect of training program elementary school teachers on management of epileptic students in Tanta. 2008.
 18. Akhtar SW, Ali S, Ali SM, et al. Survey of knowledge, attitude and practice of epilepsy among 535 schoolteachers in five cities of Pakistan. *Neurology Asia*. 2007; 12: 99-100.
 19. Bishop M, Boag EM. Teachers' knowledge about epilepsy and attitudes toward students with epilepsy: Results of a national survey. *Epilepsy & Behavior J*. 2006; 8: 397-405.
 20. Rajan E. Teachers knowledge and coping with their children with epilepsy. Rajiv Gandhi University of Health Sciences, Bangalore. 2007; 43-52.
 21. Akpan MU, Ikpeme EE, Utuk EO. Teachers' knowledge and attitudes towards seizure disorder: a comparative study of urban and rural school teachers in Akwa Ibom State, Nigeria. 2013; 16: 365-370.
 22. Abulhamail AS, Al-Sulami FE, Alnouri MA, et al. Primary school teacher's knowledge and attitudes toward children with epilepsy. *Seizure*. 2014; 23: 280-283.
 23. Alkahil HB, Falatah YM, Abdalbaki MM, et al. Awareness about epilepsy in children among school teachers in RIYADH, KSA. *Int. J Adv*. 2017; 5: 654-662.
 24. Reyace H, Kaheni S, Sharifzadeh G. Teacher's knowledge about epilepsy. *Journal of Nursing and Midwifery Sciences*. 2014; 1: 27-32.
 25. Desai S, Hiremath P, Naregal P. A study to assess the effectiveness of planned teaching program on knowledge regarding epilepsy management in school children among primary school teachers working in selected primary schools at Malur, Kolar, Karnataka. *Int J Health Sci Res*. 2015; 5: 417-423.
 26. Mohamed MA, Elalem MO. Effect of health educational program on knowledge about epilepsy and its management among primary schools' teachers. *International Journal of Advanced Research*. 2015; 3: 221-227.
 27. Sharma NK, Lakshmi KP, Kumar A. Effectiveness of Structured Teaching Program on Knowledge Regarding Epilepsy in Children among school teachers. *IOSR Journal of Nursing and Health Science*. 2013; 2: 7-13.