

Effect of Educational Program on Frequency of Epileptic Attacks and Self-Efficacy for Adolescents

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Abstract

Background: Epilepsy is the most common chronic neurological condition and very serious among adolescents. **Aim:** The study was aimed to evaluate the effect of educational program on frequency of epileptic attacks and self-efficacy for adolescents. Through the following: assessing adolescents' knowledge with epilepsy and frequency of epileptic attacks, designing, implementing and evaluating the effect of epilepsy teaching booklet on self-efficacy for adolescents' with epilepsy. **Methods:** A quasi-experimental (pre/post-test) design was utilized to conduct this study at Students' Hospitals affiliated to South Valley University Hospitals, in Qena. A purposive sample of 60 adolescents with age ranged from 12-18 years of both sexes, had a history of epilepsy at least for 6 months duration, and free from sever communication or cognitive impairment was included in the study as a single study group. Three tools were utilized in this study: the first tool was structured interview questionnaire, it had two parts; interview questionnaire sheet to assess the adolescents' sociodemographic characteristics and clinical data about epilepsy. The second tool was Epilepsy Knowledge's Scale (EKS), and the third tool was Epilepsy Self-efficacy Scale (ESES). Teaching booklet was premeditated as reference for adolescents. **Results:** There were statistically significant differences between mean scores of the pre and post implementation of the educational program as regards adolescents' knowledge regarding frequency of epileptic attacks and self-efficacy with epilepsy. **Conclusions:** there were a lack of adolescents' knowledge of epilepsy and frequency of epileptic attacks before implementing the teaching booklet of adolescents' self-efficacy. While, there were an improvement in the adolescents' knowledge was observed after implementation of the teaching booklet which had a positive effect on improving the adolescents' knowledge as regards minimizing and control frequency of epileptic attacks and maximizing adolescents' self-efficacy. The study recommended a periodically educational program planned and offered on regular basis for adolescents' with epileptic attacks.

Keywords: Frequency of Epileptic Attacks, Self-Efficacy, Adolescents.

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Introduction

Epilepsy is considered as a chronic neurological problem affected of all races, communities, ages, and genders for more than fifty million people globally. However, Five million human may experience epilepsy

fits for more than once monthly (Dinka et al.,2017). Approximately seventy-five percent of human live in developing countries suffering from epilepsy. One million new cases was globally each year. Meanwhile, the results of research agreed that about forty five per 100,000 globally is the annual occurrence in developed

international locations while doubled to one hundred per 100,000 in developing countries (Megiddo et al., 2018).

Epilepsy is the most common neurological problem affecting by higher rate during adolescents' age. This age is a critical developmental stage because it is characterized by improving the adolescents' social, physical life and psychological. The adolescents' stage will significantly affecting on the adolescents' quality of life at all developmental stages for the adolescents' life (Alaqeel, A., 2017).

The main causes of epilepsy have been considering to genetic, abnormal structural of the brain cells, metabolic disorders or occasionally unknown causes. Whereas, the structural factors are the most common factors in developing countries were parasitic and infectious diseases especially which causing the perinatal brain damage and head trauma; all are preventable (Hermann et al., 2016). The conditions are characterized by weakening seizures participating to deterioration in cognitive and intellectual functioning (Reuber et al., 2018).

The epileptic seizures are classified into partial seizure which means that epileptic activity takes place in only one part of the brain. However, it is divided into two types: simple partial seizure at this type the adolescents are conscious during the seizures; and complex partial seizure, at this type there are impaired in the adolescents' consciousness (Lewis et al., 2017). While, the second type is generalized seizure and it occurs when the adolescents loses the consciousness completely as the brain both halves are affected with epileptic activity. Meanwhile, febrile seizure is the most common type of epilepsy in adolescents more than 12 years of age (Harden et al., 2017).

The management of epilepsy is using medications of anti-epileptic drugs (AEDs). The aim of these medical treatments is to prevent the epileptic seizures with fewer side effects from these medications. However, most anti-epileptic drugs are associated with multiple side effects such as general fatigue, aggression, hyperactivity and irritability, as well as possible decreases in memory concentration and attention. In addition, the most obvious side effects are especially when more than one anti-epileptic drug is necessary to control or manage seizures activity, which occurs in approximately 10 to 15 percent of adolescents (Kilpatrick et al., 2018).

Education acts as a critical factor for epileptic adolescents' quality of care and is considered a therapeutic effect for those victims. Epileptic adolescents have many teaching desires and need to adhere to numerous self-management behaviors to control the status. On the contrary, to consolidate self-management adolescents need to have to get entry to education and educational protocols (DiIorio et al., 2018). In Egypt, adolescents with epilepsy are detached from the health services without education, representing a prior problem among adolescents' treatment.

Self-efficacy is defined as the knowledge, skills, attitudes and behaviors required to improve the physical and mental health. However, adolescents with epilepsy have different educational needs and must adopting from many self-management behaviors for minimizing and controlling their frequency of epileptic attacks. (Birbeck, 2018). Mean while, Self-efficacy behaviors have been linked to frequency of seizure attack among adolescents with epilepsy. Additionally, stress management, sleep behavior, diet and exercise. Whereas, higher levels of stress have been linked with

increases in the frequency of seizure attacks. (Birbeck, 2018)

Nurses' role in managing for adolescents complains from epileptic seizures are by teaching them about triggers factors that increase the incidence of epileptic seizures, such as fatigue, inconvenient sleep, and stress (National Institute for Health and Clinical Excellence, 2017). The educational program teaching adolescents about specific anti-epileptic medications; drug line, side effects, and regular check-up of drug levels in blood. However, Assessment and recorded of conditions preceding the seizures or epilepsy, length of each seizures, course of the seizures activity and also the consciousness level of children and vital signs. Assessment of airway patency and patient position to maintain airway open and clear after any seizures. Evaluating adolescents' self-management on epileptic medications and different lifestyles modifications in the emergencies and home care settings (Alindorfer and Szaflarski, 2017).

Significance of the study

The prevalence of epilepsy, in Egypt is 5.76/1,000 Childs, and its ultimate spread for adolescents are 5.99/1,000 people have been active epilepsy. While, Incidence rate of epilepsy was 44.14/100,000 annually and the essential cause of neurological morbidity in adolescent (El-Tallawy et al., 2018). According to the World Health Organization, more than 50 million child worldwide have epilepsy and 80% of them live in developing countries.

It is very necessary for the adolescents to develop an individualized educational program for epileptic seizures. Hence the development of educational program for epileptic seizures assists adolescents in the

implementation of effective medical treatment, which may reduce the adolescents' needs for visits to the emergency room. (Yazdi et al., 2018). The eventual goals of an epileptic seizures patient education involved providing treatment and decreasing the adolescents' absenteeism from the school, university, or their work as possible. Whereas, the action plan for epileptic seizures should include adolescent contact information, previous medical history, specific epileptic information as, types of epilepsy, duration of seizures, frequency, and triggers factor. Finally, the adolescent' educational program will improve their knowledge with epilepsy about how to minimizing and control of epileptic fit attacks and thereby reduce the frequency of epileptic seizures (Sorour, 2017.)

Aims of the study

This study aimed to evaluate the effect of educational program on frequency of epileptic attacks and self-efficacy for adolescents.

This aim was achieved through:

1. Assessing adolescents' knowledge with epilepsy and frequency of epileptic attacks
2. Designing, implementing and evaluating the effect of epilepsy teaching booklet on self-efficacy for adolescents with epilepsy.

Research hypotheses

- Epileptic adolescents who will receive the educational program will be more knowledgeable about how to minimizing and control the frequency of epilepsy attacks.

• A relationship will exist between epilepsy educational program and positive self-efficacy.

Subjects & Methods:

Research design

A quasi-experimental design (pre/post-test) used to achieve the aim of the study.

Setting

The present study was conducted at the Students' Hospitals University affiliated to South Valley University Hospitals, in Qena, Egypt.

Sample

A purposive sample of sixty epileptic adolescents from both gender (a male and female adolescents) was assigned in the current study. All should be participated voluntarily in the current study. For study group according to the determination of the sample size based upon the following sample calculation formula (9): $N = t^2 \times p(1-p)/m^2$; $N = 1.962 \times 0.04(1-0.04)/0.052$.

Inclusive criteria

- Adolescents' age from (12-18 years) of both sexes.
- Adolescent have a history of epilepsy at least for 6 months duration.
- Didn't take any previous educational program regarding epilepsy.
- Free from sever communication or cognitive impairment.

Exclusion criteria

- Epileptic adolescents suffering from another neurological disorder such as brain tumor and stroke.

Tools

Three tools were used for data collection:

Tool (I): A structured interview questionnaire (pre/post-test), it was designed by the researchers in a simple Arabic language for adolescents that aimed to cover the following:

Part 1: Socio-demographic characteristics for studied adolescents which included: The adolescents' age, gender and family history for epilepsy.

Part II: clinical data about epilepsy (possible causes, past medical history suffering from chronic diseases such as diabetes, cardiovascular disease or respiratory disease) and the frequency of seizure attacks at previous six months before educational program and six months after the program was implemented.

Tool (II): Epilepsy Knowledge's Scale (EKS). It was developed by May, et al (2002), to assess knowledge about adolescents' awareness of epilepsy, it was consisted of (19 closed- ended questions). The questions are on work that can be done, allowed activities, diagnostic test for epilepsy, medications and symptoms, if epilepsy is associated with mental illness and driving related questions.

Scoring system:

The tool of adolescents' knowledge included nineteen questions, a correct answer

scored one, while wrong answer takes zero score, and the total score is (19). After that were summing up and the all were divided by the numbers of items. At the final the scores were converted into a percentage.

Where a score divided as:

Poor knowledge < 60%	<11
Fair knowledge $60 \leq 75\%$	11-14
Good knowledge > 75%	>14

Tool (III): Epilepsy Self-efficacy Scale (ESES): it is a three point's Likert type scale adopted to assess self-efficacy. It was developed by **Dilorio, et al (2018)**. The ESES is composed of 33 statements to assess adolescent' self-efficacy in managing their epilepsy. The self-efficacy for lifestyle management subscale used in this analysis was identified in two ways. Items that corresponded to situations as, stress management, sleep, exercise and eating habits and using of antiepileptic drugs.

Scoring system:

The answer options for each item range from 1 to 3, where 1-3 indicates 1 cannot do at all, "2" Moderately sure I can do" and "3" indicates sure I can do. The total score is $3 \times 33 = 99$ score. For the length of the scale (33 items), it was divided into two tables (table 3-a) questions about anti-epileptic drugs, and table (3-b) questions about different situation.

Where a score divided as:

Poor self-efficacy	< 60%	< 59
Fair self-efficacy	60-75%	59 – 74
Good self-efficacy	>75%	>74

Researchers have developed a teaching booklet for adolescents in simple Arabic based on a review of current national and international literature. The main objective was to provide adolescents with important information and instructions about epilepsy and the positive self-efficacy of adolescents' with epilepsy. It was applied by researchers after adolescents filled out the structured interview questionnaire; this teaching booklet covered the following elements for epilepsy (definition, causes, causal factors, signs and symptoms, complications, first aid management for adolescents and family members, medications, self-efficacy guidelines, activities that could do them, and commandments to reduce the frequency of epileptic seizures).

Constant validity

The study tools of data collection were developed by the researchers after extensive review of related recent literature. Tools were reviewed by five experts in the field of pediatric nursing professionals who reviewed the instruments for content validity. Some modifications for the tools were done according to the panel judgment on appropriateness of content, clarity of sentences, and sequence of items

Reliability of tools

Test-retest reliability of the Epilepsy Knowledge's Scale (EKS) was (0.88). The Epilepsy Self-efficacy Scale (ESES) had a consistency as measured by Cronbach's alpha (0.85).

Ethical considerations

Before the pilot study as well as the study proposal was approved from Dean Faculty of Nursing, South Valley University

and the directors of previous Students' Hospitals, in Qena. An informed consent was obtained from each adolescent to participate as voluntary in the present study. No harmful procedure was performed on these participants. Patients had a right to withdraw from the study at any time. Data were confidential and only used for the present study. The participants' phone number was identified to the participants to communicate with the researchers at any time for any explanations or clarifications.

Pilot study

The tools were pilot-tested for the applicability, feasibility and the clarity of the tools and to determine the time needed for data collection. Finally the subjects of the pilot study were excluded from the study sample.

Field of Work

Preparatory phase: An official agreement was achieved from approved personnel of the study setting where a clear description was given about the nature, significance, phases and anticipated outcomes of the study. The field work was carried out from the first week of March (2019) to the end of February (2020) for data collection and epilepsy educational program. The researchers were available at the pervious mentioned study setting by rotation, three days/week at the morning and afternoon shifts as it is the time of work capacity. At the first of this phase the researchers introduced themselves and then they welcomed for the study sample, after that gave clarification regarding the aim of the study and the anticipated outcomes were clarified for the studied sample, each adolescent was interviewed individually after taken their consent to participate in the study. The interview questionnaire sheet was filled

in by the study adolescent in the presence of the researchers to simplify any questions from the adolescents related to the questionnaire form. While their Epilepsy Knowledge's Scale (EKS) was performed before the distribution of teaching booklet, each participant was taking about 30 to 40 minutes to filled using direct interview. Then, they informed the study sample about what will be provided at the time of the next visit.

Planning and implementation phase: The teaching booklet was distributed for the adolescents were at the previous mentioned setting and follow up was done by the researchers. Then, the researchers were explained to the adolescents simplified epilepsy teaching booklet. At the ended of each session the researchers were summarized of its content and feedback from the adolescents through open discussion and asking questions.

At the beginning, the aim of each session was always done before beginning session. These sessions were consisted from four sessions each session was taken around forty-five minutes. At the first two sessions beginning to explanation of the theoretical information about epilepsy as (definition, causes, types, signs and symptoms, complications, duration of seizures and intensity). The teaching methods which used for the theoretical part were discussion. Then the next two sessions were concerned to the practical part regarding self-efficacy for adolescents' seizure attacks, how to control and reduce the frequency of epileptic attacks. Each participant in the study was given a hard copy of the teaching booklet. Then the researchers by open discussions between them and the participants to ensure that participants understand and to answer any question to confirm information.

Evaluation phase: Evaluate the effect of applying the teaching booklet on adolescents' knowledge, self-efficacy and frequency of epileptic attacks six months after using the previous tools.

Limitation of the study

The adolescents didn't come orderly in follow up to monitor the frequency of seizures attacks which predestined to follow-up them by phone.

Data Analysis

Data statistical analysis, coded and analyzed were done using SPSS 21.0 statistical software package. Data were expressed using descriptive statistics in the form of frequencies, distributions and percentages used for qualitative data. While were using for quantitative data using, means and standard deviations. T-test used to determine the differences. Qualitative data were presented as percentage (%). Statistical significance was considered at as the following: $P > 0.05$ (Non-significant), $P < 0.05$ (Significant) and $P < 0.01$ (Highly-significant).

Results

Table 1: Frequency and percentage distribution of studied sample regarding to socio-demographic characteristics:

Items	No	%
• Age		
• 12< 14	29	48.33
• 14< 16	14	23.33
• 16-18	6	10.00
• Gender		
• Male	38	63.33
• Female	22	36.67
• Family history of epilepsy		
• Father	9	15.00
• Mother	16	26.67
• Grandfather or grandmother	14	23.33
• Possible cause of epilepsy		
• Head injury	2	3.33
• Infection	8	13.33
• Fever	3	5.00
• Psychological	14	23.33
• Idiopathic	33	55%
• Past medical history for any chronic diseases		
• Diabetes Mellitus	3	5.00
• Respiratory disease	6	10.00
• Other	20	33.33
• Cardiovascular disease	31	51.67

Table (1) shows that, 48.33% of the studied sample was age range from 12< 14 years old. Regarding gender 63.33% of them were male and the rest of them were female. While possible causes of epilepsy were 55% of the studied sample was idiopathic cause. As regard past medical history for any chronic diseases; 51.67% had cardiovascular disease.

Figure 1: Frequency and percentage distribution of studied sample related to the frequency of epileptic attacks.



Figure 1 shows that 51.67% of the study sample had a frequency of epileptic attacks in the previous six months before the implementation of the educational program was weekly. While after the implementation of the educational program, 55.00% of those had a frequency of epileptic attacks every six months.

Table (2): Comparison between the studied groups regarding to their knowledge.

Items	Pre-educational program				Post-educational program				Chi-Square	P-value
	Correct Answer No	%	Un-correct Answer No	%	Correct Answer No	%	Un-correct Answer No	%		
1. Adolescents' with epilepsy should avoid strenuous work because this can provoke epilepsy.	12	20.00	48	80.00	50	83.33	10	16.67	26.6*	0.00
2. An EEG can always prove the diagnosis of epilepsy.	16	26.67	44	73.33	51	85.00	9	15.00	29.4*	0.00
3. Adolescents' with epilepsy is as capable as other adolescents.	11	18.33	49	81.67	49	81.67	11	18.33	24.1*	0.00
4. All the adolescents with epilepsy should avoid working with open machinery.	10	16.67	50	83.33	48	80.00	12	20.00	21.6*	0.00
5. Every epilepsy destroys a number of nerve cells in the brain.	11	18.33	49	81.67	49	81.67	11	18.33	24.1*	0.00
6. Adolescents' with epilepsy should not swim without an accompanying person.	9	15.00	51	85.00	52	86.67	8	13.33	32.3*	0.00
7. All adolescents' with epilepsy should avoid flashing or stroking lights.	11	18.33	49	81.67	52	86.67	8	13.33	32.3*	0.00
8. In most cases doctors can control epileptic epilepsy with medication.	13	21.67	47	78.33	51	85.00	9	15.00	29.4*	0.00
9. If your epilepsy are controlled for some months, you can reduce the dose of antiepileptic medication.	12	20.00	48	80.00	48	80.00	12	20.00	21.6*	0.00
10. All adolescents' with epilepsy have similar symptoms.	12	20.00	48	80.00	46	76.67	14	23.33	17.1	0.00
11. If a patient expects an epilepsy, he/she should take an additional dose of antiepileptic medication.	20	33.33	40	66.67	48	80.00	12	20.00	21.6*	0.00
12. On job application, a patient should always disclose his epilepsy condition.	12	20.00	48	80.00	48	80.00	12	20.00	21.6*	0.00
13. Adolescents' with epilepsy can take an active part in sports.	15	5.00	5	5.00	3	1.67	7	8.33	11.3*	0.00
14. An epileptic type, epilepsy always results in loss of consciousness.	12	0.00	8	0.00	0	3.33	0	6.67	26.6*	0.00
15. Adolescents' whose epilepsy only happen during	9	5.00	1	5.00	6	6.67	4	3.33	17.1*	0.00

Items	Pre-educational program				Post-educational program				Chi-Square	P-value
	Correct Answer No	%	Un-correct Answer		Correct Answer		Un-correct Answer			
16. sleep may hold a driver's Everyone can have an epilepsy, given the appropriate circumstances.	15	5.00	5	5.00	8	0.00	2	0.00	21.6*	0.00
17. Blood samples can be used to measure the concentration of antiepileptic medication in the body.	9	5.00	1	5.00	9	1.67	1	8.33	24.1*	0.00
18. Epilepsy is a symptom of mental illness	14	3.33	6	6.67	8	0.00	2	0.00	21.6*	0.00
19. If persons with epilepsy drive, they must inform the driving authorities about their condition.	10	6.67	0	3.33	7	8.33	3	1.67	19.3	0.00

Statistically significant at $p < 0.01$

Table (2) illustrated that, the studied group knowledge before instruction were 20.43% had a correct answer. On the other hand the correct answer after instructions were 80.56%. that is clarifying, there's a highly statistically significant difference as regarding epilepsy knowledge between adolescents pre and post implementation for the educational program. Where the adolescent's knowledge was increased and was better after application of teaching booklet than pre.

Table (3-a): Comparison the mean scores adolescents regarding epilepsy self-efficacy about of situations.

Items	Pre-educational program	Post-educational program	t-test	P-value
	Mean ± SD	Mean ± SD		
1. I can always practice relaxation exercises to help me manage stress.	1.483 ± 0.68	2.750 ± 0.57	-11.40*	0.00
2. I can always get enough exercise.	1.383±0.69	2.583± 0.74	-9.10*	0.00
3. I can have fun with other adolescents and still manage my epilepsy.	1.117±0.32	2.567± 0.74	-14.21*	0.00
4. I can always use stress management techniques to stop epilepsy.	1.100 ± 0.30	2.550 ± 0.77	-12.60*	0.00
5. I can always take care of day-to-day changes in my epilepsy.	1.100 ± 0.30	2.567± 0.74	-13.99*	0.00
6. I can always manage my epilepsy in new situations.	1.067± 0.25	2.567 ± 0.74	-15.54*	0.00
7. I can always eat healthy meals.	1.083±0.28	2.567±0.74	-15.37*	0.00
8. I can always manage my epilepsy.	1.067± 0.25	2.567± 0.74	-13.94*	0.00
9. I can always recognize situations or activities that may make my epilepsy worse.	1.100 ± 0.30	2.567± 0.74	-13.99*	0.00
10. I can always find ways to get enough sleep.	1.100 ± 0.30	2.567± 0.74	-13.99*	0.00
11. I can always handle situations that upset me dosage of antiepileptic medication.	1.083 ± 0.28	2.567± 0.74	-14.14*	0.00
12. I can always find ways to do things that I enjoy to help me manage stress.	1.117 ± 0.32	2.567 ± 0.74	-14.21*	0.00
13. I can always call my doctor or nurse when I need to ask about epilepsy.	1.133 ± 0.34	2.567 ± 0.74	-14.07*	0.00
14. I can always keep my epilepsy under control.	1.117 ± 0.32	2.700± 0.62	-15.58*	0.00
15. I can always take time out from my daily activities to go to the doctor for an epilepsy check-up.	1.250 ± 0.51	2.683± 0.65	-15.38*	0.00
16. I can always avoid situations or activities that make my epilepsy worse.	1.250 ± 0.54	2.700 ± 0.59	-14.21	0.00
17. I can always drive or get a ride to the doctors' office when I need to see him.	1.233 ± 0.53	2.800 ± 0.61	-16.29	0.00
18. I can always get medical help when needed for my epilepsy.	1.167± 0.38	2.900± 0.30	-30.11	0.00
19. I always carry personal identification in case I have an epilepsy.	1.267 ± 0.55	2.783 ± 0.49	-16.76	0.00
Total self- efficacy level	1.169 ± 0.22	2.638 ± 0.50	-22.10	0.00

**** Significant at the 0.01 level**

It is evident from **Table 3-a**, a highly statistical difference, between pre and post

implementation of the educational program for adolescents with epilepsy. Where compared the total self- efficacy level for Mean \pm SD scores for situations of the study sample pre implementation of the educational program were 1.169 ± 0.22 , while post implementation of the educational program were 2.638 ± 0.50 , p- value at 0.00 .

Table (3- b) Comparison the mean scores adolescents regarding epilepsy self-efficacy about of anti-epileptic drugs.

Items	Pre educational program	Post educational program	t-test	P-value
	Mean \pm SD	Mean \pm SD		
1. I can always take my epilepsy medication when I am away from home.	1.317 \pm 0.60	2.783 \pm 0.49	- 16.82*	0.00
2. I can stay on my epilepsy medication most of the time.	1.200 \pm 0.48	2.833 \pm 0.46	- 20.75*	0.00
3. I can always name my epilepsy medication.	1.317 \pm 0.54	2.767 \pm 0.50	- 15.53*	0.00
4. I can always plan ahead so that I do not run out of my epilepsy medication.	1.183 \pm 0.47	2.800 \pm 0.48	- 20.42*	0.00
5. I can always take my epilepsy medication on holidays, birthdays, vacations, and other special occasions.	1.200 \pm 0.55	2.850 \pm 0.44	- 18.03*	0.00
6. I can always take my epilepsy medication around adolescent who do not know that I have epilepsy.	1.217 \pm 0.52	2.800 \pm 0.40	- 17.62*	0.00
7. I can always tell when I am having side effects from my epilepsy medication.	1.167 \pm 0.46	2.867 \pm 0.34	- 24.83*	0.00
8. I can always deal with any side effects from my epilepsy medication	1.133 \pm 0.34	2.783 \pm 0.42	- 26.57*	0.00
9. I can always fit my epilepsy medication schedule around my daily activities.	1.183 \pm 0.50	2.883 \pm 0.32	- 23.45*	0.00
10. I can always do what needs to be done if I miss dose of my epilepsy medication.	1.117 \pm 0.32	2.833 \pm 0.49	- 23.95*	0.00
11. I can always follow my epilepsy medication schedule	1.133 \pm 0.47	2.850 \pm 0.36	- 23.95*	0.00
12. I can always find ways to remember to take my epilepsy medication.	1.200 \pm 0.51	2.883 \pm 0.32	- 20.89*	0.00
13. I can always find a way to get epilepsy medication if I go out of town and forget mine	1.150 \pm 0.44	2.817 \pm 0.39	- 23.82*	0.00
14. I can always get my epilepsy medication refilled when i need to.	1.167 \pm 0.38	2.817 \pm 0.43	- 21.10*	0.00
Total self-efficacy level	1.192\pm 0.25	2.826 \pm 0.22	- 59.13*	0.00

**** Significant at the 0.01 level**

It is evident from Table 3-b, a highly statistical difference, between pre and post implementation for educational program for adolescents with epilepsy. Where compared the total self-efficacy level for Mean \pm SD scores for anti-epileptic drugs of the study sample were 1.192 ± 0.25 pre- implementation, while post implementation were 2.826 ± 0.22 , p- value at 0.00.

Table 4. Correlation total knowledge and frequency of attacks for the study adolescents before implementation the educational program and after six months

Items	Frequency of attack R-value	P-Value
Before six month		
▪ Knowledge's Scale (EKS).	0.062	0.637
After six month		
▪ Knowledge's Scale (EKS).	-0.294*	0.021

* Correlation is significant at the 0.05 level

Table 4: illustrated that there was no significant correlation between total knowledge and frequency of epileptic attacks among the studied sample pre implementation of the educational program. On other hand, there was a highly significant correlation between total knowledge and frequency of epileptic attacks among the studied sample six months after implementation of the educational program.

Table 5-A. Correlation between total self-efficacy scale for anti-epileptic drugs and frequency of attacks for the study adolescents before and six months after implementation the educational program

Items	Frequency of attack R-value	P-Value
Before six month		
Self-efficacy scale for anti-epileptic drugs.	0.160	0.221
After six month		
Self-efficacy scale for anti-epileptic drugs.	-0.336*	0.005

*Correlation is significant at the 0.05 level

Table 5-a: show that there was no significant correlation between total self-efficacy scale for anti-epileptic drugs and frequency of epileptic attacks among the studied sample pre implementation of the educational program. While, there was a highly significant correlation between total self-

efficacy scale for anti-epileptic drugs and frequency of epileptic attacks among study sample six months after implementation the educational program.

Table 5-b. Correlation between total self-efficacy scale for about different situation of epilepsy and frequency of attacks for the study adolescents before and six months after implementation the educational program.

Items	Frequency of attack	
	R-value	P-Value
Before six month		
Self-efficacy scale for different situation of epilepsy	0.086	0.513
After six month		
Self-efficacy scale for different situation of epilepsy.	-0.314*	0.015

*Correlation is significant at the 0.05 level

Table 5-B: show that there was no significant correlation between total self-efficacy scale for about different situation of epilepsy and frequency of epileptic attacks among the study sample pre implementation of the educational program. On another hand, there was a highly significant correlation between total self-efficacy scale for about different situation of epilepsy and frequency of epileptic attacks among the study sample six months after implementation of the educational program.

Discussion

Regarding adolescents age the majority of the studied group were males, their age was between twelve to Fourteen years. There was an agreement regarding the demographic characteristics of the present study with the results of the study which was conducted by **Intisar et al,(2018)** where the age of the patients was less than 30 and the majority of them were male and single this could be related to the similarity of the Arabic culture.

Regarding possible causes of epilepsy, more than half of studied group were idiopathic causes. And this is agreed with **Shawk, (2015)**; who notified that the most

cases suffering from epilepsy were without any previous causes, that similarly with **Ekeh & Ekrikpo, (2015)**. A study was conducted in Nigeria mentioned the main causes of epilepsy was idiopathic. Similar study which was conducted by **Desai et al.,(2015)** in India on the evaluation of knowledge, attitudes, and practice of epileptic patients at a rural health service center, reported that; about 25% of patients had no understanding of the causes of epilepsy, and 9% of patients thought it is caused by an evil spirit. In a Tanzanian study which was carried out by **RwizaHTet al., (2015)**, 40.6% of patients thought that epilepsy was infectious.

The researchers were observed that more than half of the study group had a frequency of epileptic attacks weekly, before

implementing the educational program by 6 months. While after implementing the educational program by 6 months were more than half of them had frequency of epileptic attacks every 6 months. That is revealed at the present study where, improvement in adolescent knowledge's after instruction of epilepsy teaching booklet with highly statistical significant difference regarding awareness knowledge about epilepsy in between adolescents' before and after implementation the educational program, that was in respect with **Buck et al., (2018)**, who notified that lack of knowledge about epilepsy has been found to be an important determinant of negative attitudes towards persons with this disease. So that the researchers were show the improving the knowledge about epilepsy will improve self-efficacy for adolescents with epilepsy.

Also this result was agreed with **Adavi et al., (2016)** notified that determined the person's perspective on epilepsy: self-knowledge in between Omanis. The cross cultural sample had unsatisfied knowledge about their disease. Most adolescents were unable to give accurate knowledge's of epilepsy and were not able to give correct answers to the questions pertaining to safety and compliance. The researchers proposed the need for improving adolescent's knowledge as with other disorders, adolescent's with epilepsy should take organized education programme about how to the best self-efficacy regarding to epilepsy.

The present study was matched with **Abd-Alla, (2014)**; reported the educational training program has effectiveness in improving adolescent's ' knowledge. As well as, **Ookalkar, (2019)**; documented that educational programs should be will organized according to the adolescent's needs with continuous evaluation to increase adolescent's

knowledge and awareness. That will reduce frequency of errors, eventually resulting in effective patient care.

The present study revealed that knowledge only is not enough to increase knowledge and positive self- efficacy to decrease frequency of epilepsy attacks. There is guide that chronic disease self-efficacy is influenced by a person's knowledge about health. According to **Lorig and Holman, (2013)** Self-efficacy is an individual's belief in his/her ability to successfully organize, control his/her health habit, and achieve useful health outcomes and decrease incidence of disease **Wong, and Hockenberry, (2017)**.

As regarding the relation between total knowledge and frequency of attacks among the studied sample the current study results illustrated that there was no significant correlation between total knowledge and frequency of epileptic attacks between the study subjects before implementation of the program. While after six months from the implementation of educational program, revealed a positive significant correlation between total knowledge and frequency of attacks among the study sample.

Inconsistency with the present study results of the knowledge about epilepsy, **Landover, (2014)**. reported and relation between the duration of epilepsy and duration of follow-up to the level of knowledge about epilepsy. This may be related to the lack of education by the health professionals about the epilepsy before the start of therapy. People living in different parts over the world and even those suffering from epilepsy have poor knowledge regarding the etiology, signs and symptoms, and its treatment as shown by the studies which were done to determine

knowledge, attitude, and practice about epilepsy **Amin, (2017)**.

In conclusion, the application of the educational program is considered to have led to an increase in adolescents' knowledge regarding epilepsy, improve their self-efficacy and from it reduce the frequency of epileptic attacks.

Conclusion

Based on the results of the current study, the researchers observed a lack of adolescents' knowledge of epilepsy and how to reduce the frequency of these attacks before presenting a teaching booklet of self-efficacy. While an improvement in the adolescents knowledge's was observed after the presenting of the teaching booklet, which had a positive effect on improving the knowledge of adolescent and self-efficacy for them, including reducing the frequency of attacks.

Recommendations

Based on the finding and conclusion of the current study, the following recommendations were recommended:

- A periodically educational program planned and offered on regular basis for epileptic adolescents to minimize their attacks.
- Replication of the current study on the samples largest to attain universalization and using the educational program by wider manner.

Conflicts Of Interest Disclosure

The authors declare that there is no conflict of interest.

Acknowledgments

No external or intramural funding was received.

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