

## Effect of Health Education on Mothers' Knowledge and Practice about Care of Children with Epilepsy and Administration of Antiepileptic Drugs

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### Abstract

**Background;** Epilepsy starts in childhood in 60% of cases and Most of the clinically significant aspects of the disease occur during childhood. Epilepsy is a chronic neurological disorder, characterized by recurrent unprovoked seizures. The mothers play the most significant role in helping their Epileptic children adapt to their condition. **The present Study was aimed to** evaluate the effect of health education on mother's knowledge and Practice about care of children with epilepsy and administration of antiepileptic drugs, **Subjects and Method:** A quasi-experimental research design was used in the present study, the study was Conducted at the pediatric outpatient neurological clinic at Tanta University hospital and Abo Hamous General Hospital which is affiliated to the Ministry of Health and Population on sixty mothers and their children with epilepsy. **Result:** There was statistically significant difference was found between total knowledge and practice Pre, Post and Follow up **Conclusion:** It can be concluded that there was positive significant improvement of mother knowledge, reported practices about care of children with epilepsy and administration of antiepileptic drugs after implementing health education. **Recommendation:** Continuous health education should be applied for mothers at outpatient and providing updating booklets, pamphlets to acquaint them with essential knowledge and practices about care for their children with epilepsy and administration of antiepileptic drug

**Keyword:** Anti-epileptic drug, Children, , Health education, Mothers Knowledge, Practices

### Introduction

Epilepsy is a brain disorder characterized by episodes of seizures. It is not a specific disease, but rather a heterogeneous condition arising from a variety of pathological insults involving the cortex, such as tumors or genetic channelopathies. Epilepsy affects infants and children more than any other age group. Studies have shown that epilepsies are the most common conditions encountered in most pediatric neurology clinics in many parts of

the developing world. (Engel J et al., 2019; Raspall-Chaure et al., 2018)

Epilepsy is the most common serious neurological disorder with a worldwide prevalence between 5 and 10 per 1000 with considerable variations between different settings. In Egypt the prevalence was 6.98 / 1000. (El Tallawy H, et al, 2020).

In children epilepsy is often attributed to birth defects, congenital anomalies, or genetic

disorders affecting the brain. The most cause of epilepsy is cryptogenic idiopathic. According to the official website of epilepsy, about 60 million people in the world suffer from epilepsy, where an average of between 125,000 and 150,000 are added to this infection, each year, from among which about 30% are children. (Shorvon S. et al., 2020; Zarowitz B, et al., 2020).

Epileptic children and their parents face many social and psychological problems. Problems of socialization, anxiety, cognitive impairment and behavioral (Shorvon S. et al., 2020 )

The effect of epilepsy on a child is a combination of physical consequences of the seizure, the effect on the social position, and the physiological outcome or both of them. Furthermore, not only the child with epilepsy but also the family and indirectly the community are affected. In addition, children with epilepsy are at increased risk of behavioral, emotional, cognitive, social and psychiatric problems which can adversely affect children's` developmental outcomes and considered being more handicapping than the seizure manifestation itself. ( Zarowitz B, ,et al., 2020 Jonsson P, et al., 2019)

Caring is at the center of nursing practices and in emphasizing the importance of nurse care role In fact, caring helps both the children and their mothers to compile goals and achieve them at minimum cost, time and energy. Also, due to the emphasis on resource management, cost control, the effectiveness of children care, promotion of quality and accountability, good care of the children is necessary. (Holland C, et al., 2021)

Nurses play a corner stone in the process of managing children with epilepsy. An important nursing responsibility is the management of children`s seizure which focuses on preventing injury during seizures,

administrating appropriate medication and treatments to prevent or reduce seizures, and monitoring neurologic status closely. (Ricci S. et al., 2021)

Mothers` lack of knowledge or preparedness to offer first aid to their child with epilepsy, the best approach for epilepsy should involve establishment of a good communication with mothers and should improve their responses to epilepsy at home. It is importance that mothers are relieved of their concerns and are capable of intervening optimally with the disease, understanding and improving mothers knowledge, and practices toward epilepsy are essential. (Barzegar M, et al., 2020; Elbilgahy A, et al., 2018)

There are many seizure-prevention drugs, called anti-epilepsy drugs or anticonvulsant drugs. Treat the symptoms of epilepsy by reducing the frequency of seizures. (Jafarpour S, et al.,. 2019; Faught E.,2022)

### **Significance of the study**

The frequency of epilepsy in Egypt was 6.98 per 1000 people. The most common severe neurological disorder is epilepsy. It affects 5 to 10 people per 1000 people worldwide, with significant regional difference. The best way to treat epilepsy is to build strong relationships with mothers. Since parents may not aware with how to care for their children with the condition.

### **Tools of data collection**

#### **Tool I: Mothers knowledge structured interview schedule:-**

It was developed by the researcher to obtain the demographic data of the family and the epileptic children.

#### **Part(1):-Sociodemographic characteristics of mothers as:**

Age, educational level, residence, family size, marital status and number of their children.

#### **Part (2): Children characteristic as: age, sex, birth order**

**Part (3): Medical history of children:** history of children admission to hospital, onset and duration of epilepsy, factors predisposing to occurrence for fit of epilepsy

**Tool II: Mothers' knowledge about epilepsy and administration of antiepileptic drugs:**

It was developed by the researcher after reviewing of the related literatures ( Çellk O., et a et al l., 2023; Jeetendra K, et al., 2022) to assess mothers' 'knowledge before and after implementation of health education:

**Part (1): Knowledge about:** Definition of epilepsy causes, predisposing factors, clinical manifestation and complications.

**Part (2): Knowledge of mothers about administration of antiepileptic drugs:** Indication of anti-epileptics drug, dose, route, times of given, action of drug, side effects, precaution when give drug, dose of emergency drug and complications.

**Three level of scoring for question was as the following**

Correct and complete answer was scored (2)

**Correct and incomplete answer was scored (1)**

Wrong answer or don't know and was scored (0)

**The total score system of mother' knowledge was classified into three levels as following:**

Less than 60% was considered poor knowledge

From 60 to less than 75% was considered fair knowledge

From 75-100 % was considered good knowledge

It was developed by researcher to assess mothers practice about care of children with epilepsy and administration of antiepileptic drugs (Schrier L, et al .,2020)

**Part (1): Care of seizure before, during and after fit attacks**

**a- Care of seizure before fit attacks**

-Take prescribed. anti-epileptic medication

-Eat regular meals.

-Pay attention to fever

-Avoid flashing lights

-Avoid darkness

-Don't leave him alone

- **Aware of warning signs**

**b-Care of child with seizure during fit attacks**

-Stay with the child until the seizure is over.

-Pay attention to how long the seizure lasts.

-Stay calm during seizure take at last a few minutes.

-Prevent injury by moving nearby objects out of the way.

-Make the child comfortable as possible.

-Don't hold the child down.

-Don't put anything for child mouth.

-Don't give water, pills or food by mouth unless the child is fully alert.

-Make sure their breathing is okay.

**c-After the seizure fit**

-The child should be placed on the left side in recovery position

- Keep risk of post-seizure vomiting, before the child is fully alert.

-The child head should be turned so that any vomit was drain out of the mouth without being inhaled

-Record time begin and end of fit

**Part (2): Administration of antiepileptic drugs which includes:**

- Receive antiepileptic drugs

- Caution about the necessity of giving the anti-epileptic drugs regularly and for as long as required.

- Emergency calling service if child stop breathing, vomit, disturbed movement and behavior changes.

-Management of side effect related administration of antiepileptic drugs

**Scoring system for mothers' reported practice was as follows:**

Done correctly and complete was score (1)

Done incorrect or not done well was score (0)

**The total score of mothers practice was calculate as follow:**

Less than 60 were considered unsatisfactory practice

From 60-100% were considered satisfactory practice

**Method**

**1- Administrative process:-**

An official permission to conduct this study was obtained from Faculty of Nursing Tanta University directed to administrators of pediatric department at Tanta University hospital to obtain their approval and cooperation for carrying out this study.

**2-Ethical and legal considerations**

a-Ethical approval was obtained from Scientific Research Ethical Committee in the Faculty of Nursing, Tanta University to conduct the study.

b- Mothers were informed about the confidentiality of the information obtained from them

c-The nature of the study didn't cause any harm or pain to the entire sample. Mothers' consents were obtained to participate in the study after providing appropriate explanation about the aims of the study.

d- Mothers who accepted to participate were involved in the current study, and they had the right to withdrawal from the study at any

**3- Tools Development:** The Tool of the study was developed after review of related literature

**4- Content validity**

The tools of the study were presented to a jury of five experts in the field of Paediatric Nursing to check content validity and clarity of the

questionnaire. Modifications were carried out accordingly. The face validity of the questionnaire was calculated based on experts' opinion after calculating content validity index of its items and it was 99.1%.

**5- Reliability** The study tools were tested by the pilot subjects. The test of reliability (cronbach's alpha) was 0.735 indicating high reliability of tests.

**6-A Pilot study**

was conducted on (10%) of the mothers and children to test the feasibility and applicability of the tools and to determine any obstacles that may encountered during the period of data collection accordingly, general modification was done, it was excluded from the study sample.

7-Tool (1, II, III) was used to assess mother knowledge and practice was filled in the clinical area by the studied children's in presence of the researcher.

8- The study of phases: The present study was conducted on four phases:

Including assessment, planning, implementation and evaluation

The study was calculated through four phases.

**1-Assessment phase**

It was carried out by the researcher for all study subjects to collect baseline data, and to assess mothers' knowledge regarding epilepsy and admiration of antiepileptic drugs with before, immediately and after implementation of health educational program. **(Tool II).**

The researcher was assessing the actual mothers' practice before, immediately and after one month of implementation health educational program. The researcher was available 2 days per week alternatively in the previously mentions settings. **(Tool III)**

**2- Planning phase**

Educational intervention was planned according to mother's educational needs

assessment and based on literature review which was included the following:

- Setting objectives.
- Preparation of the content which was covered the reason behind the implementation of the sessions.
- Different methods and materials of health educational were used including lectures, group discussion, demonstration and video-based learning.

### 3- Implementation phase

-Health educational was carried out for mothers through conduction of successive fifth sessions according to the actual need assessment of the mothers through two days /week and scheduled in the morning. The time for each session was about 30 – 45 minutes including period of health education according to the mothers 'progress and feedback.

-Different methods of teaching were used including interactive lectures, video presentations, and booklet.

-The studied mothers were divided into small groups and each group was consisted of five mothers

Health education was carried out for each group separately through conduction of successive sessions according to the actual need assessment of the studied mothers.

The sessions covered the following

**The first session:** - Focused on definition, causes, predisposing factors, clinical manifestation and complication of children with epilepsy

**The second session:** Focused on onset, duration and care of children with epilepsy before, during and after fit attacks

**The third session:** Administration of antiepileptic drugs, indication of anti-epileptics drug, dose, route, times of given, action of medication, side effects and complications.

**The fourth session:** Problems accompanying with anti-epileptic drug precaution when give medication, does of emergency drugs

**The fifth session:** Care of children with seizure before, during and after fit attacks

### 4- Evaluation phase

Evaluation of the guidelines effects on mothers 'knowledge and practice was carried out by using (Tool I, II, and III). Each mother was evaluated immediately after implementation of health education.

8-Data was collected within 6 month

### Statistical analysis

The collected data were organized, Collected data were organized, tabulated and statistically analyzed using spss software (statistical package for the social sciences, version 23, SPSS Inc. Chicago, IL, USA).for quantities data, the range, mean and standard deviation were calculated. For qualitative data, which describes categorical set of data by frequency, percentage or proportion of each category, comparison between two groups and more was done using Chi-square test ( $\chi^2$ ).for comparison between means of two groups of parametric data of independent samples, student t-test was used .for comparison between more than two means of parametric data, value of ANOVA test was calculated .correlation between variables was evaluated using Pearson's correlation coefficient (r).significance was adopted at  $p < 0,05$  For the interpretation of results of tests of significance

### Results

Figure (1,2): Shows percentage distribution of studied mothers about their socio-demographic characteristics. This figure revealed that 41.67% of studied mothers their age were from 30 to less than 35 years old, while 25% of them were from 35 to 40 with mean age 32, 41  $\pm$ 5.19. Concerning educational level, it was observed that 50% of

studied mothers were primary and preparatory education and 10 % of them were university education. As regard to the residence of the studied mothers, it was observed that 60% of them were from urban area, while 40% were from rural area.

**Figure (3):** Demonstrates percentage distribution of studied epileptic children about socio-demographic characteristics. It was noted that the age of 45% of children from 5 to less than 10 years. Regarding sex, it was cleared that 61.7% of them were males, while 38.33% were females, it was also noted that 45% of children were the third in their family while 13, 33% of them were the first in the family.

**Figure (4):** Total scores of mothers knowledge regarding epileptic children it was observed that 90.00% of studied mothers had poor knowledge level regarding their epileptic before program implementation and improved after program to 71.67

**Figure (5):** Total scores of mother's practice about care of epileptic children. it was found that 15.0% of mothers practice were Unsatisfactory after program compared to 96.67% before program and 20% Follow up. On the other hand, 3.33% of mothers were satisfactory of total scores of mothers practice about care of epileptic children before program compared to 85% after program implementation and 80% follow up. There was statistical significant difference  $5\% \chi^2=102.13, P=0.000^*$

**Table (1):** Illustrates percentage distribution of the studied mother's practice about administration of antiepileptic drugs it was observed that there were statistical significant differences of studied mothers' practice regarding receive antiepileptic drugs , caution about the necessity of giving the anti-epileptic drugs regularly, emergency calling service ,

and management of side effect related administration of antiepileptic drugs ( $P=0.000, P=0.000, P=0.000, P=0.000$  and  $P=0.000$ ), respectively before, immediately and after one month of health educational program implementation

A significant improvement in mothers' practice regarding management of side effect related administration of antiepileptic drugs where their 21.67% answer were done before health education program compared 100.00% to done immediately post and after implementation of health education

**Table (2):** Shows correlation between total scores of mothers' knowledge and practice about care of epileptic children. It clears that there was no significant difference between mothers total knowledge score and practice, before program. on the other hand, immediately program , 71.67% has good practice score related to good mother's knowledge score,  $\chi^2=28.627, P=0.000$ . and after one month of health educational program implementation , there was significant difference between them where  $\chi^2=32.22, P=0.000$

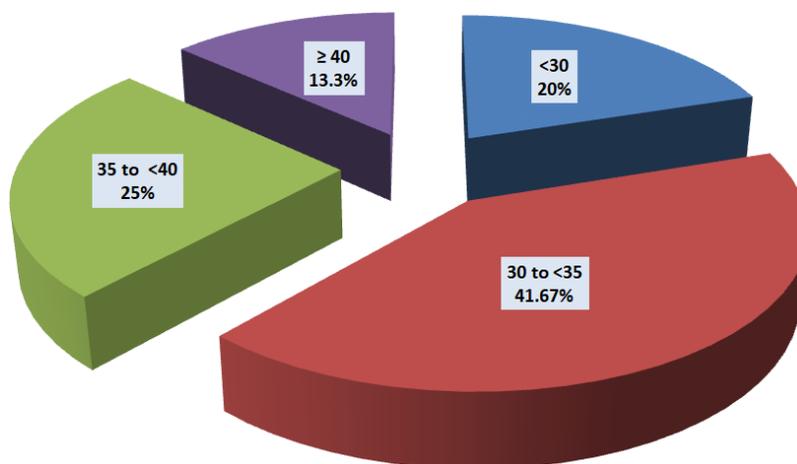
$P=0.000$ . In addition after program was significant relationship at 5% between practice and mother's knowledge score where  $\chi^2=32.222, P=0.000$

**Table (3):** Shows the relation between total mean scores of mothers' knowledge and socio-demographic characteristics of their mothers. It was observed that there was no-significant relation between mothers' age and their total knowledge scores. There was relation between mother's education level and their total knowledge scores with statistically significant difference was found

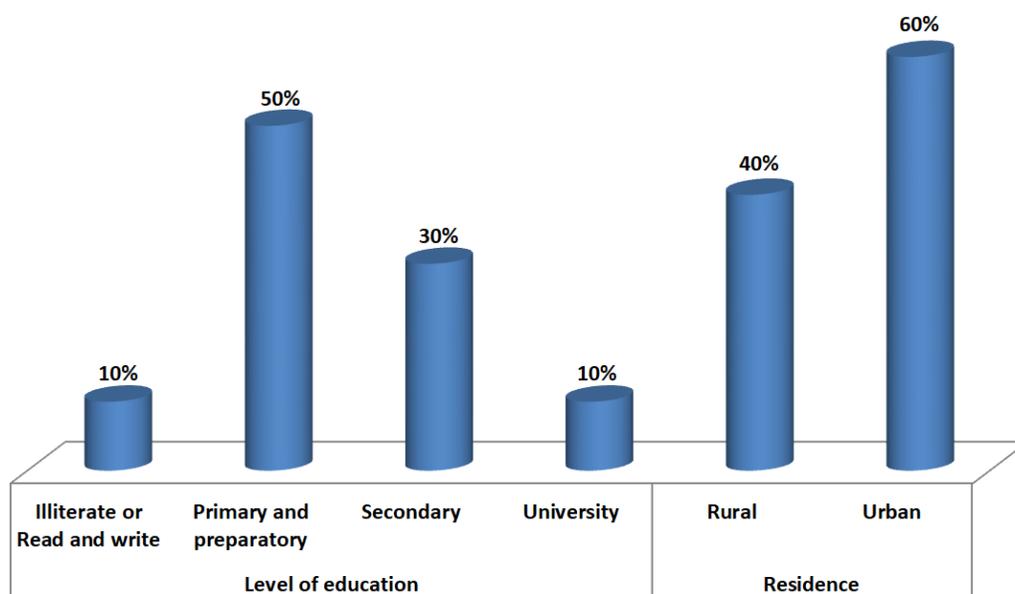
**Table (4):** Shows the relation between mean total scores of mothers' practice and socio-

demographic characteristics of their mothers. It was observed that there was no-significant relation between mothers' age and their total practice cores. There was relation between

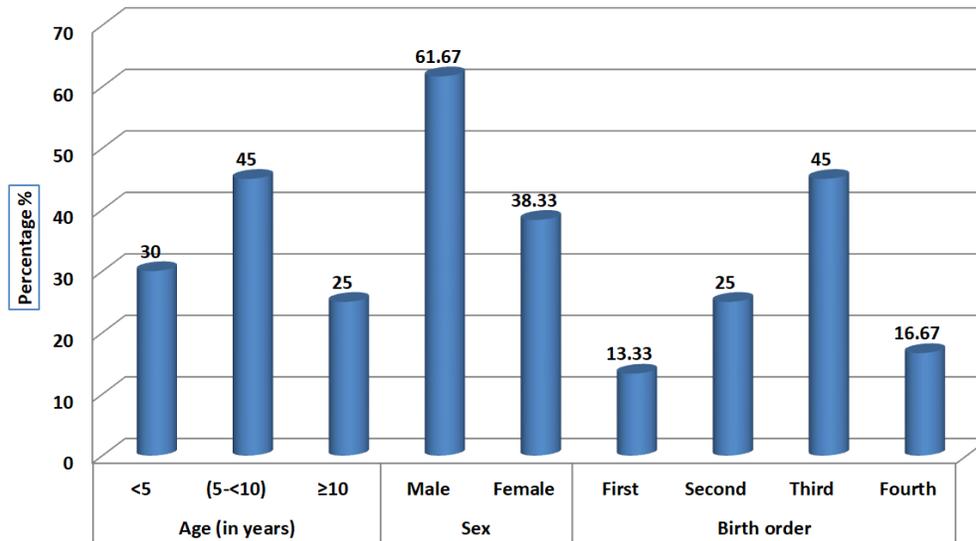
mother's education level and their total practice scores with statistically significant difference



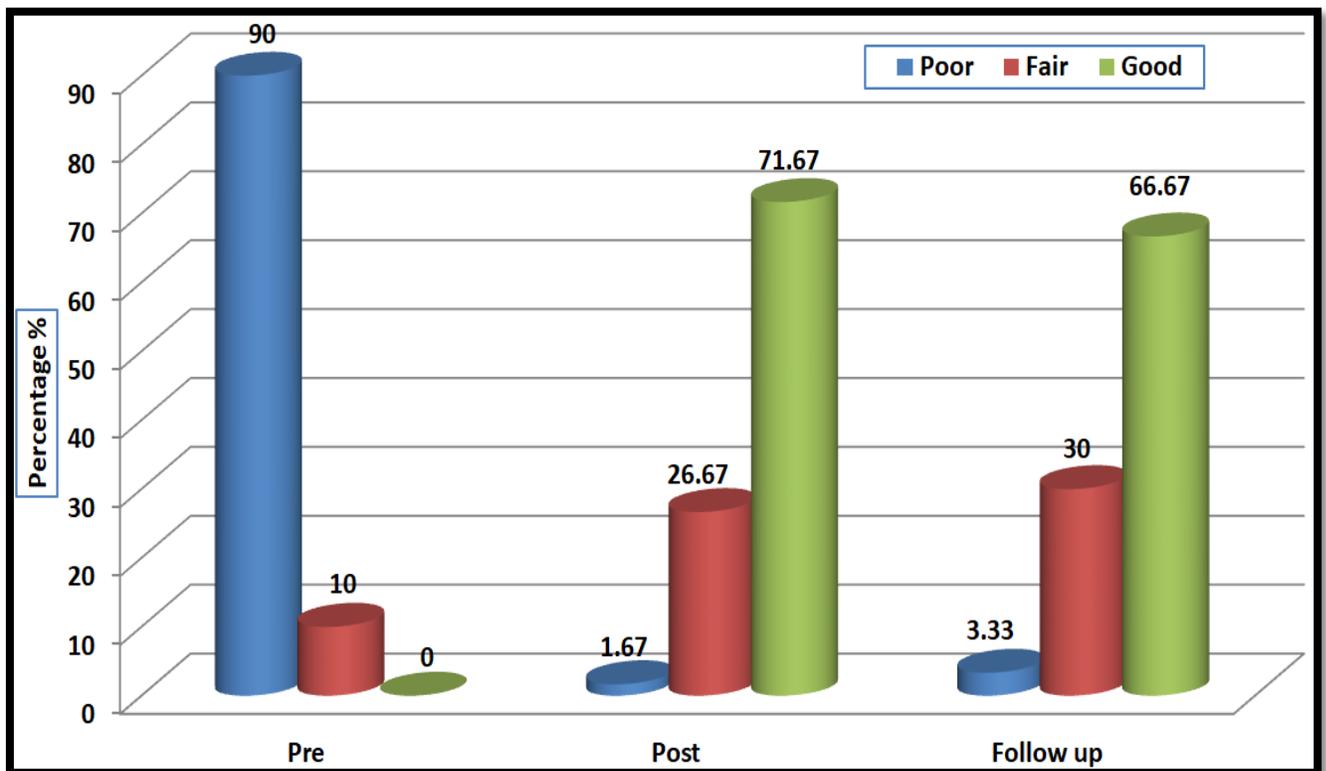
**Figure (1): Mother' age (in years)**



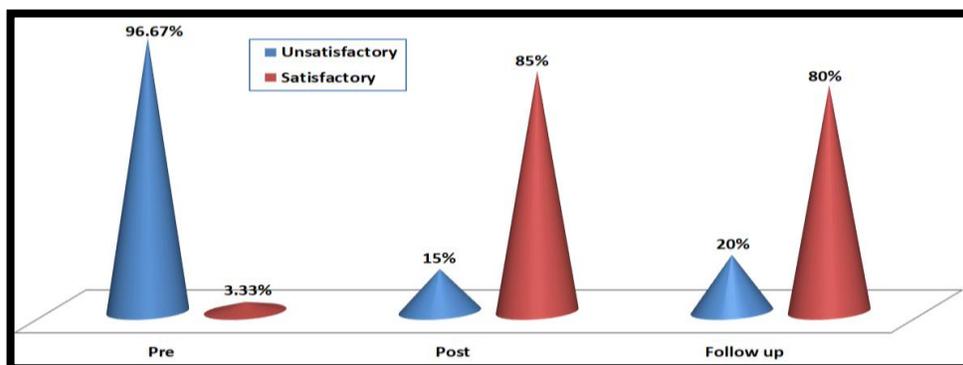
**Figure (2): Mothers educational level and residence**



**Figure (3): Epileptic children about their socio-demographic characteristics**



**Figure (4): Total scores of mothers knowledge about care of epileptic children**



**Figure (5) : Total scores of mothers practice about care of epileptic children**

**Table (1): Percentage distribution of the studied mothers' practice regarding administration of antiepileptic drugs**

Administration of antiepileptic drugs	The studied mothers (n=60)												$\chi^2$ P
	Pre				Post				Follow up				
	Not done		Done		Not done		Done		Not done		Done		
	No	%	N	%	No	%	No	%	No	%	No	%	
Receive antiepileptic drugs	58	96.67	2	3.33	0	0.00	60	100.00	20	33.33	40	66.67	21.150 0.000*
Caution about the necessity of giving the anti-epileptic drugs regularly	58	96.67	2	3.33	3	5.00	57	95.00	17	28.33	43	71.67	25.740 0.000*
Emergency calling service	57	95.00	3	5.00	0	0.00	60	100.00	29	48.33	31	51.67	17.746 0.000*
Management of side effect related administration of antiepileptic drugs	47	78.33	13	21.67	0	0.00	60	100.00	0	0.00	60	100.00	23.351 0.000*
Range	(1-3)				(2-4)				(2-4)				F=34.06 P=0.000*
Mean $\pm$ SD	2.31 $\pm$ 0.867				3.66 $\pm$ 0.539				2.94 $\pm$ 0.591				

\* Significant at level  $P < 0.05$

**Table (2): Correlation between total scores of mothers' knowledge and practice regarding care of epileptic children**

Total knowledge level	The studied mothers (n=60)											
	Total practice level											
	Pre				Post				Follow up			
	Unsatisfactory (n=58)		Satisfactory (n=2)		Unsatisfactory (n=9)		Satisfactory (n=51)		Unsatisfactory (n=12)		Satisfactory (n=48)	
No	%	No	%	No	%	No	%	No	%	No	%	
Poor	54	90.00	0	0.00	1	1.67	0	0.00	2	3.33	0	0.00
Fair	4	6.67	2	3.33	8	13.33	8	13.33	10	16.67	8	13.33
Good	0	0.00	0	0.00	0	0.00	43	71.67	0	0.00	40	66.67
$\chi^2$	FE				28.627				32.222			
P	0.008*				0.000*				0.000*			
R	0.201				0.407				0.137			
P	0.286				0.026*				0.470			

FE: Fisher' Exact test

r: Pearson' correlation coefficient

\* Significant at level  $P < 0.05$

**Table (3): Relation between mean total scores of mothers knowledge about care of epileptic children and their sociodemographic characteristics**

Mothers characteristics	The studied mothers (n=60)		
	Pre	Post	Follow up
<b>Age (in years)</b>			
<30	40.50±3.74	39.42±7.80	39.75±8.38
30 -<35	28.56±2.50	50.00±2.39	47.00±0.00
35- <40	31.53±2.67	49.53±1.92	47.00±0.00
≥ 40	12.67±6.33	47.80±2.14	45.56±2.43
F , P	100.88 , 0.00*	18.72 , 0.00*	8.79 , 0.00*
<b>Level of education</b>			
Illiterate	3.50±2.12	27.00±15.56	26.00±15.56
Read and write	10.00±1.63	41.75±2.75	40.75±3.59
Primary and preparatory	26.30±5.32	46.67±3.25	45.13±2.45
Secondary	32.00±2.95	49.61±1.98	47.00±0.00
University	41.83±3.31	49.50±2.59	47.00±0.00
F , P	53.30 , 0.00*	21.97 , 0.00*	26.96 , 0.00*
<b>Residence:</b>			
Rural	19.75±8.59	43.00±6.69	41.88±6.48
Urban	33.03±4.82	49.42±1.86	47.00±0.00
t , P	58.63 , 0.00*	29.88 , 0.00*	22.69 , 0.00*
<b>Family members</b>			
2	5.00±3.00	31.00±13.00	30.00±13.00
3-4	31.48±5.08	48.71±2.29	46.25±1.89
≥5	15.22±4.84	42.22±2.44	43.00±2.60
F , P	73.04 , 0.00*	50.20 , 0.00*	40.07 , 0.00*
<b>Number of children</b>			
1-2	40.00±3.81	50.11±2.26	47.00±0.00
3-4	30.24±2.12	48.97±1.62	46.74±0.99
≥5	16.18±7.70	40.88±6.90	40.29±7.06
F , P	90.20 , 0.00*	27.36 , 0.00*	17.67 , 0.00*
<b>Marital status</b>			
Married	45.50±0.71	47.00±3.47	45.31±2.68
Divorce	26.27±6.91	51.50±0.71	47.00±0.00
Widow	31.10±14.75	45.20±11.08	42.80±10.26
F , P	5.75 , 0.01*	1.22 , 0.30	1.35 , 0.27

\* Significant at level P&lt;0.05

**Table (4): Relation between mean total scores of mothers practice about care of epileptic children and their sociodemographic characteristics**

Sociodemographic characteristics	The studied mothers (n=60) Total practice score Mean $\pm$ SD		
	Pre	Post	Follow up
<b>Age (in years)</b>			
<30	15.42 $\pm$ 1.31	19.17 $\pm$ 0.58	18.67 $\pm$ 0.49
(30 <35)	17.24 $\pm$ 1.20	25.88 $\pm$ 3.90	28.16 $\pm$ 1.18
(35 <40)	17.40 $\pm$ 1.18	27.63 $\pm$ 2.88	28.50 $\pm$ 1.07
$\geq$ 40	19.63 $\pm$ 3.11	25.33 $\pm$ 2.53	28.20 $\pm$ 0.94
F , P	11.36 , 0.00*	17.25 , 0.00*	290.64 , 0.00*
<b>Level of education</b>			
Illiterate	13.50 $\pm$ 0.71	18.50 $\pm$ 0.71	19.00 $\pm$ 0.00
Read and write	14.75 $\pm$ 0.50	19.00 $\pm$ 0.00	18.50 $\pm$ 0.58
Primary and preparatory	17.13 $\pm$ 1.14	24.73 $\pm$ 4.38	26.27 $\pm$ 4.02
Secondary	17.28 $\pm$ 1.13	28.50 $\pm$ 2.74	28.67 $\pm$ 1.21
University	20.50 $\pm$ 3.15	25.11 $\pm$ 2.45	28.17 $\pm$ 0.86
F , P	14.64 , 0.00*	5.86 , 0.00*	12.56 , 0.00*
<b>Residence:</b>			
Rural	16.50 $\pm$ 1.67	21.29 $\pm$ 3.00	23.29 $\pm$ 4.81
Urban	17.72 $\pm$ 2.01	26.86 $\pm$ 3.11	28.33 $\pm$ 1.01
t , P	6.08 , 0.02*	47.51 , 0.00*	37.31 , 0.00*
<b>Family members</b>			
2	13.67 $\pm$ 0.58	18.67 $\pm$ 0.58	18.67 $\pm$ 0.58
(3-4)	16.00 $\pm$ 0.87	19.33 $\pm$ 0.50	18.67 $\pm$ 0.50
$\geq$ 5	17.69 $\pm$ 1.84	26.00 $\pm$ 3.39	28.23 $\pm$ 1.08
F , P	10.67 , 0.00*	23.60 , 0.00*	437.80 , 0.00*
<b>Number of children</b>			
(1-2)	16.06 $\pm$ 1.68	20.47 $\pm$ 3.18	21.24 $\pm$ 4.16
(3-4)	17.29 $\pm$ 1.14	27.89 $\pm$ 2.80	28.56 $\pm$ 1.01
$\geq$ 5	19.22 $\pm$ 3.15	25.85 $\pm$ 3.14	28.26 $\pm$ 1.05
F , P	10.07 , 0.00*	22.77 , 0.00*	54.28 , 0.00*
<b>Marital status</b>			
Married	16.98 $\pm$ 1.28	31.50 $\pm$ 2.12	26.19 $\pm$ 4.06
Divorce	17.00 $\pm$ 2.11	24.19 $\pm$ 3.94	26.50 $\pm$ 4.04
Widow	24.50 $\pm$ 0.71	25.40 $\pm$ 4.06	28.50 $\pm$ 2.12
F , P	26.51 , 0.00*	3.55 , 0.04*	0.33 , 0.72

\* Significant at level  $P < 0.05$

## Discussion

Epilepsy is surrounded by a number of common misconceptions which can contribute to poor psychosocial adjustment and problems in the medical management and home care of this condition. Epilepsy requires specialized comprehensive care which includes going children and parent education, sensitivity to important psychosocial complications and periodic comprehensive evaluation to achieve an optimal outcome. (Preston, et al., 2023; Hussein, at el., 2023) .

Regarding to socio-demographic of mothers of epileptic children, the present study revealed that most of mothers their age was from 30 to less than 35 years old, and one third of them were Primary and preparatory, nearly have of them lived in urban areas. Also, majority of them had families more than five members. This predominance of this sample coming from rural area may refer to the location of Tanta University hospital near rural areas.(**Mohamed E., et al. 2023**)

In addition, rural social habits like marriage in young age, marriage of the relatives, which increase the risk of developing epilepsy or may be related to the fact that the data was collected from Tanta University hospital where treatment is for free and it serves usually low and middle classes. This finding is in agreement with findings **Abusaad, (2020)** who found that the ages of about half of studied mothers were between 20 to less than 35 years and two third of mothers were from rural areas. As regard mother's education nearly half of them were read and write(-Ayar, D., et al..2021; Ejeliogu E, et al.,2020)

This result agree with **Zainy & Mohammed.,(2020)** who study the psychological burden among parents of children with epilepsy at the middle Euphrates center for neurosciences in al-najaf governorate and reported that more than two third of parents from urban area(Zainy Fet al 2020)

The present study revealed that epilepsy Incidence was higher in children younger than 10 years. This may be explained as it is a time of broaden field of activity to which increase the risk of exposure to infections and accidents affecting integrity of nervous system that may lead to epilepsy. This finding was agreement with studies by **Abusaad, (2020)** , **Ejeliogu (2020)** and **El-Esrigy (2021)** found that high incidence rate for childhood epilepsy, were from 5 to less than 10 years, 2020; Ejeliogu E .(2020) The present study revealed that the prevalence of epilepsy was higher in boys than girls. It may be related to the nature of boys that tend to perform extraneous activities which increase the risk of head trauma and consecutively epilepsy. Its addition boys are highly exposed to seizure aggravating factors like computer games and hard sports than girls. This result in agreement with the study of **Abdel Wahed, (2022), and Fawi (2023)** who found that epilepsy is higher in boys than in girls. (**Abdel Wahed W, et al. 2022; Fawi G, et al.,2023**)

Regarding birth order, the present study revealed that the majority of children with epilepsy were third born children. This finding may be attributed to the young age of mothers and the associated high incidence of prenatal complications, and prenatal risk factors like maternal renal illness, drug intake, prolonged labor, low birth weight and anoxia. This finding was in agreement with the study conducted by **Abdel Wahed, (2022),** who found that high percentage of epilepsy occurs in first and second born child in birth order than later children and reported that lack of maternal experience and inadequate natal and antenatal care expose the child to many risks either during pregnancy or after birth specially birth trauma, and metabolic and respiratory problems that affect nervous system integrity(**Abdel Wahed W, et al., 2022**) The present study revealed that majority of studied children has history of epilepsy since more than one year. This long duration may be

due to epilepsy nature that requires long duration of treatment and noncompliance to treatment plan leading to exacerbation of seizures and prolongation of the course of epilepsy. These findings were in agreement with **Abusaad, (2020)** who indicated that the disease duration about two third of studied children have from 12 to less than 60 months with epilepsy.

(Fawi G., 2023; -Abdl Whahed,2022) The current study clarified that most of mothers had low knowledge regarding meaning, causes of epilepsy and side effects of antiepileptic drugs and problems associated with epilepsy. Before the program, while all of them had high knowledge after the program, with a statistically significant. This enhancement in mothers; knowledge could be attributed to education program related to application of epilepsy introduction in simple and clear manner suitable to mothers.

The current study revealed that only one third of the mothers' score was good pre the program while this percentage improved to all of them immediately after program and post three months. Improvement in mothers' knowledge is due to active involvement of mothers in education sessions and frequent review of knowledge **Abusaad (2020)**. Mothers in the present study are interested in education and have an active role in their epileptic children's care. **Abusaad (2020)** (Abdl Whahed, et al 2022; EL Nabawy et al,2022 Badawy G ., 2020) These results were in agreement with **Priyadarshini, (2018)** who conclude that the information booklet on care and home management and reinforced teaching was an effective strategy for the knowledge of the mothers of epileptic children regarding care a rehabilitation of their children. (Priyadarshini S 2018)

The result of the present study found that, there was, significant improvement in mothers' reported practices regarding management of antiepileptic drugs. The majority of mothers

mentioned that the optimum action to manage the epileptic fits is administration of prescribed antiepileptic drugs Compared to one third pre-program. The significant improvement may be due to increased mothers' awareness of the value of medication in the control of seizure and the dangers that may occur to their children if they neglect the administration of the medications effectively.

These findings are in agreement with **Modi ( 2018)**, who reported that up to two third of children's do not take their AEDs as prescribed, and WHO 2016 reported that lack of education about AEDs influence medicine taking in children and young people with epilepsy.( Modi A et al.,... 2018)Regarding mothers reported practices in managing epileptic children fits there was statistical significant differences between mothers' practices before, immediately after and after where all mothers were able to provide care to their epileptic children during the fits The most common practiced actions were protecting head from injury, removal of tight clothes, ease him to the floor, and ensure good ventilation immediately and three months later.(Nashaat, Nahla M. et al., 2022)

This improvement may be due to many factors which are: increased mothers' understanding about epilepsy nature and causes, seizure triggers and how to manage them, treatment aspects regarding dose, compliance to therapy, follow up and side effects and how to manage them. Another probable cause that mothers' received information about all issues related to their children condition which lead to reduced anxiety which affect mothers' reaction to the disease. lead to better acceptance of direction and cooperation with the mother and medical care providers.

These findings were in agreement with **Babiki (2019)** who reported that the following actions were done for the epileptic children during the fits in his study: mother most should stay calm, removal of objects surrounding him, protecting

the head from injury, Pay attention to how long the seizure lasts, don't put anything in the children's mouth, don't give water, pills or food by mouth unless the child is fully alert, be sure their breathing is okay, and lying the child down. (Babikir H, et al., 2019; Mesraoua, B., et al., 2022)

The current study revealed that the majority of mothers had low practice level before the programme, while all of them had high practice level after implementation of programme, with a statistically significant. Inadequate mothers' practice may be related to the fact that, mothers were not supplied with enough information and training about care of the epileptic children. These findings were in agreement with Nelis (2019) concluded that supportive information affects positively the parents and child reaction to the disease (Nelis A, 2019.)

The present study revealed that there was significant correlation between knowledge and practice level of mothers. Care is knowledge immediately after educational program. It is increased due to awareness about epilepsy nature, cause, treatment regarding dose, route and problems associated with epilepsy. The education intervention about the disease that removes false beliefs which caused the child and family to be stigmatized from the disease. These findings were in agreement with Elsakka et al., (2021), showed that the better percentage of the level of knowledge was found to be a positive predictor to more positive parental attitude toward children with epilepsy. In addition findings, Aljandeel et al., (2021) (Elsakka, E. et al., 2022; Aljandeel, et al., 2021)

Regarding relation between mothers total practice score and their socio demographic characteristic statistically significant relation between mothers practice level and their educational level, age and residence, this result consistent with Several studies have agreed that mothers with low education have negative

practice toward epilepsy as the study Kiyak et al., (2021) . In addition findings Adewumi et al., (2020). (Kiyak, E., et al., 2021; Adewumi, T., et al., 2020)

As regarding correlations between mothers Knowledge, and Practices towards their epileptic children. This result in the same line with the study done in Egypt by Elsakka et al., (2021), who mentioned that the better percentage of the level of knowledge was found to be a positive predictor to more positive mothers practice toward children with epilepsy. Also, in Aljandeel et al., (2021) who mentioned a highly significant relationship between knowledge and practice among sample families towards epilepsy. (Elsakka, E. , et al., 2022; Aljandeel, G et al., 2021)

Regarding relation between mothers total practice score and their socio demographic characteristic statistically significant relation between mothers practice level and their educational level, age and residence respectively, this result consistent with Several studies have agreed that mothers with low education have negative practice toward epilepsy Kiyak., (2021) who mentioned that there is a statistically significant association between the level of education and the knowledge score percentage. Also, in Nigeria, Adewumi et al., (2020) . (Kiyak 2021; Adewumi, ., et al., 2020)

Concerning correlations between mother's knowledge and practices towards their epileptic children there is statistically significant correlation between mother's knowledge and practices and between mothers' attitudes and practices. This result agreed with El Amin et al., (2021) who study knowledge, and practice of mothers of children with epilepsy in Sudan and shown positive correlation and significant between mothers knowledge, and practice about epilepsy (El-Amin, R., et al., 2021)

## Conclusion

### - Based on results of the present study

It can be concluded that there was positive significant improvement of mother knowledge, reported practices about care of children with epilepsy and administration of antiepileptic drugs after implementing health education. The improvement of knowledge and practice of mothers helped them follow safe care practices to reduce the risk of care for children with epilepsy and administration of antiepileptic drugs.

### Recommendations

- 1-Continuous health education should be applied for mothers at outpatient clinic for each visit.
- 2-Pre-marital counseling for couples who have a family history of epilepsy is necessary.
- 3-In service, a training program for mothers to improve their performances about care provided to children with epilepsy.
- 4-Providing mothers with updating booklets , pamphlets to acquaint them with essential knowledge and practices about provide care for their children with epilepsy and administration of anti-epileptics drugs

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