



Knowledge and attitude of epileptic university students after providing nursing brochure

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Abstract

Background: Caring and educating epileptic patients is a very important issue because they are exposed to numerous attended risks and complications.

Aims: To evaluate the impact of the nursing brochure on epileptic patient's knowledge and attitude in addition to, design the nursing brochure.

Methods: A quasi-experimental (pre-post research design) research design was utilized, data were collected using **A self-Administered Questionnaire:** contained socio-demographic data about the patient, medical history, knowledge about epilepsy and patient attitude assessment sheet.

Data collected: from 60 adult epileptic university students who attended to Assiut university student's hospital and they were followed up for two months.

Results: the duration of illness was $M \pm SD = 3.72 \pm 3.059$. Aura symptoms disorientation represented the highest percent. A statistically significant difference between pre and post brochure applications as regards the frequency of fits per month. As regards receiving regular treatment pre-application of the brochure less than half received regular treatment but post, all patients received their drugs regularly. The patient's experiences are better after the instruction of the nursing brochure than pre. Regarding attitude, the majority of the study group answer was incorrect in pre the application of the brochure. While post all answers were correct.

Conclusion: the university epileptic students' knowledge and attitude enhanced after application of the brochure.

Recommendations: Epileptic patient needs extensive teaching and counseling to deal with disease and maintain a good life.

Keywords: knowledge, attitude, epilepsy, students, nursing brochure

Introduction

Epilepsy can define an abnormal electrical disturbance in one or more areas of the brain. Epilepsy is defined as the condition of unprovoked, recurrent seizures. A seizure is an episode of abnormal and excessive discharge of cerebral neurons. It can result in sensory, motor, or behavioral activities, and can be associated with changes in the level of consciousness (Wolters, 2009) [27].

In about one – half of the cases of epilepsy, the causes are unknown. However, some possible causes of epilepsy and seizure are classified as non-recurrent (acute) and recurrent (chronic). Non-recurrent. (Acute) can occur due to the febrile episodes, intracranial infection, intracranial hemorrhage, space-occupying lesions (cyst, tumor). Acute cerebral edema, anoxia, toxins such as drugs, tetanus, lead encephalopathy, shigella, or salmonella, metabolic alterations such as hypocalcaemia, hypoglycemia, hyponatremia or hyponatremia, hypomagnesaemia, alkalosis, disorders of amino acid metabolism, or hyperbilirubinemia. (Neligan *et al.*, 2012) [17].

Different stimuli called triggers can stimulate the patients with epilepsy; sometimes the trigger is very specific to a specific person. Common triggers include specific odors, flashing lights, and some music types. If it is possible to identify a specific stimulus, the pattern is called reflex epilepsy. Certain general causes include fatigue, lack of sleep, hypoglycemia, emotional stress, electrical shock, febrile disease, alcohol use, other medications, constipation, menstruation, and hyperventilation (Megidido *et al.*, 2016)

[16].

There are two broad categories of epileptic seizures: generalized seizures and partial seizures, also known as regional or focal seizures. Generalized seizures are categorized in types such as grand mal or tonic-clonic, which is found to involve the entire brain, and often causes unconsciousness, convulsions as well as muscle rigidity. Generalized seizures involve cerebral discharges as well as subcortical connections and structures. Abnormal electrical activities occur simultaneously in the two hemispheres. A seizure involving a loss of consciousness is described as complex. (Barza, 2014) [6].

The diagnosis of epilepsy is generally based on the observation of the onset of seizures and the underlying cause. Epilepsy can be treated as a clinical examination in several forms, having a comprehensive medical history including symptoms and the duration of seizures is one of the best available approaches. The neurological examination, developmental milestones, and constitutional symptoms, family history as well as ante, peri and postnatal history should be taken and any past illnesses or other symptoms a person may have had. (Wilden and Cohen, 2012) [25]

Epilepsy can cause a variety of complications; the risk of complications increases with the severity. It may be physical complications, systematic complications, and psychiatric complications. (Devlin *et al.*, 2012) [10]

The goal of seizure disorder management is to control the seizures or to reduce their frequency and severity, discover

and correct the cause when possible, and help the patient live as normal a life as possible. Management of epilepsy has treatment options: pharmacological management (drug therapy) and non- pharmacological management which include the ketogenic diet, vagus nerve stimulation, and epilepsy surgery and lifestyle modifications (Kotwas *et al*, 2016)^[20].

The majority of people living with epilepsy can identify factors that trigger their seizures, and some engage in attempts to reduce their seizure frequency by avoiding these factors. Poor regulation of seizures can impact negatively on the person's sense of mastery over their condition or seizures can be controlled by lifestyle modification. (Chung *et al.*, 2012)^[8].

Lifestyle modification is defined as the "knowledge, attitudes, skills, and behaviors required to promote general physical and mental health and good quality of life". The best preventive measure is to comply strictly with the drug regimen as prescribed.

Changes in lifestyle alone can not prevent epilepsy, but people can make behavioral changes that improve their lives and make them feel protected. Usually, a lifestyle often represents the behaviors, beliefs, or worldview of a person. In particular, a healthy lifestyle is described as a "balanced life" in which "wise decisions" are made. (Salanova and Worth, 2007)^[9]

It is imperative to provide detailed information to the patient and/or a responsible family member about epilepsy and drug therapy. Side effects and signs of toxicity should be discussed. The patient must understand that the drug must be taken as ordered every day. The most common cause of seizures in patients who have previously been controlled is the failure to take the drug. The patient should be asked to maintain a drug chart of time, amount taken, and side effects, along with a record of the frequency and characteristics of any seizures. Because seizures represent a chronic condition (i.e., they are usually not completely arrested), the person must understand the nature of the problem, the precipitating factors and the adaptations in lifestyle that are required. (Lawhorne and Philpott, 2013)^[13].

Aims of the study

- Evaluate the impact of the nursing brochure on epileptic university students patients’ knowledge score and attitude level
- Design the nursing brochure.

Research hypothesis

The hypothesis formulated for the current study was:

- The total patients’ knowledge score about epilepsy will increase after the application of the nursing brochure.
- The total patients’ attitude level regarding epilepsy will improve after the application of the nursing brochure.

Research design: A quasi-experimental (pre-post research design) research design was utilized,

Sitting

This study was conducted Assiut university student’s hospital

Subjects

60 adult epileptic university students attended to Assiut

university student's hospital and they were followed up for two months.

Inclusive criteria

1. Adult conscious patients.
2. Both sexes
3. Any type of epilepsy.
4. Patients can communicate verbally and willing to participate.
5. Regular follow up at the neurological department.
6. Receiving medical treatment for epilepsy, including antiepileptic drugs.

Exclusive criteria

-Any chronic illness interferes with cognition.

Tools

Tool (I) A self-Administered Questionnaire: established by the researcher based on comprehensive literature reviews, it contains the following parts:

Part 1: Patient socio-demographic data, including age, sex, marital status, address, faculty and Grade.

Part 2: medical history and knowledge about epilepsy include questions about identification and causes of disease, an attitude of the patient toward the disease, how to deal with the epileptic attack and patient information about epileptic drugs. The patient answer either correct, incorrect, don't know.

Scoring system for part (2): 55 degrees each correct answer scored (1)

Part 3: Epilepsy Knowledge's Scale (EKS). To Assess Knowledge about awareness of epilepsy It was developed by May, *et al* (2002) and consists of 19 questions. The questions are about work that can be done, events, epilepsy diagnostic tests, treatment, symptoms, job, or sports when epilepsy is correlated with mental illness and questions related to driving.

Scoring system for part (3): Epilepsy Knowledge Scale (EKS): Each question has two choices namely yes, no. The correct answer has a score of (1) and the wrong answer has no score (0).

Scoring: The total score is (19)

Tool (II): patient attitude assessment sheet. To measure patients' attitudes regarding epilepsy.

Scoring system: The response options for each item range from 0 to 2

0= don't know

1=no

2= yes

Tool (III) the nursing brochure

This brochure was developed by the researcher in a simple Arabic language based on reviewing current national and international literature.

The main goal was to provide the patient with the necessary information and instructions for the epileptic patient regarding essential epilepsy and attitude. It was instructed by the researcher after assessing the patients’ knowledge and attitude level; this brochure covered the following items:

- Definition of epilepsy.

- Causes of epilepsy.
- Predisposing factors (the triggers) of a seizure.
- Signs and symptoms.
- Complications.
- First aid management of a seizure by patient & the family members.
- How to avoid the triggers.
- Medication, its dosage, and the common adverse effects to be reported.
- Dietary intake to tackle certain Anti-epileptic medication (AED) side effects.
- The practices to be avoided.
- Women's special considerations (e.g. menarche, marriage).
- Family support.
- Lifestyle change recommendations.
- Things that you can do.
- Seizure-free life commandments.

Validity and Reliability

The tools were tested for clarity, relevance, comprehensiveness, understanding, applicability, and easiness, minor modifications were required by 5 experts of academic medicine and nursing staff from the faculty of medicine and nursing at Assiut University. Modifications were done accordingly, and then the tools were designed in its final format. The Content reliability was estimated by Alpha Cronbach's test and its result was R=0.68. Content validity

Methods of data collection

A review of current and past, local and international related literature in the various aspects of the problem was reviewed using books, articles, and periodicals.

Content validity

The validity and reliability of the content of the tools was identified by a panel of five experts (2 teaching staff of Medical-Surgical Nursing, Faculty of Nursing, Assiut University and 3 doctors of Neurology and Psychiatry at Assiut student's Hospital) who reviewed the tools for clarification, relevance, comprehensiveness, understanding, applicability and feasibility for administrative minor modifications.

Pilot study

A Pilot study was carried out in October 2017 on 10% (6 patients) of the sample in the selected setting to evaluate the applicability and clarity of the tools. Those patients were added to the study later. It provided an estimate of the time needed to fill out the tools. The purpose of the pilot study was to:

- Ensure the clarity of the designated study tools.
- Examine the utility of the designed tools.
- Identify any difficulties or problems needed to be handled before applying it.

Procedure

Upon obtaining permission to proceed with the proposed study, data collection was initiated by the researcher.

- In the initial interview: the author facilitated interaction, explained the nature and purpose of the study for patients.
- The researcher collected the needed data from patients by applying tool (I) and tool (II)

- Each patient involved in the study was tested for their knowledge and attitude; the researcher obtained the required data from patients. At morning shifts, the study was conducted.
- The researcher explained to the patient the simplified nursing brochure (tool III).
- The session ended with a summary of its content and feedback from the patients through discussion and asking questions.
- Each patient in the study group took a copy of the epilepsy nursing brochure.
- Evaluate the effect of applying the designed epilepsy nursing brochure after two months using the tool (I) and tool (II)

Ethical approval

Ethical approval: The study proposal was approved by the Faculty of Nursing Ethical Committee, there was no threat of study patient during the implementation of the study, and official permission was obtained from the authorities at Assiut University Every patient was told for the study. The researcher emphasized that participation was voluntary and confidential, and privacy was maintained by coding all information and shielding the patient from danger. Verbal consent was obtained from each patient.

Statistical design

Data collected and entered by Microsoft Excel 2016 program, the statistical analysis was done using a computer program SPSS (Version, 22). Statistical software package Excel for figures. The researcher evaluated, classified and coded the output of each device. The 6 data collected were tabulated and analyzed using descriptive statistics for qualitative variables in the form of frequencies and percentages, and quantitative means and standard deviations. When $p < 0$, P-value was considered statistically significant.

Results

Table 1: Frequency distribution of the studied patients according to socio-demographic characteristics.

Items	patients	
	NO (n=60)	%
Age: 18-25	59	98.3
26-30	1	1.7
Gender: Male	29	48.3
Female	31	51.7
Marital status: Single	60	100
Address: Rural	33	55
Urban	27	45
Faculty: Social work	5	8.3
Pharmacy	6	10
Computing	2	3.3
Law	8	13.3
Literature	8	13.3
Medicine	1	1.7
Engineering	4	6.7
Education	16	26.7
Commerce	6	10
Science	4	6.7
Grade: Preparatory	3	5
First	14	23.3
Second	18	30
Third	16	26.7
Fourth	9	15.5

Table (1) shows that more than half of the patients were females. Regarding age the majority of their age ranges between 18-25 years old. As regard residence; more than

half were living in a rural area. As regard faculty, the highest number was in educational colleges.

Table 2: Percentage distribution of clinical data for epileptic patients.

Items	N (n=60)	%
Method of diagnosis: clinical	4	6.7
clinical and EEG	38	63.3
clinical EEG and CT	18	30
Have you following causes: Head injury	23	38
Infection	3	5
Fever	10	16.7
Psychological	5	3
Idiopathic	19	31.7
Duration of illness (years): M ± SD	3.17 ±2.3	
Aura: Autonomic	6	10
Auditory	3	5
Disoriented	26	43.3
No aura	5	8.3
Sensory	11	18.3
Visual	9	15

*Data described as number and percent or M±SD according to need.

Table (2): shows that methods of diagnosis by doctor and EEG were the main presenting. Regarding symptoms, head injury was the main symptom. Regarding the duration of

illness M±SD = 3.72 ± 3.059. Aura symptoms disorientation represented the highest percent.

Table 3: Distribution of the studied sample regarding their knowledge pre and post instruction of the nursing brochure.

Items	pre (n=60)						post (n=60)				P value
	Correct answer		incorrect answer		don't know		Correct answer		incorrect answer		
	No	%	No	%	No	%	No	%	No	%	
Definition of epilepsy	6	10	54	90	-	-	60	100	0	-	0.0001
If epilepsy is hereditary?	14	23	21	35	25	41.7	60	100	0	-	0.0001
	M±SD						M±SD				
Causes of epilepsy	0.83 ± 1.264						8.55 ± 1.141				0.0001
Predisposing factor	0.88 ± 0.128						6.56 ± 6.23				0.0001
Attitude during attack	0.20 ± 0.514						3.35 ± 1.132				0.0001
The complication of epilepsy during an attack	0.88 ± 0.864						3.87 ± 0.389				0.0001
Attitude post ictal	0.50± 0.567						3.87 ± 0.389				0.0001

Table (3) shows that, pre-instruction the nursing brochure the majority of patients answered incorrectly in the first and second items (definition of epilepsy, if epilepsy is hereditary?) while post instruction the nursing brochure all answers were correct, also there's a statistically significant

difference between pre and post-instruction the nursing brochure in the following items (causes of epilepsy, predisposing factors, attitude during attack, complications of epilepsy during attack, and attitude post ictal).

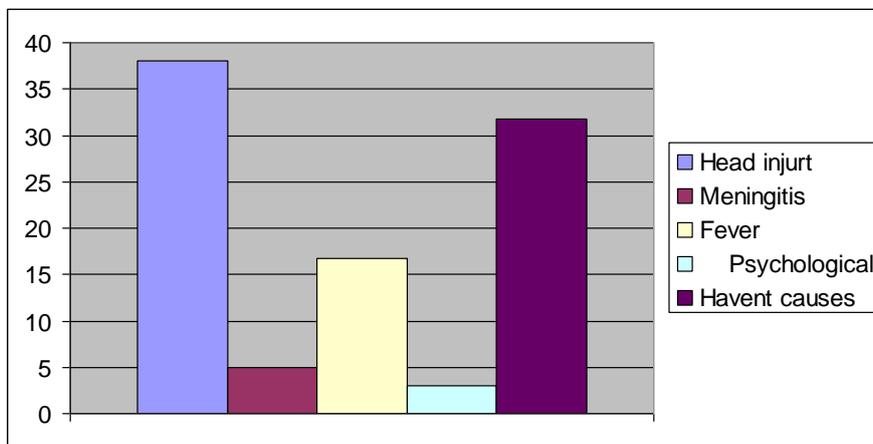


Fig 4: Percentage distribution of causes of epilepsy

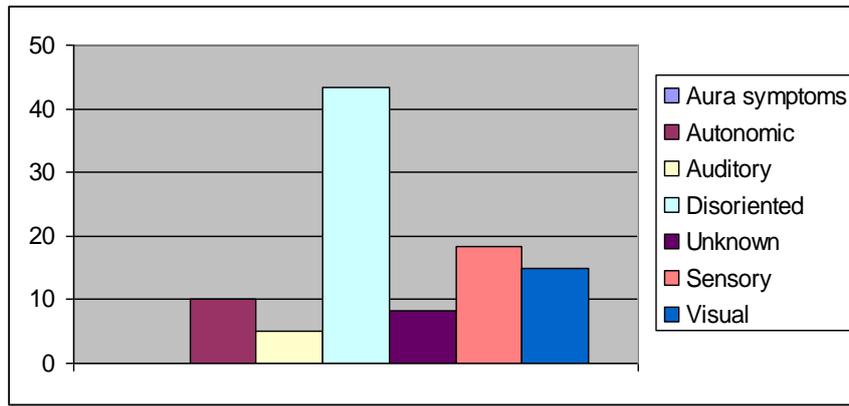


Fig 5: Percentage distribution of aura symptom

Table 4: Assessment of attitude towards epilepsy among patient's pre and post instruction of the nursing brochure.

Items	Pre (n=60)						Post (n=60)						P-value
	Yes		No		don't know		Yes		No		don't know		
An epileptic patient could marry	No	%	No	%	No	%	No	%	No	%	No	%	0.0001
	45	75	4	6.7	11	18.3	60	100	0	0	0	-	
If married can have children	8	13.3	13	21.7	39	65	60	100	0	0	0	-	0.0001
Epileptic patient like a normal person	48	80	8	13.3	4	6.7	60	100	0	0	0	-	0.001
Possible to marry an epileptic person	35	58	21	35	4	4.6	49	81	11	18.7	0	-	0.0001

Table (4) illustrates that the majority of the study group answer was incorrect in the pre-instruction of the nursing brochure. While, post nursing brochure all answers were correct in three items (Epileptic patient could marry, if married can have children, and Epileptic patient is like a

normal person). This table illustrates that; pre-teaching more than half of the patients can marry epileptic persons but post instruction of the nursing brochure the majority can marry an epileptic person.

Table 5: Assessment of knowledge about antiepileptic drugs among patient's pre and post instruction of the nursing brochure.

Items	pre (n=60)				post (n=60)				P value
	Correct answer		incorrect answer		Correct answer		incorrect answer		
	No	%	No	%	No	%	No	%	
The benefit of antiepileptic drugs	29	48.3	31	51.7	60	100	0	-	0.450
Source of information about antiepileptic drugs	10	16.7	50	83.3	60	100	0	-	0.0001
Are there things better than antiepileptic drugs	19	31.7	41	68.9	60	100	0	-	0.0001
	M±SD				M±SD				
The side effect of anti-epileptic drugs	1.63±1.49				3.81±0.70				0.0001

Table (5) shows that, the majority of the study group pre-instruction of the nursing brochure has incorrect answer regarding (benefit of antiepileptic drugs, source of information about antiepileptic drugs, and presence of anything better than antiepileptic drugs) while post

instruction the nursing brochure all answers were correct, also this table shows that there's a statistically significant difference as regard side effect of anti-epileptic drugs pre and post instruction the nursing brochure.

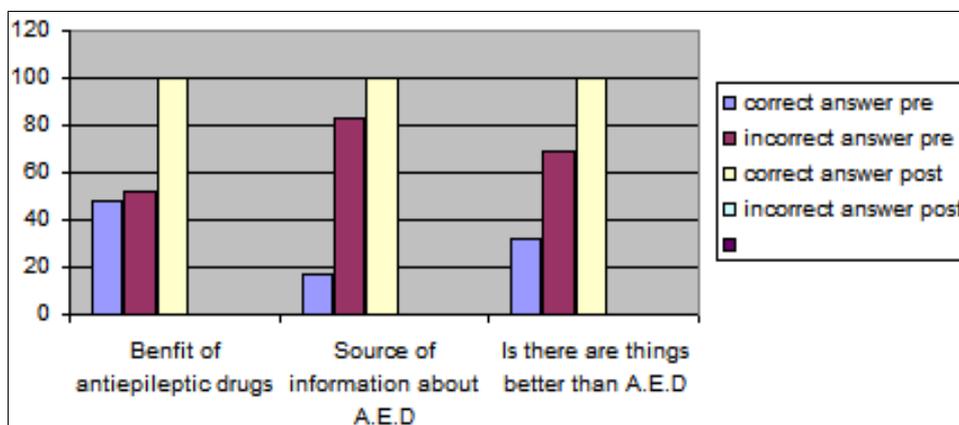


Fig 6: Percentage distribution of knowledge about antiepileptic drugs

Table 6: Comparison of frequency of fits and regularity of drugs pre and post instruction the nursing brochure.

Items	pre (n=60)				post (n=60)				P-value
Frequency of fits per month M±SD	3.633 ± 4.758				0.33 ± 0.542				0.0001
Receive regular drug	yes	%	No	%	yes	%	No	%	0.0001
	36	60	24	40	60	100	0	-	

Table (6) shows that there's a statistically significant difference as regards the frequency of fits per month. As regards receiving regular treatment pre-instruction of the nursing brochure less than half received regular treatment but post instruction the nursing brochure all patients received their drugs regularly

Table 7: Comparison between studied group knowledge pre and post instruction of the nursing brochure.

Items	Pre teaching (n=60)				Post teaching (n=60)				P-value
	Correct answer		Un correct answer		Correct answer		Un correct answer		
	No	%	No	%	No	%	No	%	
People with epilepsy should avoid strenuous work because this can provoke seizures.	39	61.9	21	33.3	60	100	0	0	0.0001
An EEG can always prove the diagnosis of epilepsy.	3	4.8	57	90.5	60	100	0	0	0.0001
People with epilepsy are as capable as other people.	31	49.2	29	46.0	60	100	0	0	0.0001
All the people with seizure should avoid working with open machinery.	24	38.1	36	57.1	60	100	0	0	0.0001
Every seizure destroys a number of nerve cells in the brain.	53	84.1	7	11.1	60	100	0	0	0.0001
People with seizures should not swim without an accompanying person.	25	39.7	35	55.6	60	100	0	0	0.0001
All people with epilepsy should avoid flashing or strobing lights.	39	61.9	21	33.3	60	100	0	0	0.0001
In most cases doctors can control epileptic seizures with medication.	25	39.7	35	55.5	60	100	0	0	0.0001
If your seizures are controlled for some months, you can reduce the dose of antiepileptic medication.	10	15.9	50	79.0	60	100	0	0	0.0001
All people with epilepsy have similar symptoms.	14	22	46	73	60	100	0	0	0.0001
If a patient expects a seizure, he/she should take an additional dose of antiepileptic medication.	13	20.6	47	74.6	60	100	0	0	0.0001
On job instruction, a patient should always disclose his or her epilepsy condition.	17	27	43	68.3	60	100	0	0	0.0001
People with epilepsy can take an active part in sports.	14	22.2	46	73	60	100	0	0	0.0001
An epileptic seizure always results in loss of consciousness.	10	15.9	50	79.4	60	100	0	0	0.0001
People whose seizures only happen during sleep may hold a driver's license.	14	22.2	46	73	60	100	0	0	0.0001
Everyone can have a seizure, given the appropriate circumstances.	12	19	48	76.2	60	100	0	0	0.0001
Blood samples can be used to measure the concentration of antiepileptic medication in the body.	28	44.4	32	50.8	60	100	0	0	0.0001
Epilepsy is a symptom of mental illness.	19	30.2	41	65.1	60	100	0	0	0.0001
If persons with epilepsy drive, they must inform the driving authorities about their condition.	17	27	43	68.3	60	100	0	0	0.0001

* Statistically significant at p<0.05

Table (7) shows that, there's a statistically significant differences as regard epilepsy knowledge level for patient pre and post instruction of the nursing brochure. The patient's experiences are better after instruction of nursing brochure than pre.

Table 9: Serious correlation between different factors pre and post instruction of the nursing brochure (N=60)

Items	r	P-value
Total epilepsy knowledge scale& age Pre	0.064	0.626
Post	0.017	0.898
Total epilepsy knowledge pre& post	0.033	0.0001

Table 8: multiple linear regression analysis of total knowledge pre and post instruction of the nursing brochure with (gender-address-faculty-grade)

Items	Pre (n=60)				post (n=60)			
	B	Beta	T	P-value	B	Beta	t	P-value
gender	1.971	0.019	0.143	0.887	0.093	0.182	1.316	0.194
address	9.731	0.096	0.735	0.465	0.081	0.157	1.189	0.240
faculty	30.508	0.293	2.148	0.036*	0.086	0.163	1.178	0.244
grade	4.135	0.091	0.701	0.487	0.024	0.107	0.810	0.422

Table (8) shows that no-significant difference between total knowledge except in faculty, practical colleges have more information than other colleges due to the field of study.

Table (9) showed that there was a positive correlation between total epilepsy knowledge per and post-application of the nursing brochure. In addition to either total knowledge pre or post-test and patients' age. Also, the table showed that there was a significant statistical difference between pre and post-test regarding epilepsy knowledge, on the other hand, there was no statistically significant difference neither between pre nor post-test and patients' age.

Discussion

The present study aimed to evaluate the impact of the

nursing brochure on epileptic university students' knowledge and attitude and design the nursing brochure. In most cases, epilepsy is considered chronic (Chung *et al.*, 2012) ^[8]. Epilepsy is a progressive brain disease affecting people around the world.

A transient symptom and/or sign event is an epileptic seizure caused by irregular repetitive or synchronous neuronal activity in the brain. Epilepsy is one of the most serious neurological disorders in about 1% of the world's population. (Thiry *et al.*, 2007) ^[24].

Lifestyle defines the health status of epileptic patients as the most critical methods for managing seizures and making appropriate changes to the lifestyle. Epilepsy patients have different educational needs and need to change some lifestyle habits to manage their disease (Megiddo, 2016) ^[16]. So our study was designed to assess knowledge and attitude for patients with epilepsy after provided a nursing instruction brochure.

The Discussion will cover the main result findings as follow

The first section will be devoted to Socio demographic characteristics of epileptic patients

The present study revealed that more than half of the study groups were females and this may be caused by exposure of female to stress and hormonal disturbances.

Regarding residence more than half of the study groups were in rural areas. And this agrees with (Shawki, 1996) ^[21]; who reported that the highest prevalence rate of epilepsy in rural areas was observed among the group who had no work. Living in an urban area was accompanied by more hospitals and medical services.

Our results showed that the main cause was the causes of epilepsy head injury and this was consistent with (Wirrel, 2006)

^[26] in a study conducted in Nigeria and reported that trauma is the main cause of epilepsy (Ekeh & Ekrikpo, 2015) ^[11]. Although idiopathic epilepsy is a common etiology, our students revealed head trauma. This could be explained by many students who think that even minor trauma as the cause of epilepsy.

The disorientation of Aura symptoms was the main symptom and this was consistent with (Smeltzer and Bare, 2008) ^[23], our results revealed that the diagnosis was made by the doctor and the EEG and this is consistent with the (Shehataa and Mahranb, 2011) ^[22] who reported that 60, 7% of the study group were diagnosed by the doctor and EEG

2. Patients knowledge about epilepsy

The current study revealed a great improvement in knowledge after application of the nursing brochure with a statistically significant difference regarding awareness knowledge about epilepsy among patients' pre and post-study. That was in agreement with (Buck *et al.*, 1999) ^[7], a significant determinant of negative attitudes about people with this condition is the lack of knowledge about epilepsy. Abd-Alla, (2000) ^[1]; reported in this regard that the service training program has a beneficial effect in enhancing the knowledge and abilities of patients. As well as, Ookalkar, (2009) ^[18];

provided that educational programs should be coordinated to improve patient understanding according to the needs of clinicians with ongoing assessment. This will result in reduced errors in the process, reducing overall risks and eventually le

ading to better patient care.

As regard complications of epilepsy during the attack, the present study revealed that the incidence of complications after the nursing brochure was significant than the pre-application of the nursing brochure. The most common complications which occurred pre implementing the designed nursing brochure were an aspiration, biting the tongue, biting lip, biting check and falling from a height or on the ground. And this was in line with a study that was conducted by (Ahmed, 2004) who assessed the health-related behaviors among epileptic adult patients which revealed that the largest proportion of the subjects suffered from seizure problems while the others didn't. These seizure problems were biting tongue or lips, wound, and injuries, fractures in different sites in the body

In our study patients knowledge about having children; the majority of patients did not believe that the epileptic patient could have children. This finding is not in agreement with a study conducted in Nigeria, where more than half of the respondents felt that epileptic patients could have children (Ekeh *et al.*, 2015) ^[11].

At pre-implementation of brochure study revealed an incorrect attitude towards epileptic patients with regard to their ability to get married, have children, or think and judge That matched similar study among high school patients in Kerala, Southern India (Pandian *et al.*, 2006) ^[19] who found that respondents objected to marrying epileptic patients (Daoud *et al.*, 2007) ^[9].

Our study also had higher percentages than similar studies of university patients in Kuwait, in which about 8% claimed that people with epilepsy should not marry and more than half as opposed to marrying epileptic patients. (Al-Rashed *et al.*, 2009) ^[5]. In our study; patient's knowledge about the ability to get married, have children, or think and judge improved after application of the nursing brochure.

Our result revealed that there was a statistically significant difference was found regarding epilepsy knowledge level for patients' pre and post applying nursing brochure. The patient's experiences regarding (benefit of antiepileptic drugs, source of information about antiepileptic drugs, and the presence of anything better than antiepileptic drugs) improving after application of the nursing brochure than pre. Our result revealed that the majority of incorrect answers pre-study became correct after the application of the nursing brochure. And this may be due to the use of nursing brochures and pictures in it to increase the patient's knowledge. Also, this study is similar to a study conducted in Pakistan and reported that 90% of the participants believed that treatment is effective (Akhtar, 2007) ^[4].

Our results described a statistically significant positive correlation between total knowledge and attitude level pre and post-application of the nursing brochure. This finding was supported by (Lua and Selamat, 2011) ^[14]. Who stated that Patients with good awareness, knowledge and attitude levels experienced a good life.

Also, this result was matched with (Adavi *et al.*, 2003) ^[2] who reported that determining the patient's perspective on epilepsy: self-knowledge among Omanis; although correctly endorsing issues related to their medication, the cross-cultural sample had limited knowledge about their condition. The majority of patients was unable to provide clear signs of epilepsy and was unable to provide correct answers to safety and compliance questions. As with other neurological conditions, the authors indicated

the need to enhance medical awareness, people with epilepsy should receive comprehensive health education on how to treat the disease most effectively.

Patients enrolled in this study were not carrying an epilepsy identity card. This result is consistent with the study done by (Amin, 2014) who found that only (4%) of the participant was carrying an epilepsy identity card (ID) with personal information, and keeping a calendar with seizure description. This could be attributed to the lack of knowledge of patients about the importance of these items, but after applying the nursing brochure they became more knowledgeable about the importance and use of this card. So, it can be concluded that results from this study and other studies strongly suggest the teaching should be done in an organized way, based on sound teaching and learning concepts, using teaching plans where possible to ensure that no critical element is omitted. Also epileptic patient needs extensive teaching and counseling to deal with disease and maintain a good life.

Conclusion & Recommendations

The university epileptic students' knowledge and attitude enhanced after the application of the nursing brochure. We can recommend that, Increase patient awareness about the importance of periodic check-up to prevent developing any complications which can affect the patient's life. An explanation must be provided to each patient (epilepsy stages, stage disposition, fit predisposing factors, diet, medication, rest, avoidable behaviors, and exercise

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