

Application of Multiple Services Educational Package Program for Patient with Epilepsy in Out Patient Clinic, Cairo city, Egypt

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Abstract

Background: Epilepsy is one of the most common and widespread neurological disorders and affects people of all ages, races, social classes, and geographical locations. **Aim:** this study aimed to assess the application of multiple services educational package program for patient with epilepsy in outpatient clinic, Cairo city, Egypt. **Research design:** A quasi-experimental design was used in this study. **Setting:** The study was conducted at neurology (epileptic) Out-Patient Clinic affiliated to Ain shams Hospitals, Cairo, Egypt. **Subjects:** A convenient group that included (200) patients with epilepsy. **Tools:** A Structured interview Questionnaire tool that cover six parts. Part I: demographic characteristic, part II: patients clinical data, part III: patients knowledge, part IV attitude, part V brief coping and part VI stress management (pre and post). **Results:** This study showed statistically significant improvement in patient's knowledge, attitude, brief coping and stress management (21.47 ± 4.11 to 32.37 ± 7.15) (22.19 ± 4.89 to 32.05 ± 5.27) (47.24 ± 4.36 to 78.35 ± 7.22) (28.75 ± 4.43 to 13.27 ± 8.3), respectively post program implementation. **Conclusion:** The current study revealed that the importance of multiple services educational package program for patient with epilepsy to improve their knowledge, coping skills, attitude, and stress management. **Recommendation:** Continuity of multiple services and educational program for patient with epilepsy in different health care setting.

Keywords: multiple services, educational, package program, patient with epilepsy, outpatient clinic.

Introduction

Globally, annually about five million people are identified with epilepsy. In high-income countries, It was estimated to be 49 per 100 000 population recognized with epilepsy each year. In low- and middle-income nation-states, this number can be as high as 139 per 100 000. This is probably due to the raised threat of endemic conditions such as neurocysticercosis; malaria or the increased proportion of motorway accident harms; birth-related troubles; and alterations in therapeutic

structure, the availability of protecting health programmers and accessible care. Near 80%, of persons with epilepsy live in low- and middle-income countries (**Fiest et al., 2019**).

Epilepsy is one of the greatest public and prevalent neurological disorders and affects people of all ages, races, social classes, and geographic places. Epilepsy is an illness of the brain described by continuing disposition to produce seizures and by the neurobiological, cognitive, psychological, and social concerns of seizure. Current estimations suggest that it accounts for 1% of

the global load of disease and affects over 65 million people. In addition, because the families and friends of people with epilepsy (PWE) also endure the burden of this condition, more than 500 million people are ultimately affected by epilepsy (WHO, 2019).

Epilepsy is not transmittable. While many underlying disease mechanisms can lead to epilepsy, the reason of the disease is quiet unknown in about 50% of cases internationally. The causes of epilepsy are allocated into the following classifications: structural, hereditary, contagious, metabolic, and immune and unidentified. Internationally, in 2016, there were 1.4 million (95% UI 1.2–1.6) idiopathic epilepsy cases in men and 1.3 million (1.1–1.6) cases in women, with age-standardized incidence rates of 38.9 per 100 000 person per years (32.7–45.7) for men and 37.1 per 100 000 person per years (30.8–44.1) for women (Devender et al., 2018).

The interest in multiple services package educational program for populaces with epilepsy has been developing. Predominantly through the inventiveness of dr. Sybille Ride, it is the first broad program in German-speaking countries, this program is an interactive program for people with epilepsy, unrelatedly syndrome, duration, and severity of the epilepsy. Multiple services package program aiming to support people to advance epilepsy knowledge, attain a better thoughtful of their disease, increase more self-assurance, and take over obligation, thus assistant patients to become professionals in managing their own disease and inspire coping actively with their disease., this program comprise five units: living with epilepsy through brief coping skills, basic knowledge, attitude, and psychological features through stress management (Mahler et al., 2018).

Significance of the study:

A series of epidemiological studies was conducted in Upper Egypt in the last 2 decades. Epidemiologic study has grown in Egypt, mainly over the last 6 years, through two main projects to calculate the prevalence and incidence of different neurological disorders in Al Kharga district, New Valley and Al Quseir City, Red Sea Governorate, Upper Egypt. The incidence rates of epilepsy in Egypt compared to worldwide rates are demonstrated that (48/100,000 per year) in Al Quseir City is within the international rate⁷⁹ and lower than that recorded in sub-Saharan Africa and Northern Tanzania. Temporarily, the incidence rate of epilepsy (48/100,000) in this study was higher than that documented in New York, NY, USA (16/100,000) and in The Netherlands (Gharib et al., 2018).

Nurses who are caring for patient with epilepsy are a part of qualified care system which has foremost role to manage and evaluate of patients with difficult uncontrolled Epilepsy. These nurses can show a dominant role in providing optimum care, teaching, and provision to their patients with epilepsy, given the appropriate tools, which can diagnose and given varying antiepileptic drug of patents. Help in increasing patient's satisfaction with knowledge and coping skills, as well as improve emotive well-being, confidence treatment faithfulness, lower costs, and shorter inpatient stays. The roles of Nurses who are caring for patient with epilepsy is included broadcasting of execution Epilepsy Review towards establishment of a profile of Epilepsy, correct clients information to perform better care improving treatment plans and goals (Laybid, 2018).

By adopting the role of patient as advocator, educator, and counselor, Nurses who are caring for patient with epilepsy are able to advance a therapeutic association with patients to enable them to manage their epilepsy. By providing relevant information

with good quality nurses can help relative's expansion a greater sense of control, which is necessary for self-management and optimal quality of life (QOL). In the hospital, clinic, or community setting, nurses assist a close connection with other professionals and synchronize the multi-disciplinary service needed for people with epilepsy (Agnes et al., 2019).

The aim of this study:

Appraise the effect of application of multiple services educational package program for patient with epilepsy in outpatient clinic, Cairo city, Egypt through:

1- Assessing knowledge, attitude, stress managements and coping skills at pre and post application of multiple services educational package program for patient with epilepsy.

2- Planning, implementing and evaluating multiple services educational package program for patient with epilepsy.

Research hypothesis: (Study Rationale)

Providing multiple services educational package program for epileptic patient will enhance their knowledge, attitude, stress management and coping skills towered their disease.

Subjects and Methods

Design: A quasi experimental design was utilized to accomplish this study.

Setting: this study was directed at the neurological (epilepsy) outpatient clinics that provide the services to patients with epilepsy two days per week, which considered one of the outpatient clinics in the ground floor at Ain Shams University Hospitals.

Group size, type, and technique:

The required group size was two hundred patients grounded on the following equation

$$n = \frac{t^2 \times p(1-p)}{M^2}$$

n= required group size

t= confidence level at 95%

p= estimated population

m=margin of error at 5%

A convenient group was used to select 200 patients with epilepsy included 10% for pilot study that denote twenty patient to be rest 200 patient with epilepsy attendance epileptic outpatient Clinic.

Tools of data collection

Data were composed using the following tools: **interview questionnaire that cover the following parts:**

A) Demographic characteristic,

This part was deliberate by the researchers after studying literature; for the purpose of collecting personal and demographic characteristics of patients with epilepsy which included age, gender, level of education, occupation, social status, marital status and living with family.

B) Part 2: clinical data of patients with epilepsy:

As aged when affected with epilepsy, Period of the disease, Length of the treatment, Type of epilepsy, Type of medications, treated by beating or cautery before, other family member diagnosed with epilepsy and Epilepsy information delivery

C) Epileptic Knowledge Questionnaire (Cramer et al., 2010)

It was used to measure knowledge level about different features of epileptic disease; it contains 21 general items and seizure related questions as causes of epilepsy, effective methods used for treating epilepsy, epilepsy as a contagious disease, epilepsy incidence of insanity, epilepsy as a chronic brain disease that cannot be cured, Epilepsy manifestations, epilepsy could lead to death, epilepsy could be cured, contributing factors of epilepsy, Seizures considered as an emergency condition when occur, dealing with seizure and Complications of patient with epilepsy, how to deal with seizure (before, during, after). Each of them included level of responses to choose the best fitting answer

Scoring:

Yes = 1 no = 0

Scores for overall knowledge (42 scores), categorized as follows:

Poor (<50%) (0-<21)

Average (50-75%) (21-31.5)

Good (>75%) (>32-42)

D) Brief COPE (carver et al 1989) and updated by Greenaway, (2015): The aim of this tool is to assess brief coping skills with epilepsy. It contains 15 subscales including 28 items. Each of them included levels of responses to choose the best fitting answer.

Subscales of brief cope:

Positive reinterpretation and growth: 1 (Turning to work or other doings to proceeds mind off things.)

Mental disengagement: 2, 16 (directed efforts on doing somewhat about the situation in, and Looking for something good in what is happening.)

Focus on and venting of emotions: 3, 17, 28 (Saying to self "this isn't real, creating jokes about it, and Assembly fun of the situation)

Use of instrumental social support: 4, 14(consuming alcohol or other drugs to make self-feel well, and Getting wellbeing and understanding from someone).

Active coping: 5, 25 (Receiving emotional support from others, and censuring myself for things that occurred.)

Denial: 6, 27 (giving up trying to deal with it, and Production fun of the condition)

Religious coping: 7, 18 (taking action to try to make the condition better, and Doing something to think about it less, such as going to shopping, watching TV, and reading, sleeping, imagining, or. movies)

Humor: 8, 20 (declining to consider that it has happened, and communicating my negative feelings).

Behavioral disengagement: 9, 24 (saying things to agreement hostile feelings escape, and thinking hard about what steps to take.)

Restraint: 10, 22(Attainment help and guidance from other people, and trying to get instruction or help from other people about what to do)

Use of emotional social support: 11, 23 (Trying to see it in a different light, to make it seem more positive, and Learning to live with it.)

Substance use: 12, 26 (Critiquing self, and Praying or contemplating.)

Acceptance: 13, 21 (trying to come up with a strategy about what to do and trying to find comfort in my religion or spiritual beliefs.)

Suppression of competing activities: 15 (Giving up the effort to cope)

Planning:19 (make a plan of action.)

Scoring:

Not doing = 1, doing this a medium amount = 2, Doing this a lot = 3

Calculate the score for overall brief coping; calculate the mean of all 28 items with 14 subscales responses.

E) Attitude questionnaire (Edward et al., 2017)

The aim of this tool is to assess attitude toward epilepsy. It contains **18** items, as think frightened of dying during seizures or harm the brain, probable for a person with epilepsy to get wedded, have a collage education and get chances of suitable job, patients with epilepsy can drive securely and swim, think patients with epilepsy need permanent treatment, patients with epilepsy have minor intellect than other people, think treatment is attainable by magical/and spiritual practices, frightened of alive with a person with epilepsy, preserve a relationship with someone with epilepsy, patient with epilepsy is insane, let kid to play with a child with epilepsy, permit son to wed a girl with epilepsy, agree daughter to marry a man with epilepsy, patients with epilepsy can have children, and ready to work with a patient with epilepsy.

Scoring:

Yes = 1 no = 0

Scores for overall attitude (36 scores), categorized as follows:

Negative (<50%) (0-<18)

Positive (50-100%) (18-36)

To calculate the score for each of these items, calculate the mean of the responses to subscale items.

F) Stress management questionnaire

It contains **8** items, as focus on enjoyable thoughts during sleep, equilibrium between play time and works, usage of exact ways to control stress, exercise relaxation or conciliation for 15-20 minutes each day, stop weariness using self-pace, get enough time and sleep well, take enough relaxation time each day, and accept those things in life that cannot be modify.

Scoring:

Never = 1, sometimes = 2, often = 3, routinely = 4

To calculate the score for overall stress management, calculate the mean of all 8 items.

Tools content and face validity:

To attain the standards of trust worth of tools of data gathering in this study, the tools were verified and assessed for content validity by three experts from faculty members in nursing and medical fields from Ain Shams University. Different academic categories and different specialties were represented in the group such as; psychiatric/mental health nursing, community health nursing and cardiology medicine. To determine relevance, clearness,

and completeness of the tools, specialists provoked responses were either agree or disagree for the face validity.

Tools reliability:

Dependability of the tools that was assessed through 20% of cases using the developed questionnaire and revision was done after 7 days on the same group and the results were the same each time. Testing reliability of proposed tools was done by Cronbach alpha test. The result was 98% for brief coping, 95% for stress management, 98.8 for knowledge questionnaire and 89.2 for attitude questionnaires

Pilot study:

The pilot study was directed on 10% from the total group, at the neurology Clinic - Ain Shams Hospitals, in order to ensure the precision and applicability of the tools and estimate the time needed to complete them.

Ethical Considerations:

The arrangements for sharing were taken after the aim of the study was explained before data collection; patient with epilepsy were informed about the goal of the study. They were given chance to refuse participation and they were informed that they could withdraw at any stage of research at any time without giving any reason. Also, they were certain that, the information given would remain private and used for the research purpose only as it is an ethical reflection for any research.

Field work:

The field work ongoing from February 2020 to July 2020. The researchers complete two visits/week in epilepsy Clinics for 6 months, (Sundays & Mondays, from 10.00 a.m. to 12.00 pm). The typical time needed to complete the tool around 30 minutes especially for patient unable to complete the questionnaire

alone by himself (16 patients by two researchers in one week that represent 200 patients in three months to complete pretest questionnaire and then the other three month for program implementation and immediate posttest.

Package program construction:

It consisted of three stages, introductory phase, application phase and evaluation phase.

Preparatory phase:

This study was come first by introductory phase in which the following actions were achieved:

- An authorized letter demanding consent to conduct the study was acquiesced from the Dean of the Faculty of Nursing, Helwan University to the director of the neurological Clinic. This letter incorporated the aim of the study and a copy from the data collection tools in order to get the approval and cooperation in the collection of data and implementation of the medical and community nursing intervention.

- Then, the researchers met patient with epilepsy who decided to participate in the study and clarify the aim and objectives of the study as evaluating the effect of the package program on patient with epilepsy knowledge, attitude, coping and stress management and technique of data collection and to seek participants' cooperation, highlighting that all collected information is firmly confidential, then oral or written approval agreement was obtained from them before the program method was applied. The researchers stayed with the patient with epilepsy to establish trust relationship and gain his/her cooperation in responding to interview sheet and scale implementation in the study.

- Assessment using the preceding tool was done by revising past and current

literature covering the several aspects of the research in books, articles, periodicals, magazines and studies related to the research study.

Implementation phase:

The researchers alienated the study group to four small groups, to implement sessions that based on patients identification needs after data collection in pretest. Different training methods were used such as; group discussions to let everyone express his/her feelings and previous experience, when dealing with their disease. This phase began by implementing the program. The researchers distributed the handouts to the participant and the program was implemented in the form of sessions. The content was covered in (12) weeks, started from May to July 2020 that overview of epilepsy causes, types, signs and symptoms, methods of prevention and treatment; coping methods as Positive reinterpretation and growth, Use of instrumental social support, Religious coping, Humor, Acceptance, and stress management.

Evaluation phase:

Upon the achievement of program, the post test was done for patient with epilepsy to approximation the effect of the program using the same preprogram tools that used previously in pretest to determined patients need and then reanalysis again to determine the effect of the program.

Statistical Design:

Data were examined using the statistical package for social sciences (SPSS), version 22. Quantitative data were offered as number and percent. Mean and standard deviation for each of the demographic, epilepsy data, and t test and Chi-square test and Pearson correlation coefficient were recorded Comparison between pre and posttest; $P > 0.05$ was

considered to be statistically significant of results.

Results:

Table 1 displayed studied group mean age 32.20 ± 16.77 , regarding their social status 38.5 are single, and 96% from them living with their family members and 47.5 had secondary education and 53.5% not working.

Table 2 showed that 56% from the studied group affected with epilepsy at 21 years old, 60% had generalized type of epilepsy, 66% treated by beating or cautery, 61.5% other family members affected with epilepsy and 64% take information from doctors or health care personal.

According to the research hypothesis, which stated providing multiple services package educational program for patient with epilepsy will improve their knowledge, attitude, coping and stress management was approved in tables (3, 4, 5, 6, &7) and figures (1).

Table (3): prove that highly statistically significant modification among knowledge studied of the study group sub items after the program application at p value.000.

Table (4): Confirmations that total scores of knowledge was intensely improved after program implementation with highly statistically significant difference with the starting point by using chi-square test and T test.

Table (5): represented that total scores of attitude was dramatically improved with highly statistically significant difference with the baseline by using chi-square test and T test after program implementation.

Table (6): Showed that brief coping scores level and sub items were improved after program application reaching either most or majority with highly statistically significant difference, $P < 0.001$).

Table (7): signifies that significant change in stress management score post program versus than pre stage.

Figure (1): showed that knowledge, attitude, stress management and brief coping were improved after program application versus pre stage.

Table (8): Epitomizes statistically, significant positive correlations were detected between change of knowledge and attitude. Also significant positive correlation between change in brief coping and stress management scores $P = 0.000$).

Table (1): Distribution of Demographic Characteristics of the Studied group (N=200).

Demographic data	The studied group (N=200)	
	No.	%
• Age:		
Mean \pm SD		32.20 \pm 16.77
• Gender:		
Male	152	76
Female	48	24
• Social status:		
Single	77	38.5
Married	75	37.5
Widow	10	5
divorce	38	19
• Living with family		
Yes	192	96
No	8	4
• Educational level		
Primary	25	12.5
Intermediate	44	22
Secondary education	95	47.5
University	36	18
Others	-	
• Occupation		
Working	93	46.5
Not working	107	53.5

Table (2): Distribution of clinical data of the Studied group (N=200).

Clinical data	The studied group (N=200)	
	No.	%
• Age of epilepsy		
<1year-<5 years	16	8
5 years- <10 years	36	18
10 years-<15 years	24	12
15 years-<20 years	12	6
20 years and more	112	56
• Duration of the disease		
<1year	55	27.5
1 year-<5 years	28	14
5 years- <10 years	117	58.5
10 years and more	-	-
• Duration of the treatment		
<1year	55	27.5
1 year5 years	45	22.5
6 yearse10 years	100	50
>10 years	-	-
• Epilepsy Types		
Generalized	120	60
Partial	80	40
• Medication Types		
Keppra	59	29.5
Depakine	117	58.5
Topamex	8	4
Others	16	8
• treated by beating or cautery		
yes	132	66
no	68	34
• any other family member diagnosed with epilepsy		
yes	123	61.5
no	77	38.5
• Epilepsy information from		
Doctors or health personal	128	64
Mass media and internet	4	2
Family and friends	51	25.5
other patients	17	8.5

*Significant (P<0.05)

Table (3): Level of knowledge among the studied group pre, and post applying the multiple services educational package program (n=200).

Pre/post scores	The studied group				T test	P value
	Pre		Post			
	No.	%	No.	%		
• Causes of epilepsy	54	27	174	87	15.200	0.000
• Effective Ways used for treating epilepsy	66	33	180	90	14.32	0.000
• Epilepsy is an infectious disease	99	49.5	152	76	5.60	0.000
• Epilepsy have a larger incidence of insanity	50	25	133	66.5	9.34	0.000
• Epilepsy is a continuing brain disease that cannot be cured	103	51.5	151	75.5	7.92	0.000
• Epilepsy manifestation	103	51.5	164	82	6.87	0.000
• Epilepsy can cause death	108	54	189	94.5	10.41	0.000
• Epilepsy can be cured	49	24	200	100	24.76	0.000
• Contributing factors of epilepsy	54	27	180	90	16.70	0.000
• Seizures considered an emergency condition	65	32.5	164	82	11.80	0.000
• Complication of epilepsy	49	24.5	159	79.5	13.16	0.000
• Occurrence of a cautionary (aura) before seizure	76	38	146	73	10.35	0.000
• Cautioning (aura) useful	36	18	200	100	23.93	0.000
• Existence of movements or actions during seizure	123	61.5	150	75	8.03	0.000
• Severity movement can varies	49	24.5	146	73	2.91	0.004
• Take a time while to recover (get back to normal)	123	61.5	155	77.5	10.14	0.000
• Cognitive Effects of seizure	59	29.5	155	77.5	11.61	0.000
• Emotional Effects of seizure	91	45.5	151	75.5	5.33	0.000
• Physical Effects of seizure	100	50	166	83	8.09	0.000
• Basic first aid measures when seeing someone had seizure	48	24	140	70	10.28	0.000

*Significant (P<0.05)

Table (4): Mean Difference of Total Knowledge Scores among patient with epilepsy Pre and Post program implementation (n=200).

Items related to the level of knowledge	Level of knowledge pre and post applying the program				χ^2	P
	Pre-applying		Post- applying			
	No.	%	No.	%		
Levels of total knowledge:						
Poor	134	67	20	10	.278	.000
Average	27	23.5	50	25		
Good	19	9.5	130	65		
Mean scores of total knowledge pre applying:						
Range			19-32 (13)			
Mean \pm SD			21.47 \pm 4.11			
Mean change of scores of total knowledge post applying:						
Range			19-40(21)			
Mean \pm SD			32.37 \pm 7.15			
Paired T test			21.42			
P			0.000			
% of knowledge improvement post program:						
Range			44%-328%			
Mean \pm SD			.694 \pm .186			

*Significant (P<0.05)

Table (5): Mean Difference of Total attitude Scores among patient with epilepsy Pre and Post program (n=200).

Items related to patients attitude	Patient attitude pre and post applying the program				χ^2	P
	Pre-applying		Post- applying			
	No.	%	No.	%		
Levels of total attitude:						
negative	93	46.5	20	10	.587	0.004
positive	107	53.5	180	90		
Mean scores of total attitude pre applying:						
Range			17-28 (11)			
Mean \pm SD			22.19 \pm 4.890			
Mean change of scores of total attitude post applying:						
Range			17-35(18)			
Mean \pm SD			32.05 \pm 5.27			
Paired T test			19.822			
			0.000			
% of attitude improvement post program:						
Range			37.5% - 67.3 %			
Mean \pm SD			.722 \pm .245			

*Significant (P<0.05)

Table (6): Mean Difference of Total brief coping Scores and Sub Items among patient with epilepsy Pre and Post program (n=200).

Brief coping items	Pre applying program		Post applying program		T test	sig
	Mean ± SD	Range	Mean ± SD	Range		
• Constructive reinterpretation and growth(1)	1.51±.501	1	2.800±.401	1	28.527	.000
• Mental disengagement(2,16)	2.76±.822	2	5.75±.434	1	45.75	.000
• Focus on and venting of emotions(3,17,28)	4.62±.486	1	7.78±1.098	3	37.351	.000
• Use of contributory social support(4,14)	2.73±.445	1	5.66±.474	1	63.394	.000
• Dynamic coping(5,25)	3.51±.862	2	5.635±.482	1	31.095	.000
• Denial(6,27)	3.69±.461	1	4.800±1.47	3	13.810	.000
• Spiritual coping(7,18)	3.69±.461	1	5.73±.445	1	45.747	.000
• Humor(8,20)	3.02±.719	2	3.40±.946	4	4.141	.000
• Behavioral disengagement(9,24)	3.40±.956	4	5.51±.501	1	32.713	.000
• Restriction(10,22)	3.51±.501	1	5.51±.514	1	45.909	.000
• Use of emotional support(11,23)	2.76±.428	1	5.75±.431	1	60.969	.000
• Substance use(12,26)	5.03±1.00	2	4.02±.719	2	20.358	.000
• Acceptance(13,21)	3.51±.501	1	5.73±.445	1	37.125	.000
• Suppression of competing activities(15)	1.99±.698	2	2.845±.362	1	15.348	.000
• Planning (19)	1.755±.431	1	2.695±.461	1	20.801	.000
• Total	47.24±4.36	13	78.35±2.22	5	1.173e2	.000

*Significant (P<0.05)

Table (7): Mean Difference Scores of Total stress management among patient with epilepsy Pre and Post applying program (n=200).

Items related to patients stress management	Pre applying program		Post applying program		T test	sig
	Mean ± SD	Range	Mean ± SD	Range		
❖ Stress management	13.270±.831	2	28.755±.431	1	1.970e2	.000

*Significant (P<0.05)

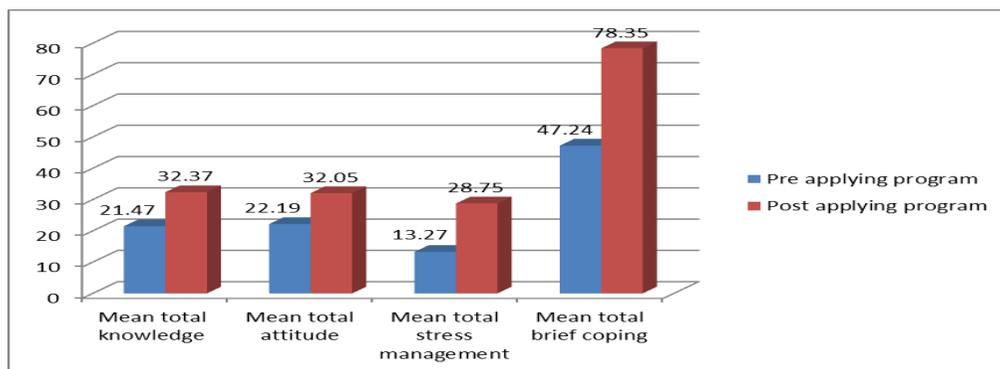


Figure (1): Mean Difference Scores of Total knowledge, attitude, stress management and brief coping among patient with epilepsy Pre and Post applying program (n=200).

Table (8): Correlation between Changes of Knowledge level, attitude, stress management and brief coping Regarding Epilepsy Disease and Patients Post applying the Program (N=200)

Items	Change of scores for the total knowledge, attitude, stress management and brief coping					
	Knowledge		Attitude		Stress	
	r	p	r	p	r	p
knowledge						
attitude	.596	.000				
stress management	0.084	0.236	0.005	.939		
brief coping	0.630	.000	0.096	0.178	0.346	.000

*Significant (P<0.05)

r=Pearson Correlation Coefficient

Discussion:

The frequency of epilepsy is being predictable at 1 in 125 to 200 people. In spite of the efficiency of antiepileptic drugs 40% of these are disappointingly controlled by pharmacological treatment.

This means that in 1 in 300 to 500 people, epilepsy becomes a long-lasting condition. Having a continuing disorder with connected medical and neurological handicaps, the complications of extended drug treatment and the psychological problems associated with chronic illness

have an important influence on one's quality of life. (McCagh, 2016)

Apropos demographic characteristics of the studied group the current study revealed that means age was 32.20 ± 16.77 and nearly half of the studied group had secondary education and not working. This result was in the same line with **Yousuf et al., (2017)** in Malaysia, whose study titled "Assessment of Knowledge, attitude and practices of Epilepsy Patients' towards their illness and treatment in a tertiary care hospital in Kuantan Pahang Malaysia" they show that the study group mean age was (31.63 ± 13.41) and majority of them were young adults and more than half of the studied group had secondary education and one third of them unemployed.

From the researcher's point of view this may be due to that the young adult seeking for treatment and follow up to improve their quality of life also was due to their concept that patient with epilepsy cannot take up a job for a long period.

Regarding social status of the studied group the present study revealed that most of them were single and most of the studied group, living with their family member. This result was in accordance with **García-Pallero et al., (2017)** Spain, whose study entitled "Effectiveness of vagal nerve stimulation in medication-resistant epilepsy. Comparison between patients with and without medication changes" most of their study groups were single. From the researcher's point of opinion this may be due to that they select to continue without wedding due to their epileptic fits and they need support and care from their families.

Regarding clinical data of the studied group the present study delineated that more than half of the studied group affected with epilepsy at 21 years old, had generalized type of epilepsy, treated by

beating or cautery, had another family members affected with epilepsy and take information from doctors or health care personal. This result was in accordance with **Robinson, et al., (2017)** UK, in their study entitled "Characteristics associated with quality of life among people with drug resistant epilepsy" who noted that most of the study subjects were older adult and on modern modes of treatment, but complementary alternative medicine was still practiced and about one third had a complex partial type of epilepsy.

Also **Neyaz et al., (2017)** at Saudi, whose study entitled "Knowledge and attitudes towards epilepsy in Saudi families " they noticed that the physician was the foremost source of information in the most of the cases and only one third of them reported that the nurse in the hospital were the source of information.

Regarding the effect of the program on the knowledge scores and level among the studied group pre, and post applying of multiple services educational package program the results of present study publicized that there were highly statistically significant change in studied group knowledge in all item (cause, treatment, incidence, manifestation, contributing factors, emergency case, complications, warning signs, cognitive, emotional and physical effect of seizure and basic first aid procedure) with p value.000.

This result was congruent with **Saeed et al., (2014)** whose study entitled "Education Based on Precede-Proceed on Quality of Life in Elderly" their study results showed that after intervention there were significant difference in knowledge level. Also **Kiwanuka et al., (2018)** whose study entitled "Knowledge, attitude, and beliefs on epilepsy among adults in Erute South" they revealed that patient education help him to get knowledge according to disease history, causes, manifestation,

treatment decisions, and side effects of drugs. Therefore, most clinic-based patient education is in form of written resources that emphasizes on all the above objects

This was in the same line with **Ridsdale et al., (2017)** UK; whose study entitled "People with epilepsy obtain added value from education in groups: results of a qualitative study" as they declared that educational programs aiming to enhance epilepsy self-management have often shown improvements in knowledge, but limited outcomes for documented changes in behavior and attitude.

Whereas this results were not in the same line with **Jones et al., (2020)** in their study entitled "Implementing standardized provider documentation in a tertiary epilepsy clinic" as they revealed that the interference made no difference in knowledge scores of his study group. The authors credited this to the fact that the patients had chronic epilepsy for an average of 23 years old and had likely learned information from other resources during this time.

Regarding mean difference scores of total level of knowledge among patient with epilepsy pre and post applying of multiple services educational package program the present study revealed that total scores of knowledge was dramatically improved after program implementation with highly statistically significant difference with the baseline assessment. From the researchers point of view this improvement may be due to knowledge refreshment through the program sessions and relevance of items of the program content.

This result was in accordance with **Karimi & Akbarian, (2016)** in Iran; in their study entitled "Knowledge and Attitude toward Epilepsy of Close Family Members of People with Epilepsy in North of Iran" they mentioned that the main

verdicts of study specified good knowledge and a positive attitude about epilepsy among family members for people with epilepsy. **Also Ip et al., (2018)** in their study entitled "An update on the prevalence and incidence of epilepsy among older adults" they concluded that adequate education is the corner stone in managing patients with epilepsy.

Harding et al., (2020) illustrated that Patient education has been shown to be effective in improving health outcomes such as reducing the need for medications; duration of treatment and hospital stays; improving risk-reducing behavior; and reducing risk factors of epilepsy.

Regarding mean difference scores of total attitude among patient with epilepsy pre and post applying of the multiple services educational package program the present study revealed that total scores of attitude was dramatically improved with highly statistically significant difference with the baseline.

This result was in the same line with **Saeed et al., (2014)** at Iran, in study entitled "Education Based on Precede-Proceed on Quality of Life in Elderly) as they detected that after intervention there were significant difference between pre/post assessment concerning patients attitude.

Regarding mean difference scores of total brief coping and sub items among patient with epilepsy pre and post applying of multiple services educational package program, the present study revealed that brief coping scores level and sub items were improved after program application reaching either most or majority with highly statistically significant difference.

This result was in the same line with **Corrigan, et al., (2016)** in Australia; in their study entitled "A systematic review of psychosocial interventions for children and young people with epilepsy"

they revealed that the educational program had a significant consequence on the measure, as Coping with Epilepsy (total score), especially on the subscales ability to Define feelings and information looking for.

Also **May et al., (2018)** in their study entitled "The effectiveness of a group self-management education course for adults with poorly controlled epilepsy, SMILE (UK): A randomized controlled trial" they revealed that the contributors believed that their knowledge about epilepsy was amended and felt that they had educated something which helped them to cope better with epilepsy in their daily life activities.

Regarding mean difference scores of total stress management among patient with epilepsy Pre and Post applying of multiple services educational package program the present study revealed that that significant change in stress management score post versus preprogram implementation. This result was confirmed by **Corrigan et al., (2016)** in their study entitled "A systematic review of psychosocial interventions for children and young people with epilepsy" as the study settled that significant decrease in level of stress, depression and measures of neurotic disorders were detected.

Novakova, etal. (2019) reported in their study entitled "Coping with stress: A pilot study of a self-help stress management intervention for patients with epileptic or psychogenic nonepileptic seizures" they decided that the intervention was seemed to be suitable, harmless, and accommodating by participants. It could be a valuable complementary treatment selection for reducing stress practiced by patients living with seizure disorders.

Regarding the mean difference scores of total knowledge, attitude, stress

management and brief coping among patient with epilepsy' pre and post applying the program in the present study revealed that improved after program application versus pre. That conveys the effectiveness of applying the multiple services educational package program.

This result was in the same line with **Ridsdale et al., (2018)** in their study entitled "The effectiveness of a group self-management education course for adults with poorly controlled epilepsy, SMILE, UK" as they revealed that his study subjects improved significantly in relevant aspects as attitude, knowledge and coping with epilepsy which indicate that the educational platform was effective. From the researcher point of view consequently interventions that educate and incorporate patient with epilepsy more into society and increase social prospect would diminish feelings of tension and improve patients coping strategies.

This results was congruent with **May and pfafflin, (2002)** in Germany, and Austria in their study title "the efficacy of an educational treatment program for patients with epilepsy (MOSES): results of a controlled, randomized study" as they reported that participants after the implementation of the educational program, their level of knowledge improved significantly.

The present study detected that statistically, significant positive correlations were detected between level of knowledge and attitude. Also significant positive correlation was detected between patient's brief coping and the stress management scores.

This result was in agreement with **Ridsdale et al., (2018)** when they showing an important relationship between individual coping style with their stress, knowledge and attitude in patients with epilepsy.

Also **Rugg-Gunn & Stapley (2017)** illustrated that although seizure control is the mainstay of epilepsy treatment, patient education is critical to improve attitudes and coping mechanisms. The influence of learning seems in adolescents with more knowledge about their complaint who report higher levels of self-esteem. Patient with epilepsy who have knowledge about their diseases are less likely to feel communally anxious. Teaching families and PWE allow better self-management of the condition and reduce seizure activity which may be effective in reducing the psychosocial sequel.

Conclusion

The results of this study settled that the multiple services package educational program had significantly positive effect on the level of knowledge of patient with epilepsy, as well as on the attitude, stress management and brief coping, which justified the research hypothesis. There were statistically significant positive relations between change of scores of total knowledge, attitude and coping post program implementation.

Recommendations:

The current study results recommended the:

➤ Continuousness of multiple services and educational program for patients with epilepsy in different health care setting, which includes the following:

- Mean and different causes of epilepsy.

- Contributing factors that increase the risk of epilepsy.

- Methods of control and prevention.

- Methods of coping.

➤ Further research in different neurological and health setting for further enhancements is needed.

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