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Effectiveness of an instructional program in parents' knowledge regarding home management of children with epilepsy

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Abstract

Background: Epilepsy is one of the most prevalent chronic neurological illnesses affecting children. This disease doesn't affect children only, but also affects the family and the society indirectly, therefore the educating parents regarding home management of epilepsy is of a paramount importance in reducing the negative impact of this disease on the child, the family and the society. **The aim:** To determine the efficiency of an instructional program in parents' knowledge based on assessment of out-come. **Methods:** A quasi-experimental design was employed and (nonprobability convenience sampling technique) is used for collecting data from Middle Euphrates Center for Neurological Science / Al- Zabra Teaching Hospital in Iraq from August 2022 to May 2023. A total of 80 parents who have children with epilepsy were included in the present study and equally assigned into two groups (40 for study group and 40 for control group). The study group received an instructional program about management, (pre-test) and after application of it by two weeks (post-test), while the control group was not exposed to the instructional program. **Results:** The study indicated that the parents in the study group have enhanced knowledge about epilepsy and home management ($p < 0.01$) after implication of the program compared with the control group. **Conclusions:** The current study indicated the significant effectiveness of the instructional program in improving parents' knowledge.

Keywords: Instructional Program, Parent's Knowledge, Home Management, Epilepsy

Introduction

Epilepsy is the most frequent neurological illness during childhood and is common to have negative impacts on the growth and the quality of life of a child. A diagnosis of epilepsy involves some modifications in the lives of the kid and their family¹. World health organization (WHO) estimates that around 70 million people of all ages will be affected by this disorder globally and that the first year of life, or around the ages of 1 to 12 years has the highest epilepsy incidence². Due to the incapacity to distinguish between several cases of partial seizures, which are common in poor countries, the prevalence of epilepsy may be lower than the actual percentage³. Up to 3% of DALYs (disability-adjusted life years) globally are attributable to neurological disorders, of which

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epilepsy accounts for 25%. Additionally, between 1990 and 2010, the total number of all-age DALYs for neurological illnesses increased by 71.6%, with epilepsy alone increasing by 30.2%⁴. Among the most prevalent neurological defects, including Migraine, stroke, and Alzheimer's disease, epilepsy ranks fourth in the United States. It often takes on different shapes, whether it's partially or completely. Seizure occurrence is often used to understand epilepsy. The seizure occurs due to the activity of the motor, psychological, or sensory, or all of these activities are mixed, which occur as a result of electrical discharge occurring more frequently than typical in the brain⁵. Nutrition, drug use, regular clinical controls, seizure event management, social activities, and a change in sleep patterns all require the family to reorganize their daily schedules because the child's perception of self-control of his or her life is significantly reduced by not knowing when and where a seizure will occur and the loss of control during a seizure⁶. In chronic conditions such as epilepsy, supplying information is vital to altering in parent behaviors, (that is, the ability to grasp and understand the offered knowledge), self-efficacy (taking responsibility of child-care, use of drugs, avoiding triggers, and coping with symptoms)⁷. In addition, it was evident that parents needed to be educated on the negative effects of seizures and antiepileptic medications on their children's development, what to do in the event of a seizure, what support systems to use, what information to share with family members and friends as well as the child's school, and what to do in the event that the child has a seizure at school⁸. Neurologist as generally concentrates on clinical care of seizures leaving the little understanding of handling seizures at home. Various instructional programs have been designed to boost understanding of caretakers of children with epilepsy. This stresses the requirements for training parents for domiciliary management of seizures. The home management by teaching children with epilepsy is vital considering the poor neurodegenerative effects of persistent seizures⁹. The pamphlets patient information (PIS) has been found to enhance parents' awareness about epilepsy. Yet, regrading countries with poor educational level, it is found that such efforts alone might not result in increased knowledge of parents. Literature reveals a key role of structured training program in boosting understanding of parents who have children with persistent epilepsy. Educational programs for children with epilepsy (CWE) and their parents are highly significant components in this context since they provide information and also cover coping methods and emotional elements of living with epilepsy¹⁰. In Nurses frequently serve as the only healthcare provider in low-resource areas, offering complete disease management and support to epilepsy patients and their families. Frequently, nurses will perform many tasks involving knowledge of providing epilepsy treatment, teaching patients and families self-management skills, providing psychosocial care, and conducting clinical research¹¹.

Aim of Study : The current study aimed to determine the effectiveness of instructional program on parents' knowledge about home management of epilepsy based on assessment of out- come.

MATERIALS AND METHODS

Design of the Study : A quasi-experimental design was used in the current study to test the effectiveness of an instructional program in parents' knowledge toward home management of

epilepsy through outcome of pre-post-test. the study was carried out between August 2022 to May 2023.

Ethical Considerations:

Before beginning the study, a legal, governmental agreement gained the National Research Ethics Committee approval for it to be ethically conducted in accordance with those requirements. Additionally, the participants' rights must be protected before data collection can start by obtaining their informed consent .

Sample and Sampling of the Study:

A non-probability (convenience sampling technique) was chosen of 80 parents who have children with epilepsy from Middle Euphrates Center For Neurological Science /Al- Zahra Teaching Hospital.

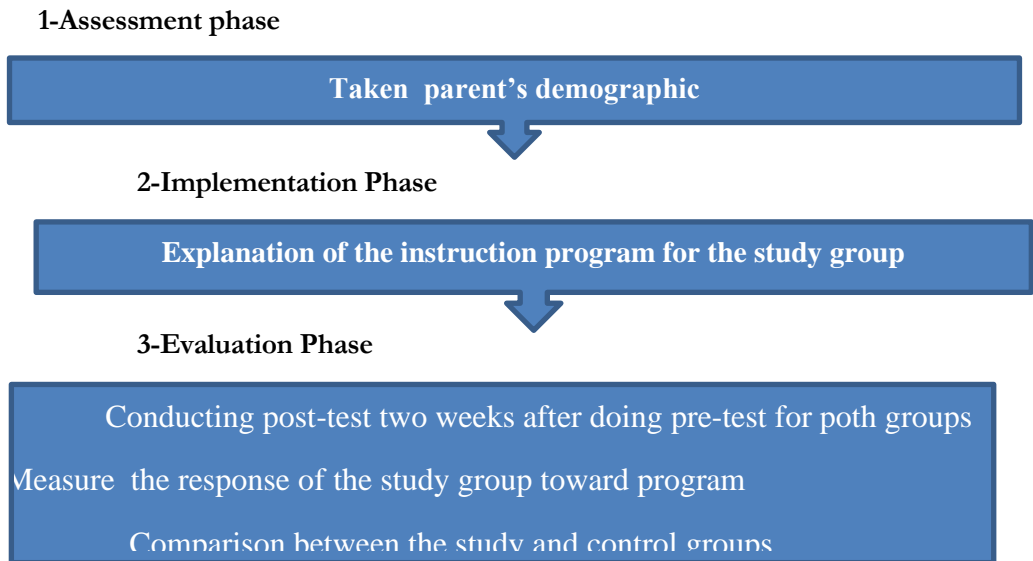
The Study Instrument:

To achieve the study phenomena, in the present study used a study instrument based on previous literature. The final instrument consists of two parts , the first part, (questionnaire) and the second part, (instructional program) which are detailed as following: questionnaire (2 parts |) 1-Parent 's socio- demographic, 2-tool for knowledge assessment including: (6) domains , each domain consist of (9) items except domain (5) that consist (8) items

Data Collection:

The researcher applied face-to-face interview method to collect the data from 80 participants. Both groups (the study and the control) were exposed to (pre-test) to assess parents' knowledge. The study group (40 participants) have been exposed to the current instructional program, while the control group (40 participants) has not been exposed to the program. After two weeks of pre-test and applying the program, participants in both groups were exposed to a post-test to assess the effectiveness of the program.

IMPLEMENTATION OF THE PROGRAM:



Statistical Analyses:

Descriptive statistics: (Frequency and percentage tables; mean and standard deviation). Inferential Statistics: (Chi-square test to test independency; Independent sample t-test, to test the difference between two independent groups study and control groups). Paired t-test was used to find the significant difference in mean of score of knowledge between pre and post test for the same group¹².

STUDY RESULTS

Table (1): The parents' demographic data of both study and control groups

Demographic data		Study Group		Control Group		χ^2 P value
		Freq. (N=40)	Percent (%)	Freq. (N=40)	Percent (%)	
Age / Years	23-34	8	20.0	12	30.0	1.07
	35-46	25	62.5	22	55.0	0.58
	47-58	7	17.5	6	15.0	
Gender	Male	14	35.0	16	40.0	0.21
	Female	26	65.0	24	60.0	0.64
Educational Status	Don't read & write	6	15.0	6	15.0	6.8
	Read and write	3	7.5	3	7.5	0.33
	Primary school	6	15.0	11	27.5	

	Intermediate	15	37.5	8	20.0	
	Secondary School	6	15.0	3	7.5	
	Institute	2	5.0	6	15.0	
	College	2	5.0	3	7.5	
Occupational Status	Employed	8	20.0	14	35.0	4.06
	Retired	2	5.0	0	0.0	0.25
	Free Job	7	17.5	5	12.5	
	Jobless/Housewife	23	57.5	21	52.5	
Residence	Urban	31	77.5	23	57.5	3.65
	Rural	9	22.5	17	42.5	0.06
Monthly Income	Sufficient	8	20.0	5	12.5	1.05
	Barely Sufficient	11	27.5	14	35.0	0.59
	Insufficient	21	52.5	21	52.5	
Type of family	Nuclear	28	70.0	31	77.5	0.58
	Extended	12	30.0	9	22.5	0.44

NS: Non-Significant at

P>0.05

Table (1) shows that the majority of the parents' subgroups in the (study group) are: those with ages ranging between (35-46) years (62.5%); female (65%); those that have intermediate school degree (37.5%); those who Jobless/Housewife (57.5%); those that who live in urban (77.5%); those with insufficient monthly income (52.5%); those who live in nuclear families (70%); Regarding control group, this table also shows that the majority of the parents' subgroups are: those with ages ranging between (35-46) years (55%); female (60%); those that have primary school degree (27.5%); those who Jobless/Housewife (52.5%); those that who live in urban (57.5%); those with insufficient monthly income (52.5%); those who live in nuclear families (77.5%); Inferential statistics has shown that there was no significant difference (P>0.05) between study and control groups regarding demographic distribution.

Table (2): Differences in mean of scores of parents' knowledge about home management of epilepsy between (pre-test and post-test) measurements for the study group

Domains	Study Group Tests	Mean	SD	Paired T-Test	df	P-value																																																								
Domain1 Knowledge Regarding Epilepsy	Pre-test	2.01	0.50	2.37	8	0.045																																																								
	Post-test	2.40	0.73				Domain2 Parents' interest in the psychosocial aspect	Pre-test	2.05	0.45	2.75	8	0.025	Post-test	2.66	0.60	Domain3 Knowledge of parents related to the treatment	Pre-test	1.51	0.47	3.29	8	0.011	Post-test	2.20	0.65	Domain4 Parents' knowledge related to nutrition	Pre-test	1.96	0.52	2.89	8	0.020	Post-test	2.31	0.59	Domain5 Parents' knowledge of preventive measures when a seizure occurs	Pre-test	1.86	0.41	2.93	7	0.022	Post-test	2.38	0.60	Domain6 Parents' knowledge of preventive measures after the seizure ends	Pre-test	2.21	0.31	2.34	8	0.047	Post-test	2.53	0.53	Overall Knowledge	Pre-test	1.93	0.44	6.59	52
Domain2 Parents' interest in the psychosocial aspect	Pre-test	2.05	0.45	2.75	8	0.025																																																								
	Post-test	2.66	0.60				Domain3 Knowledge of parents related to the treatment	Pre-test	1.51	0.47	3.29	8	0.011	Post-test	2.20	0.65	Domain4 Parents' knowledge related to nutrition	Pre-test	1.96	0.52	2.89	8	0.020	Post-test	2.31	0.59	Domain5 Parents' knowledge of preventive measures when a seizure occurs	Pre-test	1.86	0.41	2.93	7	0.022	Post-test	2.38	0.60	Domain6 Parents' knowledge of preventive measures after the seizure ends	Pre-test	2.21	0.31	2.34	8	0.047	Post-test	2.53	0.53	Overall Knowledge	Pre-test	1.93	0.44	6.59	52	0.00	Post-test	2.41	0.62						
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SD: standard deviation, df: degree of freedom

Table (2) exhibited that there is a significant difference ($P < 0.05$) between (pre-test and post-test) measurements for the study group regarding all domains. The same table shows that there is a high a significant difference ($P < 0.01$) between (pre-test and post-test) regarding overall knowledge.

Table (3): Differences in mean of scores of parents' knowledge about home management of epilepsy between study and control groups at post-test comparison

Domains	Post-Test Comparison	Mean	SD	Independent T-Test	df	P-value
Domain1 Knowledge Regarding Epilepsy	Study	2.40	0.73	2.49	16	0.037
	Control	2.13	0.75			
Domain2 Parents' interest in the psychosocial aspect	Study	2.66	0.60	2.37	16	0.045
	Control	2.27	0.68			
Domain3 Knowledge of parents related to the treatment	Study	2.20	0.65	2.37	16	0.045
	Control	1.70	0.62			
Domain4 Parents' knowledge related to nutrition	Study	2.31	0.59	2.38	16	0.044
	Control	1.96	0.66			
Domain5 Parents' knowledge of preventive measures when a seizure occurs	Study	2.38	0.60	2.78	14	0.027
	Control	1.92	0.65			
Domain 6 Parents' knowledge of preventive measures after the seizure ends	Study	2.53	0.53	2.37	16	0.045
	Control	2.03	0.44			
Overall Knowledge	Study	2.62	0.23	5.05	104	0.00
	Control	2.00	0.44			

SD: standard deviation, df: degree of freedom,

Tables (3): Exhibited that there is a significant difference ($P < 0.05$) between study and control groups at post-test comparison regarding all domain. This tables also revealed that there is a high significant difference ($P < 0.01$) between study and control groups at post-test comparison regarding overall knowledge.

DISCUSSION

Epilepsy has a serious impact on children's and parents' physical and psychological health, which has a detrimental impact on the treatment of the condition. This study's goal was to assess the effectiveness of the instructional program for parents of children with epilepsy in managing the condition. The present study indicated that the educational program raised the parents' knowledge levels, which agrees with the related literature. Numerous reports including the delivery of

instruction to the parents of epileptic children showed that the intervention group participants learnt more about home management of epilepsy. The results indicate that The educational program of present study about parent 's knowledge for the study group is effective through the good grades at (post-test) at mean of score (2.41), as compared with the fair grades at (pre-test) at mean of score (1.93) for all domains. These results are consistent with ¹ who showed that the knowledge of parent in the experimental group had considerably increased after program applied at ($p < 0.05$). Additionally ¹³ backed up the current study's findings that the average knowledge score after the test was found to be considerably higher than the average knowledge score prior to the test ($p < 0.05$), This indicates that the instruction program was effective. As for the post test of this study ,data analysis revealed that there is high significant differences of parents' knowledge between study and control groups at post-test periods, the current study reveals that the parents' knowledge it is improved after the application of the instructional program, the mean for the study group in contrast to the control group who were not exposed to instructional program so their knowledge not changed, Parents' knowledge improved after implementing the program, which took the most important and major role in increasing parents' knowledge and awareness of their epileptic children, This results corresponded with the study conducted by ¹⁴ in which it appeared boosting the level of epilepsy knowledge in parents (p -value < 0.001). Similarly, another study carried out by ¹⁵ found that the education program raised the knowledge levels of the parents at (post-test).

CONCLUSIONS:

Based upon the findings of the current study it was concluded that most study sample were within the age (35-46 years), and majority of them are female and in the pre-test indicated that the parents' knowledge are poor to moderate for the two groups. Additionally, knowledge of the parents in post-test, for the study group, was good, while the control group remained at the same knowledge level (moderate).

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