Effect of Continuous Care Model on Self-care and Self -efficacy for Children with Epilepsy

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Abstract

Background: Epilepsy is among the most common neurological disorders in children, characterized by recurrent seizures due to abnormal electrical activity in the brain. These episodes may result in involuntary muscle movements and temporary loss of consciousness. Managing epilepsy requires both medical treatment and active caregiver involvement. The aim of the study was to evaluate the effect of continuous care model in enhancing self-care practices and selfefficacy among children diagnosed with epilepsy. Design: A quasi-experimental design with preintervention, post-intervention, and follow-up phases was adopted. Setting: This study was carried out at Children' Health Insurance hospitals clinics for school children in Benha city which affiliated to the Egyptian Ministry of Education. Subject: A convenience sample of 80 mothers and their children with epilepsy. Data collection Tools: Data were collected using four instruments; Tool I: A structured interviewing questionnaire: Tool II: Mothers' knowledge and reported practice regarding to care their children with epilepsy. Tool III: Self-Management Scale for children with epilepsy and Tool IV: Self-efficacy Scale (ESES) for children with epilepsy: Results: Following the implementation of the continuous care model, significant improvements were observed in mothers' knowledge and reported practices. Additionally, children exhibited marked enhancements in self-care behaviors and self-efficacy. Statistical analysis revealed there was a highly statistically significant positive correlations among mothers' knowledge, practices, and children's self-efficacy and self-management scores regarding to epilepsy thorough of continuous care model implementation phases.. Conclusion: The continuous care model proved to be effective in improving mothers' knowledge and reported practices, as well as in promoting selfcare and self-efficacy among children with epilepsy. Recommendation: It is recommended that the continuous care model be incorporated into nursing interventions aimed at supporting families in managing pediatric epilepsy and for enhancing mothers and children self-care practices and self-efficacy in epilepsy care.

Keywords: Continuous Care Model, Epilepsy, Children, Self-care, Self-efficacy.

Introduction:

Epilepsy is prevalent а chronic disorder among neurological children. characterized by recurrent seizures. Globally, affects approximately it 50 million individuals, including over 10 million children under the age of 15 (WHO, 2020). Often referred to as a seizure disorder, pediatric epilepsy may result from genetic conditions, brain injuries, strokes, or tumors that alter brain function. Seizures stem from sudden, abnormal electrical discharges in the brain, manifesting in various formsranging from loss of consciousness to shaking or sudden collapse (American Academy of Pediatrics, 2022).

The Continuous Care Model (CCM) promotes ongoing, structured communication between nurses and children to identify their needs and foster positive health behaviors. By enhancing patient awareness, engagement, and collaboration with families, CCM supports disease control, lifestyle modification, and complication prevention. The main purpose of CCM is designing and providing a plan for facilitating acceptance, high insight, appropriate performance as well as control of disease and its possible complications (Otaghi et al., 2016).

CCM consists of four stages: orientation, sensitization, control, and evaluation. Its goal is to establish a consistent, interactive relationship involving children, their families, and healthcare providers to encourage adoption of healthy behaviors and improve quality of care. The objective is to know the needs and problems of children, sensitize children to acquire continuous and help out preserve health behaviors recovery and promote health (Salehipour et al., 2021).

Self-care refers to the actions taken to maintain one's emotional, physical, mental, and social well-being. For children with epilepsy, this includes managing seizures, adhering to treatment, and leading a balanced lifestyle with support from both family and healthcare professionals (Glowiak, 2024). Therefore, Self-care is important that helps to get balance and avoid burnout and stress. Good self-care takes some forms such as getting enough sleep every night, playing, and taking time for relaxation or fun (Scott, 2024).

Self-care in epilepsy means the process needed to manage seizures and the effects on daily life. Seizure management needs teamwork between members of the child health care team, his family and child. Consider the roles of everyone involved

Self-efficacy reflects a child's confidence in managing health-related tasks and overcoming challenges. It plays a crucial role in helping children succeed in various life domains including healthcare settings, school, home, relationships, hospitals, and other important areas. Therefore, selfefficacy play an important role that helps children to achieve their life goal (Cherry, 2024).

Mothers, as primary caregivers, significantly influence the development of children's self-care behaviors and selfefficacy. Therefore, empowering mothers through education and support is essential to improving pediatric epilepsy outcomes and need improvement in their knowledge and enhancing their practice regarding caring of their children with epilepsy and regarding many aspects of child condition as physical, educational psychological, behavioral, achievement, and social. (Ye et al., 2020).

Nurses also play a pivotal role in managing epilepsy by identifying needs, preventing complications, and promoting family involvement in self-care practices to enhance children's self-efficacy. Nursing roles must be performed to identify the nursing care problems, implement the nursing care problems, implement the nursing care process to develop a care plan to prevent complications from epileptic seizures and recurrent epileptic seizures, reduce anxiety for children and their mothers, promote the potential of children and their mothers in performing self-care at home as well as enhancing self-efficacy (Siripoon, 2022).

Significance of the study:

Epilepsy is considered one of neurological morbidity within children. Annual rate of incidence of epilepsy from birth to aged 15 years is about 5-7 cases per 10,000 children. This indicated that nearly 5 out of every 1,000 children will have epilepsy in any given year (Johnferdayhons, 2015). Globally, more than 11 million children aged active less. than 15 years have epilepsy (Rabie et al., 2016). The study conducted in Egypt revealed that there was high prevalence of epilepsy in Upper Egypt (Farghaly,2018).

Epilepsy is estimated to impact five million people globally each year. In Egypt, there were 6.98 instances of epilepsy for per 1000 individuals in 2016. In Lower Egypt, the prevalence is 7.2/1000, while in Upper Egypt, it is 9.7/1000 (WHO, 2023).

Seizures are one of the most prevalent medical problems affecting children, in addition, are the most prevalent chronic neurological condition in children in both developed and developing countries. The spectrum of diseases that form childhood epilepsy syndromes ranges from mild to potentially fatal. Children may experience seizures for a variety of reasons, such as infection, severe brain injury, and anatomical deformity (**Rubenstein, and Levy, 2019**).

Self-care enhances children with epilepsy to cope with their disease and to lead to a better quality of life and helps them to improve their self-efficacy. Implementing the continuous care model. which encourages active children and their mother's participation in their health care and self-care, also can reduce utilization of health care services. Therefore, this study was conducted to improve self-care and selfefficacy for children with epilepsy.

Aim of the Study:

The present study aimed to evaluate the effect of continuous care model on self-care and self -efficacy for children with epilepsy through the following:

1. Assess children' and their mothers' knowledge and reported practice regarding Epilepsy

2. Design and implementation of continuous care model for mothers and their children with epilepsy.

3. Evaluate the effect of continuous care model on self-care and self -efficacy of children with Epilepsy.

Research hypotheses:

H1: Implementing the continuous care model will improve mothers' and their accompanied children'knowledge and

reported practices towards epilepsy compared to before implementing the continuous care model.

H2: Implementing the continuous care model will improve self-care and self-efficacy for children with epilepsy compared to before implementing the continuous care Model.

Subjects & Method:

I. Technical design:

The technical design for the study includes research design, setting of the study, subject and tools for data collection.

Research design: The study was conducted by using a quasi- experimental research design (pre-test, post-test, and follow-up) will be utilize in this study.

Research setting: This study was carried out at Children' Health Insurance hospitals clinics for school children in Benha city which affiliated to the Egyptian Ministry of Education.

Sample: A purposive sample of 80 children diagnosed with epilepsy. According to the statistics of the Health Insurance hospitals clinics for school children in Benha city, the total number of children with epilepsy 101. The sample size calculated through formula

n= N

 $1 + N(e)^2$

n=sample size

N=population size

E=margin of error=0.05

 $n=N/1+N(e)^2 = 101/1+101(0.05)^2 = 80$ children diagnosed with epilepsy and their mothers was selected based on the following inclusion criteria:

- Children aged between 6 and 18 years.

- Children without any other neurological disorders.

-Children and their mothers not previously attended continuous care models.

- Willingness of both mothers and their children to participate voluntarily

Data collection Tools: This study had four tools, which included the following:

Tool I: A structured interviewing questionnaire: - It was developed by the researchers after review of the related literature, written in an Arabic language and divided into four parts.

Part (1): Characteristics of the studied children such as age, gender, birth order, education stage, school regularity, and causes of school irregularity.

Part (2): Characteristics of the studied mothers such as age, educational level,

occupation, residence, and sources of mothers' Information.

Part (3): Children medical history of epilepsy including: onset epilepsy, types of epilepsy, possible cause of epilepsy, frequency of epileptic attacks, and family history of epilepsy.

Part (4): Children and their mothers' knowledge questionnaires, to assess children and their mothers' knowledge toward epilepsy. It was adapted by (Nashaat et al., 2022). It consists of 12 multiple choice questions as definition, nature, causes, and symptoms/signs, onset age of epilepsy, treating specialty, treatment duration, precipitating factors, diagnosis, prevention, precautions, and treatment. The studied subject's answers were compared with the model key answer, where two scores were given for complete correct answer, one score was given for incomplete correct answer and zero score was given for wrong answer and unknown answer (equal 24 score).

The total score was calculated as follows:

Good knowledge level at \geq 75% (equal 18 or more) score.

Average knowledge level at 50% - < 75% (equal 12-< 18) score.

Low knowledge level < 50%. (equal< 12) score

Tool II: Children and their mothers' reported practices observational checklist it was concerned with assessment of children and their mothers' reported practice regarding care for children with epilepsy. It was adapted from **(Rashad et al., 2016).** It includes reported practice before fit attack (7 steps), reported practice during fit attack (9 steps), and reported practice after fit attack (4 steps).

Scoring System: Total subjects reported practice scores were developed by the researchers. Each observed item was checked as done or not done. Each correct step was given 1 point and zero was given not done.

Practice score totaled 20 points distributed as follows: The total practice score of subjects were classified as follows:

Satisfactory level ($\geq 60\%$) = (≥ 12 score)

Unsatisfactory level (< 60%) = (<12 score) Tool III: Epilepsy Self-Management Scale for children:

Epilepsy Self-Management Scale (ESMS) for children: It was adapted by (Dilorio et al., 2004). To assess epilepsy selfmanagement practices for children, it contains a 38-item under grouped five groups named medication management (10 items), Information (8 items), safety (8 items), seizures (6 items) and lifestyle (6 items). Each item is rated on a 5-point scale ranging from (1), never, to (5), always

Total scores were found by reverse coding the 12 items negatively words and summing answers to all 38 items. Total scores range from 38-190 with higher scores indicating more continoual use of selfmanagement strategies. The 38-items scale is based on an original 26-items version assessed for content validity and reliability with alpha coefficients of 0.81–0.84 (Quon, et al., 2019).

Tool IV: Epilepsy Self-efficacy Scale (ESES): It was adopted by **Dilorio**, et al (2018). To assess children's self-efficacy in managing their epilepsy. The ESES is composed of 33 items as follows (I can always take my seizure medication when I am away from home, I can always get enough exercise, I can always use stress management techniques to stop seizures, I can always avoid situations or activities that make my seizures worse)

Scoring system Epilepsy Self-Efficacy Scale for children:

The children response was classified into three-point Likert scale, I cannot do at all (1), Moderately sure I can do (2), Sure I can do (3). Total scores were ranged from (0-99) points, so the level of children self-efficacy was categorized as the following, High selfefficacy was ranged from (74-99) points, Moderate self-efficacy (59-74) and low selfefficacy (less than 59) point.

Low self-efficacy < 60%

Moderate self-efficacy 60-75%

High self-efficacy $\geq 75\%$.

II. Operational design:

The operational design included: preparatory phase, content validity, reliability of tool, pilot study and field work.

The preparatory phase

This phase included reviewing related literature and different studies related to epilepsy and theoretical knowledge of various aspects of the study, using textbooks, evidence-based articles, internet, periodicals and journals to develop tools and to get acquainted with the various study aspects of the research problems.

Tools validity:

Tools validity was checked through a jury of three experts (professors) of Pediatric Nursing from the Faculty of Nursing Benha University, and El-Monafia University, to test the content validity of the instruments and to judge its clarity, comprehensives, relevance, simplicity, and accuracy. All their remarks were considered. Some items were rephrased to arrive at the final version of the tools. The tools were regarded as valid from the experts' point of view.

Reliability:

Reliability for tools was applied by the researchers for testing the internal consistency of the tools by administrating the same tool to the same subjects under similar conditions. Internal consistency reliability of all items of the tools was assessed using Cronbach's alpha coefficient. This turned to be (0.75.) for children and mothers' knowledge assessment sheet. Reliability of child self-care management, the value was (0.73). Reliability of children Self-Efficacy Scales, the value was (0.85).

Ethical considerations:

The researcher obtained ethical approval from the scientific research ethical committee at Benha University's faculty of nursing code; REC-PN-P 60 on 1 October 2024, and an official approval was obtained from director of the Children' Health Insurance hospitals clinics for school children in Benha city. Informed consent was obtained from the studied mothers and their children prior to data collection. The children and their mothers were informed about the purpose and the expected outcomes of the study. Also, the mothers were assured that the study was harmless to their children, their participation was voluntary, and they have the right to withdraw from the study at any time without giving any reason. Mothers and their children were also assured that anonymity and confidentiality will be guaranteed as well, the collected data will be used for research purposes only. The ethics, values, culture and beliefs of the children and their mothers were respected.

Pilot study:

Pilot study was conducted on 10% of the total sample size (8 mothers and their children) to test the applicability and validity

of the study tools and to determine how long it would take to complete the questionnaire. The pilot sample included the subjects in the study because there were no significant modifications carried out on the study tools. **Field work:**

Study was carried out from the beginning of October 2024 and completed at the end of February 2025 covering 5 months. The researchers visited the previously mentioned setting three days/week (Sundays, Tuesdays, and Thursdays) from 9 AM to 12 PM. The study was conducted through continuous care model phases. At first, continuous care was implemented in four stages: Orientation, sensitization, control, and evaluation.

Orientation stage: This stage was the first step in which the researcher introduced herself, illustrated the study aim and expectations, explained the various stages of the model to the participant mothers and their children, generated motivation and emphasized the value of continuing care contact between the researcher and mothers and their children, clarified the ways of communication and established the required phone calls schedules until the end of the intervention. At this stage, the researcher took oral consent from mothers to participate in the study. Data was collected by the researcher through the distribution of a selfadministered questionnaire, (Tool I part 1,2,3) in order to fill in to assess mothers' & children's personal data & medical history of children. It took nearly (10-15 minutes).

Then, the researcher distributed Mothers' and their children's knowledge Questionnaire (Tool I part4) (Pretest) to assess the level of mothers' and their children's knowledge about epilepsy. The average time required for completion of the questionnaire was nearly (10-15 minutes). Also, the researcher distributed mothers' practice regarding their children with epilepsy (Tool II) (Pretest) to evaluate the level of mothers' reported practice regarding their children with epilepsy. The average time required for completion of the questionnaire was around (25-30 minutes). Furthermore, the researcher distributed epilepsy self-care management scale (Tool III) to evaluate self-care management of children with epilepsy. Finally, the researcher distributed epilepsy self- efficacy (Tool IV) for lifestyle management of children with epilepsy. The average time

required for completion of the questionnaire was around (10-15 minutes).

Sensitization stage: This stage was carried out to engage and apply continuous care process to participant mothers and their children. Mothers were divided into 10 groups. The average number of mothers in each group (8mothers and their children). Each group attended four educational sessions (two sessions weekly). The actual time of each session was (45-60) minutes. These sessions were applied in the waiting area of Health Insurance hospitals for school children in Benha city. At the beginning of the first session the mothers and their children were oriented with the program contents. Each mother was informed about the time of the next sessions at the end of session. The subsequent session started with feedback about the previous session and the objectives of the new session by using simple Arabic language to suit mother's level understanding. Various educational of methods (group discussion, role-playing, demonstration, and re-demonstration) and materials (power point presentation, a designed booklet, power point presentation, photos, educational videos, lab top, and CD to help proper understanding of the content by children and their mothers.) were used. At the end of each session the researcher gave five minutes to participant mothers and their children to ask any questions for correcting any misunderstanding.

First session: at the beginning of the first session the researchers gave the mothers and their children the educational booklet and introduced an orientation of the educational booklet including the general and specific objectives by using Arabic language. Then the researcher started by providing mothers and their children with knowledge about epilepsy including definition, causes, clinical manifestation, and diagnosis.

Second session: The researchers discussed mothers' reported practices in caring for their children with epilepsy before, during, and after fit attacks as don't leave the child alone, give children prescribed anti-epileptic medication, don't put anything for child mouth, make sure that child breathing is okay, placed child on the left side in recovery position, and the child head should be turned.

Third session: The researchers discussed with mothers and their children regarding

epilepsy self- care management to control and manage epilepsy including medication management, information management, safety management, seizure management, and lifestyle management.

Fourth session: The researchers discussed with mothers and their children regarding self-efficacy for lifestyle management it is including items that corresponded to situations as, stress management, sleep, exercise and eating habits and using of antiepileptic drugs.

Control stage: During this stage, the researchers maintained mutual relationships with studied mothers and their children through weekly phone calls for each woman (4 calls) throughout one month, according to the women's preferred time for making phone calls (morning or afternoon). Each woman's weekly phone call lasted approximately 1.-15 minutes and varied depending on mothers' and their children' needs and questions to help mothers to improve their self-efficacy and promote selfcare practices in caring for their children.

Evaluation stage: Immediately and one month after implementation of continuous care model, the researchers used the same previous assessment tools to evaluate the effect of continuous care model on knowledge, self-care among mothers and their children with epilepsy.

III- Administrative Design:

An official approval was taken from the Dean of the Faculty of Nursing Benha University to director of Children' Health Insurance hospitals clinics for school children in Benha city. A clear explanation was given about the nature, importance and expected outcomes of the study to carry out the study with minimal resistance.

IV- Statistical Design:

The collected data organized, tabulated and statistically analyzed using Statistical Package for Social Science (SPSS) version 21 for windows, running on IBM compatible computer. Descriptive statistics were applied (e.g. frequency, percentages, mean and standard deviation). Test of significance, Chi-square test (χ^2) this test used to measure significant of qualitative variables and correlation coefficient (r) used for quantitative variables that were normally distributed or when one of the variables is qualitative. These tests were applied to test the study hypothesis. Reliability of the study

tools was done using Cronbach's Alpha. A highly significant level value was considered when p < 0.001, a significant level value was considered when p < 0.05 and. No statistical significance difference was considered when p > 0.5

Results:

Table (1): Reveals that, less than half (46.3%,40.0%) of studied children were in the age group 12 < 15 years, with mean \pm SD= 12.92 \pm 2.83 years and were preparatory school educational level, more than half (53.8%&55.0%) of them were females and second birth order in family. While 65.0% of them do not have regularity to go to school and 44.2% of them do not regularity to go to school due to fearing of mother to exposure to fits in the school.

Table (2): Presents that less than half (42.5%) of the studied children were aged of onset disease between 5-10years with mean \pm SD=8.32 \pm 2.18 years and possible cause of epilepsy due to fever, while 20.0% of them had Atonic type of epilepsy. Moreover about (50.0%) of them had frequency of epileptic attacks > 1per month, but < 1 per week and regarding to duration of seizures by minute (57.5%) of them continues of fits from 3-4 minutes.

Table (3): Shows that, less than half (45.0% & 42.5%) of the studied mothers were in the age group 35-<40, with mean \pm SD= 37.13 \pm 4.74 years and had secondary education. Also, less than three quarters of 70.0% of studied mothers were living in urban areas and working. Meanwhile, less than half of them, 40.0% had sources of information from doctors.

Table (4): Clarifies that, majority (81.2% & 83.5%) of the studied mothers had incorrect or don't know answer regarding treating specialty and prevention of epilepsy of childhood in the pre continuous care model implementation phases. While 91.2%, and 87.5% of them had correct complete answer regarding treating specialty and treatment in post continuous care model the implementation phase. Moreover 67.5 and 71.2% of them had correct complete answer regarding prevention and treatment in the follow-up after one-month continuous care model implementation phase. Moreover, there was a highly statistically significant difference at pre, post and after one month of continuous care model implementation of mothers' knowledge regarding epilepsy (P <0.001).

Table (5): Shows that, majority (93.75% & 92.5%) of the studied children had incorrect or don't know answer regarding treating specialty and prevention of epilepsy of childhood in the pre continuous care model implementation phases. While 90.0% and 87.5% of them had complete correct answers regarding treatment and precaution in the post continuous care model implementation phase. Moreover 86.25 and 85.0% of them had correct complete answer regarding precaution and signs and symptoms and diagnosis of epilepsy in the follow-up after one-month continuous care model implementation phase. Moreover, there was a highly statistically significant difference at pre, post and after one month of continuous care model implementation of mothers' knowledge regarding epilepsy (P < 0.001).

Table (6): Presents that, most (91.25%) 90.0 % & 87.5%) of the studied mothers had inadequate reported practice regarding care their children before, during and after fit attacks at the pre continuous care model implementation phase respectively. While improvement to 88.8%, 86.25% and 93.75% had adequate reported practice regarding care their children before, during and after fit attacks at the post continuous care model implementation phase. 81.25%, 76.2% and 85.5% of them had had adequate reported practice regarding care their children before, during and after fit attacks at the after one month of continuous model care respectively. implementation phase Moreover, there was a highly significant difference between pre, post and after one continuous month of care model implementation of mothers' practices regarding caring for their children with epilepsy before fit attacks (P < 0.001).

 Table (7): Mentions that, mean score of the studied children regarding their epilepsy self-management medication management in

the pre- continuous care model $(18.80\pm.6.21)$ which improved to be $(33.50\pm8.19\& 31.88\pm.11.04)$, in the post and after one month of continuous care model implementation respectively. Moreover, there was a highly statistically significant difference (p <0.000) in favor of post program.

Fig (1): Demonstrates that, (85.5% & 75.0%) of studied mothers had a total good level of knowledge at post and after one month regarding epilepsy at continuous care model implementation phases as compared to pre of continuous care model implementation phase.

Fig (2): Illustrates that, majority (85.0% & 81.2%) of the studied mothers had total satisfactory level of reported practices at post and after one month regarding care of their children with epilepsy at continuous care model implementation phases as compared to pre of continuous care model implementation phase.

Fig (3): Clarifies that, majority (91.2% & 82.4%) of the studied children had total high self-efficacy level regarding epilepsy at post and after one month regarding care of their children with epilepsy at continuous care model implementation phases as compared to pre of continuous care model implementation phase.

Fig (4): Shows that, majority (89.6% & 81.4%) of the studied children had total good self-management level regarding epilepsy at post and after one month regarding care of their children with epilepsy at continuous care model implementation phases as compared to pre of continuous care model implementation phase.

Table (8): Presents that, there was a highlystatistically significant positive correlationbetween total mothers' knowledge, reportedpractice, children self-efficacy and self-managementregarding to epilepsythorough of continuous care modelimplementation phases (P < 0.001).

Personal characteristics	No.	%							
Age (years):									
6-<9	6	7.5							
9-<12	16	20.0							
12- <15	37	46.3							
15-≤18	21	26.2							
Mean±SD 12.92 ±2.83 years		1							
Gender:									
Male	37	46.2							
Female	43	53.8							
Child education stage									
Primary school	27	33.8							
Preparatory school	32	40.0							
Secondary school	21	26.2							
Birth order:									
First	13	16.2							
Second	44	55.0							
Third	23	28.8							
School regularity									
Yes	28	35.0							
No	52	65.0							
Causes of school irregularity(n=52)									
Miss school due to illness	12	23.1							
Fearing of mother to exposure to fits in the school	23	44.2							
child refused to go to school	17	32.7							

Table (1): Distribution of the studied children regarding their personal characteristic (n= 80).

1-2

3-4

4-5

% **Medical History** No. Age of onset disease From birth 13.8 11 1-<5 19 23.8 5-<10 34 42.5 10-≤15 20.0 16 Mean±SD 8.32 ±2.18 years **Types of Epilepsy** 7.5 Generalized Seizures 6 Tonic- Clonic 11 13.8 Tonic 13.8 11 Absence 17.5 14 16 20.0 Atonic Focal Seizures 16.2 13 Unclassified seizures 9 112 Family history of epilepsy Yes 32.5 26 54 67.5 No Possible cause of epilepsy Head injury 6 7.5 15.0 Infection 12 Fever 34 42.5 10.0 Psychological 8 25.0 Idiopathic 20 Frequency of epileptic attacks. 17 21.2 > 1 per day > 1 per week 28.8 23 > 1per month. mainly 3-4, or 3-5times/ month 40 50.0 Duration of seizures by minute / s

Table (2): Distribution of the studied children regarding their medical history (n= 80).

21

46

13

26.25

57.5

16.25

Characteristics of Mothers	Studied Mothers				
	No.	%			
Age (years)					
25 - < 30	5	6.3			
30 -<35	13	16.2			
35-<40	36	45.0			
40-≤45	26	32.5			
Mean± SD 37.13 ±4.74 years	5				
Mothers' education					
Illiterate	3	3.8			
Read and write	6	7.5			
Primary education	7	8.8			
Secondary education	34	42.5			
High education	30	37.5			
Working status					
Working	56	70.0			
Not working	24	30.0			
Residence					
Rural	56	70.0			
Urban	24	30.0			
Sources of Mothers' Information					
Doctor	32	40.0			
Nurse	14	17.5			
Books, TV, internet	25	31.2			
Relatives and other mothers in similar situation	9	11.3			

Table (3): Distribution of the studied mothers regarding their personal characteristic (n= 80).

Phases of continuous care model implementation(n=80)													
Items	Pre continuous care model implementation			Post continuous care model implementation			Follow continuous care model implementation			V ²	Р	V ²	Р
	Complete correct answer	Incomplete correct answer	Don't know	Complete correct answer	Incomplete correct answer	Don't know	Complete correct answer	Incomplete correct answer	Don't know	1	value		value
Definition	17.5	23.8	58.7	83.8	8.8	7.4	62.5	20.0	17.5	91.52	0.000	53.70	0.000
Nature	15.0	31.2	53.8	75.0	17.5	7.5	57.5	30.0	12.5	63.70	0.000	42.12	0.000
Causes	7.5	26.3	62.2	66.2	18.8	15.0	43.8	41.2	15.0	81.22	0.000	55.52	0.000
Symptoms/signs	11.2	31.2	57.6	82.5	10.0	7.5	60.5	30.5	9.0	87.10	0.000	82.25	0.000
Onset age	5.5	20.4	74.1	82.5	11.2	6.3	67.5	23.8	8.7	76.92	0.000	53.52	0.000
Treating specialty	6.2	12.5	81.2	87.5	7.5	5.0	63.7	27.5	8.8	72.10	0.000	32.92	0.000
Treatment duration	3.8	25.0	71.2	80.0	10.0	10.0	68.8	17.5	13.7	87.60	0.000	74.23	0.000
Precipitating factors	4.2	17.2	78.6	77.5	16.2	6.2	61.2	28.8	10.0	71.42	0.000	75.27	0.000
Diagnosis	10.0	17.5	72.5	86.2	10.2	7.5	75.0	14.2	10.8	67.22	0.000	41.17	0.000
Prevention	10.0	10.5	83.5	76.2	15.0	8.8	67.5	21.2	11.3	81.77	0.000	80.82	0.000
Precautions	5.8	17.5	76.7	85.0	8.0	7.0	63.8	26.2	10.0	99.50	0.000	73.47	0.000
Treatment	8.0	12.0	80.0	91.2	5.3	3.5	71.2	18.6	10.2	97.82	0.000	77.52	0.000

Table (4): Distribution of the studied mothers' knowledge towards epilepsy thorough of continuous care model implementation phases (n =80).

	Phases of continuous care model implementation(n=80)												
Items	Pre continuous care model implementation			Post cont im	Post continuous care model implementation			ntinuous care plementation	model	X ²	P value	X ²	P value
	Complete correct answer	Incomplete correct answer	Don't know	Complete correct answer	Incomplete correct answer	Don't know	Complete correct answer	Incomplete correct answer	Don't know				
Definition	6.25	10.0	83.75	77.5	12.5	10.0	71.52	11.25	17.5	88.40	0.000	66.87	0.000
Nature	5.0	8.75	86.25	82.5	12.5	5.0	73.75	6.25	20.0	79.69	0.000	57.86	0.000
Causes	7.5	6.25	86.25	81.25	7.5	11.25	75.0	16.25	8.75	78.83	0.000	68.54	0.000
Symptoms/signs	7.5	8.75	83.75	88.75	6.25	5.0	85.0	7.5	7.5	88.35	0.000	72.34	0.000
Onset age	3.75	5.0	91.25	86.25	8.75	5.0	76.25	11.25	12.5	89.23	0.000	65.59	0.000
Treating specialty	2.5	3.75	93.75	85.0	8.75	6.25	75.0	11.25	5.0	73.29	0.000	57.36	0.000
Treatment duration	6.25	8.75	85.0	88.75	7.5	3.75	82.5	5.0	12.5	89.41	0.000	65.28	0.000
Precipitating factors	3.75	6.25	90.0	86.25	8.75	5.0	68.75	20.0	11.25	84.59	0.000	65.37	0.000
Diagnosis	8.75	10.0	81.25	87.5	8.75	3.75	85.0	6.25	8.75	76.59	0.000	52.37	0.000
Prevention	2.5	5.0	92.5	81.25	11.25	7.5	75.0	16.25	8.75	91.77	0.000	67.82	0.000
Precautions	8.75	7.5	83.75	87.5	8.75	3.75	86.25	5.0	8.75	78.69	0.000	83.20	0.000
Treatment	10.0	8.75	81.25	90.0	6.25	3.75	82.5	8.75	8.75	59.56	0.000	66.40	0.000

Table (5): Distribution of the studied children's knowledge towards epilepsy thorough of continuous care model implementation phases (n =80).

	Phases	Phases of continuous care model implementation(n=80)								
	Pre- c	ontinuous	Post co	Post continuous		Follow				
	care	model	care	model	continu		р		р	
Items	implementation		implementation		mo	Ξ	ı vəlu	5	ı val	
items					implem	X_{2}	valu	X_2		
	Adequ	Inadequa	Adequ	Inadeq	Adequ	Inadeq		Ľ		ut
	ate	te	ate	uate	ate	uate				
	%	%	%	%	%	%				
Before fit	0 75	01.25	00 0	11.2	01.25	10 75	55.	0.00	33.	0.0
attacks	0.75	91.23	00.0	11.2	01.23	10.75	48	0	53	00
During fit	10.0	00.0	86.25	12 75	76.2	22.8	53.	0.00	33.	0.0
attacks.	10.0	90.0	80.23	15.75	/0.2	23.8	88	0	88	00
After fit	12.5	97 5	03 75	6 25	85 A	15.0	95.	0.00	93.	0.0
attacks	12.3	07.5	35.75	0.23	03.0	13.0	20	0	45	00

Table (6): Distribution of the studied mothers' reported practices in caring for their children with epilepsy thorough of continuous care model implementation phases (n = 80).

Table (7): Mean score of the studied children regarding their epilepsy self-management thorough of continuous care model implementation phases (n =80).

Items	Pre (n =80)	Post (n =80)	Paired t test	P value	Follow up (n =80)	Paired t test	P value
	Mean ± SD	Mean ± SD			Mean ± SD		
Medication	18 80+ 6 21	33 50+8 10	12.04	0.000	31.88±.11.0	15 75	0.000*
management	10.000.21	55.50±0.19	12.04	0.000	4	15.75	*
Information	12.05 + 7.40	29 21 + 6 44	12.22	0.000	26 08 1 7 55	12.02	0.000*
management	12.95± 7.49	26.21 ± 0.44	15.25	0.000	20.08± 7.33	12.03	*
Safety	14 67+ 17 10	25 78+ 7 04	16.05	0.000	22 76+ 7 08	13.84	0.000*
management	14.07 ± 17.10	23.76± 7.94	10.05	0.000	23.70± 7.98		*
Seizure	11 62 6 02	20.16 ± 7.42	14.22	0.000	1770+027	12 69	0.000*
management	11.02 ± 0.92	29.10± 7.45	14.22	0.000	$1/./0\pm 9.3/$	15.08	*
Lifestyle	8 00 5 02	10 15 5 00	17 20	0.000	12.99+6.27	12.90	0.000*
management	0.90±3.03	18.15±3.08	17.38	0.000	12.00±0.27	12.89	*

Figure (1): Distribution of the total mothers' knowledge about epilepsy thorough of continuous care model implementation phases (n = 80).



Figure (2): Distribution of the total mothers' reported practices in caring for their children with epilepsy thorough of continuous care model implementation phases (n =80).





Figure (3): Distribution of the studied children regarding their Total epilepsy self-efficacy thorough of continuous care model implementation phases (n = 80).

Figure (4): Distribution of the studied children regarding their total epilepsy selfmanagement thorough of continuous care model implementation phases (n = 80).



Table (8): Correlation coefficient between total mothers' knowledge, reported practice, children self-efficacy and self-management regarding epilepsy thorough of continuous care model implementation phases (n=80).

	Correlation coefficient phases									
Items	Pre continuo model implem	us care entation	Post cont care mo implemen	inuous odel tation	After continuous care model implementation					
	r	Р	r	Р	r	Р				
Total mothers' knowledge and reported practice	0.370	0.00	0.501	0.000	0.735	0.000				
Total mothers' knowledge and children self-efficacy	0.414	0.00	0.750	0.000	0.933	0.000				
Total mothers' knowledge and children self- management	0.496	0.00	0.655	0.000	0.823	0.000				
Total mothers' reported practice and children self- efficacy	0.374	0.00	0.524	0.000	0.749	0.000				
Total mothers' reported practice and children self- management	0.425	0.00	0.621	0.000	0.825	0.000				
Total children self-efficacy and children self- management	0.436	0.00	0.588	0.000	0.755	0.000				

Discussion

Mothers of children with epilepsy face many challenges regarding their children's health. Physical, social, and physiological impact on mothers and children. Moreover, increase hazardous of behavioral, emotional, and cognitive, problems which can negatively affect children' health (**Bagherian**, et al., 2021). Furthermore, mothers' high level of self-efficacy helps to improve mothers caring for their children and overcome their challenges (**Tan et al., 2021**).

Regarding, family history of epilepsy, the result of the study clarified the most of them had no family history of epilepsy. This result was similar with the result conducted by **Badawy et al.**, (2018). Who found that most of them had no family history of epilepsy. Moreover, it was in congruent with the result of the study conducted by **Abdel Wahed et al.**, (2022). Who reported that family history as a significant predictor of epilepsy.

As regard to the gender of studied children most of them were female this result in the agreement with the result conducted by **Barakat et al.**, (2024). Who founded that the majority of studied sample were female. On the other hand, **Abdel Wahed et al.**, (2022). Revealed that the prevalence of epilepsy was higher in males than females. Furthermore, the birth orders, most of them, were second in birth order.

Concerning, school regularity the finding of this study reported that the majority of them was irregular go to school this result was disagree with result conducted by **Elmohalem et al., (2020).** Who found that the majority of studied sample was regular to go to school. Moreover, the main cause of school irregularity was Fearing of mother to exposure to fits in the school

In relation to residence of epilepsy the result of this study showed that the majority of them were in rural area this result similar to the study conducted by **Abdel Wahed et al.**, (2022). Who reported the high prevalence of epilepsy among rural area.

The present study showed that the most important cause of epilepsy was fever. The study conducted by **Dabilgou et al.**, (2023). Mentioned that brain disease was the most important cause of epilepsy by the subject.

The present study showed that the studied mothers had sources of information by doctor. This result in agreement with the study done by **Nashaat et al., (2022).** Who found that mothers had their information from doctors during follow up to prevent complication. Thereafter, the source of information for mothers regarding epilepsy was TV, and the internet this finding was congruent with the result of the study conducted by **Dargie et al., (2020).** Who reported that the main source of information from internet. This may be due to the variation of mothers' education, culture, and residence.

In relation to mothers' knowledge regarding epilepsy the study found that there was a highly statistically significant difference at pre, post and after one month of continuous care model implementation of mothers' knowledge regarding epilepsy. This result was supported by the study done by **Dargie et al.**, (2020). & Kissani et al., (2020). Who found that the studied subject had poor knowledge regarding epilepsy. Furthermore, the study conducted by **Nashaat et al.**, (2022). Who reported that mothers had unsatisfactory knowledge regarding epilepsy before program implementation.

In researcher point of view the differences in mothers' knowledge level may be due to many factors including educational level of mothers, cultural and social factors, residence, as well as available provided health services.

Concerning the mother's reported practice regarding epilepsy the current study showed that the majority of mothers had low reported practice level in caring for their children with epilepsy before continuous care model implementation phases, while most of them had high reported practice level after continuous care model implementation phases. This result is in accordance with the result of study conducted by **Abd Elghfar et al., (2024).** This was due to inadequate mothers' knowledge and training toward caring for their children with epilepsy that resulted in mothers having low practice to provide care for their children.

Furthermore, the mothers had inadequate practice regarding care the child during fit attacks in the pre continuous care model implementation phase. While there was improvement in the post and the follow-up after one-month continuous care model implementation phases. This finding was consistent with the result conducted by Abd Elghfar et al., (2024). & Mesraoua, et al., (2022)

Regarding, self-care management the result of this study founded that studied children had total good self-management level regarding epilepsy at post and after one month at continuous care model implementation phases as compared to pre of continuous care model implementation phase. This result was similar to the result conducted by **Badaway et al., (2018).** Who found that the study subject had low self-care management before implementation of educational program while after program implementation had good self- care management.

In relation to correlation between total mothers' knowledge, reported practice, children self-care management the result of the present study mentioned that there was a highly statistically significant positive correlation between total mothers' knowledge, reported practice, and children self-care management. This result was supported by Leviton et al., (2023). & Guven et al., (2020). Who clarified that self-care management enhances mothers and their children's knowledge and practice regarding epilepsy.

Regarding children's total epilepsy self-efficacy thorough of continuous care model implementation phases the result of the study clarified that, majority of the studied children had total high selfefficacy level regarding epilepsy at post and after one month as compared to pre of continuous care model implementation phase. This result was in the consistency of the study performed by **Barakat et al., (2024). & Abdel-Salam et al., (2023).** Who found that most of studied samples had high selfefficacy post program implementation.

In addition, the study conducted by **Brooks** & **Palau (2023).** Who mentioned that children had high statistically significant self-efficacy after program implementation that led to enhance and improve mothers' practice. Moreover, self-efficacy had positive effect on child quality of care **Tekciftci & Kose (2024).**

Form the researcher point of view high selfefficacy among mothers of children with epilepsy after continuous care model implementation due to mothers gain more knowledge and practice about epilepsy help them to care for their children help them to be more satisfaction and give more empowerment and responsibility to face the challenges in caring of their children.

In addition, the result of the Present study showed that, there was a highly statistically significant positive correlation between total mothers' knowledge, and practice regarding epilepsy thorough of continuous care model implementation phases. This result was in the agreement with the study conducted by **Shahin & Hussien (2021).** Who revealed that there was a positive correlation between mothers' self-efficacy and practice.

This emphasized that the mothers' knowledge regarding epilepsy had a significant impact on their general understanding of the disease. Moreover, their practice helps to provide adequate care for their children.

Conclusion:

The findings of the current study demonstrate that applying the continuous care model significantly enhances mothers' knowledge and reported practices regarding epilepsy, while also improving children's self-care behaviors and self-efficacy. The positive outcomes observed throughout the intervention phases confirm the model's effectiveness in addressing both educational and behavioral needs for families managing pediatric epilepsy. The continuous engagement between healthcare providers, children, and their mothers helped establish a supportive environment that contributed to improved health outcomes. These results highlight the value of integrating structured, ongoing care models into pediatric epilepsy management programs. Moreover, there was a highly significant statistical positive correlation between total mothers' knowledge, practice, children's self-efficacy and self- care management regarding epilepsy thorough of continuous care model implementation phases.

Recommendations: Based on the study results, the following recommendations are proposed: 1. Integrate the Continuous Care Model into standard nursing protocols for managing children with epilepsy, especially in outpatient and schoolbased health settings.

2. Develop structured educational programs targeting mothers of children with epilepsy to improve their knowledge, preparedness, and response to seizure events.

3. Encourage collaborative care approaches that involve both children and their caregivers to enhance adherence to treatment and foster independence in disease management.

4. Provide regular follow-up and support through phone calls, group sessions, or home visits to reinforce learning and maintain improved practices.
5. Further research is recommended to explore the long-term impact of the continuous care model across different regions and larger populations.

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