Mindfulness Based Program Effectiveness for Mothers of Children with Epileptic Fits

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Abstract:
Epilepsy is a common debilitating condition affecting children. Mindfulness intervention enhances mothers' self-control in response to the quality of life of their children. **Aim**: The study aimed to evaluate mindfulness based program effectiveness for mothers of children with epileptic fits. **Method:** A quasi-experimental research design (one group pre/post/and follow up) was used. **Settings:** The study was conducted in epilepsy out-patient clinic at both Fayoum General Hospital and Mostafa Hassan Pediatric Hospital. **Sampling:** A non-probability purposive sample involved (120) mothers and their children who attended to the aforementioned settings. **Tools:** Four tools were used, **1st Tool:** A structured interview questionnaire to assess mothers' knowledge regarding epilepsy. **2nd Tool:** Mothers' reported practices to assess mothers' practices before, during, and after epileptic fits **as well as** first-aids practices for their children. **3rd Tool:** Mindfulness Attention Awareness Scale **4th Tool:** Pediatric Quality of Life Epilepsy Scale. **Results:** The epileptic children's quality of life, as well as the knowledge, and practices of the studied mother showed a highly statistically significant improvement at pre, post, and follow up implementation of mindfulness program with (P- value <0.001). **Conclusion:** There was a positive correlation between mothers' total knowledge, total practices, total mindful attention awareness, as well as total quality of life score of their children with epilepsy pre/post and follow up implementation of mindfulness program (p=<0.001). The research findings support the research hypothesis. **Recommendation:** Frequent mindfulness training program for mothers with epileptic children have utility to improve attentional self-regulation and children quality of life.

Keywords: Children, Epileptic fits, Mindfulness program &Mothers

Introduction:

Epilepsy is considered one of the most prevalent neurological diseases affecting children, which is characterized by epileptic fits due to excessive and aberrant neuronal electrical discharges in the brain which temporarily alter motor activity, sensation, or cognition, that causes seizures as well as cognitive, psychological, behavioral, and social consequences **(Patel & Moshé, 2020)**. It affects over 70 million people globally. More than 85% of the disease burden occurs in developing nations, and 50% of cases start in childhood or adolescence. The highest incidence rate of epilepsy is seen during infancy, with 1 out of 150 children receiving a diagnosis within the first ten years of life **(WHO, 2020)**.

The causes of epilepsy vary by age and are multifaceted, although around half of children with epilepsy have an unknown cause. However, frequent causes include head trauma, stroke, congenital defects or brain malformations, prenatal or perinatal traumas, and neurological infections namely; meningitis and encephalitis **(Chiu & Zeineh, 2022)**.

Epileptic fits can result in burns, hypoxia, serious physical harm, and drowning from aspiration and respiratory arrest. Also, accidents, suicide, and unexpected deaths account for a large portion of the high mortality rate **(Shasha et al., 2022)**. Furthermore, children with epilepsy and their families face a number of difficulties, including complex treatment plans, and psychosocial comorbidities. These challenges affect daily life, significantly strain families financially and socially, and are linked to a poor quality of life **(Maher et al., 2022; Ahmed, 2019)**.

Consequently, seizures were triggered by emotional stress, lack of sleep, exhaustion, fever, infection, and illness in around 90% of children with epilepsy. However, understanding what causes children's seizures, it's critical to understand what triggers them and implement lifestyle changes and stress management techniques **(American Epilepsy Society, 2018)**.

Other contributing factors encompass bright or flashing lights, medication forgetfulness, excessive stimulation from extended computer use or video games, malnutrition and fasting, dehydration, fever, certain drugs, and hyperventilation **(Maher et al., 2022)**.

Childhood epilepsy is a prevalent disorder that places a significant strain on their mothers due to the unpredictability of seizures, coexisting medical

conditions, financial pressures and heightened concern regarding the child's future, and levels of low self-efficacy among these mothers **(El-Marzky et al., 2019)**. Mothers have a special responsibility as the primary caretakers for their children with epilepsy. Their expectations and parenting are extremely demanding and burdensome. The family faces significant physical and psychological challenges while providing care for a child with a chronic life-threatening condition like epilepsy **(LaportaHoyos et al., 2022).** So, in order to improve the cognitive, behavioral, psychological, and social functioning of epileptic children and their mothers, comprehensive care should be focused on identifying and managing the medical and psychosocial issues associated with them **(Rani & Thomas, 2019).**

Mindfulness is a Buddhist concept that describes the experience of emotional stability and openness required to recognize the current moment in a non-reactive, non-judgmental manner. Engaging in mindfulness awareness has been linked to a decrease in psychological distress and physical health symptoms **(Cho et al., 2021)**. Mindfulness is described as a state of awareness and meditation practice combined with an accepting and open-minded attitude that is free from judgment. It is a novel approach that enables mothers to accept and adjust to their child's condition, which can significantly alter the mother-child bond and is typically linked to reduced levels of stress, anxiety, and worry **(Weder, 2022)**.

Pediatric nurse's role is to educate the children and their families-especially the mother-regarding epilepsy and assist them in developing coping strategies to manage the psychological and social stressors associated with it. Pediatric nurses play a significant role in empowering the mothers with self-management skills by providing instructions about at home care, including epileptic fits preventive measures, medication dosage and side effects, potential triggering factors, and the significance of maintaining healthy lifestyle **(Cooper & Gosnell, 2019).** Furthermore, seizure prevention attack, maintaining adequate airway and breathing during seizures, treatments modalities, and administrating appropriate medication for seizures prevention or reduction, and neurologic condition observation **(Watson et al., 2019).**

Significance of the study:

Epilepsy is considered a common problematic neurological disorder during childhood that has great effect on children and their families. Epilepsy affects infants and children more than any other age group. It has been observed that epileptic children during seizure are exposed to variety of hazards and dangers.

Globally, 10.5 million children below 15 years are thought to have active epilepsy. Additionally, there are 125,000 new instances of epilepsy each year. The entire family is thought to be impacted by children with epilepsy, necessitating new forms of family structure and organization. Furthermore, long-term treatment and the stigma associated with epilepsy cause psychological stress and behavioral abnormalities, necessitating that mothers and other family members adjust to the particular requirements of the disease **(Mohamed et al., 2022).**

Of all neurological diseases, epilepsy accounts for 27% and is linked to a significant burden on both mental and physical health**.** Mothers face a number of challenges while caring for children with epilepsy including the embarrassment of disclosing epilepsy, withdrawal from family and friends, a lack of reliable information about managing the difficulties, and the need for emotional and psychosocial support **(El-Marzky et al., 2019)**. Mindfulness program is an important approach to provide mothers whose children have epileptic fits with support, direction, understanding, and education. So, this study was carried out by the researchers to evaluate the mindfulness based program effectiveness for mothers of children with epileptic fits.

Aim of the study:

The study aimed to evaluate mindfulness based program effectiveness for mothers of children with epileptic fits.

Research Hypotheses:

- Implementation of mindfulness based program improves level of the studied mothers' practices regarding epileptic fits.
- Implementation of mindfulness based program improves level of the studied mothers' mindfulness attention regarding epileptic fits.
- Implementation of mindfulness based program improves quality of life of children with epileptic fits.

Subject and Methods
Technical design:
Research Setting:

The study was carried out at out-patient clinic for Epilepsy at both Fayoum General Hospital affiliated to Egyptian Ministry of health and Mostafa Hassan Pediatric Hospital affiliated to Fayoum University.

Research Subject:

Non-probability purposive sample involved (120) mothers and their children of both sexes, and confirmed diagnosis with epilepsy who visited to the aforementioned settings during the study period and voluntarily participated in the study. Children who had a history of cerebral hemorrhage, brain tumors, chromosome abnormalities, inborn metabolic

problems, or hydrocephalus were excluded from the study.

Sample size:

The study's sample size for the study was generated using a statistical power analysis calculation, considering the total number of children in all earlier mentioned setting. The estimated sample size was 120 children, purposively selected according to the predetermined criteria from a pool of 455 child who attend the same setting. This sample size was chosen with a confidence level of 80%, indicating the level of certainty in the study's findings **(Thompson, 2012)**.

Tools for data collection (pre / post and follow up):
Four tools were utilized for the aims of the study:

Tool I: Structural interview questionnaire: It was developed by the researchers and consisted of 17 closed ended questions (Q1-Q17). It composed of the following parts:

Part I: It was concerned with characteristics of the study subjects, it consisted of 9 questions (Q1-Q9) **as follows:**

a. Characteristics of the studied children such as; age, gender, number of siblings in family, and order between siblings.
b. Socio-demographic characteristics of studied mothers such as; age, educational level, working, social status, residence, and family type.

Part II: It was concerned with past and current history of the disease. It involved 8 closed ended questions (Q10-Q17) as the following:

Family history of epilepsy as is there a person with epilepsy in the family, consanguinity between father and mother, and when was the disease detected.

Current History as treatment adherence, and follow up.

Part III: It was used to assess mothers' knowledge regarding epilepsy namely; definitions, types of epileptic fits, causes, signs and symptoms, triggers factors for epileptic fits and its avoidance, precautions, and intervention before, during, and after fits. It included twelve closed ended questions (Q18-Q29).

Scoring system of knowledge:

Responses of the mothers were assessed in relation to the model key response, with a score of (1) indicating the "correct answer" and (zero) indicating the "incorrect answer." These results were added together, and the resulting percentage was calculated. The total knowledge scores was 12. These scores were summed and converted into a percentage, accordingly **total responses were classified into three categories (Mahmoud et al., 2013):**

- **Good:** If score ≥75% (≥ 9 grades)
- **Average:** If score from 50 to less than 75% (6-9 grades)
- **Poor:** If score <50% (< 6 grades)

Tool II: Mothers' reported practices: It consisted of two sections to assess the studied mothers' reported practices:

Section one: It was adopted from **Edmonton Epilepsy Association, (2011)** to assess mothers' reported practices before, during, and after epileptic fits. It included 19 (Q30-Q48) items, and covered 3 parts namely;

Part A: Addresses the practices of mothers during focal seizures. It was composed of three items: stay with the child, let the seizure take its course, and move dangerous objects out of the way or block access to hazards.

Part B: Addresses mothers' practices during epilepsy fits. It included the following 13 items as: remain composed, note the time of the seizure, shield the child from harm, position something soft beneath the head, and unfasten any tight clothes around the neck, gently turn the child over onto their side, don't restrain the children, avoid putting anything in the mouth, gently roll the child onto his or her side, do not put onions, perfume in children's nose or mouth, and wait to give the child food, drink, or medication until the child has completely awakened. Additionally, refrain from splashing the children's' faces in water.

Part C: Addresses mothers' practices to be followed once epilepsy fits have finished. It consisted of three items; mothers should to record the time after an epileptic episode, calm, and reassure their children in the event that confusion ensues.

Scoring system:

The mother's response for practices regarding their epileptic children included 19 grades each item was graded as done (one grade) or not done (zero grade). The scores of all items were summed-up and converted into a percentage. The total practice score was 19 and categorized into two categories:

- **Satisfactory;** when mothers reported practices is ≥75% (≥ 14 points).
- **Unsatisfactory;** when mothers reported practices is < 75% (< 14 points).

Section two:

It was adapted from **Abdulla & Abdulhadi, (2015)** and modified by researchers after researching the associated literature to evaluate mothers' practice on first aid management namely; Temperature (9 items), Fractures (13 items), Wounds (10 items), and Loss of consciousness (6 items). It consisted of 38 elements (Q49- Q87). Two options are presented: Yes and No. A score of one was awarded for the right practice and zero for the wrong one.

Scoring system:
Every item had a score between 0 and 1. Complete safe practice received a one-point score, whereas inappropriate practice received a zero [0]. The scores for all items were totaled and converted to percentages. The total practice score was 38, divided into three categories:
- **Poor practice:** < 60% (< 23 grades)
- **Fair practice:** ≥ 60-85% (≥ 23 – 32 grades)
- **Good practice:** > 85% (> 32 grades)

Tool III: Mindfulness Attention Awareness Scale (MAAS): it was adapted from **Brown & Ryan, (2003)** in order to evaluate a fundamental aspect of dispositional mindfulness, specifically open or receptive mindfulness of and attention to what is happening in the present. It included 15 statements using 1-6 scale, which (1) refers to almost always, (2) very frequently, (3) somewhat frequently, (4) somewhat infrequently, (5) very infrequently, and (6) almost never. The researchers translated the tool in order to create an understandable tool that was conceptually coherent with the original. Cronbach's alpha, which measures internal consistency, was 0.937.

Scoring system:
The overall score is calculated by adding up the 15 questions; the lower the score, the less desirable the state; the higher the score, the greater the mothers' dispositional mindfulness levels.

Tool IV: Pediatric Quality of Life Epilepsy (PedsQL) Scale: It was adapted from **Varni, (2014)** to assess health related quality of life of children with epilepsy. It composed of 29-items measure with five subscales: **Impact of the disease (9 items)** assess the ways in which epilepsy affects independence, social interaction, everyday activities, and the increased illness burden brought on by therapy, cognitive effect (6 items), which includes reading difficulties, school-related challenges, memory, and the capacity to learn new information. The (3 items) on sleep impact assess weariness and trouble sleeping. (6 items) that assess impulsivity, inattention, task initiation, and organization make up the Executive Function Impact. The (5 items) on the mood/behavior impact scale examine anger feelings, sadness, worries, and frustration tolerance.

Scoring system:
It is the total score of the five subscales. Each item has a score between 0 and 4, where 0 indicates that there is never a problem, 1 indicates that there is almost never a problem, 2 indicates that there is sometimes a problem, 3 indicates that there is often a problem, and 4 indicates that there is almost always a problem. After that the items were scored and linearly transformed as 0 = 100, 1 = 75, 2 = 50, 3 = 25 and 4 = 0. So that the higher scores indicate better health

related quality of life. Quality of life is classified accordingly into;
- **High quality of life** (score ≤ 75-100).
- **Moderate quality of life** (score <50-75).
- **Low quality of life** (ranging from 0 to 50)

Validity and Reliability:
To ensure face and content validity, the researchers sought the input of five experts from pediatric nursing department in Ain Sham University and Helwan University in Egypt. Through their expertise, the necessary adjustments were made to various statements within the tools. This included the removal of unnecessary phrases, as well as rephrasing. The goal was to enhance the relevance and clarity of the content, ensuring that it effectively covered all aspects of mothers' knowledge and practices concerning care for their children with epileptic fits. Cronbach's alpha test was used to assess the reliability of the developed tools, with the following results:

Tools	Alpha Cronbach
Mother's knowledge regarding epileptic fits	0.837
Mothers' reported practices regarding epileptic fits	0.923
Mothers' practice for first-aid management of epileptic fits	0.888
Mindfulness attention awareness scale	0.937
Total children's quality of life	0.905

Pilot study:
Prior to beginning fieldwork, it conducted to verify the instruments' relevance and accuracy and determine how long it would take to finish each task. It was conducted on 10% of the study sample (12 mothers and their children), who were not included in the final sample.

Administrative design:
The director of the Fayoum University Faculty of Nursing provided official letters to the head of Out-patient clinics at both Fayoum General Hospital affiliated to Egyptian Ministry of health as well as Mostafa Hassan Pediatric Hospital affiliated to Fayoum University.

Ethical considerations:
The Scientific and Ethical Committee of the Faculty of Medicine at Fayoum University approved the study in its session (101) on 11/2/2024 with the research numbered (R532). Mothers were given information about the study's goals and anticipated results during the initial appointment. Participants were assured of the study's safety and their ability to discontinue participation at any time without providing a justification. Each mother provided an informal verbal consent before starting the data collection. The researchers assured participants that their involvement in the study was completely voluntarily, and the collected data treated confidentially.

Field Work:

The program was conducted for mothers suitable for the study. Data collection for this study was carried out from March 2024 to the end of November 2024. It passed through the following phases:

Assessment phase (pre-test): During the assessment phase, baseline data was gathered by interviewing mothers who brought their children to the study settings. The researchers visited the hospital in the aforementioned settings twice a week (Monday and Wednesday) by rotation from 9 AM and extended to 1.00 PM. Earlier to data collection, the researchers greeted mothers, discussed the goal, duration, and the study's activities, and obtained their oral agreement for study participation. Tools were distributed individually to the study subjects. Mothers completed the questionnaires in the presence of researchers, asking questions as needed, and it took them anything from 15 to 20 minutes to finish. This stage sought to ascertain the program's baseline needs for the mothers under study.

Planning phase: After reading the most current relevant literature, the researchers examined the pretest data that they had collected during the assessment phase from **(Torfizadeh et al., 2022 & American epilepsy Society, 2018)** for preparation the program that was created and edited to increase mothers' mindfulness regarding care of their children with epilepsy in addition their children quality of life. Objectives of mindfulness program theoretical part was to enhance mothers` knowledge about the concept of epilepsy. Also, overview about mindfulness process. Meanwhile the objectives of practical part of the program apply practical skills that should be followed by mothers before, during, and after their children epileptic fits to improve their mindfulness actions. In additions mothers practices regarding first aids management included (fever, fractures, wounds, and loss of consciousness).

Implementation phase: Eight sessions (4) theoretical & (4) practical were required to implement the mindfulness program to improve mothers' knowledge and practices regarding their epileptic children's quality of life. To provide emotional and self-management support to the studied mothers, the researchers start by mentally preparing them for sessions, establishing their goals, the options available to them, and the challenges they confront. Mothers included in the study were divided into ten groups, with (12) mothers in each subgroup. Eight sessions were attended by each subgroup; two sessions /week. Each session lasted about 60 minutes.

The theoretical session was conducted about knowledge, mindfulness, and breathing meditation through lectures, handouts, and group discussions. White papers, power points, and handouts were also used as teaching aids to encourage active participation in the discussion and to get the mothers under study to share their experiences with the real world of work and life.

In the practical sessions: Regarding epileptic fits before, during, and after, and first aids management. The researchers employed role play, modeling, demonstration, and re-demonstration as a means of imparting practical skills. There were also talks in small groups, lectures, and movies. The mothers themselves as well as the mothers and the researchers engaged in role-playing.

Following the collecting of reported practices, questionnaires, and mindfulness rating scale for the studied mothers, as well as the quality of life for their children, the mindfulness program sessions began.

Prior to each session, there was an open discussion on any questions and a synopsis of the prior session's topics. Each session ended with the researcher summarizing the main points and confirming that the mothers understood the material.

The content of Mindfulness program sessions was as follows:

1st Session: Overview and introduction to epilepsy and understanding deviant behavior in children.

2nd Session: Introduction to mindfulness (Recognition, Commitment, Acceptance, Intention, Patience, Empathy, and Childlikeness). Like any other talent, mindfulness in action, feelings, and ideas may be developed.

3rd Session: The fundamentals of mindfulness in parenting, including realistic expectations and active skill training.

4th Session: Positive parenting techniques.

5th Session: Mindfulness parenting (insight, motivation, daily versus complex/long-term needs, and fostering attachment and consistency)

6th Session: The effects of mindfulness breathing and systematic body scanning techniques on psychological distress.

7th Session: Practices regarding epileptic fits (before, during, and after).

8th Session: First aids management (fever, fracture, wounds, and loss of consciousness).

Evaluation phase (post and follow up test): Immediately, after implementation of the program for mothers, and after 6 months from posttest. The researchers used the same formats of pretest to evaluate the effect of mindfulness program to improve awareness attention of mothers and quality of life of their children with epilepsy.

Statistical design:
The study data were subjected to analysis using SPSS version 21. When examining nominal data, such as demographic information concerning the participating mothers and their children, descriptive statistics were employed. These included calculations of frequency distributions and percentages to provide an overview of the data. To assess differences between variables at different evaluation points in time, the study utilized the T-test as a statistical tool. This allowed for the examination of variations and comparisons across various time intervals. The arithmetic means, standard deviation (SD), chi square test, and Anova test were used to compare the groups (pre-post and follow-up) in order to determine the statistical significance and relations. The tests Pearson's and Spearman's were employed to investigate correlation between the variables.

Results:

Table (1): Distribution of the studied children according to their characteristics (n=120).

Characteristics of the studied children	No.	%
Age (Years)		
1<5	37	30.8
5<10	69	**57.5**
≥10	14	11.7
Range	**(1-12)**	
x¯S.D	**6.08±2.91**	
Gender		
Male	81	**67.5**
Female	39	32.5
Ranking between their siblings		
First	42	**35.0**
Second	38	31.7
Third	31	25.8
Fourth	5	4.2
Fifth	4	3.3
Educational stage		
Nursery	18	15.0
Primary	60	50.0
Not attached to school	42	35.0
Onset of disease		
< 1 year	60	50
1< 2 years	30	25
2< 4 years	17	14.2
≥ 4 years	13	10.8

SD= Standard deviation.

Table (2): Distribution of the studied mothers according to their socio-demographic data (n=120).

Demographic data of the studied mothers	No.	%
Age (Years)		
< 20	12	10.0
20<30	71	**59.2**
30<40	32	26.7
≥ 40	5	4.1
Range	(19-48)	
x⁻ S.D	33.6±5.41	
Educational level		
Illiterate	5	4.2
Rea and write	9	7.5
Basic education	16	13.3
Secondary education	62	**51.7**
High education	28	23.3
Occupation		
Housewife	96	**80.0**
Working	24	20.0
Marital status		
Married	112	93.3
Divorced	5	4.2
Widowed	3	2.5
Residence		
Urban	79	**65.8**
Rural	41	34.2
Number of family members		
Three	54	45.0
Four	18	15.0
Five	30	25.0
More than five	18	15.0

SD= Standard deviation.

Table (3): Distribution of total mothers' knowledge score about epilepsy pre, post, and follow up intervention (n=120).

Items	Pre-intervention		Post intervention		Follow-up		Test of Sig. (p_1)	Test of Sig. (p_2)	Test of Sig. (p_3)
	No.	%	No.	%	No.	%			
Good	17	14.1	97	80.8	93	77.5	X^2=117.07 P=0.000**	X^2=0.713 P=0.700	X^2=162.58 P=0.000**
Average	29	24.2	17	14.2	18	15.0			
Poor	74	61.7	6	5.0	9	7.5			
x⁻ S. D	4.95±2.27		10.41±1.97		10.35±2.02		t=32.30 P=0.000**	t=1.825 p=0.071	F=112.32 P=0.000**

X^2: Chi-square test.   t= Paired t.test.   F= ANOVA Test.   P= p-value.   SD= Standard deviation
*No significant at p >0.05.   **Highly significant at p ‹ 0.01.*
*P_1: p value for comparing between **pre and post** intervention. P_2: p value for comparing between **post and follow-up**.*
*P_3: p value for comparing between **the three phases**.*

Table (4): Distribution of total mothers' practices score regarding epileptic fits pre, post, and follow up intervention (n=120).

Levels of total reported practices	Pre-intervention		Post intervention		Follow-up		Test of Sig. (p1)	Test of Sig. (p2)	Test of Sig. (p3)
	No.	%	No.	%	No.	%			
Satisfactory	42	35.0	108	90.0	100	83.3	X2=77.44 P=0.000**	X2=2.308 P=0.129	X2=101.90 P=0.000**
Unsatisfactory	78	65.0	12	10.0	20	16.7			
x⁻ S. D	7.50±1.97		12.35±2.51		12.20±2.83		t=32.12 P=0.000**	t=1.918 P=0.057	F=150.58 P=0.000**

X^2: Chi-square test.   t= Paired t.test.   F= ANOVA Test.   P= p-value.   SD= Standard deviation
*No significant at p >0.05. **Highly significant at p ‹ 0.01.*
P_1: p value for comparing between pre and post intervention. P_2: p value for comparing between post and follow-up.
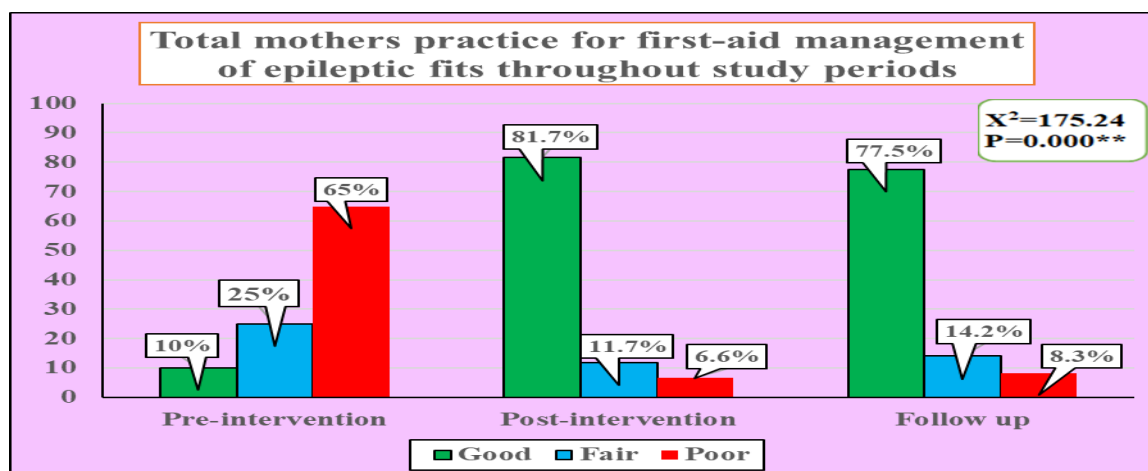*P_3: p value for comparing between the three phases.*

Figure (1): Percentage distribution of total mothers' practices regarding first-aid management for their children pre, post and follow up intervention (n=120)

Table (5): Total mean scores for mothers' mindfulness scale regarding epilepsy pre, post, and follow up intervention (n=120)

Items	No. of items	Pre-intervention Mean ± SD	Post-intervention Mean ± SD	Follow-up Mean ± SD	(p_1)	(p_2)	(p_3)
Total mindfulness score	15	48.10±10.2	75.2±8.12	75.0±8.29	t=49.28 P=0.000**	t=1.406 P=0.162	t=365.56 P=0.080

t= Paired t.test.   F= ANOVA Test.   P= p-value.   SD= Standard deviation

*No significant at p >0. 05.   **Highly significant at p ‹ 0.01.*

P₁**: p value for comparing between **pre and post** intervention. **P₂:** p value for comparing between **post and follow-up.

***P₃**: p value for comparing between **the three phases**.*

Table (6): Distribution of the studied children according to impact of epilepsy on their quality of life pre, post and follow up intervention (n=120)

Items	Pre-intervention						Post intervention						Follow-up						Test of Sig. (p_1)	Test of Sig. (p_2)	Test of Sig. (p_3)
	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low				
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			
Impact of disease	85	70.8	29	24.2	6	5.0	15	12.5	27	22.5	78	65.0	16	13.3	32	26.7	72	60.0	X²=110.78 P=0.000**	X²=0.696 P=0.706	X²=145.11 P=0.000**
Cognitive functions impact	67	55.8	41	34.2	12	10.0	12	10.0	24	20.0	84	70.0	17	14.2	19	15.8	84	70.0	X²=96.73 P=0.000**	X²=1.443 P=0.486	X²=124.91 P=0.000**
Sleep impact	37	30.8	65	54.2	18	15.0	6	15.0	19	15.8	95	79.2	10	8.3	20	16.7	90	75.0	X²=100.0 P=0.000**	X²=1.161 P=0.560	X²=126.88 P=0.000**
Executive functions impact	64	53.3	43	35.8	13	10.8	18	15.0	24	20.0	78	65.0	18	15.0	30	25.0	72	60.0	X²=77.62 P=0.000**	X²=0.907 P=0.636	X²=95.65 P=0.000**
Mood and behavior impact	84	70.0	29	24.2	7	5.8	16	13.3	26	21.7	78	65.0	16	13.3	29	24.2	75	62.5	X²=105.71 P=0.000**	X²=0.222 P=0.895	X²=140.40 P=0.000**
Total children's' quality of life score	**77**	**64.2**	**31**	**25.8**	**12**	**10.0**	**8**	**6.7**	**17**	**14.1**	**95**	**79.2**	**10**	**8.3**	**20**	**16.7**	**90**	**75.0**	X²=124.47 P=0.000**	X²=0.601 P=0.741	X²=168.18 P=0.000**
x̄ S. D	88.84±19.2						53.60±15.4						54.0±15.6						t=30.51 P=0.000**	t=1.777 p=0.119	F=172.85 P=0.000**

X²: Chi-square test.   t= Paired t.test.   F= ANOVA Test.   P= p-value.   SD= Standard deviation.

*No significant at p >0.05. * Significant at p ‹ 0.05. **Highly significant at p ‹ 0.01.*

P₁**: p value for comparing between **pre and post** intervention.   **P₂:** p value for comparing between **post and follow-up.

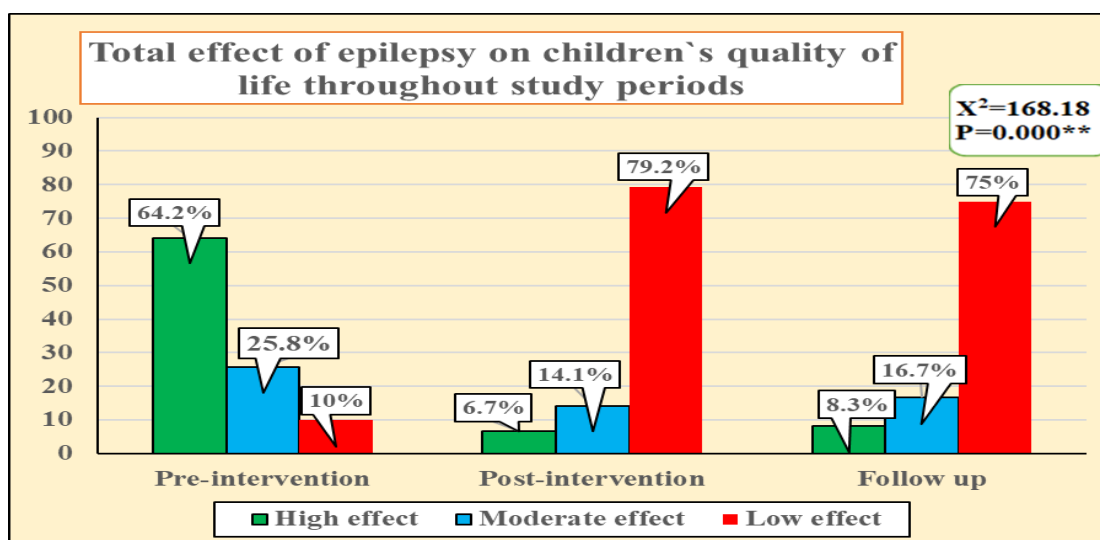***P₃**: p value for comparing between **the three phases**.*

Figure (2): Distribution of the studied children according to effect of epilepsy on their quality of life pre, post and follow up intervention (n=120).

Table (7): Correlation between total mother's knowledge, total reported practices, total mother's mindfulness, and their total children's quality of life pre, post and follow up intervention (n=120)

Items		Total mother's knowledge			Total mother's reported practices			Total mother's practice			Total woman's mindfulness		
		Pre	Post	Follow-up	Pre	Post	Follow-up	Pre	Post	Follow-up	Pre	Post	Follow-up
Total mother's reported practices	r	0.900	0.910	0.876									
	p	0.000**	0.000**	0.000**									
Total mother's practice	r	0.916	0.917	0.911	0.937	0.909	0.905						
	p	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**						
Total mother's mindfulness	r	0.937	0.886	0.891	0.958	0.908	0.931	0.969	0.906	0.920			
	p	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**			
Total children's quality of life	r	-0.941-	-0.924-	-0.921-	-0.944-	-0.938-	-0.937-	-0.965-	-0.961-	-0.952-	-0.990-	-0.956-	-0.947-
	p	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**

r= coefficient correlation test.   *p= p-value.*   ***highly significant at $p < 0.01$.*

Table (1): Shows that 57.8% of the studied children age ranged from 5<10 years old, with Mean ±SD = **6.08±2.91** years, more than two thirds (67.5%) of them were male, and more than one third (**35%**) of them were the first ranking between their siblings. Furthermore, 50% of them onset of disease was at the first year of life.

Table (2): Indicates that **59.2** % of the studied mothers 'age were between 20 < 30 years old with Mean ±SD = **33.6±5.41**. Also, **80.0**% of them were housewives. It was observed that 51.7 % of the mothers had secondary education. As regards residence, 65.8 % of them were living in urban areas

and less than half (45%) of them had three family members.

Table (3): Reveals that only 5% of the studied mothers had poor knowledge post intervention with high statistically significant difference between pre, post and follow up intervention regarding total mothers' knowledge score about their children's epilepsy with p-value =**0.000**.

Table (4): Demonstrates an improvement in mothers' reported practices between pre, post and follow up intervention. While, total mothers' reported practice changed from 65% unsatisfactory pre intervention to the 90% of them had satisfactory practice post

intervention with a highly statistically significant difference at P = 0.000**.

Figure (1): Indicates that 6.6 % of the studied mothers had poor first aids management practices post intervention with a highly statistically significant difference between pre, post and follow up intervention regarding total mothers' practices score regarding first aids management with p-value **=0.000**.

Table (5): Illustrates that there was a highly statistically significant difference was observed between the pre and post intervention about mothers" mindfulness regarding epilepsy where P- value <0.000**.

Table (6): Shows that there was a highly statistically significant difference was observed as regards impact of epilepsy on children's quality of life pre, post and follow up intervention, as revealed P- value <0.000**.

Figure (2): Indicates that 6.7 % of the studied mothers had poor quality of life post intervention compared to 64.2% of them pre intervention with high statistically significant difference between pre, post and follow up intervention regarding total effect of epilepsy on children's quality of life with p-value **=0.000**.

Table (7): Clarifies that, there was statistical positive correlation between total knowledge scores, total reported practices scores, and total mother's mindfulness scores pre/post intervention of adaptation strategies with a highly statistically significant improvement (p=<0.001). Also, this table showed that there was no a statistical significant correlation between all study variable and total children's quality of life.

Discussion:

Epileptic fits is one of the most common and well-known neurological emergencies in pediatrics. Epilepsy placed the family at risk over time, and causing mothers not to pay attention to other aspects of life **(Torfizadih et al., 2022)**. Moreover, children with epileptic fits likely to suffer physical problems such as fractures, bruising, and a slightly higher chance of abrupt death **(Fleeman et al., 2022).** Therefore, this study was conducted to evaluate the effect of mindfulness based program effectiveness for mothers of children with epileptic fits.

The present study founded that, the studied children mean age was 6.08±2.91 years old and more than two thirds were male. These results align with Egyptian study done by **Elmohalem et al., (2020)** who informed that mean age ± SD was 9.45 ± 3.70 years old and more than two thirds of the studied children were male. However, this contrasts with results from Egyptian study done by **ElSayed et al.,**

(2022) & Barakat et al., (2024) who indicated that the mean age of the studied children was 20.97 ± 13.19 and more than two thirds of them are female. From the researchers' point of view, the previous finding may be due to over caring and value of male children in Egypt.

Also, more than one third of the studied children was the first ranking between their siblings and half of them the onset of disease at the first year of life. The present results is consistent with Egyptian study done by **El Maghraby et al., (2021)** who revealed that half of children are the first ranking. On the other hand, this result contradicted with Egyptian study done by **Abd Elghfar et al., (2024)** who noted that more than one third of children were the third ranking in their family. In the same context, a Chinese study done by **Wei et al., (2024)** found that around half of the children their disease onset was at the first year. Also, this result align with an Egyptian and Indian study done by **Elmohalem et al., (2020) & Hagantipati et al., (2024)** who stated that epilepsy can begin at any time from birth to two years of age.

Regarding the studied mothers' characteristics, the results of the current study showed that the mean of mothers' age was 33.6±5.41years. Also, majority of them were housewives and over half of them reside in urban and have completed secondary school. The current study findings were consistent with Egyptian and Eastern Nepal by **ELsayed et al., (2022) & Pokharel et al., (2021)** results who found that all mothers aged was between 20 – 40 years, near to half were secondary education and most of them were housewives. Similarly, the finding of a study done in Iraq by **Zainy et al., (2020)** reported that more than two thirds of mothers from urban area. This could be because, in the society, mothers are usually the ones who tend to their children's needs, especially when they are ill, and because caring for epileptic children takes a lot of time.

The current study found that mothers' knowledge improved after the intervention with a strong statistically significant difference. This finding aligns with Ethiopian and Egyptian study by **Girma et al., (2022) & Hosny et al., (2023)** who indicated that over half of studied subjects had poor knowledge prior to intervention. Furthermore, it concurs with a finding of a study done in Egypt by **Nashaat et al., (2022)** who showed that there was highly statistically significant improvements in mothers' total knowledge scores, about epilepsy after intervention. This clarified that, mothers had strong desire to enhance their knowledge regarding dealing positively with their children. This results support and achieve the research hypothesis.

Regarding to total mothers' reported practices, the study results noted that, there was an improvement in

mothers' reported practices between pre, post and follow up intervention with a highly statistically significant difference at P = 0.000. This result was compatible with Egyptian study done by **Nashaat et al., (2022)** who demonstrated that there was highly statistically significant differences in mothers' practices at pre, post and follow up at p value <0.001. In addition, the result was in congruent with Egyptian study by **Abd Elghfar et al., (2024)** who noted that there was statistical significant differences between mothers' practices before, immediately after, and after the program where all mothers were able to provide care to their epileptic children during the fits. The researchers believe that, the mindfulness program intervention succeed to improve mothers skills to caring their children which effect positively in children's quality of life.

The findings of the current study highlighted that, there was highly statistically significant difference was observed pre, post, and follow up intervention regarding mothers' practice as regards first-aids management. This result was in the same line with Egyptian study by **Elshafi et al., (2021)** who declared that program implementation had a statistically significant effect on improving mothers' practices regarding first aids which introduced to their children during epileptic fits after the program. From the researchers' perspective, the mindfulness program had positive effect in improving the mothers' practices regarding first aid introduced to their epileptic children

As regarding total mean scores for mothers' mindfulness scale regarding epilepsy pre, post, and follow up intervention. This result was in accordance with study in Iraq by **Torfizadeh et al., (2022)** who stated that, mindfulness-based programs can improve mothers' awareness, attention and enhanced the physical and mental wellbeing of mothers with their epileptic children. From the researcher's viewpoints, the mindfulness parenting including insight, motivation, and fostering attachment and consistency as well as mindfulness breathing and body scanning exercises improve mothers' awareness and attention regarding their children's epilepsy care as well as other family member's issues.

Concerning the impact of epilepsy on the studied children's quality of life pre, post and follow up intervention, the present results clarified that there was highly statistically significant difference was observed regarding total children's quality of life pre, post and follow up intervention. This result was in congruent with Egyptian study by **Hassan et al., (2022)** who clarified that, there were significant improvements in all quality-of-life domains score among the studied epileptic children post the implementation of the intervention compared with the

pre intervention scores. Furthermore, the result was consistent with a study conducted in Poland by **Rozensztrauch & Kołtuniuk (2022)** which indicated that, epilepsy had a substantial influence (p < 0.05) on all dimensions of children's quality of life, resulting in a poor overall score of 46.42 out of 100 (SD ± 20.95). This results reflects the positive effect of the mindfulness program and improvement of mother's knowledge and practices on their children quality-of-life score**.** From the researcher's perspectives, mothers need such program to enhance their knowledge, practice and mindfulness as regards caring of their children. This results support the research hypothesis.

Concerning correlation between total mothers' knowledge, reported practices, mother's mindfulness scores, and their children's quality of life pre/post and follow up mindfulness program, the present study illustrated that there was statistical positive correlation between all variables. This result was in the same line with a study done in Canada by **Puka et al., (2020)** who discovered that there was positive correlation between live-online mindfulness-based intervention and children's HRQOL. In addition, this result was in agreement with Egyptian study by **Shasha et al., (2022)** who found that the overall post-knowledge score and the total post-practice score were positively correlated. From the researcher perceptive this could attribute to improved mothers' knowledge level due to organized education program, and desire of mothers to increase their knowledge which had positive reflect on management care of their children.

Conclusion:

The current study revealed that a mindfulness-based program had a positive effect on enhancing mothers' knowledge, practices and mindfulness attention as well as the quality of life of their children with epileptic fits. The research findings supported the research hypothesis.

Recommendations:

- Conducting mindfulness program frequently can help to raise mothers' knowledge and practice about how to care for their children with epileptic fits.
- Providing further supportive educational interventions to support mothers and their epileptic children in all quality of life domains and increase awareness about existing resources in Egypt.
- Replicating of this study using large sample size in different area including rural and urban over all Egypt for generalization of the result.

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