RESEARCH
O&G Forum 2024; 34 – 3s: 1879-1887

ASSESSMENT OF THE KNOWLEDGE ABOUT EPILEPSY OF MOTHERS UPON THEIR EPILEPTIC CHILDREN

Israa Musa Jaafar Sadiq[1], Professor Dr. Shukriya Shadhan Al-ogaili[1]
[1]College of health and medical techniques/Kufa, Al-Furat Al-Awsat Technical University

Abstract:
Background: Epilepsy is considered as one of the most serious noninfectious chronic neurological conditions in the world, characterized by frequent unprovoked seizures caused by a malfunction of brain cells. The study aimed to assess the level of mother's knowledge regarding epileptic among children in Babylon province.
Materials and methods: This is a descriptive and analytical cross-sectional study was conducted at Babil Teaching Hospital for Maternity and Children at Electroencephalogram (EEG) unit, Emergency wards and room of Neurological Consultation. A purposive sampling of 100 mothers was chosen using a non-probability sampling method. The data was collected by direct interviews with the participants by using closed-ended questions was taken to every woman. The study period starts from November 2023 to February 2024.
Results: The results found that 58% of mothers with moderate knowledge. There were statistically significant differences found between mothers' knowledge scores and their socio-demographic characteristics in area related to occupational status, family income, residence and level of education, where the mothers whom were employment, sufficient family income, live in urban and have higher education level, were with the better knowledge score (P. value <0.05).
Conclusion: The study concluded that most mothers in Babil Governorate have moderate knowledge of epilepsy. The results also revealed that employed mothers, sufficient family income, mothers living in urban areas, and higher education were associated with a good degree of knowledge. Educating the public about epilepsy through the mass media could go a long way in reducing the morbidity and mortality associated with this problem.
Keywords: Epilepsy, Children, Assessment, Knowledge.

Introduction:
Epilepsy is considered as one of the most serious noninfectious chronic neurological conditions in the world. The prevalence of epilepsy in the world is about 10/1000 inhabitants. Annually there are 16–51 new cases of epilepsy in 100,000 inhabitants [1]**.** The World Health Organization defines epilepsy as a condition characterized by frequent seizures caused by a malfunction of brain cells. Seizures can begin at any age and occur intermittently or often. Almost 80% of epileptics reside in low- and middle-income countries [1].

Approximately 60–70 million people worldwide, representing all ages, races, social groups, and geographic areas, suffer from epilepsy, a widespread chronic neurological illness characterized by recurrent episodic attacks, epileptic seizures, and their associated physical and mental effects. It has an impact on the patient's and their family' social, behavioral, and financial circumstances [2]**.**

Studies on the prevalence of epilepsy have been carried out in a number of countries, with varying results in the Arabic world. 724,000 people are thought to be affected by epilepsy. However, because epilepsy is so socially stigmatized among Arab nationalities, they are attempting to minimize or deny its significance [3]. The education of caregivers and emergency medical personnel about epilepsy can result in improved results and reduce the adverse effects of epilepsy in patients [4]**.** Furthermore, parental attitudes are suggestively connected with epileptic difficulties in children, including the duration and intensity of seizures, since parental worries may alter children's behavioral and psychological results. Supportive knowledge and high levels of awareness among parents might aid children's needs and manage the effects of epilepsy [5].

Individuals with medically intractable seizures experience difficulties that have a substantial influence on their quality of life, independence, and mobility [6]**.** People's views of epilepsy as being dangerous, horrifying, and unanticipated remained out of control despite the ongoing improvements in media education because the media cannot educate people about the variety of the disease disorder, which perpetuates the stigma [7].

Aims of the study:
1. To assess the level of mother's knowledge regarding epileptic among children.
2. To find out the relationship between the overall knowledge score of mothers about epileptic among their children and some factors related to their demographical data.

Materials & methods:

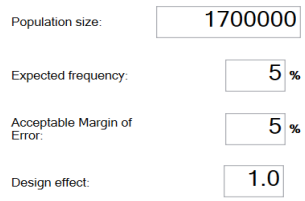
Study design and setting:

This is a descriptive and analytical cross-sectional study that evaluates the level of mothers' knowledge regarding epileptics among their children in Babylon province. The study was conducted at Babil Teaching Hospital for Maternity and Children at Electroencephalogram (EEG) unit, Emergency wards and room of Neurological Consultation. The study period starts from November 2023 to February 2024.

Sample Size

The sample was determined by using the Epi info program version 7.2 based on population size in Babylon province (1700,000), expected rate of 5 % according to WHO [8], the confidence interval of 95% margin of error (0.05). The estimated sample size was 73 mothers. We selected 100 mothers to strengthen the study. As explained in table 1.

Table (1): Epi info program for estimating sample size



Confidence Level	Cluster Size	Total Sample
80%	31	31
90%	51	51
95%	73	73
97%	89	89
99%	126	126

Selection criteria:

Inclusion criteria:

All mothers with epileptic children who attending to Babil Teaching Hospital for Maternity and Children at Electroencephalogram (EEG) unit, Emergency wards and room of Neurological Consultation.

Exclusion criteria:

1. Mothers who refuse to participate and provide incomplete information.
2. The study also excludes mothers who do not reside in Babylon Governorate.
3. Mothers whose children are less than 1 year or over 12 years old.

Sampling techniques:

A purposive sampling of 100 mothers was chosen using a non-probability sampling method. participants are included in the study thanks to the fact that they happen to be at the correct place at the right time. Researchers simply add respondents who are available to participate in the study until they have reached the necessary number of participants in the sample. The mother is determined by the diagnosis made by the doctor who meets the criteria for epilepsy in her children.

Data collection technique:

The data was collected by direct interviews with the participants after translating the questionnaire to the local language (Arabic) by using closed-ended questions was taken to every woman. After explaining the objectives of the study and assuring them that the data taken will be reserved confidentially. The data were collected through interviews with participant by utilizing a structured questionnaire filled by the researcher, and questions were asked using a clear Arabic language. Each interview took approximately 15-20 minutes.

Variables and measurement:

- **Dependent variable:** The total knowledge score of mothers.
- **Independent variables:** sociodemographic variables– age, education level, occupation, family income, and residence.

Rating scoring:

The rating and scoring of items are three points Likert scale applied for rating knowledge. items as Yes, Uncertain, No. the three-point type Likert scales scored as (1) for yes, (2) for uncertain and (3) for no. The questions regarding assessment of knowledge" so the Minimum of mean Score= 1, Maximum of mean Score= 3, and the Median for mean Score = 2. A score of more than 75% was considered good (>2.5 MS), 50-75% moderate (2-2.5 MS), and less than 50% was taken as poor (<2 score). The questions in Knowledge "The questions regarding knowledge about epileptic" were 49 questions so the Minimum Score= 49, Maximum Score= 147, and the Median Score = 98. A score of more than 75% was considered good (>122 score), 50-74% acceptable/fair (98-122 score), and less than 50% was taken as poor (<98 score) [9].

Statistical Analysis:

Data was collected by questionnaire, transferred to code sheets, input into a personal computer, and analysed using IBM-SPSS-27. Simple frequency, percentage, mean, standard deviation, and range measurements were used. Qualitative data was analysed using the Pearson Chi-square test (χ2-test) to determine the significance of percentage differences. Statistical significance was considered when P-value was 0.05 or below.

Results:

Socio-demographic characteristics of participants

Table (1), shows that the highest percentage (35%) of mothers with age group (29-34). The average age of mother is 31.8±7.9 years. And the majority of mothers are housewives (85%), 15% of them are employee. 57% have Sufficient to some extended family income. The same table shows that family types more than half of them nuclear (56%) households, and more than half of them residency is rural (53%). For the education level of mothers, the high percentage (41%) primary school and less.

Table (1): The distribution of the mother according to Socio-demographic characteristics

Socio-demographic variables (For mothers)		No.	Percent
Age groups	17-22 years	11	11.0
	23-28 years	20	20.0
	29-34 years	35	35.0
	35-40 years	24	24.0
	41-46 years	6	6.0
	47-52 years	1	1.0
	≥53 years	3	3.0
	Mean± SD (Range)	**31.8±7.9 (17-57)**	
Occupational status	Employment	15	15.0
	Housewife	85	85.0
Family income	Sufficient	23	23.0
	Insufficient	20	20.0
	Somewhat sufficient	57	57.0
Family type	Extended	44	44.0
	Nuclear	56	56.0
Residence	Rural	53	53.0
	Urban	47	47.0
Educational level	Not read or write	15	15.0
	Primary and less	41	41.0
	Secondary	22	22.0
	Institute & above	22	22.0

Knowledge of mothers about epilepsy:
In **Table 2,** the results of this study indicate that all knowledge items have good and moderate assessment except for 1st question (Epilepsy is a neurological disorder characterized by the diagnosis of epilepsy syndrome or at least two unprovoked seizures that happen more than 24 hours apart), which mean score 1.83 fall within poor knowledge, and also knowledge about type of epilepsy was poor within mean range (1.72-1.94). In addition, respondents' knowledge about epilepsy causes and risk factors is uneven. "Neonatal jaundice," "Diabetes," and "Maternal blood pressure" are all rated "Poor <2 MS," indicating a lack of knowledge of these illnesses as probable epilepsy causes. Knowledge of "Traumatic brain injury," "Brain tumor," "Mental retardation," "Cerebral palsy," "CNS infection," and "Hydrocephalus" is "Poor< 2 MS," showing poorer understanding of these possible epilepsy risk factors. The results of the study also showed that knowledge about complications was poor regarding psychological problems, with a mean score of 1.88. Regarding knowledge about diagnosis only, there was one item about Spinal tab that was poor with a score of 1.7. As for knowledge about prevention and control, participants had poor scores <2 MS regarding protect traumatic brain injuries, get vaccinated, taking a healthy diet and a lot of fluid, wash your hands and prepare food safely, and stay healthy during your pregnancy. Finally, most of the participants have poor evaluation scores (<2MS) regarding management.

Table (2): The distribution of mother's answers according to them knowledge about epilepsy

	Yes		Un certain		No			
	No.	%	No.	%	No.	%	MS	Ass.
Epilepsy is a neurological disorder characterized by the diagnosis of epilepsy syndrome or at least two unprovoked seizures that happen more than 24 hours apart	7	7.0	69	69.0	24	24.0	1.83	Poor
Type of epilepsy								
focal (partial)	26	26.0	42	42.0	32	32.0	1.94	Poor
Generalized	25	25.0	43	43.0	32	32.0	1.93	Poor
Unclassified	5	5.0	62	62.0	33	33.0	1.72	Poor
Signs and symptoms								

	Yes		Un certain		No			
	No.	%	No.	%	No.	%	MS	Ass.
Staring	94	94.0	5	5.0	1	1.0	2.93	Good
Stiffening of the body	98	98.0	1	1.0	1	1.0	2.97	Good
Loss of consciousness, Breathing problems.	89	89.0	7	7.0	4	4.0	2.85	Good
Loss of bowel or bladder control	37	37.0	42	42.0	21	21.0	2.16	Moderate
Falling suddenly for no apparent reason, especially when associated with loss of consciousness	55	55.0	31	31.0	14	14.0	2.41	Moderate
Jerking movements of the arms and legs	95	95.0	4	4.0	1	1.0	2.94	Good
Not responding to noise or words for brief periods	69	69.0	25	25.0	6	6.0	2.63	Good
Appearing confused or in haze	46	46.0	41	41.0	13	13.0	2.33	Moderate
Nodding head rhythmically when associated with loss consciousness	22	22.0	59	59.0	19	19.0	2.03	Moderate
Period of rapid eye blinking and staring	29	29.0	56	56.0	15	15.0	2.14	Moderate
Causes and risk factors								
High fever	92	92.0	5	5.0	3	3.0	2.89	Good
Neonatal jaundice	21	21.0	27	27.0	52	52.0	1.69	Poor
Diabetes	5	5.0	18	18.0	77	77.0	1.28	Poor
Maternal blood pressure	14	14.0	13	13.0	73	73.0	1.41	Poor
Genetic	96	96.0	0	.0	4	4.0	2.92	Good
Traumatic brain injury	37	37.0	22	22.0	41	41.0	1.96	Poor
Brain tumor	28	28.0	28	28.0	44	44.0	1.84	Poor
Mental retardation	14	14.0	38	38.0	48	48.0	1.66	Poor
Asphyxia	37	37.0	30	30.0	33	33.0	2.04	Moderate
Cerebral palsy	24	24.0	31	31.0	45	45.0	1.79	Poor
CNS infection	28	28.0	32	32.0	40	40.0	1.88	Poor
Hydrocephalus	20	20.0	38	38.0	42	42.0	1.78	Poor
Complications								
psychologic problems	26	26.0	36	36.0	38	38.0	1.88	Poor
behavioral problems	52	52.0	20	20.0	28	28.0	2.24	Moderate
learning problems	45	45.0	14	14.0	41	41.0	2.04	Moderate
social problems	75	75.0	5	5.0	20	20.0	2.55	Good
Side effects of drugs	95	95.0	4	4.0	1	1.0	2.94	Good
Diagnosis								
follow up	100	100.0	0	.0	0	.0	3.00	Good
A neurological exam	80	80.0	12	12.0	8	8.0	2.72	Good
Imaging test of the brain	96	96.0	2	2.0	2	2.0	2.94	Good
Electroencephalogram	99	99.0	1	1.0	0	.0	2.99	Good
Lumbar puncture (spinal tap)	3	3.0	64	64.0	33	33.0	1.70	Poor
Prevention and control								
protect traumatic brain injuries	39	39.0	19	19.0	42	42.0	1.97	Poor
regular visit to doctor or primary health center.	96	96.0	1	1.0	3	3.0	2.93	Good
Taking treatment according to doctor order.	100	100.0	0	.0	0	.0	3.00	Good
Get vaccinated	6	6.0	20	20.0	74	74.0	1.32	Poor
Taking a healthy diet and a lot of fluid.	34	34.0	8	8.0	58	58.0	1.76	Poor
Bed rest and sleeping	66	66.0	4	4.0	30	30.0	2.36	Moderate
Avoid seizures triggers factors	74	74.0	2	2.0	24	24.0	2.50	Moderate
Wash your hands and prepare food safely	0	.0	15	15.0	85	85.0	1.15	Poor
Stay healthy during your pregnancy	19	19.0	11	11.0	70	70.0	1.49	Poor

	Yes		Un certain		No			
	No.	%	No.	%	No.	%	MS	Ass.
Management								
Medicines according to doctor order.	100	100.0	0	.0	0	.0	3.00	Good
Ketogenic diet	3	3.0	40	40.0	57	57.0	1.46	Poor
Vigus nerve stimulation	9	9.0	48	48.0	43	43.0	1.66	Poor
Surgery	19	19.0	39	39.0	42	42.0	1.77	Poor

Mean score <2 (Poor); MS 2-2.5 (Moderate); MS >2.5 (Good)

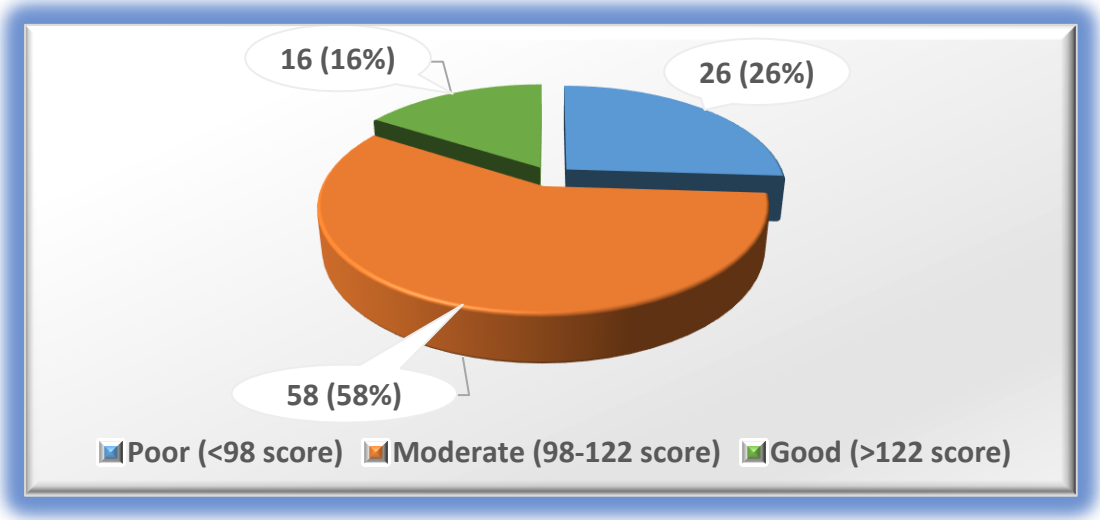


Figure (1): The total knowledge score of mothers about epileptic

Figure 1 indicates the overall knowledge assessment of the participants. The results showed that the highest percentage was 58% of those with moderate knowledge, followed by 26% with poor knowledge, and 16% with good knowledge.

Table 3 represents that the association between total knowledge score and socio-demographic characteristics. The results report that there is no statistically significant difference in knowledge scores exists across mothers' age groups ($p = 0.162$), demonstrating that age does not affect epilepsy knowledge. Factors such as family income, and residence substantially impact knowledge scores ($p < 0.001$). Housewives, low-income mothers, and rural mothers had lower knowledge ratings. Education level significantly impacts knowledge scores for mothers ($p < 0.001$). Illiterate mothers had lower knowledge scores. Mothers' knowledge scores are not significantly different by family type.

Table (3): The association between total knowledge score and socio-demographic characteristics

		Total Knowledge score						
		Poor		Moderate		Good		
		No.	%	No.	%	No.	%	P. value
Age groups	17-22 years	3	27.3	6	54.5	2	18.2	0.162
	23-28 years	5	25.0	13	65.0	2	10.0	
	29-34 years	5	14.3	22	62.9	8	22.9	
	35-40 years	8	33.3	14	58.3	2	8.3	
	41-46 years	4	66.7	2	33.3	0	.0	
	47-52 years	0	.0	0	.0	1	100.0	
	≥53 years	1	33.3	1	33.3	1	33.3	
Occupational status	Employment	0	.0	5	33.3	10	66.7	**<0.001**
	Housewife	26	30.6	53	62.4	6	7.1	
Family income	Sufficient	1	4.3	11	47.8	11	47.8	**<0.001**
	Insufficient	12	60.0	8	40.0	0	.0	
	Somewhat sufficient	13	22.8	39	68.4	5	8.8	
Family type	Extended	12	27.3	27	61.4	5	11.4	0.533
	Nuclear	14	25.0	31	55.4	11	19.6	
Residence	Rural	24	45.3	27	50.9	2	3.8	**<0.001**
	Urban	2	4.3	31	66.0	14	29.8	
Educational level	Not read or write	11	73.3	4	26.7	0	.0	**<0.001**

		Total Knowledge score						
		Poor		Moderate		Good		
		No.	%	No.	%	No.	%	P. value
	Primary and less	14	34.1	26	63.4	1	2.4	
	Secondary	0	.0	17	77.3	5	22.7	
	Institute & above	1	4.5	11	50.0	10	45.5	

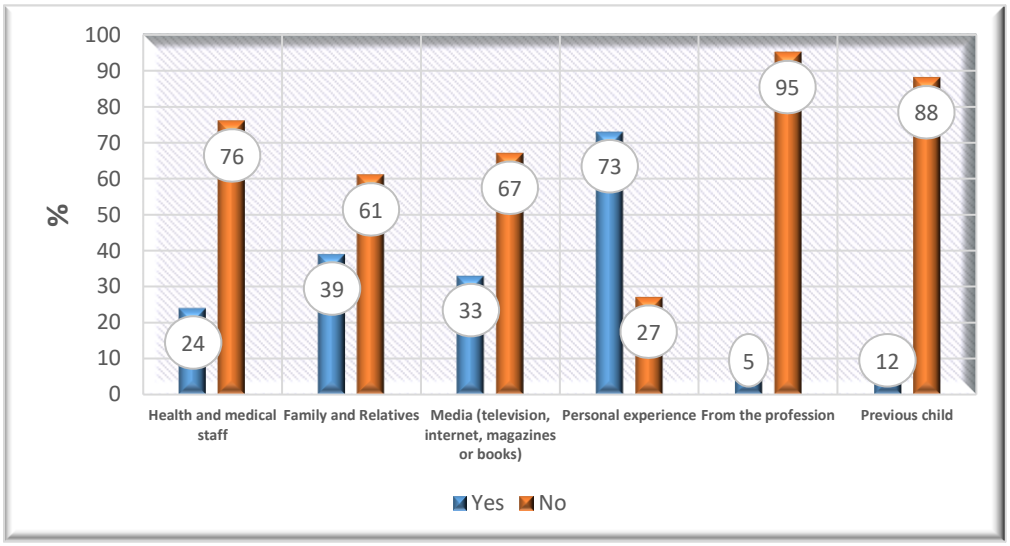


Figure (2): The distribution of mothers according to Sources of information about epilepsy

Figure (2) shows mothers' epilepsy knowledge sources. Personal experiences are a source of knowledge for 73% of mothers. Family and relatives are another source of information for 39% of mothers. 33% of moms get their information from TV, the internet, magazines, and books. Mothers visit doctors 24% of the time. Fewer mothers report from the profession and past personal experiences (5% and 12%, respectively).

Discussion:

The present study results show that high percentage of mothers age between (29-34) years for mothers. This result may be due to this age considered the most productive age to have child. This result is in agreement with the study findings conducted in south of India [10] which found that the same results.

In this study, the majority of mothers are housewives (85%) and this finding agreement with the study done in Gorgan, Iran by [11], which revealed that most the mothers were housewives. this may due to lack of employment opportunities and difficulty of obtaining private job in Iraq.

The present study shows that 41% of mothers have primary or less in educational attainment, this high percentage might be regard to the fact that more of people in Iraqi governorate unable to complete their studies due to many causes such as socio-economic status, insecure cities and schools or housing in particular faraway places where schools are not close and need transportation especially in rural area, the percentage may also be high since most females early marriage and most boys work also at young age leading them to drop out of school…etc. And This result is in agreement with study done in Turkey by [12] which illustrate highest percentage of mothers were primary school graduated.

According to the present study, 53.0% of moms lived in rural regions. The data was collected from Babil Teaching Hospital for Maternity and Children, which treats low and middle classes for free while upper socioeconomic class families treat their children in private hospitals or abroad. It may also be due to rural social habits like relative marriage, home delivery, limited access to health services, and poor health literacy. This agrees with [13], who estimated that rural locations had a greater childhood epilepsy rate than metropolitan ones.

In addition, the socioeconomic status for family in the present study is sufficient to what limits (57.0%) this related to that most families come to the general hospital with low or moderate income, this result is in agreement with the study by [14]

The study shows knowledge of mothers about the disease: as regard to the definition and types of epilepsy are graded poor. Most of mothers denied that epilepsy happens due to excess electrical activity in the brain. And this result come in agreement with the study conduct by [15] which found that majority of parent of children with epilepsy were having deficient knowledge of the definition and nature of epilepsy and its seizure.

As regard to the causes and risk factors also graded poor. This finding come in agreement with the study by [16] which found that many parents failed to know what possible etiologies of epilepsy.

Also, the mothers have poor grad in relation to the management of epilepsy. All mother know that

epilepsy can be treated by using AEDs but regard to ketogenic diet, VNS and surgery most mothers don't hear about them also this result agreement with studies conducted by [17] which reported that mother knowledge of therapy options, 64% of moms said AEDs treat epilepsy, whereas 29% said Vagus Nerve Stimulation does and [18] which found that Only 13 families (8.7%) thought that there is a surgical treatment for epilepsy.

When ask the mothers about the signs and symptoms and about the diagnosis of epilepsy most mothers have good mean score in knowledge, this result due that most mothers know most signs and symptoms from observation their child during occurring seizures more than one time also from doctor when he explain about what may occur to child during seizure. This result agreement with study by [19] which found that the gap between these questions and the remainder of the questionnaire may be due to the fact that doctors prioritize emergency information above other information.

When asked about the lumber puncture as on method for diagnosis this disease only (3%) of mothers know this method. But they have good grad when asked about the other methods as follow up, neurological exam, Imaging test of the brain and electroencephalogram because those are the most used method by doctors. This result agreement with the study by [20] which found that most mothers were known the (EEG) as the main method to diagnosis the epilepsy.

Regarding knowledge of mothers about complication and the prevention and control the mean score of mothers was moderate. And this result agreement with [21] which found that most parents believed that epilepsy could affect a child's behavior, and their learning ability. Also, parents believed that their child with epilepsy differs from other children and don't tell friends about the epileptic disease in their children, so this considered as social problems.

In this study, the results found that most of mothers have a moderate knowledge regarding epilepsy. This result come in different with other studies, where the majority of the respondents had good knowledge (95.3%) in [22] study which assess knowledge and attitudes Towards epilepsy among parents in Osogbo LGA Osun State, Nigeria. And 43.6% of the respondents had poor general knowledge towards epilepsy in [23] study which assess the knowledge and attitudes toward epilepsy in Ethiopia. This different in the result of knowledge may related to the difference level of education across the study areas and countries and the source of their information about epilepsy, so in that study where the knowledge was good returned to that most of them were with high level of education and their information were from physician, while in the study where the knowledge was poor returned to that most of them were with low level of education and their information were from their experience or relative.

In our study most mothers have low educational level and high percentage of mothers gain their information about epilepsy from their own experience (73%), while the health and medical staff as source of information represent only (24%) of mother's source. Depending on the personal experience and the family and relative this lead to that incorrect information about epilepsy and misconception knowledge will transport to mother who recently discover her son's illness, and this come in agreement with the study [24] which found there are many false beliefs and misconceptions regarding epilepsy in the general population as well as among families of epileptic patients.

The low percentage of health and medical staff may due to the country conditions in which the educational programs relatively lack, and the medical staff deal with many of cases in short period of time and crowding room so there is not enough time to give all information about the disease or forget some of them due to fast working, and this result is in agreement with the result of [25] study which found that physicians do not have time and often failed to appreciate the importance of various informational needs of parents.

According to this study there is significant relationship between the occupational status of mothers and their knowledge score, the result show that the most housewives have poor score while the most employment mothers have good score, this result may be due to that most of housewives not have educational attainment and that effected on their understanding of some scientific term about epilepsy such as definition, types and treatment of epilepsy.

As regards mothers' knowledge scores according to their education, the current study revealed that there was statistically significant relation between mothers' knowledge and their education. It was found that the majority of the mothers who completed their secondary / institute and above education had "good" and "moderate" scores in their knowledge. This finding could be explained in the light of the fact that education might helped them in understanding of the most important of terms about epilepsy. This finding is supported by [26] which found that that the educational status of the parents/caregivers had a significant impact on their general understanding of the disease as well as the care they provide to their children.

Conclusions:

The study concluded that most mothers in Babil Governorate have moderate knowledge of epilepsy. The results also revealed that employed mothers, sufficient family income, mothers living in urban areas, and higher education were associated with a good degree of knowledge. In addition, there are misconception and information gaps in issues related to the meaning, type, causes and the management of the disease.

Recommendations:

Educating the public about epilepsy through the mass media could go a long way in reducing the morbidity and mortality associated with this problem. In addition, Continuous, repetitive health instructions and

educational programs should be held for mothers of epileptic children, based on needs assessment to raise their information regarding epilepsy as in definition, type, causes and management of epilepsy.

Competing interests

The authors declare no competing interest.

Authors' contributions

All authors coordinated in the preparation of data, and participated in the preparation and writing of the manuscript. The author read and approved the final version of the manuscript.

Acknowledgment

The authors would like to express their gratitude to the individuals who generously agreed to participate in this study.

References:

1. El-Mouty SMA, Salem NM. Burden and Quality of Life among Caregivers to Children with Epilepsy. Am J Nurs Res Vol 7, 2019, Pages 817-823. 2019;7(5):817–23.
2. Rincon N, Barr D, Velez-Ruiz N. Neuromodulation in drug resistant epilepsy. Aging Dis. 2021;12(4):1070.
3. Dalky HF, Gharaibeh H, Faleh R. Psychosocial burden and stigma perception of Jordanian patients with epilepsy. Clin Nurs Res. 2019;28(4):422–35.
4. Alharbi RW, Kaki A, Tabassum S. Effectiveness of an Educational Intervention on Status Epilepticus Among the Caregivers of Children With Epilepsy: An Interventional Study. Cureus. 2023;15(6).
5. Carmassi C, Corsi M, Bertelloni CA, Carpita B, Gesi C, Pedrinelli V, et al. Mothers and fathers of children with epilepsy: Gender differences in post-traumatic stress symptoms and correlations with mood spectrum symptoms. Neuropsychiatr Dis Treat. 2018;14:1371–9.
6. Nashaat N, Abd El-Ghany G, Mahmoud S, El Sebaie S, AbdelrhmanAlhanafy S, Mohamed ES. Effect of Nursing Intervention program on Mothers' Knowledge, Practice and Attitudes toward Management of their Children with Epilepsy and Intellectual disability. Tanta Sci Nurs J. 2022;25(2):198–216.
7. Hansen B, Szaflarski M, Bebin EM, Szaflarski JP. Affiliate stigma and caregiver burden in intractable epilepsy. Epilepsy Behav. 2018;85:1–6.
8. World Health Organisation. Epilepsy. WHO [Internet]. 2024; Available from: https://www.who.int/news-room/fact-sheets/detail/epilepsy#:~:text=Rates of disease-,Epilepsy accounts for a significant proportion of the world's disease,and 10 per 1000 people.
9. Shareef RH, Al-Sarray AAM. COVID-19 Vaccination Knowledge Among a Sample of Healthcare Providers in Karbala Governorate. NeuroQuantology. 2022;20(6):4539.
10. Rani A, Thomas PT. Parental knoweldge, attitude, and perception about epilepsy and sociocultural barriers to treatment. J epilepsy Res. 2019;9(1):65.
11. Estiri M, Aghapour SA, Behnampour N, Ghelichi-Ghojogh M, Hosseini PS, Hosseini SA. The role of educating parents of children with fever and febrile convulsions in reducing the intensity of anxiety of parents; A Quasi-experimental study in Gorgan. Iran J Prev Epidemiol. 2024;9(1):e35201.
12. Aydın H, Korkut O. Examination of Parents ' Knowledge , Attitudes , and Behaviors About Epilepsy. 2022;(March 2020):4–9.
13. Okamoto K, Fukuda M, Saito I, Horiuchi I, Okazawa T, Ishii E. Incidence of childhood epilepsy: A population-based study in rural Japan. Brain Dev. 2018;40(10):904–8.
14. Beghi E. The epidemiology of epilepsy. Neuroepidemiology. 2020;54(2):185–91.
15. Shahin MAH, Hussien RM. Knowledge, attitude, practice, and self-efficacy of caregivers of children with epilepsy: Impact of a structured educational intervention program. Epilepsy and Seizure. 2021;13(1):1–16.
16. DESSALEGEN HM, Gedlu E, Moges A. Knowledge, attitude and practices of parents and guardians of children with epilepsy at pediatric neurology clinic in a tertiary hospital in Ethiopia. Ethiop Med J. 2021;59(03).
17. Elmohalem RIB, Ismail SS, Bayomi MH. Assessment of Parents' Knowledge, Practices and Attitude Toward Care for Their Epileptic Children. Egypt J Heal Care. 2020;11(3):144–62.
18. Neyaz HA, Aboauf HA, Alhejaili ME, Alrehaili MN. Knowledge and attitudes towards epilepsy in Saudi families. J Taibah Univ Med Sci. 2017;12(1):89–95.
19. Ibrahim H, Shata Z. The Relationship between Mothers' Epilepsy-related Knowledge and their Healthcare Practices and Attitudes, Alexandria, Egypt. Alexandria Sci Nurs J. 2017;19(1):58–74.
20. Kolahi A-A, Abbasi-Kangevari M, Bakhshaei P, Mahvelati-Shamsabadi F, Tonekaboni S-H, Farsar A-R. Knowledge, attitudes, and practices among mothers of children with epilepsy: a study in a teaching hospital. Epilepsy Behav. 2017;69:147–52.
21. Salisu MA, Senbanjo IO, Oshikoya KA, Lamina MO, Alaje EO. Parent's Knowledge, Attitude and Pattern of Care for Children with Epilepsy in Lagos, Nigeria. Ann Heal Res. 2022;8(2):131–40.
22. John PN, Adebanke T, Yaya AK, JP FAB, Oluwasegun AA. Knowledge and Attitudes Towards Epilepsy Among Parents in Osogbo LGA Osun State, Nigeria. Am J Pediatr Med Heal Sci. 2024;2(1):142–64.
23. Wubetu AD, Admasu Basha E, Alemnew

Engidaw N. Public Knowledge and Attitude towards Epilepsy and Its Associated Factors: Community-Based Cross-Sectional Study, Ethiopia, 2019. J Environ Public Health. 2020;2020.

24. Dulla CG, Pitkänen A. Novel approaches to prevent epileptogenesis after traumatic brain injury. Neurotherapeutics. 2021;1–20.
25. Masri A, Aburahma S, Khasawneh A, AL Qudah A, Nafi O, Al Momani M, et al. Parental knowledge and attitudes towards epilepsy –A study from Jordan. Seizure. 2017;53:75–80.
26. Sinha R, Soneji D, Tewari V V., Singh S, Kalikinkar Ojha P, Patra A, et al. Assessment of knowledge, attitude and practice (KAP) of parents/caregivers towards epilepsy in children – A cross- sectional observational study. Heliyon. 2023;9(9):e19849.