Original Article

Knowledge, Attitude, and Practice toward Epilepsy among Primary School Teachers in Al-Rusafa/Baghdad 2022

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Abstract

Background: Epilepsy is one of the most widespread neurological illnesses in the world with a prevalence rate of 2.8–19.5 per 1000 of the general population, and it is more prevalent in childhood. The understanding of the teachers about epilepsy has a significant impact on the academic performance and social skills of schoolchildren with epilepsy. **Aim of Study:** This study aimed to assess teachers' knowledge, attitude, and practice regarding epilepsy in schoolchildren and the association of certain studied variables with the level of schoolteachers' knowledge, attitude, and practice. **Subjects and Methods:** This was a cross-sectional study that included 402 participants and was conducted in Al-Rusafa/Baghdad during the period from November 1, 2021, to January 31, 2022. A self-administered questionnaire was used for data collection method. **Results:** Most of the studied sample demonstrated fair knowledge (52%), attitudes (55%), and practices (55%). A significant association was detected between knowledge, attitude, practices, and each of marital status, specialty, and academic qualification ($P < 0.05$). **Conclusion:** There was a Fair level of knowledge, attitude, and practice of teachers regarding students with epilepsy. Being single unmarried, of university degree and with a scientific specialty were considered as a predictor factors of good knowledge, attitude, and practice. While age, gender, and years of experience were not associated with any of the knowledge, attitude, and practice parameters. Multiple sources considered a major source of information.

Keywords: Attitude, epilepsy, knowledge, practice, schoolteachers

Introduction

Epilepsy is one of the most widespread neurological illnesses in the world with a prevalence rate of 2.8–19.5 per 1000 of the general population, and it is more prevalent in childhood. It represents 1% of the global disease burden, and approximately 80% of this burden is in underdeveloped nations. Numerous nations and concerned organizations currently regard epilepsy as a public health hazard.[1]

Children with epilepsy are susceptible to a number of psychiatric disorders, including depression, anxiety, and psychosis. In many nations, sociocultural views continue to have a negative effect on the management of epilepsy. In many nations, the disease is related to superstition, discrimination, and stigma. Still strongly established in some cultures is the belief that demonic spirits are responsible for these terrifying attacks.[2]

The deficiency of knowledge about epilepsy has been exposed in a large part of the populations throughout the world.[3]

Widespread ignorance, fear, and misunderstanding have negatively influenced epilepsy management. Thus, many children who experience any type of seizure are initially evaluated and treated by religious or traditional healers. Children with epilepsy are subjected to unfathomable social deprivation and educational prejudice, which may be more damaging than the disease itself.[4]

There is currently little research on societal perceptions of epileptics in Iraq and other Arabic countries. To ensure the effective management of epilepsy, it is essential to have a thorough awareness of the community's perspective on the disease.[5]

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The public and the educational setting are both plagued by unfavorable attitudes and misconceptions concerning epilepsy. Most occurrences of epilepsy tend to develop in childhood and adolescence, and schoolteachers typically do not receive any official training on the condition during their education. As is generally known, the most prevalent neurological condition in children of school age, when they start and finish a crucial phase of their social and academic development, is epilepsy. Teachers' negative attitudes and views regarding epilepsy can result in a child being expelled from school or possibly not attending. In addition, some kids with epilepsy may be shunned by their friends out of concern for contamination.[6]

Teachers play a critical role in students with epilepsy becoming mentally, socially, and academically well-rounded. Teachers who know how to respond to seizures can boost school safety levels and influence fellow students' and school staff's reactions.[7]

However, school staff members' knowledge about the condition affects their attitudes toward students with epilepsy.[1]

Teachers typically do not receive professional training in epilepsy. Therefore, it is essential to teach them about the problem correctly and to encourage them to adopt a positive and upbeat outlook. If other kids know the seizure is benign, it might be beneficial. They ought to be inspired to assist others and impart knowledge on epileptic treatment to their family and friends.[8]

A child's quality of life is likely low if they suffer epilepsy. Numerous studies have demonstrated that psychosocial factors significantly affect a child's quality of life more than the seizures themselves or factors connected to antiepileptic medication.[9]

Children with epilepsy frequently experience school-related challenges, including behavioral and intellectual challenges, which significantly lower their quality of life. According to several research, teachers at schools may negatively affect the quality of life for kids with epilepsy because they lack adequate understanding of the condition.[10]

The current study was conducted aiming to assess schoolteachers' knowledge, attitude, and practice regarding epilepsy in schoolchildren and to study the association between sociodemographic factors and the level of schoolteachers' knowledge, attitude, and practice.

Subjects and Methods

This was a cross-sectional study conducted in 30 primary schools in the Second Educational Directorate in Al-Rusafa, Baghdad, Iraq, during a period from November 1, 2021, to January 31, 2022, using a convenient method of sampling. A self-administered questionnaire was distributed to all teachers in the mentioned primary schools who worked for at least 1 year who agreed to be participated in the study.

A pilot study was conducted on 40 participants from the selected schools to check the applicability of the questionnaire, to find any difficult questions, and to explore any obstacles that may face the research.

After the pilot study, no major changes were made, apart from simple changes on the Arabic version. The participants involved in the pilot study were excluded from the study.

The research proposal was fully discussed by the Ethical and Research Committee at Al-Kindy College of Medicine. The agreement of education authority in AL-Rusafa was taken before the school visiting.

Permission of all primary school directors involved in the study was obtained. The individual consent verbally was taken from each teacher before starting the interview. Full explanation of the study's aim was given to the teachers and insuring them about the confidentiality of the collected data which would not be used for any purpose other than this study and would be anonymous.

The used questionnaire was adopted from previous studies measuring the same studied variables and translated into local Arabic language; the questionnaire was revised by the supervisor and panel of experts in Al-Kindy College of Medicine (two community medicine specialists and one family medicine specialist) and their modification and advice regarding the proposed questionnaire was taken into consideration.[11,12]

The used questions include two parts: Part 1: The sociodemographic variables of the included teachers' age, gender, qualification, marital status, work duration, specialty, heard about epilepsy, main source of information, presence of epileptic patient in their family, students class, and presence of epilepsy records in the school. Part 2 included three domains: first domain check the knowledge through 10 questions, the second one assessing the attitude through 10 questions also, and the third domain ask about practice with five questions.

A questionnaire had been given to teachers at a selected school via direct interviews; the questionnaire was filled by the participants in Arabic language. It was used to gather the necessary information as the following:

- Assessment of knowledge includes 10 questions, one score for each correct answer (epilepsy caused by, manifests as, occur at which age, the average intelligence of a person with epilepsy, diagnosis, treatment, kinds of disease, epilepsy is a contagious disease or not, children with epilepsy have a higher incidence of insanity and epilepsy is a chronic brain disease that cannot be cured or controlled)
- Assessment of attitude includes 10 closed questions with (yes, no, uncertain) responses, one score for each correct answer (afraid of having a student with epilepsy in my classroom, prefer to have all students with epilepsy placed in a special classroom, allow the child to play or sit in the same class with a child with epilepsy, allow the child to marry a person with epilepsy in the future, think that sports should be prevented in epileptic child, children who have epilepsy do not have a normal life expectancy,

children who have epilepsy have equal privileges like all citizens, child who has epilepsy are expected to demonstrate illegal behaviors more than normal pupils, child who has epilepsy is considered as a threat to the community, and epileptic pupils who are taking medications that stop seizures must receive attention like anyone else)

- Assessment of practice includes five questions, one score for each correct answer (perform first-aid seizure management before, discuss parents about students' condition at the beginning of school years, make a list of epileptic medications and time of administration while in school, perform first-aid seizure management for child with epileptic fit through lying child on his/her side, clearing airway, providing mouth to mouth breathing if child is not breathing, inserting a spoon or gag into the mouth, should not leave dangerous things beside patient).

The scoring system for knowledge, attitude, and practice scores was calculated according to the following equation:

$$\textit{domain score} = \frac{\textit{Number of correct answer in the domain}}{\textit{Total number of questions in that domain}} \times 100$$

The level of knowledge, attitude, and practice was considered good if subjects achieved more than 75%, fair if achieved 50%–74%, and poor if achieved <50%.[13]

The collected data were introduced to Microsoft Excel Sheet 2016 and often reviewed, cleaned, and loaded into SPSS software version 26 (SPSS Inc., Chicago, IL, USA.) for statistical analysis. Descriptive statistics was presented using tables and graphs. The Chi-square test was used to find the significance of association between related categorical variables. $P < 0.05$ was considered a discrimination point of significance.

Results

The results of this cross-sectional study show that 402 subjects were included: 29.6% of them aged 40 years or less, 36.8% aged 40–50, and 33.6% aged more than 50 years. Males formed 18.9% of studied sample, 13.4%, 74.6%, and 11.9% were single, married and others (divorced or widowed) respectively. About 43.4% were teaching scientific discipline, 42.3% were literature and 14.4% teaching sports or arts. Regarding qualification 31.8% had teaching institute, 34.6% had diploma, and 33.6% finished university or more. About 32.3% spend <10 years in their jobs and 36.6% and 29.1% spend 10–20 years and more than 20 years, respectively [Table 1].

Figure 1 shows that 40% of studied sample got their information from multiple sources, while the source of information of 25% of the studied participants was mass media, and in 11%, 9%, 8%, and 7% were relatives, friends, doctors, and parents of students with epilepsy, respectively.

Table 1: The sociodemographic characteristics of the studied sample

	n (%)
Age (years)	
≤40	119 (29.6)
40–50	148 (36.8)
>50	135 (33.6)
Gender	
Male	76 (18.9)
Female	326 (81.1)
Marital status	
Single	54 (13.4)
Married	300 (74.6)
Others	48 (11.9)
Specialty	
Scientific	174 (43.3)
Literature	170 (42.3)
Sports and arts	58 (14.4)
Qualification	
Teacher institute	128 (31.8)
Diploma	139 (34.6)
University	135 (33.6)
Years of experience (years)	
<10	130 (32.3)
10–20	155 (38.6)
>20	117 (29.1)

Table 2: The distribution of studied cases according to knowledge items

	Percentage
Cause of epilepsy	16.9
Manifestation of epilepsy	51.7
Epilepsy time of onset	71.1
Knowledge about intelligence of patients with epilepsy	41.3
Epilepsy diagnosed by	4.0
Epilepsy is treated by	79.1
Epilepsy has many kinds	28.4
Epilepsy is a contagious disease	79.1
Children with epilepsy have a higher incidence of insanity	55.2
Epilepsy is a chronic brain disease that cannot be cured or controlled	17.4

Table 2 shows correct and incorrect answer percentages regarding knowledge. Concerning manifestation of epilepsy, time of onset, treatment, epilepsy considered a contagious disease, and children with epilepsy have a higher incidence of insanity most of the participants answered correctly as 51.7%, 71.1%, 79.1%, 79.1%, and 55.2% respectively.

Figure 2 shows that the level of knowledge was good 39%, fair in 52%, and poor in 9% of studied cases.

Table 3 shows that there was a significant association between single marital status, scientific specialty, university level of education, and good knowledge level, $P < 0.05$ in all

conditions. While no significant associations were noticed between age, gender, and years of experience, with knowledge level ($P > 0.05$).

Table 4 shows correct and incorrect answer percentages regarding attitude. Regarding allowing child to play or sit in the same class with a child with epilepsy, children who have epilepsy do not have a normal life expectancy, child who has epilepsy are expected to demonstrate illegal behaviors more than normal pupils, and child who have epilepsy are a threat to the community, most of participants answered correctly as 73.6%, 89.1%, 78.6%, 81.6%, respectively.

Figure 3 shows that the level of attitude was good 35%, fair in 55%, and poor in 10% of studied cases.

Table 5 shows that there was a significant association between single marital status, scientific specialty, university level of education, and good attitude level, $P < 0.05$ in all conditions. While no significant associations were noticed between age, gender, and years of experience, with attitude level ($P > 0.05$).

Table 6 shows correct and incorrect answer percentages regarding practice. Referring to discussing parents about students' condition at the beginning of school years, perform first-aid seizure management for child with epileptic fit through, and avoid leaving dangerous things beside patient but not contact with patient's body or saliva, most of participants answered correctly as 85.1%, 88.6%, and 74.6%, respectively.

Figure 4 shows that the level of practice was good 26%, fair in 55%, and poor in 19% of studied cases.

Table 7 shows that there was a significant association between single marital status, scientific specialty, university level of education, and good practice level, $P < 0.05$ in all conditions. While no significant associations were noticed between age, gender, and years of experience, with practice level ($P > 0.05$).

Discussion

The present study has found that teachers in Al-Rusafa Second Directorate demonstrated suboptimal knowledge regarding epilepsy; as around half had fair knowledge, less than half had good knowledge and around tenth demonstrated poor knowledge. This finding is understandable, given that around two-thirds of teachers had either university or diploma academic degrees.

In the present study, there was no significant association of the knowledge level, with age, gender, and years of experience. Similar findings were reported in a study conducted by Al-Harbi *et al.* where the age of the participant and the work experience had no association with the knowledge toward

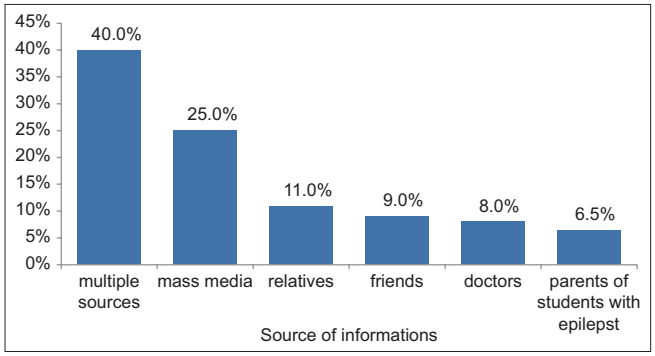

Figure 1: The distribution of studied cases according to source of information

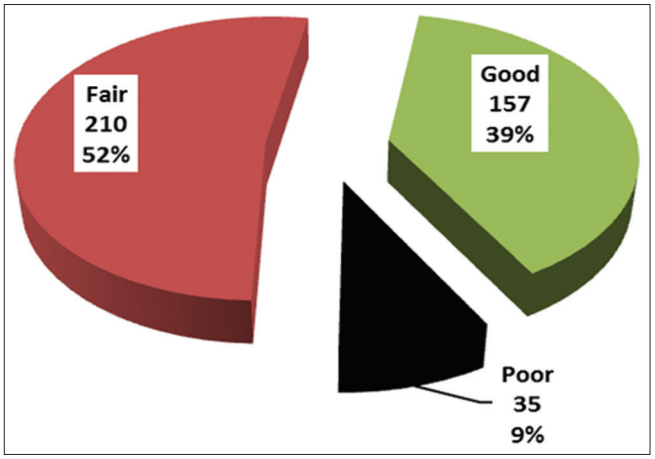

Figure 2: The distribution of studied cases according to knowledge level

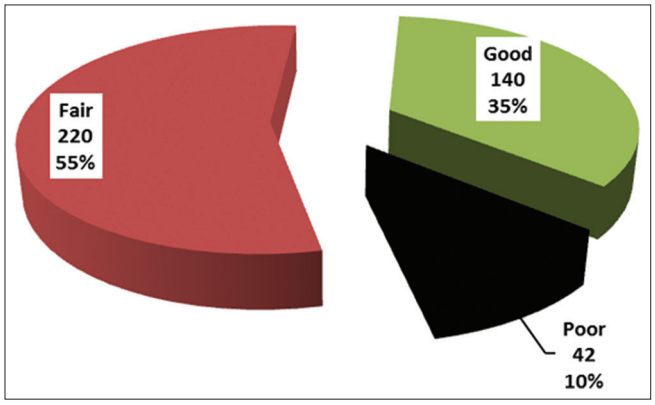

Figure 3: The distribution of studied cases according to attitude level

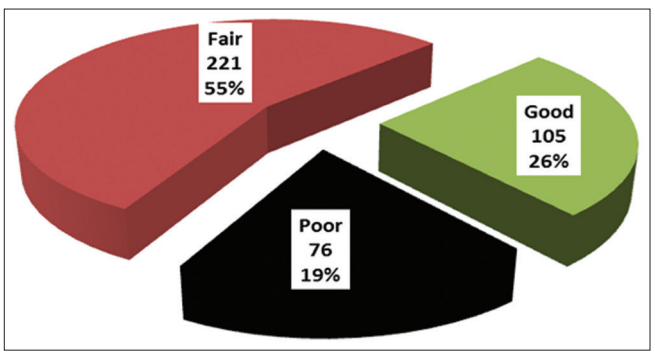

Figure 4: The distribution of studied cases according to practice level

Table 3: The association between essential variables and knowledge level

	Knowledge level			
	Poor (n=35), n (%)	Fair (n=210), n (%)	Good (n=157), n (%)	P
Age (years)				
≤40	11 (9.24)	62 (52.10)	46 (38.66)	0.481
40–50	12 (8.11)	85 (57.43)	51 (34.46)	
>50	12 (8.89)	63 (46.67)	60 (44.44)	
Gender				
Male	9 (11.84)	44 (57.89)	23 (30.26)	0.175
Female	26 (7.98)	166 (50.92)	134 (41.10)	
Marital status				
Single	1 (1.85)	17 (31.48)	36 (66.67)	0.001
Married	33 (11.00)	169 (56.33)	98 (32.67)	
Others	1 (2.08)	24 (50.00)	23 (47.92)	
Specialty				
Scientific	13 (7.47)	81 (46.55)	80 (45.98)	0.006
Literature	21 (12.35)	98 (57.65)	51 (30.00)	
Sports and arts	1 (1.72)	31 (53.45)	26 (44.83)	
Qualification				
Teacher institute	14 (10.94)	80 (62.50)	34 (26.56)	0.008
Diploma	13 (9.35)	67 (48.20)	59 (42.45)	
University	8 (5.93)	63 (46.67)	64 (47.41)	
Years of experience (years)				
<10	15 (11.54)	66 (50.77)	49 (37.69)	0.603
10–20	12 (7.74)	85 (54.84)	58 (37.42)	
>20	8 (6.84	59 (50.43)	50 (42.74)	

Table 4: The distribution of studied cases according to attitude items

	Percentage
Afraid of having a student with epilepsy in my classroom	45.8
Prefer to have all students with epilepsy placed in special classroom	31.8
Allow child to play or sit in the same class with a child with epilepsy	73.6
Allow child to marry person with epilepsy	11.4
Think that sports should be prevented in an epileptic child	33.3
Children who have epilepsy do not have a normal life expectancy	89.1
Children who have epilepsy have equal privileges like all citizens	18.4
Child who has epilepsy are expected to demonstrate illegal behaviors more than normal pupils	78.6
Child who have epilepsy are a threat to the community	81.6
Epileptic pupils who take medications that stop seizures are like anyone else	11.9

epilepsy.[14] However, this is in discordance with the study by Alzhrani *et al.*, who found that higher years of experience was a predictor of good knowledge, whereas lower age was linked to poorer knowledge.[15]

Surprisingly, single teachers showed better knowledge than their married counterparts did. This can be due to being more with free time and engaged with media and sources of information than married teachers. A similar conclusion was reached byAl-Harbi *et al*. in Saudi Arabia.[14] who found that 66.67% of the single people had a good knowledge, while most of married teachers had fair knowledge. Concerning educational qualification, it was a predictor of good knowledge, which is in discordance with the study by Al-Harbi *et al.*[14]

As for core answers to the knowledge questionnaire, the current study has shown that a minority of the participants responded correctly regarding the cause of epilepsy (it can be due to a combination of more than one of the genetic factors, infection, trauma, tumors, brains diseases, or insanity), while the majority responded incorrectly. In the study of Kaleyias *et al.,* 85.3% of the participants responded that epilepsy is a transient brain dysfunction, 2% said that it is a blood disease, 1.3% said that it is a psychological problem, and 0.7% said that it is a kind of mental retardation.[16] In the study of Al-Harbi *et al*., 60.1% answered correctly regarding the cause of epilepsy.[14] It is noteworthy to mention that in Sudan, a study found that 10% of Sudanese doctors believe in evil spirits as a possible cause of epilepsy.[17]

Concerning the question about intelligence of patients with epilepsy, less than half knew it correctly. In comparison, 2% of the participants in the Greek study said that epilepsy in children is almost always associated with mental or learning problems.[16] In a Saudi study, only 29.4% answered this question correctly.[14]

Table 5: The association between essential variables and attitude level

	Attitude level			
	Poor (*n*=42), *n* (%)	Fair (*n*=220), *n* (%)	Good (*n*=140), *n* (%)	*P*
Age (years)				
≤40	13 (10.92)	63 (52.94)	43 (36.13)	0.426
40–50	14 (9.46)	90 (60.81)	44 (29.73)	
>50	15 (11.11)	67 (49.63)	53 (39.26)	
Gender				
Male	12 (15.79)	44 (57.89)	20 (26.32)	0.096
Female	30 (9.20)	176 (53.99)	120 (36.81)	
Marital status				
Single	2 (3.70)	20 (37.04)	32 (59.26)	0.001
Married	38 (12.67)	176 (58.67)	86 (28.67)	
Others	2 (4.17)	24 (50.00)	22 (45.83)	
Specialty				
Scientific	16 (9.20)	87 (50.00)	71 (40.80)	0.028
Literature	24 (14.12)	99 (58.24)	47 (27.65)	
Sports and arts	2 (3.45)	34 (58.62)	22 (37.93)	
Qualification				
Teacher institute	17 (13.28)	86 (67.19)	25 (19.53)	0.001
Diploma	15 (10.79)	70 (50.36)	54 (38.85)	
University	10 (7.41)	64 (47.41)	61 (45.19)	
Years of experience (years)				
<10	18 (13.85)	66 (50.77)	46 (35.38)	0.537
10–20	14 (9.03)	90 (58.06)	51 (32.90)	
>20	10 (8.55)	64 (54.70)	43 (36.75)	

Table 6: The distribution of studied cases according to practice items

	Percentage
Performed first-aid seizure management before	23.9
Discuss parents about student's condition at the beginning of school years	85.1
Make a list for epileptic medications and time of administration while in school	2.0
Perform first-aid seizure management for child with epileptic fit through	88.6
Avoid leaving dangerous things beside patient, but not contact with patient's body or saliva	74.6

Regarding the question whether if epilepsy can be controlled or cured, in the Greek study, less than fifth of participants answered this correctly in comparison with the majority thinking that it can never be controlled, 42.7% answered that epilepsy can usually be controlled by medications, 20.7% said that it is almost always controllable by medications, 8% stated that it is only occasionally controllable, and 9% indicated that it can almost never be controlled by medications. In the same study, 5.3% of the participants responded to the question "Know if epilepsy can be radically cured so that the child will be seizure-free for the rest of life, without medications?" with "almost always," 16.7% with usually, 13.7% with occasionally, and 17% with almost never, while the majority of them 47.3% did not know the answer.[16]

The majority of the participants in the current study knew that epilepsy is not a contagious disease, while 20.9% showed a lack of knowledge regarding this aspect. In a study by Gebrewold *et al.*, only 1% answered it wrong.[18]

Regarding the attitude level toward epilepsy, more than half of the participants in the current study had a fair attitude, while research by Elhassan *et al.* showed that 41.2% of the participants with poor attitude toward epilepsy.[19]

All the essential variables were examined. Age, gender, and work duration did not show a significant association with attitude. This is in discordance with the study by Elhassan *et al.* who found that age and work duration (teaching experience) were not associated with attitude.[19] While in the study by Alzhrani *et al*., in Saudia Arabia in 2021, there was a significant association between the age and work experience with attitude.[15]

The current study showed again that being single (unmarried), of scientific specialty (university or diploma) was associated with a positive attitude. In comparison, the study conducted by Elhassan *et al.* found no association between the qualification and the attitude levels of the participants.[19] This may be partly explained by the small study size of the mentioned study in comparison to the present study.

A high percentage of teachers were afraid of having a student with epilepsy in their classroom, which is possible due to poor skills and facilities for providing first aid for a child with seizure. In the Saudi study, 42.6% of teachers think that a student with epilepsy at class makes a problem,[1] while in the Greek study, 48.3% think so.[16]

Table 7: The association between essential variables and practice level

	Practice level			
	Poor ($n=76$), n (%)	Fair ($n=221$), n (%)	Good ($n=105$), n (%)	P
Age (years)				
≤40	24 (20.17)	66 (55.46)	29 (24.37)	0.371
40–50	27 (18.24)	88 (59.46)	33 (22.30)	
>50	25 (18.52)	67 (49.63)	43 (31.85)	
Gender				
Male	15 (19.74)	45 (59.21)	16 (21.05)	0.532
Female	61 (18.71)	176 (53.99)	89 (27.30)	
Marital status				
Single	6 (11.11)	23 (42.59)	25 (46.30)	0.001
Married	64 (21.33)	173 (57.67)	63 (21.00)	
Others	6 (12.50)	25 (52.08)	17 (35.42)	
Specialty				
Scientific	33 (18.97)	87 (50.00)	54 (31.03)	0.031
Literature	38 (22.35)	93 (54.71)	39 (22.94)	
Sports and arts	5 (8.62)	41 (70.69)	12 (20.69)	
Qualification				
Teacher institute	32 (25.00)	78 (60.94)	18 (14.06)	0.002
Diploma	25 (17.99)	74 (53.24)	40 (28.78)	
University	19 (14.07)	69 (51.11)	47 (34.81)	
Years of experience (years)				
<10	29 (22.31)	67 (51.54)	34 (26.15)	0.78
10–20	27 (17.42)	89 (57.42)	39 (25.16)	
>20	20 (17.09)	65 (55.56)	32 (27.35)	

In the current study, around two-thirds falsely preferred to assemble all epileptic students in a special classroom. This misconception is considerably higher than the findings in the Greek study, where 6% of the participants said that the child with epilepsy should be transferred to some other (e.g., special education) school. 3.7% of them said that this is because the teachers cannot be responsible if something harmful happens to him or her at school and 0.7% said that it is because his or her presence would be negative for the other students and/or their parents.[16] In the Saudi study, 14.3% answered that the child should be transferred to a special needs school.[14]

Unfortunately, only 11.4% of teachers said that they would allow their children to marry a person with epilepsy. In the Ethiopian study, a percentage was found where 7.5% of the participants answered that they would allow their child to marry a person with epilepsy.[18]

This study has demonstrated that around half of the participants in this study had a fair practice level toward epilepsy. In Turkey, the teachers had significantly more negative attitudes toward children with epilepsy regarding questions concerns about the child's aggression, placement at a special school, participation in sports and encouraging the child to play/sit beside a child with epilepsy. However, significantly more teachers felt that they could manage an epileptic seizure.[10]

It was also observed that being single, of scientific specialty and university qualification were all predictors of good practice level. This is in concordance with the study conducted by Elhassan *et al*. who found that the practice level was strongly associated with teachers' education level, as 21.6% of teachers with graduate degree had a good practice level toward epilepsy.[19]

Again, age, gender, and work experience were not associated statistically with the practice level toward epilepsy. Elhassan *et al.*, however, found that a higher work experience was associated with higher practice level. The same association was found with female gender.[19]

In the present study, around one-fifth of the participants have performed the first-aid seizure management before. In the study of Shehata and Mahran, 23.8% of the participants accepted to give students with fit in the class the first-aid measures and 12.7% accepted to give the students with seizure in the class, any form of prescribed treatment.[20]

The vast majority of participants in the current study stated that they did not apply the practice of making a list of epileptic medications at the time of school admission.

It can be concluded that the knowledge, attitude, and practice scores of teachers regarding students with epilepsy were fair. Multiple sources was considered as a major source of information. Being single, of university degree and with a scientific specialty were considered as a predictor of good knowledge. Age, gender, and years of experience were not associated with any of the knowledge, attitude, and practice parameters.

It is recommended to adopt an education program among primary school teachers to increase awareness regarding epilepsy among students. Further studies dealing with this issue in Iraq using larger sample size and another tool of measurement. Epilepsy awareness efforts should be creative in their use of state-sponsored media and social media to provide information.

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Conflicts of interest

There are no conflicts of interest.

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