

# Relationship Between Teachers' Attitudes and Knowledge About Epilepsy and Their Health Literacy and Health Anxiety

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## Abstract

**Background:** Epilepsy is a common neurological condition that can affect students in educational settings. Teachers' knowledge and attitudes toward epilepsy play a vital role in ensuring student safety and educational continuity.

**Aim:** This study aimed to examine the relationship between teachers' health literacy, health anxiety, and their knowledge and attitudes toward epilepsy.

**Methods:** A cross-sectional descriptive study was conducted among primary, middle, and high school teachers in Ankara, Türkiye. A total of 205 teachers were selected through simple random sampling. Data were collected using a sociodemographic questionnaire, Epilepsy Knowledge and Attitude Inventories, Short Health Anxiety Inventory, and Turkey Health Literacy Scale-32. Descriptive statistics, Pearson correlation, Student's t-test, and Chi-square tests were used for data analysis.

**Results:** Participants had a mean age of  $46.16 \pm 8.33$  years and an average of  $21.79 \pm 8.46$  years of teaching experience; 75.6% were female. The mean scores on the epilepsy attitude and knowledge inventories were  $41.32 \pm 5.32$  and  $8.26 \pm 2.95$ , respectively. Teachers with personal experiences, such as witnessing a seizure or having a family member with epilepsy, scored higher on epilepsy knowledge. Knowledge of epilepsy was negatively associated with the "negative consequences" subdimension of health anxiety and overall health literacy. Positive correlations were found between epilepsy attitudes and health literacy, while attitudes were negatively correlated with health anxiety.

**Conclusion:** Training programs should be implemented to improve teachers' knowledge of epilepsy and their first aid skills, especially for those without prior experience. These programs should address practical aspects of epilepsy, including symptoms, seizure types, and appropriate interventions. Additionally, they should offer stress management strategies to enhance teachers' confidence and preparedness.

**Keywords:** Attitude, epilepsy, health anxiety, health knowledge, health literacy, nursing, teachers

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## Introduction

Epilepsy is a neurological condition characterized by abnormal electrical discharges in the brain, affecting approximately 0.5–1% of children worldwide.<sup>1–3</sup> In Türkiye, prevalence rates vary, with 0.8% reported in the 7–17 age group<sup>4</sup> and 0.86% in the 6–14 age group.<sup>5</sup> Despite these differences, the overall prevalence among school-aged children remains high. School is a critical period for children's development, and those with epilepsy face increased risks of academic failure, learning difficulties, and behavioral disorders compared to peers with other chronic conditions.<sup>6–9</sup> Epilepsy also has emotional consequences, with many children experiencing stigma that negatively impacts their social lives.<sup>10–12</sup> Teachers who are knowledgeable about epilepsy and maintain a positive attitude can improve the peer relationships and academic success of students with epilepsy.<sup>10</sup>

Studies examining teachers' knowledge levels about epilepsy have generally found them to be low.<sup>13–15</sup> However, despite limited knowledge, teachers often demonstrate a positive attitude toward the condition. It is essential for teachers to have sufficient knowledge about their student's health conditions in order to understand and manage them effectively.<sup>16</sup>

Health literacy equips teachers with the foundational knowledge to understand general health issues and provide appropriate support for students' specific health needs.<sup>17</sup> Studies have shown that many teachers lack sufficient knowledge regarding emergency interventions during seizures and how to create a safe physical environment.<sup>18–20</sup> Teachers' knowledge levels play a crucial role in their ability to support students effectively. Factors such as anxiety levels and socioeconomic background can influence how teachers respond to health-related situations. Therefore, enhancing teachers' understanding of conditions like epilepsy and promoting their health literacy is essential.<sup>21</sup> Maintaining a calm and systematic approach is particularly important during emergencies.<sup>22</sup> However, teachers may experience fear or anxiety when witnessing epilepsy symptoms in their students.<sup>23</sup> Individuals with health anxiety are more likely to interpret physical symptoms in an excessively negative manner.<sup>24</sup> While research on health anxiety in teachers is limited, with most studies focusing on the general population,<sup>25–27</sup> the presence of health anxiety among teachers could impair their ability to manage emergencies effectively. A basic understanding of epilepsy, combined with the

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ability to respond calmly and supportively in unfamiliar or high-stress situations, can help teachers manage potential emergencies and adapt to evolving circumstances with greater confidence.

Health literacy refers to an individual's ability to access, understand, evaluate, and use health-related information. People with low health literacy may struggle to obtain accurate and reliable information about illnesses, which can lead to misconceptions and the formation of attitudes based on inadequate understanding. In contrast, individuals with high health literacy are better able to evaluate health information, develop healthier attitudes based on accurate knowledge, and more effectively apply that information. Health literacy can also shape individuals' attitudes toward epilepsy; as knowledge increases, negative biases may diminish, fostering greater empathy and support. When these factors align, health literacy can significantly influence epilepsy-related knowledge and attitudes, promoting more informed and supportive perspectives, reducing misinformation-based prejudices, and enhancing the ability to provide effective assistance. Although the importance of teachers' health literacy for school health has long been recognized,<sup>28</sup> no specific studies have focused on epilepsy in this context.

This study was conducted to address a critical gap in teachers' knowledge and attitudes regarding epilepsy, a condition that significantly affects the academic success and social integration of students. Although the importance of health literacy in managing health-related issues in schools is widely recognized, no specific study has comprehensively examined its relationship with teachers' knowledge and attitudes about epilepsy. This research aimed to fill that gap by exploring how health literacy influences teachers' ability to support students with epilepsy and effectively manage related emergencies.

## Research Questions

1. How do teachers' knowledge levels about epilepsy vary according to their personal experiences?
2. How do health anxiety and health literacy influence teachers' knowledge and attitudes toward epilepsy?

## Materials and Methods

### Study Design

This cross-sectional descriptive study was conducted using a structured online survey administered between April 1 and August 15, 2023. The study followed the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) checklist for cross-sectional studies.

### Sample Size

The study population consisted of teachers working at the primary, lower secondary, and upper secondary education levels in the Çankaya district of Ankara, Türkiye. According to records from the Ministry of National Education, there are a total of 14,939 teachers in the Çankaya district.<sup>29</sup> In this study, the sample size was calculated as 205 participants using G\*Power version 3.1.9.7, based on a confidence level of 85% and a sampling error of 5% for a known population. The survey was closed once the target sample size of 205 participants was reached. Simple random sampling, a type of cluster sampling method, was used to select participants. Teachers from primary, middle, and high schools were included. Eligibility criteria required participants to have no prior formal training on epilepsy and to provide informed consent. Those with insufficient knowledge of epilepsy or who were unable to complete the survey were excluded from the study.

### Data Collection Instruments

Data were collected using the Epilepsy Attitude Inventory (EAI), Epilepsy Knowledge Inventory (EKI), Short Health Anxiety Inventory (SHAI), and the Turkey Health Literacy Scale-32 (THLS-32). The dependent variable in this study was teachers' knowledge and attitudes toward epilepsy, while the independent variables were sociodemographic characteristics, health anxiety, and health literacy levels.

### Sociodemographic Information Form

This form consists of 10 open-ended or multiple-choice questions developed by the researchers based on a review of the literature. It aims to gather information on characteristics that may influence teachers' knowledge and attitudes toward epilepsy.<sup>13,16</sup>

### Epilepsy Attitude Inventory

Developed by Aydemir in 2008 to assess knowledge and attitudes about epilepsy in the Turkish population,<sup>30</sup> this scale originally included 15 items but was finalized with 14 items. Cronbach's  $\alpha$  was calculated as  $\alpha=0.85$ . The items are scored on a 5-point Likert scale to evaluate general attitudes (both positive and negative) toward epilepsy and individuals with epilepsy. The total score ranges from 14 to 70, with higher scores indicating a more positive attitude toward epilepsy and those affected by it.<sup>20</sup> The Cronbach's alpha value obtained in this study was 0.72.

### Epilepsy Knowledge Inventory

This inventory was developed by Aydemir (2008) to assess the level of knowledge about epilepsy within the Turkish community.<sup>30</sup> The items in the scale cover topics such as the causes of epilepsy, treatment methods, seizure triggers, social limitations associated with epilepsy, and appropriate responses during seizures. Cronbach's  $\alpha$  was calculated as  $\alpha=0.67$ .<sup>30</sup> The knowledge scale consists of 16 items, with a total score ranging from 0 to 16. Higher scores indicate greater knowledge about epilepsy. Response options are categorized as "correct," "incorrect," and "I don't know." The Cronbach's alpha value found in this study was 0.69.

### Short Health Anxiety Inventory

This is an 18-item self-report scale developed by Salkovskis et al. in 2002,<sup>31</sup> and its Turkish validity and reliability study was conducted by Aydemir et al. in 2013.<sup>32</sup> Each item is scored from 0 to 3, with higher scores indicating higher levels of health anxiety. The SHAI consists of two factors. The first factor includes the first 14 items of the scale, representing the bodily dimension, which reflects excessive sensitivity to bodily symptoms and related anxiety. The second factor comprises the last 4 items, referred to as the negative consequences subscale, which is associated with perceived adverse outcomes of the condition. The original Cronbach's alpha internal consistency coefficient for the scale was 0.91. In this study, Cronbach's alpha value was found to be 0.87.

### Turkey Health Literacy Scale-32

This scale was developed by Okyay et al. in 2016,<sup>33</sup> based on the conceptual framework of the European Health Literacy Consortium, to assess health literacy among literate individuals aged 15 and older. The scale includes two main dimensions: treatment and health services, and disease prevention and health promotion, and covers four key processes: accessing health information, understanding it, interpreting/evaluating it, and using it for health-related decision-making. The Cronbach's alpha values were 0.93 for the entire scale, 0.88 for the treatment and health services subscale, and 0.86 for the disease prevention and health promotion subscale. The scale comprises 32 items, each evaluated using a 5-point Likert-type response format. Positive statements were re-coded as 1–4, while negative statements were coded as 4–1 during score calculation. The final score was standardized into an index ranging from 0 to 50 for each participant, using the formula:

$$\text{Index} = (\text{Mean} - 1) \times [50 / 3]$$

Health literacy levels were categorized based on the index score as follows: 0–25 points indicate inadequate literacy; 25–33 points indicate problematic/limited literacy; 33–42 points indicate sufficient literacy; and 42–50 points indicate excellent health literacy.<sup>33</sup> The Cronbach's alpha value for this study was found to be 0.96.

### Data Collection

The online survey [Google Forms] link was distributed via an instant messaging application [WhatsApp] used by school principals in the Çankaya district, ensuring that it reached teachers through each school's dedicated messaging platform. To serve as reminders, the survey link was reposted at two-week intervals until the desired number of responses was obtained. Once the target number was reached, the survey was closed to further responses. Teachers who voluntarily participated and completed the online forms in full comprised the study sample. Completion of the survey took approximately 20 minutes.

### Statistical Analysis

Data were analyzed using SPSS Statistics for Windows, Version 23.0 [IBM Corp., Armonk, NY]. Statistical significance was set at  $p<0.05$ . Descriptive analyses were used to present data in terms of frequency, percentage, mean, and standard deviation. To assess the normality assumption, kurtosis and skewness coefficients ( $\pm 1.5$ )

**Table 1.** Characteristics of teachers (n=205)

	Mean±SD	Min-max
Age (years)	46.16±8.33	27–65
Years of professional experience	21.79±8.46	1–40
Characteristics	n	%
Gender		
Female	155	75.6
Male	50	24.4
Marital status		
Married	161	78.5
Single	44	21.5
School level taught		
Primary	20	9.8
Lower secondary	58	28.2
Upper secondary	127	62.0
First aid education		
Received at least one training	140	68.3
Never received training	65	31.7
A family member with epilepsy		
Yes	25	12.2
No	180	87.8
Witnessed a child having a seizure		
Yes	109	53.2
No	96	46.8
Intervened for a child with a seizure		
Yes	45	22.0
No	160	78.0
Currently teaching a child with epilepsy		
Yes	28	13.7
No	177	86.3

SD: Standard deviation

were examined. The Student's t-test (a) was used to compare the means of two independent groups when the normality assumption was met, whereas the Mann-Whitney U test (b) was employed when this assumption was violated. For comparisons involving three or more groups, the Kruskal-Wallis H test (c) was applied. The Chi-square test was used to analyze differences in categorical variables. Pearson correlation analysis was conducted to examine the relationships between scale scores.

### Ethics Approval

Ethical approval for the study was obtained from the Ethics Committee of Selçuk University [Approval Number: 2023/127, Date: 02.03.2023], and the study was conducted in accordance with the principles of the Declaration of Helsinki. Participants were informed about the purpose and nature of the study via an online consent form. The form provided detailed information regarding the study's objectives, procedures, potential risks, and the voluntary nature of participation. Prior to participation, informed consent was obtained from all participants by confirming their agreement through the consent form. To ensure participants' privacy, all collected data were securely stored, and no personally identifiable information was included in the dataset. Confidentiality was maintained throughout the study, and the data were used exclusively for research purposes. Permissions to use the scales were obtained from the respective authors, and proper citations were provided for all instruments used in the study.

### Results

The participants' average age was 46.16±8.33 years, with an average teaching experience of 21.79±8.46 years. Among the participants, 75.6% were female, 78.5% were married, and 62% worked at the high school level. Additionally, 68.3% had

**Table 2.** Mean scores for teachers' epilepsy knowledge, attitudes, health literacy, and health anxiety

Variables	Mean±SD	Min-max
Epilepsy Attitude Inventory (EAI)	41.32±5.32	18–56
Epilepsy Knowledge Inventory (EKI)	8.26±2.95	0–13
Short Health Anxiety Inventory (SHA-I) State	11.83±5.89	2–37
Negative Consequences	2.56±2.07	0–9
Turkey Health Literacy Scale-32 (THLS-32)	17.57±9.47	2.38–66.67

previously received first aid training. At the time of the study, 12.2% reported having a family member or relative with epilepsy, and 13.7% had a student diagnosed with epilepsy. Furthermore, 22% of the participants had previously intervened in a seizure episode involving a child (Table 1).

The mean score on the Epilepsy Attitude Inventory was 41.32±5.32; the Epilepsy Knowledge Inventory mean was 8.26±2.95. The Health Anxiety Scale - State subscale had a mean of 11.83±5.89, and the Negative Consequences subscale had a mean of 2.56±2.07. The mean score for Health Literacy was 17.57±9.47 (Table 2).

Participants' scores on the Epilepsy Knowledge Scale were significantly higher among those who had a family member with epilepsy, had a student diagnosed with epilepsy in their class, or had witnessed an epileptic seizure ( $p<0.05$ ). However, no significant relationship was found between age, gender, school level taught, years of teaching experience, prior first aid training, experience intervening during a child's seizure, and scores on the Epilepsy Knowledge Scale. Similarly, no significant relationship was found between participants' scores on the Epilepsy Attitude Scale and any of the examined characteristics ( $p>0.05$ ) (Table 3).

There was no correlation between participants' epilepsy knowledge and the state subscale of health anxiety ( $r=0.094$ ,  $p=0.179$ ). However, a significant negative correlation was observed between epilepsy knowledge and both the negative consequences subscale of health anxiety ( $r=-0.202$ ,  $p=0.004$ ) and health literacy ( $r=-0.198$ ,  $p=0.004$ ). Correlation analysis exploring the relationship between epilepsy attitudes and health anxiety revealed a negative relationship with both health anxiety subscales: the state subscale ( $r=-0.383$ ,  $p=0.000$ ) and the negative consequences subscale ( $r=0.575$ ,  $p=0.000$ ). In contrast, a positive correlation was found between teachers' epilepsy attitudes and health literacy ( $r=0.309$ ,  $p=0.000$ ) (Table 4).

### Discussion

The results of this study may represent an important step toward increasing awareness of epilepsy within educational institutions and addressing existing gaps in this field. As such, the findings are expected to provide a valuable roadmap for identifying key focus areas in teacher training and awareness programs.

Numerous studies conducted worldwide have shown that teachers often lack sufficient knowledge and appropriate attitudes regarding epilepsy.<sup>13–16</sup> While some research indicates that teachers may generally have positive attitudes toward individuals with epilepsy, significant gaps remain in their understanding of the condition, particularly regarding its impact in educational settings and the appropriate management of epilepsy and seizures in the classroom.<sup>34</sup> A systematic review of 54 studies from 27 countries found that, globally, teachers tend to hold negative knowledge and attitudes toward epilepsy.<sup>16</sup> The findings of our study align with these results. Analysis of the scale scores revealed that teachers' average scores on the Epilepsy Attitude Inventory indicate suboptimal levels of both knowledge and attitudes toward epilepsy.

In the present study, it was particularly observed that teachers who have a family member with epilepsy, a student diagnosed with epilepsy, or who have witnessed a seizure tend to score significantly higher on the Epilepsy Knowledge Inventory. This suggests that personal experiences may positively influence teachers' knowledge levels about epilepsy. Supporting this, studies conducted in Greece<sup>35</sup> and Italy<sup>36</sup> have shown that teachers often acquire information about epilepsy through personal experiences. These findings underscore the influential role that encounters can play in the process of knowledge acquisition. However, a study assessing attitudes toward epilepsy found that having a family member with epilepsy or encountering epilepsy-related situations did not influence primary school teachers'

Table 3. Comparison of teachers' epilepsy knowledge, attitudes, health literacy, and health anxiety scores by selected variables

Variables	Categories	EAI		EKI		SHAI state		SHAI negative consequences		THLS-32	
		Mean±SD	p	Mean±SD	p	Mean±SD	p	Mean±SD	p	Mean±SD	p
Gender	Female	41.67±4.96	0.321	7.64±3.44	0.068	11.79±5.82	0.684	2.49±1.94	0.017	17.68±9.87	0.203
	Male	40.42±6.22		8.46±2.76		11.98±6.16		2.76±2.46		17.23±8.18	
Marital status	Married	41.34±5.27	0.975	8.29±3.02	0.255	11.95±5.86	0.603	2.56±2.08	0.941	9.34±0.73	0.475
	Single	41.25±5.56		8.15±2.75		11.4±6.05		2.54±2.07		8.07±1.21	
School level taught	Primary	41.05±8.95	0.933	8.05±3.45	0.942	11.1±6.35	0.774	2.9±2.19	0.197	20.52±10.43	0.004
	Lower secondary	41.51±4.61		8.31±2.91		11.65±5.11		2.15±1.84		15.96±8.87	
	Upper secondary	41.27±4.9		8.27±2.91		12.03±6.18		2.69±2.14		17.71±8.93	
First aid education	Received at least one training	41.42±5.49	0.361	8.68±2.84	0.641	11.61±6.05	0.376	2.57±2.16	0.198	17.13±9.31	0.938
	Never received training	41.1±4.94		7.35±3.01		12.32±5.56		2.52±1.89		18.26±8.67	
A family member with epilepsy	Yes	39.88±5.33	0.767	9.92±5.51	0.021	11.36±5.16	0.866	2.6±2.14	0.771	17.72±9.36	0.665
	No	41.52±5.3		8.1±2.98		11.9±6		2.55±2.07		17.45±9.1	
Witnessed a child having a seizure	Yes	41.37±5.01	0.25	9.03±2.45	0.006	12±6.19	0.235	2.46±2.11	0.798	16.93±8.7	0.514
	No	41.26±5.67		7.38±3.2		11.64±5.56		2.63±2.04		18.12±9.56	
Intervened for a child with a seizure	Yes	40.84±5.63	0.931	9.15±2.42	0.203	11.28±5.86	0.802	2.4±2.16	0.663	16.79±9.88	0.442
	No	41.45±5.23		8.01±0.05		11.99±5.91		2.6±2.05		17.68±8.9	
Currently teaching a child with epilepsy	Yes	41.03±5.6	0.654	9.81±2.78	0.03	11.35±6.42	0.565	2.25±2.27	0.887	16.88±7.98	0.317
	No	41.36±5.28		8.01±2.96		11.91±5.82		2.61±2.04		17.58±9.29	
Age [years]		r	p	r	p	r	p	r	p	r	p
		0.23	0.746	-0.001	0.984	0.071	0.309	-0.081	0.246	0.065	0.363
Years of professional experience		0.1	0.889	0.5	0.473	-0.078	0.266	-0.058	0.407	0.6	0.396
EAI: Epilepsy attitude inventory, EKI: Epilepsy knowledge inventory, SHAI: Short Health Anxiety Inventory, THLS-32: Turkey Health Literacy Scale-32, SD: Standard deviation											

**Table 4.** Correlations between teachers' epilepsy knowledge and attitude, and their health literacy and health anxiety levels

	EKI		EAI	
	r	p	r	p
Short Health Anxiety Inventory (SHAI) - State	-0.094	0.179	<b>-0.383</b>	<b>0.000</b>
Short Health Anxiety Inventory (SHAI) - Negative Consequences	<b>-0.202</b>	<b>0.004</b>	<b>-0.575</b>	<b>0.000</b>
Turkey Health Literacy Scale-32 (THLS-32)	<b>-0.198</b>	<b>0.004</b>	<b>0.309</b>	<b>0.000</b>

EAI: Epilepsy attitude inventory, EKI: Epilepsy knowledge inventory

social attitudes toward the condition.<sup>14</sup> Such findings highlight the importance of exploring a broader range of factors that influence both knowledge and attitudes toward epilepsy. Understanding the factors that shape teachers' knowledge and attitudes toward epilepsy could contribute to the development of more effective education and awareness programs for teachers.

The study reveals that as teachers' level of knowledge about epilepsy increases, their anxiety regarding the potential negative consequences of epilepsy decreases. In other words, better-informed teachers may feel more confident and less anxious when faced with epilepsy-related situations, which may be associated with higher levels of knowledge and a greater sense of perceived control. Research specifically focusing on teachers' health anxiety is limited in the literature, with most studies addressing professional groups within broader investigations of the general population.<sup>26,27,37</sup> The negative consequences subscale of health anxiety measures individuals' negative expectations related to illnesses.<sup>32</sup> In this study, it was observed that lower levels of knowledge among teachers about epilepsy were associated with increased negative expectations regarding illness. This suggests that a lack of information may contribute to the development of overly negative perceptions about the condition. In this context, interventions aimed at improving teachers' knowledge about epilepsy may help reduce negative illness-related expectations. Lowering health anxiety may also play a role in reducing panic responses during emergencies.

The study found a negative relationship between teachers' attitudes toward epilepsy and their health anxiety. This indicates that teachers who hold more positive attitudes tend to experience less anxiety when facing epilepsy-related situations. Adopting a more open and supportive approach to epilepsy may help teachers feel more competent and calm in managing such events. One study found that three key dimensions of health anxiety (the tendency to exaggerate the likelihood of illness, perceived seriousness of illness, and response to disgusting stimuli) were positively and significantly associated with the development of health anxiety.<sup>25</sup> These tendencies are shaped by systematic education, popular media, and environmental influences.<sup>38</sup> Providing accurate information and addressing misconceptions can help teachers develop more positive attitudes. Additionally, educational sessions that promote empathy and understanding may contribute to fostering positive attitudes toward individuals with epilepsy among teachers. Creating a supportive and inclusive school environment can further enhance these positive attitudes. As previously mentioned, reducing health anxiety is also essential, as it can improve teachers' ability to manage emergency situations effectively.

Karabulut and Abi's in 2022<sup>14</sup> study found no relationship between primary school teachers' sociodemographic characteristics, previous experiences with epilepsy, and their health literacy scores. In contrast, Yilmazel's in 2023<sup>39</sup> study identified both negative attitudes toward epilepsy and limited health literacy among teachers. Previous research generally suggests that teachers possess limited health literacy, with no clear link to their personal or professional experiences.<sup>14</sup> However, in the present study, a positive relationship was identified between teachers' attitudes toward epilepsy and their health, a finding not previously reported in the literature. These findings suggest that teachers generally exhibit acceptable attitudes toward epilepsy and demonstrate proficiency in interpreting health-related information. While various policies are being implemented to improve health literacy across different communities, the number of studies specifically addressing this area is limited. Existing research primarily emphasizes the effectiveness of educational interventions in enhancing health literacy.<sup>40</sup>

For example, an intervention study conducted in India used an interactive workshop format for teachers, incorporating active participation methods such as lectures and role-playing activities. This approach resulted in increased knowledge about

epilepsy among teachers and fostered positive attitudes toward the condition.<sup>41</sup> Similarly, in Nigeria, an educational program for teachers focusing on epilepsy and first aid, delivered through a discussion-based format, led to significant improvements in both knowledge and attitudes toward epilepsy among teachers.<sup>42</sup> In Türkiye, a study implementing an educational intervention on epilepsy and seizure management for teachers also showed a notable increase in knowledge scores following the intervention.<sup>43</sup> These findings collectively demonstrate that educational programs for teachers, particularly those using interactive and discussion-based approaches, can significantly enhance both their understanding of epilepsy and their attitudes toward individuals living with the condition. The positive outcomes observed across different countries underscore the importance of such initiatives in enhancing teachers' preparedness to support students with epilepsy.

## Limitations

Since the study was conducted solely in the city of Ankara, the results may not be generalizable to teachers across all of Türkiye. Teachers' health literacy, health anxiety, and attitudes toward epilepsy may vary across different geographical regions, as well as cultural and educational contexts. Therefore, the findings of this study may primarily apply to teachers in Ankara, and similar research conducted in other provinces may yield different results. This limitation is an important factor that narrows the scope of the study's findings.

## Conclusion

The findings of this study indicate that teachers' knowledge and attitudes toward epilepsy may vary depending on personal experiences. In particular, personal experiences were found to positively influence knowledge levels, emphasizing the need for further investigation into the factors that shape teachers' understanding and attitudes regarding epilepsy. Additionally, a negative relationship was identified between health anxiety and epilepsy-related knowledge. Increased health anxiety may reinforce negative attitudes, while accurate information has the potential to improve them. Educational programs that promote empathy and foster inclusive school environments can further support the development of positive attitudes. Additionally, a positive correlation was found between attitudes toward epilepsy and health literacy, suggesting that teachers are generally capable of interpreting health-related information and tend to hold acceptable attitudes toward epilepsy. Therefore, policies aimed at improving health literacy among educators should be prioritized.

In conclusion, teachers should receive practical training in first aid for managing epileptic seizures. Community support initiatives also play a crucial role in raising epilepsy awareness. Organizing epilepsy awareness days, distributing informative materials, and developing individualized support plans can help foster lasting awareness. Such sustainable interventions can reduce stigma and promote a more inclusive educational environment.

**Ethics Committee Approval:** The study was approved by the Selçuk University Ethics Committee [Approval Number: 2023/127, Date: 02.03.2023].

**Informed Consent:** Written informed consent was obtained from the participants.

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## References

- Auer T, Schreppel P, Erker T, Schwarzer C. Impaired chloride homeostasis in epilepsy: Molecular basis, impact on treatment, and current treatment approaches. *Pharmacol Ther.* 2020;205:107422. [CrossRef]
- Bastos F, Cross JH. Epilepsy. *Handb Clin Neurol.* 2020;174:137–158. [CrossRef]
- Rubenstein S, Levy A. Seizures in childhood: Aetiology, diagnosis, treatment, and what the future may hold. *Neurology.* 2019;7:62–70. [CrossRef]
- Canpolat M, Kumandas S, Poyrazoglu HG, Gumus H, Elmali F, Per H. Prevalence and risk factors of epilepsy among school children in Kayseri City Center, an urban area in Central Anatolia, Turkey. *Seizure.* 2014;23(9):708–716. [CrossRef]
- Huseyinoglu N, Ozben S, Arhan E, Palanci Y, Gunes N. Prevalence and risk factors of epilepsy among school children in eastern Turkey. *Pediatr Neurol.* 2012;47(1):13–18. [CrossRef]
- Aydin A, Ergor A, Ergor G, Dirik E. The prevalence of epilepsy amongst school children in Izmir, Turkey. *Seizure.* 2002;11(6):392–396. [CrossRef]
- Beghi E. Addressing the burden of epilepsy: Many unmet needs. *Pharmacol Res.* 2016;107:79–84. [CrossRef]
- Davies S, Heyman I, Goodman R. A population survey of mental health problems in children with epilepsy. *Dev Med Child Neurol.* 2003;45(5):292–295. [CrossRef]
- Wu YP, Follansbee-Junger K, Rausch J, Modi A. Parent and family stress factors predict health-related quality in pediatric patients with new-onset epilepsy. *Epilepsia.* 2014;55(6):866–877. [CrossRef]
- Elhassan MA, Alemairy AA, Amara ZM, Hamadelneel AA, Mohamed AH, Elaimer AA. Epilepsy: Knowledge, attitude, and practice among secondary school teachers in khartoum state. *Neurol Ther.* 2017;6(2):225–235. [CrossRef]
- Kotsaki K. A historical review on stigma of epilepsy and its interactive factors. *Glob J Intellect Dev Disabil.* 2022;8(3):2575–8586.
- Ustuner Top F, Cam HH, Bora Güneş N. Perceptions of stigma of children with epilepsy and their parents and its effects on social life. *Curr Psychol.* 2024;43(1):62–71. [CrossRef]
- Assadeck H, Toudou Daouda M, Moussa Konate M, Mamadou Z, Douma Maiga D, Sanoussi S. Knowledge, attitudes, and practices with respect to epilepsy among primary and secondary school teachers in the city of Niamey, Niger. *Brain Behav.* 2020;10(3):e01539. [CrossRef]
- Karabulut N, Abi Ö. Primary school teachers' health literacy levels, knowledge, and attitudes toward childhood epilepsy. *Epilepsy Behav.* 2022;127:108511. [CrossRef]
- Sansa E, Fray S, Jamoussi H, Chebbi S, Ben Mahmoud M, Ben Ali N, et al. Knowledge and attitudes toward epilepsy among teachers in Tunisia. *Epilepsy Behav.* 2021;123:108260. [CrossRef]
- Jones C, Atkinson P, Helen Cross J, Reilly C. Knowledge of and attitudes towards epilepsy among teachers: A systematic review. *Epilepsy Behav.* 2018;87:59–68. [CrossRef]
- Liu C, Wang D, Liu C, Jiang J, Wang X, Chen H, et al. What is the meaning of health literacy? A systematic review and qualitative synthesis. *Fam Med Community Health.* 2020;8(2):e000351. [CrossRef]
- Aleid DK, Alanazi AA, Kokandi AA, Aljahany MS. Epilepsy and seizures: Knowledge, attitudes and first aid practice among school teachers in Saudi Arabia. *Epilepsy Seizure.* 2020;12(1):28–39. [CrossRef]
- Alharthi WM, Almalki SR, Alkhaldi AA, Althobati NM, Alomairi NE, Atalah AA, et al. Knowledge, attitude and practice about epilepsy among elementary school teachers in Taif city, Saudi Arabia. *World Fam Med J.* 2019;99(6515):1–9.
- Alkhotani AM, Almalki WM, Alkhotani AM, Turkistani MA. Makkah female teachers' knowledge of seizure first aid. *Epilepsy Behav.* 2019;98:10–13. [CrossRef]
- Liu R, Yu M, Zhao Q, Wang J, Bai Y, Chen H, et al. Are personal health literacy and school health literacy environment important to schoolteachers' health outcomes? *medRxiv.* 2024. Preprint. [CrossRef]
- Chatzipanagiotou P, Katsarou E. Crisis management, school leadership in disruptive times and the recovery of schools in the post COVID-19 era: A systematic literature review. *Educ Sci.* 2023;13(2):118. [CrossRef]
- Yang L, Lu Q, Tang W, Ji J, Tang P, Jiang Y, et al. Teachers' experiences of managing children with epilepsy in school: A qualitative study. *Epilepsy Behav.* 2021;121:108039. [CrossRef]
- Abramowitz JS, Olatunji BO, Deacon BJ. Health anxiety, hypochondriasis, and the anxiety disorders. *Behav Ther.* 2007;38(1):86–94. [CrossRef]
- Asmundson GJ, Abramowitz JS, Richter AA, Whedon M. Health anxiety: Current perspectives and future directions. *Curr Psychiatry Rep.* 2010;12(4):306–312. [CrossRef]
- Barrett LC. Teaching teachers about school health emergencies. *J Sch Nurs.* 2001;17(6):316–322. [CrossRef]
- Özdin S, Bayrak Özdin Ş. Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: The importance of gender. *Int J Soc Psychiatry.* 2020;66(5):504–511. [CrossRef]
- Okan O, Paakkari L, Dadaczynski K. Health literacy in schools: State of the art. *Schools for Health in Europe.* 2020.
- Ankara Çankaya Milli Eğitim Müdürlüğü. Accessed April 15, 2025. <https://cankaya.meb.gov.tr/>
- Aydemir N. Developing two different measures for assessing knowledge of and attitudes toward epilepsy for the Turkish population. *Epilepsy Behav.* 2008;12(1):84–89. [CrossRef]
- Salkovskis PM, Rimes KA, Warwick HM, Clark DM. The Health Anxiety Inventory: Development and validation of scales for the measurement of health anxiety and hypochondriasis. *Psychol Med.* 2002;32(5):843–853. [CrossRef]
- Aydemir Ö, Kirpinar I, Sati T, Uykur B, Cengiz S. Sağlık Anksiyetesi Ölçeği'nin Türkçe için güvenilirlik ve geçerlilik çalışması. *Arch Neuropsychiatr.* 2013;50(4):325–331. [CrossRef]
- Okuyap P, Abacıgil F, Harlak H. Türkiye Sağlık Okuryazarlığı Ölçeği-32 (TSOY-32). In: Türkiye sağlık okuryazarlığı ölçekleri güvenilirlik ve geçerlilik çalışması. 2016;43–61.
- Bishop M, Boag EM. Teachers' knowledge about epilepsy and attitudes toward students with epilepsy: Results of a national survey. *Epilepsy Behav.* 2006;8(2):397–405. [CrossRef]
- Kampra M, Tzerakis NG, Losidis S, Katsarou E, Voudris K, Mastroyianni S, et al. Teachers' knowledge about epilepsy in Greece: Information sources and attitudes towards children with epilepsy during school time. *Epilepsy Behav.* 2016;60:218–224. [CrossRef]
- Iannone LF, Roberti R, Arena G, Mammoni S, Pulitano P, De Sarro G, et al. Assessing knowledge and attitudes toward epilepsy among schoolteachers and students: Implications for inclusion and safety in the educational system. *PLoS One.* 2021;16(4):e0249681. [CrossRef]
- Asmundson GJG, Taylor S. How health anxiety influences responses to viral outbreaks like COVID-19: What all decision-makers, health authorities, and health care professionals need to know. *J Anxiety Disord.* 2020;71:102211. [CrossRef]
- Du X, Witthöft M, Zhang T, Shi C, Ren Z. Interpretation bias in health anxiety: A systematic review and meta-analysis. *Psychol Med.* 2023;53(1):34–45. [CrossRef]
- Yilmazel G. Teachers' negative attitudes and limited health literacy levels as risks for low awareness of epilepsy in Turkey. *J Prev Med Public Health.* 2023;56(6):573–582. [CrossRef]
- Nutbeam D, McGill B, Premkumar P. Improving health literacy in community populations: A review of progress. *Health Promot Int.* 2018;33(5):901–911. [CrossRef]
- Sulena S, Singh G, Tyagi D, Bansal N, Padda P, Garg R, et al. Epilepsy smart schools: Educational intervention improves knowledge, attitude, and practices regarding epilepsy among school teachers. *Epilepsy Behav.* 2023;141:109138. [CrossRef]
- Eze CN, Ebuehi OM, Brigo F, Otte WM, Igwe SC. Effect of health education on trainee teachers' knowledge, attitudes, and first aid management of epilepsy: An interventional study. *Seizure.* 2015;33:46–53. [CrossRef]
- Kartal M, Karakaş N, Tuz P, Kapıkıran G. The evaluation of the training, "The approach to epilepsy and epileptic seizure," which was given to teachers in Türkiye. *Brain Behav.* 2024;14(5):e3538. [CrossRef]