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Article

The Extent of Parents Awareness Towards Absence Seizures Among Children

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Abstract: Absence seizures in children represent a nuanced aspect of pediatric epilepsy that often goes unrecognized or misunderstood among the general population. The level of awareness and attitudes towards absence seizures among parents play a crucial role in the timely diagnosis and management of this condition. This study aimed to evaluate the extent of parents awareness and their attitudes towards absence seizures in children, examining correlations with demographic factors to identify areas for targeted educational interventions. This cross-sectional study involved 92 participants, comprising parents from diverse demographic backgrounds. Data were collected through structured questionnaires that assessed knowledge levels (good, moderate, poor) and attitudes (good, moderate, poor) towards absence seizures. Demographic variables included sex, age group, educational level, residence, employment status, marital status, and family income. Statistical analysis was conducted to explore correlations between demographic data and both awareness levels and attitudes towards absence seizures. The majority of participants exhibited poor knowledge (69.6%) and moderate to good attitudes (68.5%) towards absence seizures. No significant correlation was found between demographic factors and knowledge levels, except for residence, where participants living outside Tikrit showed significantly higher awareness ($P<0.05$). Similarly, attitudes were significantly influenced by residence ($P<0.05$), with more positive attitudes observed among participants living outside Tikrit. Other demographic variables did not show a significant impact on attitudes towards absence seizures. The study highlights a significant gap in awareness and a moderately positive attitude towards absence seizures among parents, with geographical location being a significant factor. The findings underscore the need for targeted educational programs, especially in areas with lower awareness, to enhance understanding and foster more supportive attitudes towards children with absence seizures.

Keywords: absence seizure, children, parents awareness

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1. Introduction

In recent years, there has been growing awareness of the impact of having a child with epilepsy on parents, as well as the influence of parental knowledge and attitudes towards epilepsy on the affected child [1], [2]. Additionally, the attitudes of parents towards epilepsy were found to be just as important in influencing a child's outcome as the child's seizure history and the duration of their epilepsy [3]. Moreover, a substantial number of parents still have unmet information and support needs that persist at a significant level during the initial two years following their child's epilepsy diagnosis [4].

Absence seizures in children are brief, recurring episodes of unconsciousness, often accompanied by simple repetitive movements or other types of movements. There are two main types: typical and atypical [5]. In the U.S., absence seizures affect 1.9 to 8 people per 100,000, with their impact lessened by effective treatment. These seizures, more common

in females, especially in childhood, can lead to fatal accidents if they occur during dangerous activities. Morbidity is mainly due to the underlying condition in children. The onset age varies: 4-8 years for childhood absence epilepsy, around puberty for juvenile absence epilepsy, and 8-26 years for juvenile myoclonic epilepsy. Early detection and treatment are key to preventing educational and behavioral complications [6].

Typical absence seizures usually happen in children with normal development and intelligence. They typically last about 10 seconds and are characterized by regular, symmetrical spike-and-wave patterns in the brain's electrical activity, with a frequency of 3 Hz, which is a hallmark of this condition. If not treated, these seizures can significantly affect a child's physical safety, education, and overall quality of life. However, most typical absence seizures can be effectively managed with anticonvulsant medications [7].

In the context of Tikrit City, a home to a diverse population, where health awareness varies significantly among its inhabitants. limited attention has been directed specifically towards understanding the community's awareness of absence seizures, this is generally the case for most developing countries [3], [8]. Given the significance of early detection and its impact on a child's academic performance, social interactions, and overall well-being, it is paramount to explore the extent of parents' knowledge and awareness of this particular type of seizure.

This study aims to bridge the gap in literature regarding parents' awareness towards absence seizures among children in Tikrit. By shedding light on this topic, the research seeks not only to identify potential areas of educational need but also to drive community interventions that can lead to timely diagnoses and improved outcomes for affected children. Epilepsy, a neurological disorder marked by recurrent seizures, manifests in various forms, of which absence seizure (AS) is distinguished by a transient alteration in cognitive awareness accompanied by brief, recurrent episodes of fixed gaze, in conjunction with specific electroencephalogram (EEG) alterations. Occasionally, it may be linked to automatism or ocular flutter [9], [10].

Episodes are commonly observed as recurring events throughout the day, characterized by a duration of a few seconds (2-10 s) on average, while some individuals may experience longer episodes (>10s). The description of an ictal episode encompasses the abrupt stop of motor activity accompanied by a vacant gaze and unresponsiveness, subsequently followed by the recovery of previous motor activity and visual responsiveness [11]. Absence seizures are short seizures marked by a sudden pause in behavior, which is linked to specific electrical patterns (3-Hertz spike-and-wave) seen on an EEG. They are seen in several genetic generalized epilepsy types, including childhood absence epilepsy (CAE), juvenile absence epilepsy (JAE), and juvenile myoclonic epilepsy (JME). Atypical absence seizures can also occur in about 60% of individuals with Lennox-Gastaut syndrome [12], [13]. In the past, absence epilepsy was referred to as "pyknolepsy," which comes from the Greek word "pyknos," meaning "very frequent" or "grouped." The term "petit mal" seizure was previously used to describe absence seizures but is no longer recommended [7]. Absence seizure is sometimes confused with Attention Deficit Hyperactivity Disorder (ADHD), which is a prevalent neurodevelopmental condition that impacts children and frequently persists into adulthood. Manifesting in challenges in sustaining attention, an impaired capacity to regulate impulsive actions characterized by acting without deliberation of potential outcomes, and a heightened level of hyperactivity [14]. There is a genetic component in all generalized epilepsies, including absence epilepsy. In 1951, Lennox reported that 66% of identical twins shared the 3-Hertz spike-and-wave EEG pattern, suggesting a genetic link. Doose et al. studied 252 absence epilepsy patients with this pattern and suggested multifactorial inheritance. Several genes, including the voltage-gated T-type calcium channel gene, GABA-A receptor subunits GABRG2 and GABRG3, and the CACNA1A gene, are thought to play a role in the development of this epilepsy syndrome [15], [16].

Additionally, certain copy number variants (CNVs) like 15q11.2, 15q13.3, and 16p13.11 microdeletions have been found in some childhood absence epilepsy patients. However, the exact inheritance mode and most of the genes involved in CAE are still not fully understood [17]. Childhood absence epilepsy affects approximately 6.3 to 8.0 children per 100,000 each year, making it a common pediatric epilepsy syndrome. It accounts for 10% to 17% of all epilepsy cases in school-aged children [18]. The initial observation and comprehensive documentation of absence seizures can be attributed to Poupart, with Calmeil being credited as the first to employ the term "absence" in reference to these seizures [19]. Absence epilepsy constitutes a prevalence ranging from 2% to 10% among the overall population of children diagnosed with epilepsy [20]. The phenomenon generally takes place within the age range of 4 to 10 years, with its highest point observed between 5 and 7 years of age [17]. Absence seizures are commonly classified into two distinct categories, namely conventional and atypical absence seizures:

1) Conventional Absence Seizures: Brief, generalized seizures with a sudden start and end. They are marked by an altered state of consciousness and 3-Hz spike-and-slow-wave patterns on EEG [21].
2) Atypical Absence Seizures: More commonly found in children with learning disabilities and those who exhibit other seizure forms like myoclonic, tonic, and atonic seizures. These don't have a distinct start and finish, and might display changes in muscle tone. The EEG readings for this type often show slow spike and wave activity [22]. Neurons in the thalamic nucleus reticularis have two firing patterns: oscillatory (like sleep spindles) and continuous spikes (during wakefulness). These patterns shift due to spikes in thalamocortical networks and reticularis neurons. This shift is influenced by T-type calcium channels, which briefly allow calcium in after depolarization, then become inactive. Re-activation needs a long hyperpolarization via GABA-B receptors. Abnormal rhythms can arise from T-type channel issues or increased GABA-B activity [17]. The genetics of absence epilepsy link genes related to T-type calcium channels and GABA receptors to its development. Medications that block T-type calcium channels, like ethosuximide and valproate, are effective against absence seizures. On the other hand, drugs that boost GABA-B activity, such as vigabatrin, worsen absence seizures. However, GABA-A agonists like benzodiazepines, which enhance GABA activity in reticularis neurons, can suppress absence seizures [17]. Childhood absence epilepsy (CAE) typically starts between 4 and 10 years old, with a peak between 5 and 7 years old. If absence epilepsy begins before age four, it may indicate an underlying glucose transporter type 1 (GLUT1) deficiency and requires further evaluation [7]. In terms of clinical presentation, family members and teachers often observe short episodes where the patient loses awareness, becomes unresponsive, and experiences a behavioral pause. They describe the patient as having a "blank stare" during these spells. These episodes can happen frequently, ranging from 10 to more than 30 times a day. Most children completely stop their activity during these episodes, although some may continue it at a slower or unusual pace. In some cases, there may be 3-Hertz regular eyelid fluttering [12], [13]. During absence seizures, oral automatisms may occur, particularly during prolonged seizures or when hyperventilating. Children often exhibit mild clonic or tonic movements in the first few seconds of the episode. Pallor is frequently reported, while urinary incontinence is rare. These spells usually last between 4 and 30 seconds. Factors like hyperventilation, increased arousal, sleep

deprivation, and medication usage can influence the seizure's duration. Importantly, these seizures do not have an aura preceding them and do not result in a postictal state afterward [7], [23]. For Juvenile Absence Epilepsy (JAE), the typical age of onset is between 10 and 19 years, with a peak around 15 years old. Seizures in JAE are less frequent than in Childhood Absence Epilepsy (CAE) but tend to have longer durations. Additionally, it's worth noting that about ten to fifteen percent of patients with childhood absence epilepsy have a history of febrile seizures [24]. During a physical examination, absence seizures can be triggered by hyperventilation. To perform this test, the examiner asks the child to blow repeatedly for more than 2 minutes, often using a pinwheel or paper to encourage cooperation. Successful hyperventilation can lead to the development of seizures, which can be observed clinically and/or on an EEG. It's worth noting that absence seizures may be more easily provoked when the person is in a sitting position [25]. Absence status refers to generalized, non-convulsive seizures marked by impaired awareness and sometimes accompanied by other manifestations like automatisms or subtle movements such as myoclonic, tonic, atonic, or autonomic phenomena. Typically, patients already have a prior diagnosis of generalized epilepsy. These non-convulsive seizures can last anywhere from half an hour to several days. They often end abruptly on their own, but it's important to treat them with anti-seizure medications upon diagnosis [26]. EEG is the primary diagnostic tool for assessing absence epilepsy. In childhood absence seizures, EEG typically reveals bilaterally synchronous and symmetrical 3-Hertz spike-and-wave discharges that start and end suddenly. Sometimes, these discharges may have maximum frontal amplitude or begin with unilateral focal spikes. In 50% of childhood absence epilepsy seizures, the initial discharge is the typical spike-and-wave pattern, while the remaining 50% can show a single spike, polyspikes, or an atypical, irregular, generalized spike-and-wave. The EEG background is usually normal. In contrast, atypical absence seizures have a more gradual onset and offset, slower spike-and-wave patterns (less than 3 Hertz), and an abnormal interictal background [17].

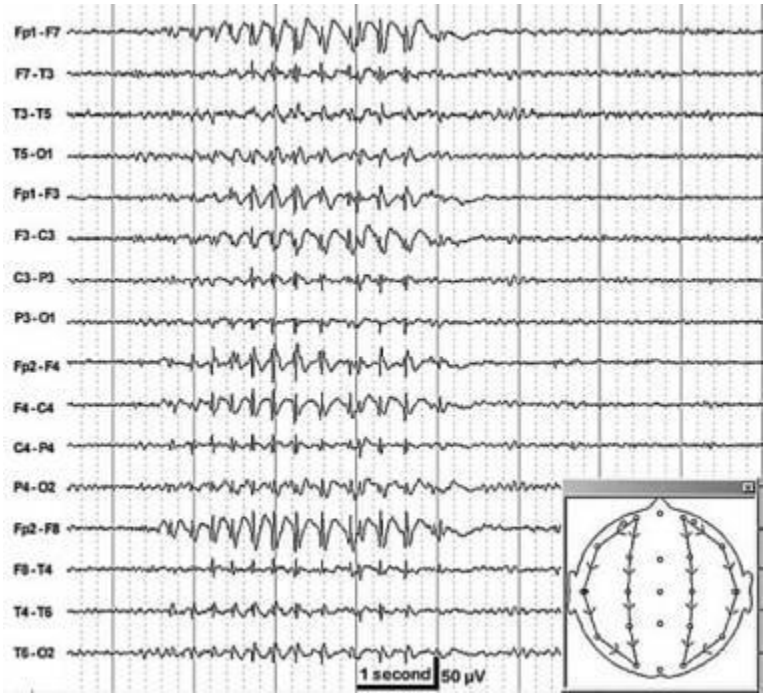

Figure 1. EEG of a typical absence seizure with 3-Hz spike-and-wave discharges [6].

Patients with Childhood Absence Epilepsy (CAE) often exhibit cognitive deficits, particularly in attention, executive function, verbal and visuospatial memory, and language and reading skills. Additionally, they may experience higher rates of depression, anxiety, and attention deficit/hyperactivity disorder. Imaging studies are not routinely performed for CAE due to its generalized nature. For Juvenile Absence Epilepsy (JAE), EEG typically shows generalized 3- to 4-Hertz spike-and-wave or polyspike-and-wave discharges. In cases of absence status, EEG reveals continuous or nearly-continuous generalized spike-and-wave or polyspike-and-wave discharges at 2 to 4 Hertz [7]. The ramifications of absence seizures in pediatric patients are characterized by several manifestations, such as attention deficit, social isolation, and altered mood. Additionally, there is a notable presence of comorbidities, particularly learning difficulties, which commonly impact the individual's reading proficiency. The given coordinates are [27], [28]. Learning difficulties sometimes have a detrimental impact on various academic domains, such as writing, reading, and mathematical abilities, thereby impeding academic accomplishments [29]. Moreover, it is commonly observed that children diagnosed with epilepsy, along with their families, often encounter instances of prejudice and societal stigma throughout numerous countries on a global scale [30]. The pharmacological agents commonly employed for the management of absence seizures in pediatric and adolescent populations encompass ethosuximide, lamotrigine, and valproate [31]. Ethosuximide is considered the preferred medication for first monotherapy in the treatment of typical absence seizures, whereas sodium valproate is the preferred medication for absence seizures when there is a concurrent occurrence of generalized tonic-clonic seizure [32]. A 2010 randomized controlled trial involving 446 children with Childhood Absence Epilepsy (CAE) demonstrated that both ethosuximide and valproic acid were more effective than lamotrigine in managing the condition [33].

In the mentioned study, the seizure-free rates were relatively low, with 53% of patients in the ethosuximide group, 58% in the valproic acid group, and 29% in the lamotrigine group achieving seizure freedom. Notably, the valproic acid group showed lower attentional scores compared to the ethosuximide and lamotrigine groups, making ethosuximide the preferred choice for treating absence epilepsy. Another study revealed that only one-quarter of children with absence epilepsy became seizure-free with levetiracetam. Levetiracetam can effectively control absence epilepsy at a relatively low dose, typically less than 40 mg/kg/day [34].

The most common side effects of ethosuximide are abdominal pain and nausea, which is why it should be taken with meals to mitigate these effects. Other medications suitable for managing Childhood Absence Epilepsy (CAE) include valproate, lamotrigine, and topiramate. If needed as an adjunct therapy, second-line medications like valproic acid, zonisamide, and levetiracetam can be considered.

Some medications, like phenytoin, carbamazepine, gabapentin, pregabalin, and vigabatrin, can worsen absence seizures and should be avoided in their treatment. For women of childbearing age who are not using contraception, valproic acid is not recommended, and ethosuximide is the preferred option. While there are suggestions from experts about the potential benefits of a ketogenic or medium-chain triglyceride diet, the evidence supporting their effectiveness in treating absence epilepsy is limited. Overall, it's important to choose appropriate medications and consider the patient's individual circumstances and needs in the management of absence epilepsy [17].

2. Materials and Methods

2.1. Study design

The impending research utilized a descriptive cross-sectional study design. This approach was chosen as it effectively provided a snapshot of the level of awareness among parents regarding absence seizures within a specific timeframe in Tikrit City. A structured questionnaire was developed to assess the following:

- The level of knowledge parents possessed regarding absence seizures
- The attitudes of parents towards absence seizures.

The questionnaire consisted of closed-ended and open-ended questions. And was designed in both printed and online form in google forms.

2.2. Sample selection

This descriptive cross-sectional study was conducted in Tikrit city between November 2023 and January 2024. The target population was parents of school students in Tikrit city from various primary, secondary, and high schools.

2.3. Knowledge and attitude assessment

The questionnaire contained 9 questions to assess knowledge and 4 questions to assess attitude. Each participant would get a score of 0-9 for their knowledge and 0-4 for their attitude. The score are then converted to a percentage of 0-100% where less than 50% is considered poor, 50-70% is considered moderate and above 70% is considered good.

2.4. Data management and analysis

Upon completion of data collection, responses were diligently entered into Microsoft Excel 2020 for data management purposes. Every effort was made to ensure the accuracy of data entry, and any missing or inconsistent responses were addressed promptly. Confidentiality of participants was maintained throughout the process. For comprehensive statistical analysis, IBM SPSS version 27 was used. Descriptive statistics, chi-square tests, and t-tests were applied, depending on the nature of the data.

2.5. Inclusion criteria

1) Adult parents or legal guardians of children aged 0-18 years
2) Those willing to participate and provided informed consent.

2.6. Exclusion criteria

1) Parents or legal guardians who did not provide informed consent
2) Parents or legal guardians with a history of cognitive or psychiatric disorders that might have affected their ability to understand or answer the questionnaire.
3) Parents below the age of 18.

2.7. Ethical considerations

Ethical approval was sought from the research ethics committee of the Tikrit teaching hospital. Informed consent was obtained from all participants before administering the questionnaire, and they were informed that they were free to discontinue the questionnaire whenever they pleased. All data were anonymized to ensure privacy.

3. Results

Table 1. Descriptive statistics of study participants (N=92)

Variable		Count	%
Sex	**Female**	50	54.3%
	Male	42	45.7%
Age Group	**18-28**	64	69.6%
	29-39	14	15.2%
	40-50	10	10.9%
	>50	4	4.3%
Educational level	**Illiterate**	3	3.3%
	High/Middle school	19	20.7%
	Bachelor's	64	69.6%
	Master's or more	6	6.5%
Residence	**Outside Tikrit**	59	64.1%
	Tikrit	33	35.9%
Employment status	**Employed**	36	39.1%
	Student	35	38.0%
	Unemployed	21	22.8%
Marital status	**Divorced**	4	4.3%
	Married	79	85.9%
	Widowed	9	9.8%

Family income	**Less than 500,000 IQD**	27	29.3%
	500,000 - 1,000,000 IQD	44	47.8%
	1,000,000 – 1,500,000 IQD	12	13.0%
	More than 1,500,000 IQD	9	9.8%

The study sample comprised slightly more females (54.3%, n=50) than males (45.7%, n=42). The majority of participants were in the age group of 18-28 years (69.6%, n=64), followed by those aged 29-39 years (15.2%, n=14), 40-50 years (10.9%, n=10), and those over 50 years (4.3%, n=4). Concerning educational level, most participants held a Bachelor's degree (69.6%, n=64), followed by high/middle school education (20.7%, n=19), Master's or more (6.5%, n=6), and a few were illiterate (3.3%, n=3).

Residentially, a significant portion of the participants lived outside Tikrit (64.1%, n=59), as opposed to those residing within Tikrit (35.9%, n=33). Employment status showed a close split between those employed (39.1%, n=36) and students (38.0%, n=35), with the unemployed constituting 22.8% (n=21) of the sample. The marital status of the participants was predominantly married (85.9%, n=79), with fewer being widowed (9.8%, n=9) or divorced (4.3%, n=4). In terms of family income, nearly half of the participants (47.8%, n=44) reported earnings between 500,000 and 1,000,000 IQD, followed by those earning less than 500,000 IQD (29.3%, n=27), 1,000,000 – 1,500,000 IQD (13.0%, n=12), and more than 1,500,000 IQD (9.8%, n=9).

Table 2. Knowledge and attitude about absence seizures (N=92)

Variable		Count	%
Knowledge	**Good**	7	7.6%
	Moderate	21	22.8%
	Poor	64	69.6%
Attitude	**Good**	26	28.3%
	Moderate	37	40.2%
	Poor	29	31.5%

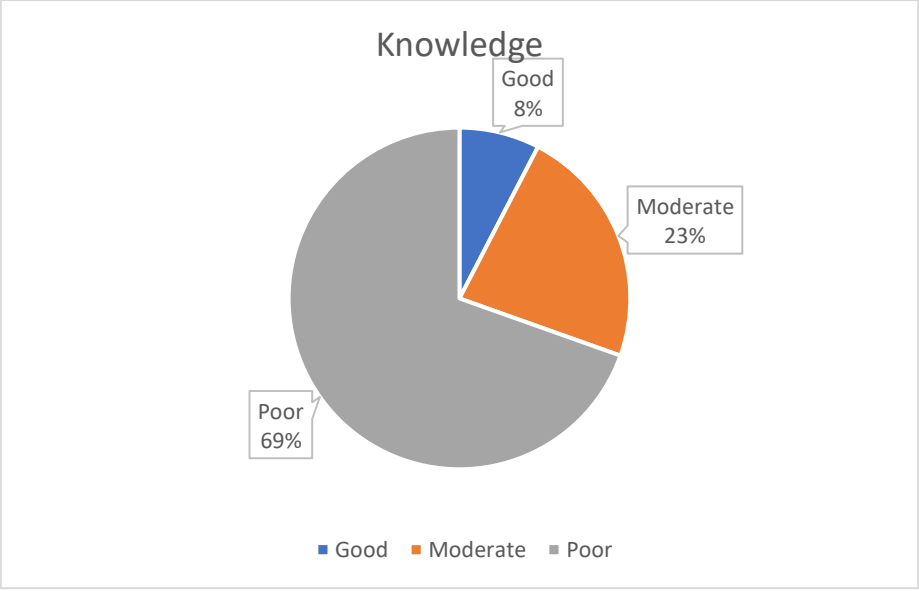

Figure 2. Knowledge about absence seizure among study population

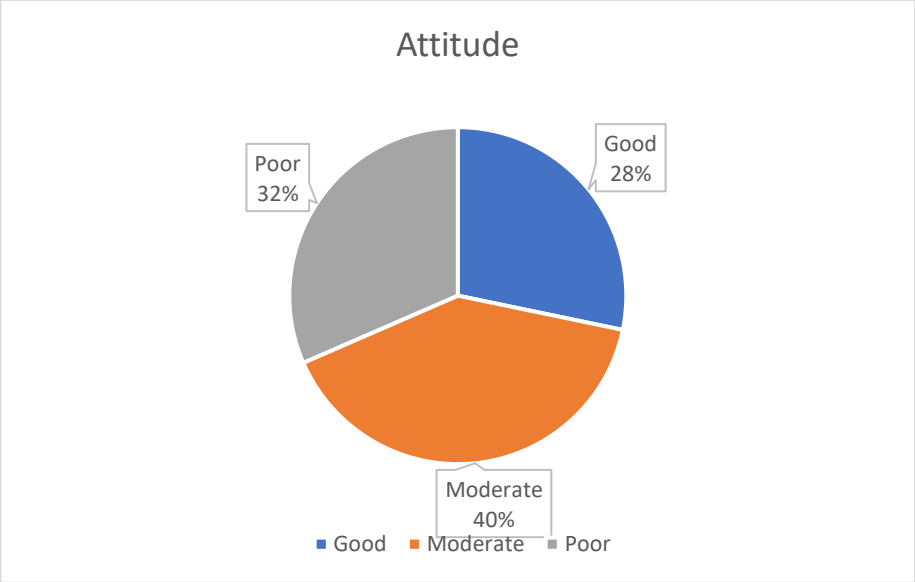

Figure 3. Attitude towards absence seizure among study population

Regarding knowledge of absence seizures, the majority of participants exhibited poor knowledge (69.6%, n=64), followed by those with moderate knowledge (22.8%, n=21), and a small fraction with good knowledge (7.6%, n=7). This indicates a significant gap in awareness and understanding of absence seizures among the parents surveyed.

When analyzing attitudes towards absence seizures, the results showed a relatively better scenario with 28.3% (n=26) of the participants having a good attitude towards the condition. However, the largest group had a moderate attitude (40.2%, n=37), and a considerable number still displayed a poor attitude (31.5%, n=29).

Table 3. Correlations between the demographic data and the awareness level (N=92)

Variable		Knowledge			P-value
		Good	Moderate	Poor	
Sex	**Female**	8.0%	16.0%	76.0%	>0.05
	Male	7.1%	31.0%	61.9%	
Age group	**18-28**	9.4%	29.7%	60.9%	>0.05
	29-39	7.1%	7.1%	85.7%	
	40-50	0.0%	10.0%	90.0%	
	>50	0.0%	0.0%	100.0%	
Educational level	**Illiterate**	0.0%	0.0%	100.0%	>0.05
	High/Middle school	0.0%	10.5%	89.5%	
	Bachelor's	10.9%	26.6%	62.5%	
	Master's or more	0.0%	33.3%	66.7%	
Residence	**Outside Tikrit**	6.8%	32.2%	61.0%	**<0.05***
	Tikrit	9.1%	6.1%	84.8%	
Employment status	**Employed**	8.3%	19.4%	72.2%	>0.05
	Student	11.4%	31.4%	57.1%	
	Unemployed	0.0%	14.3%	85.7%	
Marital status	**Divorced**	0.0%	25.0%	75.0%	>0.05
	Married	7.6%	22.8%	69.6%	

	Widowed	11.1%	22.2%	66.7%	
Family income	**Less than 500,000 IQD**	3.7%	22.2%	74.1%	>0.05
	500,000 - 1,000,000 IQD	13.6%	20.5%	65.9%	
	1,000,000 – 1,500,000 IQD	0.0%	33.3%	66.7%	
	More than 1,500,000 IQD	0.0%	22.2%	77.8%	

3.1. Sex and awareness level

The distribution of awareness levels by sex shows that females had a slightly higher percentage of poor knowledge (76%) compared to males (61.9%), with males having a higher proportion of moderate knowledge (31%). However, the difference in knowledge levels between sexes was not statistically significant (P>0.05), suggesting that sex may not be a determining factor in the awareness of absence seizures.

3.2. Age group and awareness level

Awareness levels varied across age groups, with the 18-28 age group showing a better balance between moderate (29.7%) and poor knowledge (60.9%). Knowledge levels tended to decrease with increasing age, with those over 50 years all having poor knowledge. Nonetheless, these differences across age groups were not statistically significant (P>0.05).

3.3. Educational level and awareness level

Educational level showed a trend where higher education correlated with slightly better knowledge levels. Bachelor's degree holders had the highest percentage of good knowledge (10.9%) and moderate knowledge (26.6%). However, the differences in knowledge levels across educational groups were not statistically significant (P>0.05), indicating that educational level alone may not significantly influence awareness of absence seizures.

3.4. Residence and awareness level

A significant correlation was found between residence and awareness level (P<0.05). Participants living outside Tikrit exhibited a higher percentage of moderate knowledge (32.2%) compared to those living in Tikrit, who had a higher percentage of poor knowledge (84.8%). This suggests that geographical location may play a role in the level of awareness regarding absence seizures.

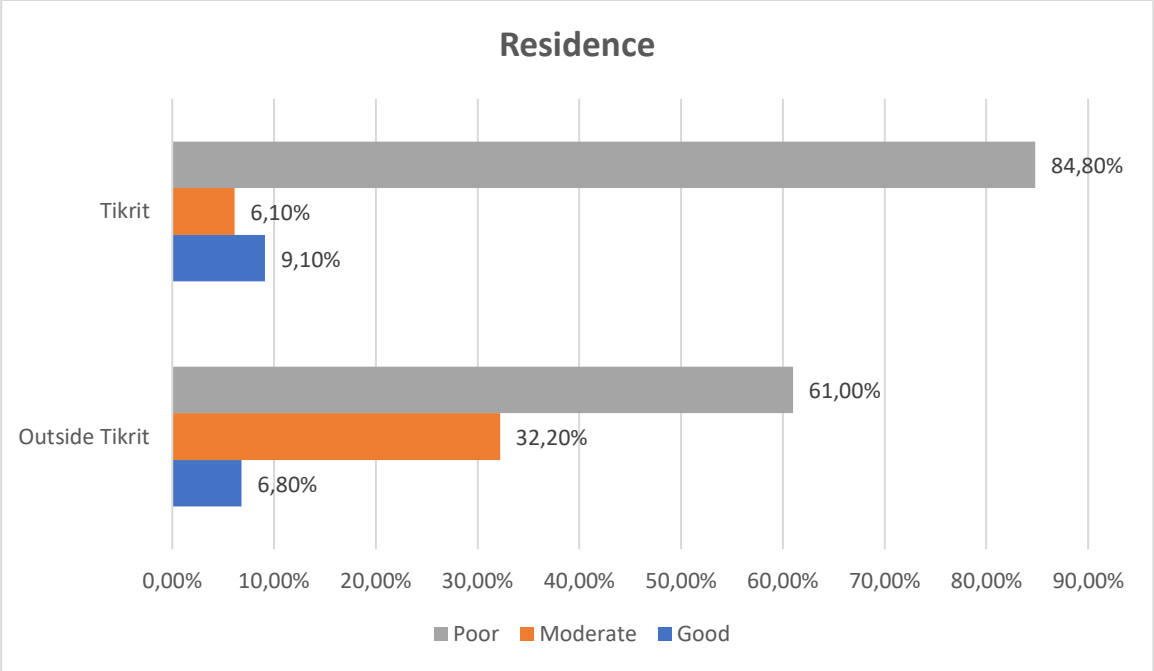

Figure 4. Knowledge according to residence in Tikrit

3.5. Employment status and awareness level

The distribution of knowledge across different employment statuses did not show significant differences (P>0.05). Students displayed a relatively higher percentage of moderate knowledge (31.4%) compared to employed and unemployed participants, suggesting a slight trend towards better awareness among students, although not statistically significant.

3.6. Marital status and awareness level

Marital status did not significantly affect the knowledge levels (P>0.05), with all groups primarily exhibiting poor knowledge, though widowed participants showed a slightly higher good knowledge percentage (11.1%).

3.7. Family income and awareness level

Family income did not show a statistically significant correlation with awareness levels (P>0.05), despite some variation in the distribution of knowledge across different income levels. Participants with a family income of 500,000 - 1,000,000 IQD showed the highest percentage of good knowledge (13.6%).

Table 4. Correlations between the demographic data and attitude (N=92)

Variable		Attitude			P-value
		Good	Moderate	Poor	
Sex	**Female**	34.0%	38.0%	28.0%	>0.05
	Male	21.4%	42.9%	35.7%	
Age group	**18-28**	31.3%	40.6%	28.1%	>0.05
	29-39	21.4%	57.1%	21.4%	
	40-50	10.0%	20.0%	70.0%	
	>50	50.0%	25.0%	25.0%	
Educational level	**Illiterate**	33.3%	0.0%	66.7%	>0.05
	High/Middle school	15.8%	52.6%	31.6%	
	Bachelor's	31.3%	39.1%	29.7%	
	Master's or more	33.3%	33.3%	33.3%	
Residence	**Outside Tikrit**	30.5%	47.5%	22.0%	**<0.05***
	Tikrit	24.2%	27.3%	48.5%	
Employment status	**Employed**	22.2%	44.4%	33.3%	>0.05
	Student	37.1%	37.1%	25.7%	
	Unemployed	23.8%	38.1%	38.1%	
Marital status	**Divorced**	25.0%	50.0%	25.0%	>0.05
	Married	27.8%	39.2%	32.9%	
	Widowed	33.3%	44.4%	22.2%	
Family income	**Less than 500,000 IQD**	25.9%	40.7%	33.3%	>0.05
	500,000 - 1,000,000 IQD	29.5%	43.2%	27.3%	
	1,000,000 – 1,500,000 IQD	16.7%	33.3%	50.0%	
	More than 1,500,000 IQD	44.4%	33.3%	22.2%	

3.8. Sex and attitude

The distribution of attitudes by sex indicates that females had a higher percentage of good attitudes (34%) compared to males (21.4%), but these differences were not statistically significant (P>0.05). This suggests that sex may not play a crucial role in shaping attitudes towards absence seizures.

3.9. Age group and attitude

Attitudes varied across age groups, with the youngest age group (18-28) showing a relatively balanced distribution across all attitude levels. Notably, participants over 50 years showed a higher percentage of good attitudes (50%), but these differences across age groups were not statistically significant (P>0.05), indicating that age may not be a strong determinant of attitude towards absence seizures.

3.10. Educational level and attitude

Educational level appeared to have some influence on attitude, with higher education levels associated with a slightly better distribution of good attitudes. However, the differences in attitudes across educational levels were not statistically significant (P>0.05), suggesting that education alone does not significantly impact attitudes towards absence seizures.

3.11. Residence and attitude

A significant correlation was found between residence and attitude (P<0.05). Participants living outside Tikrit exhibited a more favorable distribution of attitudes, with a lower percentage of poor attitudes (22%) compared to those living in Tikrit (48.5%). This indicates that geographical location might influence attitudes towards absence seizures.

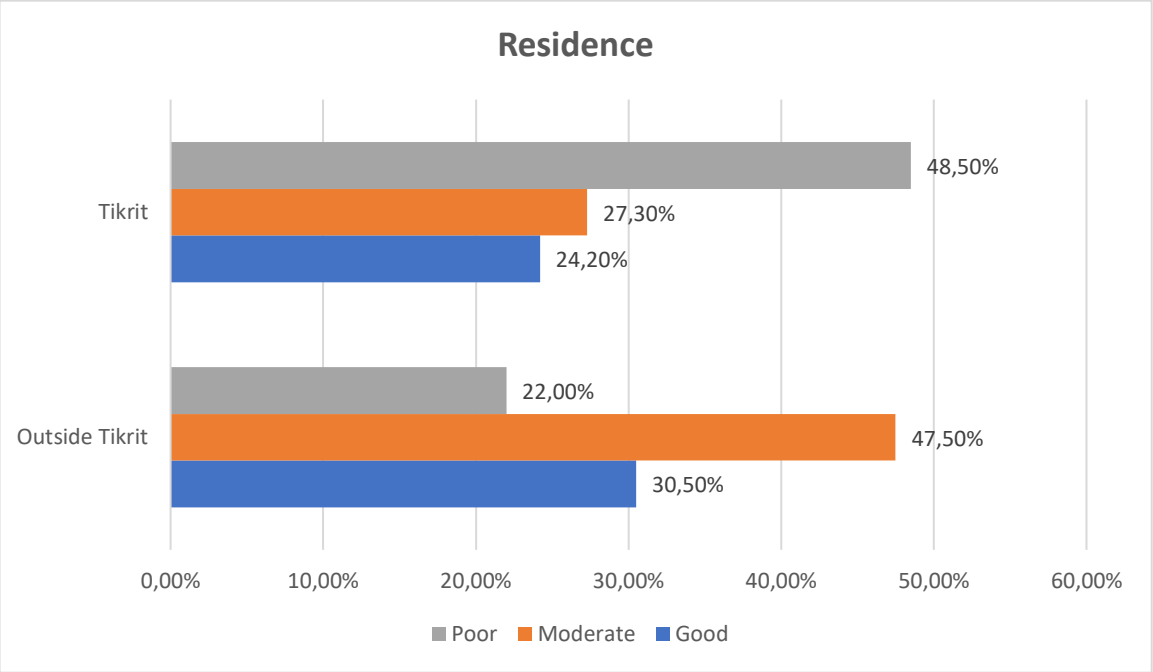

Figure 5. Attitude according to residence in Tikrit

3.12. Employment status and attitude

Employment status did not significantly affect the distribution of attitudes (P>0.05), though students showed a higher percentage of good attitudes (37.1%) compared to employed and unemployed participants. This suggests a trend towards more positive attitudes among students, although not statistically significant.

3.13. Marital status and attitude

Marital status did not show a significant correlation with attitudes (P>0.05). However, there was a relatively uniform distribution of attitudes across different marital statuses, indicating that marital status may not significantly influence attitudes towards absence seizures.

3.14. Family income and attitude

Family income did not show a statistically significant correlation with attitudes (P>0.05), despite some variation in the distribution of attitudes across different income levels. Participants with a family income of more than 1,500,000 IQD showed the highest percentage of good attitudes (44.4%).

4. Discussion

We found that understanding and attitudes towards absence seizures vary significantly among participants. A considerable majority, 69.6%, displayed a lack of knowledge about absence seizures, with a mere 7.6% showing comprehensive understanding and 22.8% possessing moderate knowledge, which is consistent with findings from other studies on parental awareness of epilepsy and seizure disorders in children. For instance, a study by

Elsayed et al. found that 59.2% of parents had poor knowledge about epilepsy, and 72.8% demonstrated poor practices towards their epileptic children [35]. This aligns with the observed lack of knowledge about absence seizures, where the majority of participants demonstrated poor knowledge. In another study conducted in the pediatric population in Makkah, Saudi Arabia, there was a noted poor level of awareness among parents regarding the difference between Attention Deficit Hyperactivity Disorder (ADHD) and Childhood Absence Epilepsy (CAE), further emphasizing the need for improved educational initiatives [14].

When examining attitudes towards absence seizures, responses were more balanced. Approximately 28.3% of the participants demonstrated a positive attitude, 40.2% had a moderate stance, and 31.5% exhibited a negative attitude towards managing or addressing absence seizures.

Delving into demographic correlations, we observed that factors such as sex, age, educational level, employment status, marital status, and family income largely did not influence knowledge or attitudes towards absence seizures significantly. Both females and males, as well as various age groups, showed similar awareness levels and attitudes. Although a higher educational level was linked to improved knowledge, this association was not statistically significant across different educational backgrounds. However, geographic location emerged as a significant factor, with individuals residing outside Tikrit exhibiting markedly better knowledge than those within Tikrit. This finding highlights the influence of geographic disparities on awareness levels.

Alharthi et al. highlighted the presence of both informed and misinformed beliefs among parents in the Al Baha region regarding epilepsy in children, suggesting an ongoing need for awareness campaigns and educational initiatives [36]. This suggests that while some knowledge exists, there are still significant misconceptions and gaps in understanding that need to be addressed.

Parental awareness of absence seizures in children is crucial for understanding the prevalence and consequences of these seizures in our society. Parents' attitudes towards children with epilepsy are shaped by their awareness of the condition. It is important to identify and rectify any misconceptions or misinformation to ensure proper care and management [37].

5. Conclusion and Recommendation

5.1. Conclusion

The study investigated the extent of parental awareness regarding absence seizures in children among a cohort of 92 participants, revealing significant insights into demographic characteristics, knowledge, attitudes, and correlations between demographic data and awareness levels.

1) The majority of the participants were females (54.3%), predominantly aged between 18-28 years (69.6%), with a bachelor's degree (69.6%), residing outside Tikrit (64.1%), and married (85.9%). Employment status varied, with a significant portion either employed (39.1%) or students (38%).
2) Knowledge levels were generally low, with 69.6% of participants having poor knowledge, 22.8% moderate, and only 7.6% good knowledge. This indicates a significant gap in understanding absence seizures among parents.
3) Attitudes were slightly better than knowledge levels, with 28.3% of participants showing a good attitude, 40.2% moderate, and 31.5% poor. This suggests a moderate level of empathy or concern, although still coupled with a lack of comprehensive understanding.
4) The study found no significant correlation between sex, age group, educational level, employment status, marital status, and family income with knowledge and attitude

levels, except for residence. Participants from outside Tikrit showed a statistically significant difference in both knowledge and attitude compared to those from Tikrit, indicating geographical differences in awareness levels.

5.2. Recommendation

Based on the findings, the following recommendations are proposed to enhance the awareness and attitudes of parents towards absence seizures in children:

1) Implement targeted educational initiatives to raise awareness about absence seizures, emphasizing signs, implications, and management strategies. These should be tailored to various demographic segments, with a focus on regions showing lower awareness levels.
2) Integrate absence seizure education into school health programs, ensuring children and their peers are informed and supportive environments are fostered.
3) Encourage healthcare providers to actively inform and educate parents about absence seizures during pediatric appointments, particularly in areas with low awareness.

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