

## Knowledge and Attitude of Teachers In Kindergarten about Children with Epilepsy

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**Abstract:** The aim of the present work was to examine the knowledge and attitude of teachers in kindergartens about children with epilepsy. Descriptive cross-section research design was used. The study was conducted in six experimental governmental schools represent the six educational areas in Alexandria. The sample of the study was 167 teachers. Data was collected through distributing self completed questionnaires in each school included in the study. There were significant relations between level of education and positive attitude towards epileptic children. There was signification relation between years of experiences and correct knowledge about epilepsy in children.

### INTRODUCTION

Seizures are common in the pediatric age group and occur in approximately 10% of children. Less than one third of seizures in children are caused by epilepsy; a condition in which seizures are triggered recurrently from within the brain. Epilepsy is a chronic disorder, in which the indispensable feature is recurrence of seizures that are typically unprovoked and usually unpredictable. The cumulative lifetime incidence of epilepsy is 3%; more than half of the cases begin in childhood. The annual prevalence of epilepsy is low (0.5-0.8%) because many children outgrow epilepsy.<sup>(1)</sup> Epilepsy significantly affects learning and behavior. Children with epilepsy are particularly vulnerable to educational

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problems and resultant academic underachievement.<sup>(2)</sup> Co-morbidities like cognitive and behavioral problems contribute significantly to problems at school.<sup>(2)</sup> These learning difficulties seem to be caused by a variety of factors including cognitive dysfunction, specific learning disabilities and behavioral problems. These problems in turn, may be related to organic factors such as underlying brain pathology, frequent seizures and/or paroxysmal EEG activity and medication side effects, and non-organic factors such as overprotection by parents, decreased self-esteem and poor motivation.<sup>(3-4)</sup>

School is the second most important social environment for the child after family. There, with the acquisition of knowledge and skills, the child develops social skills as well. Through interaction with their peers, children satisfy their development task of emancipation, they develop self-

respect, and they build a picture of themselves. Enthusiasm or lack of enthusiasm for school elevates or breaks the expectations of any child, especially those affected by chronic illness; that is their self-image can be enhanced or destroyed.<sup>(5)</sup> The quality of life of school children with epilepsy may seriously be affected by the attitude of their families and school environment if the people around them are unaware of or uneducated about their condition. This fact renders the children with epilepsy helpless, fragile, and unconfident. Children having seizures may distract their teachers who do not receive specific training about epilepsy during their education. Moreover, the teachers may feel desperate not knowing how to handle the situation.<sup>(6)</sup> On the other hand different studies have shown that teachers have limited understanding of common chronic childhood illness.<sup>(5)</sup>

One of the major difficulties in

developing countries is in giving some degree of priority to non-communicable diseases like epilepsy in the midst of competing health problems such as infections, malnutrition, unsafe drinking water and high maternal and child mortality. Teachers are important targets for health educational problems especially as good percentage of child's waking life is spent in school. During this time teachers have much influence on children and therefore have an important role to play in the management and surveillance of children with epilepsy. Teacher attitude and knowledge regarding childhood epilepsy is likely to influence the educational performance of children with the disease.<sup>(6)</sup>

The aim of present work was to examine the knowledge and attitude of teachers in kindergartens about children with epilepsy and, thus, gain information on how the teachers approach children with epilepsy in the course of their work.

Furthermore, this kind of study was to provide information for better understanding the social effects of epilepsy in children.

## **MATERIAL AND METHODS**

### **1- Study design:**

Descriptive cross-section research design was used to determine the knowledge and attitude of kindergarten teachers about epilepsy in children.

### **2- Sample setting**

The study was conducted in six experimental governmental schools representing the six educational areas in Alexandria. Hoda-Sharawy school, Abokir experimental school, Balkis school, Karmoz school, Alagamy school and Alamreya school.

### **3- Subject**

The sample of the study was 167 teachers chosen randomly from school sheets in the six schools included in the study (every second name).

### Tools and methods

Data was collected through distributing self completed questionnaires in each school included in the study. The questionnaire consists of 26 questions. The questionnaire consists of four main sections

- Personal details include: age, marital status, years experience and education.
- For knowledge assessment 12 questions.
- For familiarity assessment 4 questions.
- For attitude assessment 10 questions.

The questionnaire was developed following careful review of similar previous studies. It was modified from two questionnaires.<sup>(7,8)</sup>

The questions were mainly answered by "Yes", "No", "Don't know". The areas covered by the questionnaire included:

1. Teacher personal details including age, years of teaching experiences and marital status.
2. General knowledge of the aetiology, presentation, treatment, and outcome of school children with epilepsy.
3. Previous experience of epilepsy in children, including personal encounters with epileptic children and previous specific training on epilepsy.
4. Views regarding possible learning difficulties in epileptic children and the most appropriate school placement for them.
5. Appropriate restrictions of activity for children who had epilepsy, appropriate careers for them and views regarding the difficulties that might be encountered by them on leaving school.
6. First-aid treatment of epileptic fits and views regarding the administration of rectal diazepam at school.
7. Overall confidence of the teachers when presented with a child with epilepsy.

The questionnaire was tested on 20

teachers as pilot and amended for clarity by simplify some questions. The score of each section was calculated by summing the scores of its questions. Cronebach alpha coefficient of internal consistency was used to estimate the reliability of the questionnaire. Alpha coefficient was 0.789. Verbal consent was obtained from the principles and head teachers before the questionnaires were distributed to school teachers. The questionnaires were analysed using SPSS statistical computer package, frequencies were done and associations determined by using the Chi<sup>2</sup>-test.

## RESULTS

Table 1: shows the main demographic features of the teachers. As regards the age 18.6% of the sample were under 25 years, 16.2% between 25-< 30 year, 31.1% between 30-< 35 year and 34.1% were 35 years or more. Also 34.7% of the sample were single and 65.3% were married. As

regards experience, 14.4% have less than 5 years, 50.3% have 5-10 years experience and 35.3% have more than 10 years. As regard education level 23.4% were secondary, 48.5% were university and 28.1% were post graduate.

Table 2: shows the familiarity of teachers to epilepsy as 27.5% of sample have tough a child with epilepsy, 43.7% have epileptic relative or friend, 36.5% can do the first-aid for epileptic child and only 9.6% can put rectal suppository during convulsion.

Table 3: shows teachers response to questions on knowledge about epilepsy. About 58.1% of the sample knew the definition of epilepsy. As regards the causes of epilepsy, 11.4% of the sample agreed that epilepsy is an infectious disease, 16.7% agreed that epilepsy is psychiatric disease, 56.3% agrees that epilepsy runs in families. As regard treatment of epilepsy 43.7% of the sample

agreed that drugs used to treat epilepsy may cause drowsiness and 50.9% agreed that epilepsy can be cured with medicine.

As regards diagnosis of epilepsy 60.5% of the sample agreed that diagnosis of epilepsy by E. E. G. and only 9.6% agreed that the incidence of epilepsy in school children was between 0.5%-1%.

Table (4) shows the attitude of teachers towards epilepsy. Results revealed that 70.7% of teachers have positive attitude towards epileptic child but 67.1% of the sample thought that epileptic child may make problems in the class and 47.3% thought that epileptic child have behavior problems. As regards learning performance of epileptic children, 77.8% of the sample

agree that epileptic children can learn in regular schools, only 15% of the sample objected to having a pupil with epilepsy in the class, while 41.9% thought that epileptic child may have learning problems and 70.7% of the sample allowed epileptic child to participate in activities.

Table 5 shows the relation between teachers' attitude towards epilepsy and levels of education. There was significant relation between level of education and positive attitude towards epileptic children.

Table 6 shows the relation between teachers' knowledge and years of experience. There was significant relation between years of experiences and correct knowledge about epilepsy in children.

**Table 1: The main demographic features of the teachers**

Character	n = 167	
	No.	%
<b>Age</b>		
< 25	31	18.6
25-<30	27	16.2
30-<35	52	31.1
35+	57	34.1
<b>Marital statuses</b>		
Single	58	34.7
Married	109	65.3
<b>Experience</b>		
Less than 5 years	24	14.4
5-10 years	84	50.3
More than 10 years	59	35.3
<b>Education level</b>		
Secondary	39	23.4
University	81	48.5
Post graduate	47	28.1

**Table 2: Familiarity of teachers to epilepsy:**

Areas of familiarity	Yes		No		Don't know	
	No.	%	No.	%	No.	%
-Have you ever tough a child with epilepsy	46	27.5	117	70.1	4	2.4
-*Have you a friend or relative of epilepsy	73	43.7	89	53.3	4	2.4
-Do you think that you can do first aid for epileptic students	61	36.5	73	43.7	33	19.8
-Do you can put supporting for conductive treatment in epileptic child	16	9.6	64	38.3	87	52.1

\*n= 167 but one teacher didn't answer the question.

**Table 3: Teachers' response to questions on knowledge about of epilepsy**

Teachers' general knowledge (n = 167)	Yes		No		Don't know	
	No.	%	No.	%	No.	%
1-Do you know the definition of epilepsy	97	58.1	49	29.3	21	12.6
2-Epilepsy is an infectious disease	19	11.4	130	77.8	18	10.8
3-Epilepsy is a psychiatric disease	28	16.7	111	66.5	28	16.8
4-All children who have fit have Epilepsy	20	11.9	108	64.7	39	23.4
5-Epilepsy can be cured with medicine	69	41.3	32	19.2	66	39.5
6-Epilepsy runs in families	94	56.3	34	20.4	39	23.4
7- Epileptic children have educational problems	94	56.3	4	2.4	69	41.3
8-Epileptic can occur at any time	61	36.5	49	29.3	57	34.1
9-Drugs used to treat epilepsy can cause drowsiness	73	43.7	13	7.8	81	48.5
10-Epilepsy can be cured	85	50.9	16	9.6	66	39.5
11-Diagnosis of epilepsy by E. E. G	101	60.5	10	6.0	56	33.5
12-Incidence of epilepsy in school children 0.5-1%.	16	9.6	4	2.4	147	88.0

**Table 4: Attitude of teachers towards epilepsy**

Areas of attitude	Response (n = 167)					
	Yes		No		Don't know	
	No.	%	No.	%	No.	%
1-Do you have positive attitudes towards epileptic child as other children	118	70.6	31	18.6	18	10.8
2-Do you think that epileptic child will make problem in the class	112	67.1	49	29.3	6	3.6
3-Do you think that epileptic child have behavior problems	79	47.3	55	32.9	33	19.8
4-Do you think that epileptic child have learning problems	70	41.9	52	31.1	45	26.9
5-Should children with epilepsy be allowed to participate in regular schools	130	77.8	7	4.2	30	18.0
6-Should children with epilepsy be allowed to participate in activities.	118	70.7	19	11.4	30	17.9
7-Do you think that a pupil with epilepsy may be as intelligent as others	103	61.7	16	9.6	48	28.7
8-Do you agree that your child make a friendship with an epileptic child	124	74.3	19	11.4	24	14.4
9-Do you agree that epileptic child live alone	7	4.2	154	92.2	6	3.6
10-Do you object to having a pupil with epilepsy in your class	25	15.0	133	79.6	9	5.4

**Table 5: Shows the relation between teacher's attitude towards epilepsy and levels of education**

Areas of attitude	Response	Level of education						Test of sig.
		Secondary		University		Post graduate		
		No	%	No	%	No	%	
1- Do you have positive attitude towards epileptic child as other children	Yes	19	63.3	57	70.4	42	89.4	$\chi^2 = 8.197^*$ p = 0.017
2- Do you think that epileptic child will make problems in the class	No	3	10.0	15	18.5	31	66.0	$\chi^2 = 38.927^*$ p < 0.001
3- Do you think that epileptic child have behaviour problems	No	8	26.7	15	18.5	32	68.1	$\chi^2 = 33.283^*$ p < 0.001
4- Do you think that epileptic child have learning problems	No	7	23.3	15	18.5	30	63.8	$\chi^2 = 29.195^*$ p < 0.001
5- Children with epilepsy should be admitted in school for normal children	Yes	23	76.7	62	76.5	45	95.7	$\chi^2 = 8.320^*$ p = 0.016
6- Should children with epilepsy be allowed to participate in any form of sports	Yes	23	76.7	50	61.7	45	95.7	$\chi^2 = 18.279^*$ p < 0.001
7- Do you think that a pupil with epilepsy may intelligent with others	Yes	10	33.3	52	64.2	41	87.2	$\chi^2 = 23.516^*$ p < 0.001
8- Do you agree that your child makes a friendship with epileptic child	Yes	20	66.7	61	75.3	43	91.5	$\chi^2 = 7.671^*$ p = 0.022
9- Do you agree that epileptic child live alone	No	30	100.0	79	97.5	43	91.5	$\chi^2 = 4.433$ p = 0.109
10- Do you object to having a pupil with epilepsy in your class	No	19	63.3	71	87.7	37	86.0	$\chi^2 = 9.485^*$ p = 0.009

\*significant

**Table (6): The relations between knowledge of teachers about epilepsy and years of experience**

Area of knowledge	Number of correct answers	Years of experiences						$\chi^2(p)$
		Less than 5 years		5-10 Years		More the 10 years		
		No.	%	No.	%	No.	%	
1-Do you know the definition of epilepsy	97	10	10.3	46	47.4	41	42.3	23.526* (<0.001)
2-Epilepsy is an infectious disease	130	20	15.4	63	48.5	47	36.2	21.800* (<0.001)
3-Epilepsy is a psychiatric disease	111	9	8.1	54	48.6	48	43.2	32.270* (<0.001)
4-All children who have fit have Epilepsy	108	6	5.6	53	49.1	49	45.4	37.722* (<0.001)
5-Epilepsy can be cured with medicine	69	17	24.6	30	43.5	22	31.9	3.739 (0.154)
6-Epilepsy runs in families	94	11	11.7	43	45.7	40	42.6	19.936* (<0.001)
7- Epileptic children have educational problems	94	10	1.6	44	46.8	40	42.6	22.043* (<0.001)
8-Epileptic can occur at any time	61	1	1.6	32	52.5	28	45.9	27.967* (<0.001)
9-Drugs used to treat epilepsy can cause drowsiness	73	3	4.1	42	57.3	28	38.4	32.082* (<0.001)
10-Epilepsy can be cured	85	6	7.1	30	35.3	49	57.6	32.776* (<0.001)
11-Diagnosis of epilepsy by E. E. G	101	8	7.9	61	60.3	32	31.7	41.842* (<0.001)
12-Incidence of epilepsy in school children 0.5-1%.	16	0	0	5	31.3	11	68.8	2.250 (0.134)

\* Significant

## Discussion

Among the many factors, organic or non organic, that can adversely influence academic achievement and quality of life of an epileptic child at school are the knowledge and attitude of their teachers toward them This issue has attended the

interest of many investigators. To assess knowledge and attitude toward any subject the degree of familiarity with it is important.<sup>(3)</sup> Our study revealed that about 29.32% of teachers had been familiarized with epilepsy. Kaleyias et al (2005)<sup>(3)</sup> concluded that Greek teachers seem to have a reasonable degree of familiarity with epilepsy. Twenty-four percent have had an epileptic child in their class, at same time, a figure that is similar in other studies<sup>(9,10)</sup> although rates up to 41%<sup>(11)</sup> and 57%<sup>(12)</sup> have been reported in other studies. This factor of familiarity with epilepsy seen to be an important as it was correlated with a higher degree of confidence in one's ability to help a convulsive child, a more accurate knowledge of the prognosis of epilepsy and more positive attitude toward the epileptic child.<sup>(3)</sup>

In our study the general knowledge score of epilepsy was 51.9%. In Ngazi 2002<sup>(13)</sup> study general knowledge of

epilepsy with overall score of 59.2% while those in the paper of Bannan, et al was 70%.<sup>(12)</sup> It would appear from this study that this knowledge was acquired as a result of personal experience over the years rather than from structured training. These findings agree with our study as general knowledge increases significantly with years of experience.

Pala and Vanier (1997) found that teacher knowledge about epilepsy to be far from satisfactory. This was understandable as most teachers had not attended any educational programme on epilepsy. Also the teacher training program didn't cover child health problems.<sup>(14)</sup>

Many of the teachers in our study were not familiarized with the initial procedures in attending a person during seizure. The initial procedures adapted by some teachers who answered this question would be somehow inappropriate. Dantas et al (2001)<sup>(15)</sup> found the same result. In another study,<sup>(16)</sup> half of the respondents

who had experience with first-aid management of seizures also used improper and potentially harmful measures. These difficulties were probably related to poor educative programs in epilepsy.<sup>(17)</sup> Also Ngozi (2002)<sup>(13)</sup> stated that majority of teachers will engage in dangerous or harmful practices if a child has a seizure in the classroom. Bannon et al (1992) concluded that the subject of administration<sup>(12)</sup> of rectal suppository by teachers in school is fraught with difficulty. These findings are in agree with our study as 9.6% of teachers only can administrate rectal suppository to child during convulsions.

In the present study teachers' attitude is significantly affected by teachers' education level. When teachers' were asked about their attitude toward the epileptic student, the

overwhelming majority (70.7%) stated that it is the same as to any other child.

This finding indicates a very high degree of acceptance by their teachers despite that about 67.1% of teachers stated that epileptic child may make problems in the class room. This agree with another study which explain these findings and is not contradicting, however because when one looks at the specific problems generated by the epileptic child, the most common was "increase anxiety and responsibility for the teacher which is reasonable and does not indicate rejection by the teacher."<sup>(3)</sup> A high proportion of teachers (83.2%) in Zimbabwe were<sup>(17)</sup> willing to teach children with epilepsy as compared with 79.6% in the present study.

As regard the type of school the present study reveled that 77.8% of teachers agree that epileptic child be

admitted to regular school as compared with 70% of teachers in Lagos<sup>(18)</sup> and 95% of those in North Staffordshire.<sup>(12)</sup> The same result was stated by Kaleyias et al (2005),<sup>(3)</sup> while in a study among teachers in Thailand 15.1% of teachers preferred students with epilepsy to be placed in special classrooms and 9.8% wanted them to be cured and controlled before returning to their classrooms.<sup>(19)</sup> In another study from Brazil 93-95% of the teachers didn't object to having a student with epilepsy in the class<sup>(15)</sup>.

The issue of academic achievement in epilepsy still remain controversial. Epilepsy in general may be associated with learning disabilities more frequently.<sup>(18,19)</sup> In the present study 41.9% of teachers believed that epileptic children have learning problems. Pale and Vankar (1997) stated that the teachers' perceptions about educational

performance of the children with epilepsy were largely negative.<sup>(14)</sup> Dantas et al (2001)<sup>(15)</sup> stated that some teachers in the study had disturbed about learning achievement of students with epilepsy. Kaleyias 2005,<sup>(3)</sup> stated that about 40% Greeks teachers think that epilepsy and learning problems coexist almost never or occasionally. The fact that epilepsy differs greatly in children must be taken into consideration, as some have severe learning problems and others do not. So teachers cannot have uniform conceptions of the capabilities of children with epilepsy.<sup>(20-22)</sup>

## RECOMMENDATIONS

A well directed programme on causes and management of epileptic seizures will definitely improve the perception of epilepsy by teachers. Efforts should therefore be made, using possible avenues such as seminars,

school health education programmes and media which is an important source of information in most developing countries.

## REFERENCE

1. Afify M, Kamel M, Mohamed M. Serum Ghrelin Level in Epileptic children, *Alex J of Ped*, 2008; 22(2): 231-5.
2. Guerrini R. Epilepsy in children *Lancet*, 2006; 367: 499-524.
3. Kaleyias J, Tzoufi M, Kotslis C, Papavasiliou A, Diamantopoulos N. Knowledge and attitude of the Greek educational community toward epilepsy and the epileptic student. *Epilepsy & Behavior*, 2005;15: 179-86.
4. Dunn DW, Harezlak J, Ambrosius WT, Austin JK, Hale B. Teacher assessment of behavior in children with new-onset seizures. *Seizure*, 2002; 11:169-75.
5. Prpic I, Korotaj Z, Vlastic I., Paucic Kirinic, E, Valerjev A, Tomac V. Teacher's pinions about capabilities and behavior of children with epilepsy. *Epilepsy & Behavior*, 2003; 4: 142-45.
6. Bekiroglu N, Ozkan R, Gurses C, Arpac B, Dervent A. A study on awareness and attitude of teachers on epilepsy in Istanbul. *Seizure*, 2004; 13:517-22.
7. Tosetti MFV, Campos MA, Bauer CR. Knowledge about epilepsy among teachers and epileptic patients. *Arq Neuropsiquiat*, 1991; 49:255-9.
8. Millogo A, Siranyan S. Knowledge of epilepsy and attitudes towards the condition among school teachers in Bobo-Dioulasso (Burkina Faso). *Epileptic Disord*, 2004; 6: 21-6.
9. Kankirawatna P. Epilepsy awareness among school teachers in Thailand. *Epilepsia*, 1999; 40: 497-501.
10. Ojinnaka NC. Teachers' perception of epilepsy in Nigeria: a community based study. *Seizure*, 2002;11: 386-91.
11. Gallhofer B. Epilepsy and its prejudice. Teachers' knowledge and opinions: are they a response to psychopathological phenomena? *Psychopathology*, 1984; 17: 186-212.
12. Bannon MJ, Wilding C, Jones PW. Teachers' perceptions of epilepsy. *Arch Dis Child*, 1992; 67: 149-71.
13. Ngozi C. Teachers' perception of Epilepsy in Nigeria: a community – based study *seizure* 2002; 11: 386-91.
14. Pala I, Vankar G. Epilepsy and Teachers: a Survery. *Indian J Pediatr* 1997; 64: 211-4.
15. Dantas FG, Cariri GA, Cariri GA, Riberiro FAR. Knowledge and attitudes toward epilepsy among primary secondary and tertiary level teachers. *Arq Neuropsiquiat*, 2001; 59 (3-B) 712-6.
16. Kandirawatana P. Epilepsy awarenss among school teachers in Thailand. *Epilepsia*, 1999; 40: 497-501.
17. Mielke J, Adamolekun B, Ball D, Mundanda T. Knowledge and attitudes of teachers toward epilepsy in Zimbabwe. *Acta Neurologica Scandinavica*, 1997; 96: 133-7.

18. Danesi M A. Epilepsy and the secondary schools in Nigeria. *Tropical and Geographical medicine*, 1994; 46: 25-7.
19. Kankirawatana P. Epilepsy awarness among school teacher in Thailand. *Epilepsia*, 1999; 40 (4): 497-501.
20. Gambhir S K., Kumar V., Singhi P D., Goel R.C. Public awareness, understanding and attitudes toward epilepsy. *Indian Journal of Medical Resarch*, 1995; 102: 34-8.
21. Lhatoo SD, Sander WAS. The epidemiology of epilepsy and learning disability. *Epilepsia*, 2001; 42 (Suppl. 1): 6-9.
22. Aldenkamp AP, overweg-Plandsoen WCG, Arends J, An open, non-randomized clinical comparative study evaluating the effect of epilepsy on learning. *J Child Neurol*, 1999; 14: 795-800.



