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CLINICAL & BASIC RESEARCH

Primary School Managers' Knowledge of and Attitude towards Epilepsy among Children in Erbil City, Iraq

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معارف ومواقف مديري المدارس الابتدائية نحو مرض الصرع لدى الأطفال في مدينة أربيل، العراق

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ABSTRACT: ***Objectives:*** This study aimed to determine the knowledge and attitudes of primary school managers regarding epilepsy among school children in Erbil City, Iraq. ***Methods:*** A cross-sectional study was conducted in primary schools between 18 June and 18 August 2013. A total of 80 primary school managers were selected to answer a questionnaire covering three domains: socio-demographical characteristics, knowledge of epilepsy and attitudes towards epilepsy. ***Results:*** More than half of the participants (55%) had spent less than 10 years in school administration. More than one-third (37.5%) of the participants believed that epilepsy was an infectious disease, and over half of the respondents (53.75%) stated that epilepsy cannot be treated or prevented. ***Conclusion:*** Although the respondents' attitudes towards pupils with epilepsy were generally positive, their knowledge of epilepsy was imperfect; thus, an epilepsy education campaign is required. This should focus on the causes of epilepsy and its management.

Keywords: Epilepsy; Health Knowledge; Attitudes; Practice; Iraq.

الملخص: **الهدف**: التشنج هوالنوبة المرضية الشديدةوالتي يصاحبها الإطلاق الكهربائي الذي لا يمكن السيطرة عليه من الخلايا العصبية في الدماغ. وهي قد تحدث بصورة عفوية دون أي سبب واضح. وهدفت الدراسة إلى معرفة المعارف والمواقف من مديري المدارس الابتدائية بخصوص الصرع بين أطفال المدارس في مدينة أربيل. **الطريقة**: أجريت دراسة مقطعية في المدارس الابتدائية في مدينة أربيل/العراق بين 18 يونيو و 18 أغسطس 2013. تم اختيار ثمانين من مديري المدارس الابتدائيةلإجابة ثلاثة استبيانات في ثلاثة مجالات مختلفة: المجال الأول عن الخصائص الاجتماعية والديموغرافية و المجال الثاني المعرفة (10 أسئلة) والمجال الثالث المواقف حول مرض الصرع (10 أسئلة). **النتائج**: أظهرت النتائج أن (55%) ممن شملتهم الدراسة لديهم خبرة أقل من 10 سنوات في الإدارة وكان أكثر من ثلث (37.5%) المشاركين لديهم مفهوم خاطىء أن الصرع هو مرض معد. أكثر من نصف المشاركين (53.75%) ذكروا أن الصرع لا يمكن الشفاء منه أو السيطرة عليه. **الخلاصة**: أشارت نتائج الدراسة إلى إيجابية مواقف المشاركين في الدراسة تجاه التلاميذ الذين يعانون من الصرع ولكن كانت هناك أوجه قصور مهمة من حيث المعرفة العامة حول الصرع. ونوصي بتدريب وتوعية مديري المدارس الابتدائية عن مرض الصرع وطرق علاجة.

مفتاح الكلمات: الصرع؛ المعرفة الصحية؛ المواقف؛ الممارسة؛ العراق.

Advances in Knowledge

- *A large segment of the primary school manager population in the city of Erbil in northern Iraq know very little about epilepsy.*
- *Regardless of their understanding of epilepsy, primary school managers in Erbil demonstrate incorrect attitudes towards children with this disorder.*

Application to Patient Care

- *This research emphasises the need to include epilepsy management education in school curricula.*
- *Health education should focus on improving knowledge of epilepsy among school managers.*

Epilepsy is a chronic disorder of abnormal, recurring, excessive and self-terminating electrical discharge of neurons in the brain in which a person has recurrent seizures.[1] Seizures are paroxysmal, uncontrolled electrical discharges of neurons in the brain that interrupt normal function.[2] A seizure (sometimes called a convulsion) is a single event of abnormal electrical discharge in the brain resulting in an abrupt and temporary altered state of cerebral function.[3]

The incidence of epilepsy is 0.3–0.5% in different populations throughout the world, with the prevalence

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of epilepsy estimated at 5–10 people per 1,000.[4] Epilepsy can influence behaviour in many different ways; these changes in behaviour can be either due to the underlying cause of the epilepsy; a side-effect of the seizures; the drugs used to treat the epilepsy, or the management of the disorder.[5] The frequent need for continuous medical care in epilepsy, in addition to the availability of antiepileptic drugs, justifies the careful planning of an epilepsy awareness programme. Persons suffering from epilepsy are often stigmatised, mainly as a result of fear of the unexpected and public loss of self-control.[6] Therefore, primary school managers' knowledge of and attitudes towards epilepsy should be considered as an important issue since their knowledge and attitudes will have a significant impact on the learning outcomes of their students. This study aimed to assess the knowledge and attitudes of primary school managers in Erbil, Iraq, concerning epilepsy among schoolchildren and to find relationships between the managers' demographical data and their knowledge and attitudes.

Methods

This cross-sectional study was performed in Erbil City in northern Iraq from 18th June to 18th August 2013. This is a wealthy region (population 1,000,000) with an economy based on natural resources, industry and commercial activities and services. In Erbil City, primary school managers are administrators in schools while retaining some limited teaching responsibilities. Out of the 525 primary schools, 80 primary school managers were selected by a purposive sampling method. This sample size was chosen because it reduced cost and time while still allowing for an estimation of information about the whole population. The sample size calculation indicated that a sample of 80 managers was appropriate, considering a 95% confidence interval.

A questionnaire was designed based on the general knowledge, attitude, practice (KAP) questionnaires used in many previous studies with slight modifications adapted to Iraqi society. The aim of the questionnaire was to measure the knowledge and attitude of primary school managers toward epilepsy among children.[7,8] Questions covered three domains: socio-demographic characteristics (including age, gender, years of formal education, years of experience in administration, marital status and religion); knowledge of epilepsy (10 questions) and attitudes towards epilepsy (10 questions).

The content validity of the questionnaire was tested after getting comments from specialists in the field. Test-retest reliability was employed to determine the questionnaire's reliability by collecting data from questionnaires completed by 10 primary school managers. The Pearson correlation coefficient was then computed. The findings indicated that r = 0.96 for the test-retest reliability. A total of 105 questionnaires were distributed, with a 76.2% response rate. Frequency tables were developed to display the frequencies of responses to each of the 20 questions.

The respondents were notified of the aims of the study and assured of the confidentiality of the data. Verbal permission was received before data collection, keeping in mind that verbal consent is easier to obtain in the Iraqi culture as a request for written consent creates fear among expected participants which often results in non-participation in prospective studies. The questionnaires were filled out anonymously to encourage the respondents to participate actively. The Scientific & Ethical Committee of the College of Nursing of Hawler Medical University granted approval for the study on 13th May 2013.

Results

The mean age of the managers was 44.62 years (standard deviation [SD] = 8.57, range = 24–63). Table 1 shows that nearly half (45%) of the respondents were aged 40–49 years. Males constituted 62.5% of the respondents. With respect to formal years of education, 67.5% had 14 years of formal education and 2.5% had 12 years of formal education. More than half of the respondents (55%) had less than 10 years in administration. Regarding the marital status of the studied sample, 68.8% were married.

Table 2 shows that more than one-third (37.5%) of the participants believed that epilepsy was an infectious disease. More than half of the participants (53.8%) stated that epilepsy cannot be treated or prevented. High percentages of the respondents knew or believed that epilepsy is a chronic neurological disorder (93.8%); epilepsy affects people of all races and genders (95.0%); children who have epilepsy cannot perform any physical exercises (92.5%), and children with epilepsy have difficulties in acquiring knowledge (65.0%). More than half of the subjects (58.8%) knew that epilepsy can be hereditary and more than one-third knew that brain tumours and malnutrition can cause epilepsy.

Table 3 shows that more than half (55.0%) of the participants thought that children who have epilepsy should be taught separately and in a different classroom from non-epileptic children. More than two-thirds (72.5%) of the subjects believed that children with

Table 1: Demographic data of primary school managers (N = 80)

Demographic characteristic	n	%
Age in years		
20–29	4	5
30–39	17	21.3
40–49	36	45
50–59	18	22.5
>60	5	6.3
Formal years of education		
12	2	2.5
14	54	67.5
16	24	30
Number of years in administration		
<10	44	55
10–19	27	33.8
20–29	6	7.5
30–39	2	2.5
>40	1	1.3
Marital status		
Single	17	21.3
Married	55	68.8
Widowed	2	2.5
Separated	6	7.5

Table 2: Knowledge of epilepsy among primary school managers (N = 80)

Questionnaire item	Response n (%)		
	Yes	No	Don't know
Epilepsy is an infectious disease	30 (37.5)	48 (60)	2 (2.5)
Epilepsy cannot be treated or prevented	43 (53.8)	28 (35)	9 (11.3)
Convulsions take place after an abnormal electric discharge occurs	77 (96.3)	1 (1.3)	2 (2.5)
Epilepsy is a chronic neurological disorder	75 (93.8)	1 (1.3)	4 (5)
Epilepsy affects people of all races and genders	76 (95)	1 (1.3)	3 (3.8)
Children who have epilepsy cannot perform any physical exercise	74 (92.5)	1 (1.3)	5 (6.3)
Children who have epilepsy have difficulties in acquiring knowledge	52 (65)	18 (22.5)	10 (12.5)
Epilepsy can be hereditary	47 (58.8)	23 (28.8)	10 (12.5)
Brain tumours can cause epilepsy	39 (48.8)	16 (20)	25 (31.3)
Malnutrition is one cause of epilepsy	32 (40)	26 (32.5)	22 (27.5)

epilepsy have equal privileges to other citizens. More than half of the respondents thought that children with epilepsy are: mentally underdeveloped; a threat to the community; should be separated from others who do not have epilepsy, and can be expected to demonstrate illegal behaviours more often than non-epileptic pupils. The majority of primary school managers believed that children who have epilepsy do not have a normal life expectancy, wish to live with others who have epilepsy and have an undesirable impact on the other children in a regular class.

Table 4 shows the correlation between total knowledge and attitude scores with some variables in the study. The results show a positive statistically significant correlation between knowledge and attitude with age, years of formal education and number of years in administration.

Discussion

The analysis of the primary school managers' demographic characteristics revealed that most of the primary school managers were between 40–49 years; this result agrees with a study conducted by Dantas *et al*. in Brazil to assess teachers' knowledge and attitudes towards epilepsy which indicated that 69.0% of teachers were between 30–49 years.[6] In the Iraqi educational system, especially that of Erbil City, those who wish to become school managers are required to have at least 10 years of teaching and learning experience. Concerning the managers' level of education, this study revealed that 67.5% of the respondents had 14 years of formal education (with an institutional qualification), while the study in northeast Brazil demonstrated that 70.0% of their participants had 14 years of education.[6]

Among those surveyed, 37.5% believed that epilepsy is an infectious disease; this is in agreement with a study of schoolteachers in both urban and rural settings in Nigeria which found that 45.5% of the 60 respondents felt that seizure disorders were infectious.[9] The current study indicated that 53.8% of the participants supposed that epilepsy cannot be treated or prevented; similarly, a study of 360 schools in Thailand indicated that approximately half of the

Table 3: Attitudes among primary school managers regarding epilepsy (N = 80)

Questionnaire item	Response n (%)		
	Agree	Uncertain	Disagree
Children who have epilepsy should be put into separate classrooms	44 (55.0)	5 (6.3)	31 (38.8)
Children who have epilepsy have equal privileges like all citizens	58 (72.5)	12 (15.0)	10 (12.5)
Children who have epilepsy do not have a normal life expectancy	69 (86.2)	6 (7.5)	5 (6.3)
Children who have epilepsy are mentally underdeveloped	49 (61.2)	5 (6.3)	26 (35.5)
Children who have epilepsy are a threat to the community	62 (77.5)	9 (11.3)	9 (11.3)
Epileptic children should not mix with others from their age group	45 (56.3)	11 (13.7)	24 (30.0)
Children who have epilepsy are expected to demonstrate illegal behaviours more often than normal pupils	46 (57.5)	9 (11.3)	25 (31.2)
Epileptic pupils who take medications that stop seizures are like anyone else	50 (62.5)	13 (16.2)	17 (21.2)
Epileptic children wish to live with others who have epilepsy	64 (80.0)	8 (10.0)	8 (10.0)
Children who have epilepsy have an undesirable impact on other children in regular classes	69 (86.3)	10 (12.5)	1 (1.3)

schoolteachers (46.6%) thought that epilepsy was a chronic, incurable disease.[10]

The present study shows that 65% of primary school managers believed that epileptic children have difficulties in acquiring knowledge; correspondingly, in a study by Thacker *et al*. in India assessing knowledge, attitude and practice towards epilepsy among schoolteachers, nearly half of the subjects (47.7%) stated that epileptics have normal intelligence.[11] However, 31.7% of teachers believed that their intelligence was below average. The results of the current study show that 55% of managers believed that schools should separate epileptic children into another classroom, while Thacker *et al*. demonstrated that only

Table 4: Correlations of primary school managers' knowledge and attitude scores with their age, formal years of education and number of years in administration (N = 80)

Demographic characteristic	R value	*P* value
Age		
Knowledge scores	0.360*	0.012
Attitude scores	0.271*	0.043
Years of formal education		
Knowledge scores	0.279	0.051
Attitude scores	0.248	0.081
Number of years in administration		
Knowledge scores	0.422**	0.003
Attitude scores	0.796*	0.031

***Correlation is significant at the 0.01 level; *Correlation is significant at the 0.05 level.*

32.2% of the Indian schoolteachers were troubled by having epileptic pupils in their classrooms.[11] This is in contrast to a study that demonstrated that more than 70% of Nigerian secondary schoolteachers did not feel that epileptic patients could be placed in regular classrooms.[12]

The results of the current study found that school managers perceived that epilepsy can have a hereditary cause (58.75%). This result was in agreement with a study conducted in Iran in 2012, which stated that 41% of biology teachers were aware that the aetiology of epilepsy was genetic.[13] However, most Iraqis traditionally consider that the majority of diseases have a genetic cause.

The majority of primary school managers in the current study believed that children with epilepsy cannot perform any physical exercise (92.5%). This is in contrast to a 2013 study in Zimbabwe where three-quarters of the respondents (74%) indicated that epileptic pupils should do active sports for interaction and socialisation purposes.[14]

Less than half (40%) of the participants in the current study indicated that malnutrition is a cause of epilepsy; whereas, in humans, restricted nutrition does increase the risk of neurological disorders such as epilepsy.[15]

An important limitation of the current study was the non-response bias. School managers with high workloads may not have responded to the survey due to a lack of time.

Conclusion

Although the respondents' attitudes towards pupils with epilepsy were generally positive, primary school managers' knowledge of epilepsy was inaccurate; thus, an epilepsy education campaign is required and should focus on the causes of epilepsy as well as its management. Such a campaign would increase teachers' knowledge, create understanding among the epileptic students' classmates as well as within the epileptic community and improve the quality of life for all.

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