



Association between knowledge and attitudes of educators towards epilepsy and the risk of accidents in Greek schools

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ARTICLE INFO

Article history:

Received 8 October 2012

Revised 8 January 2013

Accepted 10 January 2013

Available online 6 March 2013

Keywords:

Knowledge

Attitudes

Epilepsy

Teachers

Accidents

Greece

ABSTRACT

Accidents in children with epilepsy are an actual concern of teachers and parents in Greece and internationally. The aim of this study was to investigate the relationship between the knowledge and attitudes of teachers and the frequency of accidents caused by epilepsy in Greece. The study surveyed 1404 public elementary school teachers from all prefectures of the country by an anonymous questionnaire. Results showed that teachers cannot always recognize the manifestations of an epileptic seizure or an injury caused by it, making it difficult for them to report such incidents, and, sometimes, they use wrong or even dangerous manipulations during seizures. Furthermore, the knowledge and attitudes of teachers were associated with the occurrence of accidents. It is, therefore, of major importance that the responsible authorities provide teachers with appropriate guidelines to respond to such incidents, especially in schools where a school nurse is not present.

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1. Introduction

Epilepsy is one of the most frequent neurological conditions and perhaps the only one that has preoccupied the human civilization so intensively since its beginning. This is apparent by the names that epilepsy was given by different civilizations in the past. Epilepsy was known as “disease of fainting” in Egypt, “morbus comitialis” or “morbus magnus” during the Roman era, “sacred or great disease” due to its severity and difficult treatment in ancient Greece, “lunatism” in Byzantium, and mania, “demonic suffering”, or “morbus lunaticus” (moon illness) in the Middle Ages. Finally, the term epilepsy, which comes from the ancient Greek verb “επιλαμβάνω” that means affect, attack, and possess, prevailed as the disease appears in a sudden way [1].

Globally, there are almost 33 million children with epilepsy, and it is estimated that they have 2 to 5 times more chances to present behavioral, emotional, and psychiatric problems in comparison with healthy children or children with other chronic diseases. Also, the frequency of nonepileptic seizures is increased among children with epilepsy in comparison with the general population, a finding that indicates the neurological and psychological susceptibility of children with epilepsy [2]. The increased number of accidents that is related to epilepsy is an additional factor that impairs their quality of life. According to the results of a recent study, almost 45% of children with epilepsy had an accident related to a seizure, and for 18% of the cases, it was considered necessary to visit a hospital emergency

department because of the severity of the injury [3]. Furthermore, persons with epilepsy suffer more frequently from minor injuries and fractures caused by falls and are susceptible to burns, car accidents, and drowning [4]. On the other hand, there is, also, the opposite belief that the frequency of accidents among children with epilepsy does not significantly differ from the frequency among the healthy children of the same age [5].

Knowledge about the disorder is important and can minimize its social and psychological effects and improve the response of the family to daily life matters [6]. A person with epilepsy needs, apart from a systematic follow-up, continuous training on health issues and on alternative ways to tackle the problems that may occur [7]. A school nurse plays a substantial role inside the school environment by providing valid information and health care to all students as well as promoting their health and academic success [8]. In addition, the preparation of an emergency plan by the school nurse for handling epileptic seizures will enable the school staff to respond in such incidents and consequently improve the quality of life of the child with epilepsy and his/her family [9]. In most Greek schools, without a school nurse, the knowledge and beliefs of teachers most likely determine the way that they will treat a child with epilepsy. Given that children spend most of their day either at school or in places with educational activities, such as gyms and conservatories, teachers should be informed and responsible for the prevention and management of accidents that may occur due to the disease. Moreover, teachers are asked to deal with urgent situations and to create the appropriate conditions so that the school becomes a safe environment for students with epilepsy or students with any other chronic disease.

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Several studies suggest that most teachers have a quite positive or neutral attitude towards persons with epilepsy [10,11]. Questions are raised by the fact that most teachers do not consider that persons with epilepsy are capable of taking care of a student (for example, if person with epilepsy were to become a teacher) [10]. In addition, according to our professional experience, parents frequently fail to report their child's health problem, and, as a result, no precautions are taken regarding their child's safety.

Based on the previous facts, this study was performed in order to investigate the possible association between the knowledge and attitudes of teachers and the frequency of accidents caused by epilepsy in Greece.

2. Methods

The study was designed as a cross-sectional survey. In total, 386 primary and secondary public schools and schools of special education from all Greek prefectures were included in the present study. The study sample was derived from the 226 schools of special education (SSE), the 94 vocational lyceums (VLY) that had a health and welfare branch, and the 66 regular elementary schools. The latter were randomly selected from all prefectures of the country, and, in total, 1404 teachers participated in the survey.

The study protocol was approved by the ethics committee of the Faculty of Nursing, University of Athens, and written permission was granted from the responsible authorities of the Ministry of Education and the Pedagogic Institute. Moreover, anonymity of schools was kept by using identification numbers on the prepaid response envelopes, and all questionnaires were anonymous. Completion of questionnaires by teachers was voluntary and did not interfere with school activities.

The questionnaire included 51 questions that were developed after an extensive review of the international literature. These questions were divided into four sections: demographic characteristics, knowledge and attitudes of teachers, quality of life of the students with epilepsy, and training of teachers on first aid, along with their opinion on the necessity of school nurses and their believed benefit on acquiring new knowledge. A pilot study was conducted in order to test the questionnaire for reliability and validity. Because accidents were not always recorded in the log books that were kept in schools, it was impossible to collect relevant data as it was intended at the beginning of the study. Questionnaires were sent out in November 2008, and their collection was completed in April 2009.

Data entry and statistical analysis were then conducted with the use of the statistical package SPSS13. Means and standard deviations (SD) or medians and inter-quartile ranges were used for describing quantitative variables. Pearson's chi-square test or Fisher's exact test, when appropriate, were used for comparing proportions. For the comparison of quantitative variables between two different groups the nonparametric criterion Mann-Whitney was used. For correcting type I error, because of the multiple comparisons, the Bonferroni correction was used, according to which the significance level was $0.05/\kappa$ (κ = number of comparisons). Calculated P-values were two-tailed, and an association was considered statistically significant when $P \leq 0.05$. For the identification of independent factors related to the occurrence of accidents and care of accidents due to epilepsy, a stepwise multivariate logistic regression analysis was performed. Odds ratios (ORs) and their respective 95% confidence intervals (CIs) were calculated. Internal consistency of the questionnaire was calculated by Cronbach's alpha and was found equal to 0.73.

3. Results

The response rate was considered satisfactory as it ranged from 70 to 85%. Teachers of primary education who worked in a school

without a school nurse showed the least interest, although even in that case the response rate was adequate.

3.1. Demographic characteristics

Sixty-two percent ($n = 868$) of the teachers were women, and 38% ($n = 531$) were men. Almost one in every three teachers was between 31 and 40 years old, 42.8% were between 41 and 50 years old, and 14.3% were between 50 and 60 years old. In addition, working experience in their current school was 12.2 years (± 8.8), and 85.4% of the participants had a university degree. Furthermore, 51.4% of the participants were working at schools of special education, 71.8% of whom were elementary school teachers, 13.6% special educational personnel, and 14.6% high school teachers. As far as the regular schools are concerned, 52.2% were elementary school teachers and 47.8% teachers of different specialties were working at VLY.

3.2. Knowledge and attitudes of teachers towards epilepsy

The correct answer regarding the frequency of epilepsy in the general population (1/100) was given by 285 (20.4%) participants, and 288 (20.7%) of them correctly responded to the possible manifestations of an epileptic seizure. Moreover, 99.2% answered that epilepsy is not a communicable disease. However, only 0.6% of the teachers knew the possible consequences of status epilepticus. They incorrectly believed that epilepsy is related to psychiatric diseases and mental retardation (11.5%) or answered that they do not know whether that kind of association exists (21.9%). Furthermore, only 274 (19.6%) knew that a child who has absence seizures may also have a major generalized motor seizure. Finally, 63.4% knew that a large number of seizures may be accompanied by many physical, mental, and psychological disorders.

Describing the attitudes that teachers had towards students with epilepsy, 793 (56.7%) of the participants correctly answered that the main goal during a small epileptic seizure is to protect the child until he totally recovers, but 52 (3.7%) answered that they would give water to the child in order to help him recover. The correct answer that during an epileptic seizure objects that may cause injury should be removed from the environment was given by 97.2% of participants, and 67.3% were aware of the fact that the earlier the seizure is confronted, the better it will be controlled. However, only 8.9% of the participants knew that accidents of students with epilepsy may be caused by side-effects of the antiepileptic treatment. Only 162 (11.6%) participants correctly responded that placing an oropharyngeal airway in order to prevent the inversion of the tongue during a seizure is wrong.

The degree of difficulty in dealing with children with different diseases, according to the participants' responses, is presented in Table 1 (the lower the degree, the easier is the disease dealt with according to the teachers). Participants regarded asthma as the easiest disease to deal with and epilepsy as the hardest one.

Accidents related to epilepsy were reported by 32.2% ($n = 447$) of the participants, while 14.6% had no knowledge of such an incident having taken place. Nevertheless, only 15.7% of them considered that they could take all the necessary measures in order to prevent an injury due to a seizure. Besides, only 20.8% of the participants correctly responded that during a seizure, an accident due to a fall, an object that we try to insert into the child's mouth, a sharp object, water-related accidents, or burns by electric devices may happen.

Table 1
Degree of difficulty in dealing with severe chronic diseases as perceived by teachers.

Would you prefer to deal with a child suffering from the following:	Mean	SD
Asthma	1.8	0.9
Diabetes	1.9	0.9
Cancer	3.0	1.1
Epilepsy	3.3	0.8

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