



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

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ABSTRACT

School nurses have the ability to enhance the knowledge and tolerance of an entire community and to form more positive and sensitized attitudes to future adults. The aim of this study was to investigate the relationship between the knowledge and attitudes of nurses and the frequency of accidents caused by epilepsy in Greek schools. Our sample consisted of 306 school nurses from all over the country. It was observed that the knowledge of school nurses on epilepsy was quite high, although there were specific aspects that raise concerns on their preparedness to respond to seizure-related emergencies, while their attitudes, although positive, still need improvement. Accidents caused by epilepsy were reported by half of the nurses, and prevention was considered of major importance. Therefore, organized continuous education programs and clear guidelines by the responsible authorities would help school nurses provide better services to students with epilepsy.

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1. Introduction

The psychosocial consequences of epilepsy are often more painful and devastating than its physical manifestations [1–3]. Regarding children and adolescents, accidental injuries are related to their temperament and bodily changes as well as their surrounding environment. Previous studies that compare rates of accidents among children with epilepsy and age-match healthy controls are inconclusive [4]. It is probable that children with epilepsy avoid sport and recreational activities that are dangerous, and besides this, they learn to be more responsible and careful, while at the same time have the sense of proportion as far as sleep, nutrition and exercise are concerned. There is, however, another view, which seems to prevail, that the frequency of the accidents among children with epilepsy is higher than that of their peers. There is no evidence about the specific number of children with epilepsy in Greece, but it is estimated that about 70,000 persons in our country suffer from the disease [5]. Research has shown that students believe that health education should be systematically taught at schools by nurses and doctors [6]. Therefore, the primary aim of this study was to study the association between knowledge and attitudes of school nurses towards epilepsy and the potential risk of seizure-related accidents in the school environment.

2. Material and methods

The study was designed as a cross-sectional survey. The study sample was derived from 226 primary and secondary special education schools and 94 secondary education vocational schools (VS) from all Greek prefectures. Only schools which employed nurses were selected. School nurses are registered nurses, either with an academic or a professional degree [7]. The number of nurses that responded in the study was 306, of whom 86.4% came from the VS and 13.6% from the special needs schools. The response rate was 85% for special education school nurses and 77% from VS nurses.

The study protocol and questionnaire were approved by the responsible authorities, namely the Ministry of Education and the Pedagogical Institute. Moreover, anonymity of the schools was kept with the use of identification numbers on the prepaid response envelopes, and all questionnaires were anonymous. Completion of questionnaires by nurses was voluntary and was considered as informed consent.

An anonymous questionnaire with 51 questions was developed after an extensive literature review [8–14]. A pilot study was conducted in order to test the questionnaire for reliability and validity. This questionnaire consisted of four sections: demographic characteristics, knowledge and attitudes of school nurses, quality of life of the students with epilepsy, and the necessity for acquiring new knowledge by nurses. Questions on knowledge included frequency of epilepsy, information about medicines and first aid, degree of difficulty in dealing with chronic severe diseases, and the jobs that are prohibited to persons with epilepsy. Questions on attitudes included

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whether they would object if their children play with a child with epilepsy or if a relative marries a person suffering from epilepsy. The questionnaires were sent in November 2008, and their collection was completed in April 2009.

Data entry and statistical analysis were conducted with the use of the statistical package SPSS13. Means and standard deviations (SD) or medians and interquartile ranges were used to describe quantitative variables. Pearson's chi-square test or Fisher's exact test, when appropriate, was used to compare proportions. The non-parametric criterion Mann-Whitney was used for the comparison of quantitative variables between two different groups. To correct type I error, because of the multiple comparisons, Bonferroni's 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 $P \leq 0.05$. A stepwise multivariate logistic regression analysis was performed for the identification of independent factors related to the occurrence of accidents and preventative measures to avoid seizure-related accidents. Odds ratios (ORs) and their respective 95% confidence intervals (C.I.s) were calculated. Cronbach's alpha was 0.71.

3. Results

3.1. Demographic characteristics

School nurses were predominantly women (83.4%), and 44.9% were between 41 and 50 years old. In addition, duration of employment in their current school was 9.5 years (± 6.3), and almost 30% of the participants had university education, of whom the majority were working in vocational schools. Furthermore, 13.6% of the participants were working in schools providing special education.

3.2. Knowledge and attitudes of school nurses towards epilepsy

Almost one in three (31.3%) of the participants gave the correct answer about the frequency of epilepsy in the general population ("1/100"), and 26% gave the correct answer to the question about factors that influence the manifestation of seizures. Alongside this, 15.5% of the participants responded correctly to the question concerning the possible signs of an epileptic seizure, and only 2% to the likely results of status epilepticus ("*Breathing disorders and autonomous nervous system disorders*" and "*not reversible damage of the nervous system*" and "*death*"). Moreover, 62.9% of the participants gave the correct answer concerning the main safety-related goal when there is a mild seizure ("*We should protect the child until s/he comes around*").

We also attempted to assess the preparedness of school nurses on emergencies and the percentage of them who would administer diazepam when there is a prescription from a specialist physician, and 39.9% of the participants gave the correct answer (administer diazepam suppository). Nurses in Greek schools can only administer a diazepam suppository if it is stored in the school pharmacy, if a prescription from the child's doctor is delivered to the school by their parents, and in the event of a prolonged seizure. The range of correct answers to questions concerning seizures was 22.3% to 100% (Table 1).

The degree of difficulty in dealing with children with different diseases, according to the participants' responses, is presented in Table 2 (the lowest the degree, the easiest the disease according to the school nurses). The participants regarded diabetes as the easiest disease to deal with and cancer as the hardest one. Epilepsy was considered to be the second most difficult disease to deal with after cancer.

Nearly half of the school nurses reported that in their schools, accidents due to epilepsy may happen about once per school year. In addition, more than half of the participants (53.0%) were working in

Table 1
School nurses' knowledge about seizures.

	Correct answer N (%)
The sooner we deal with seizures the better we control them.	260 (87.8)
Correct taking of medical history is important in diagnosis of epilepsy.	287 (97)
Epilepsy is related to mental diseases and retardation.	225 (76)
Seizures in adults and children above 6 years old are usually due to epilepsy.	176 (59.5)
A great number of seizures may be accompanied by too many disorders of physical, mental or psychological functions.	263 (88.9)
During seizures we place oropharyngeal airway in order to avoid inversion of the tongue.	90 (30.4)
A significantly increased incidence of convulsions may follow absence seizures.	132 (44.6)
There is probability of cessation of medicines if the person stays free from seizures for a year.	211 (71.3)
When medicine is ineffective we try the combination of two or more drugs.	277 (93.6)
We remove objects that may cause injuries.	296 (100)
Children with epilepsy don't suffer from accidents more frequently than their classmates.	153 (51.7)
Side effects may provoke injuries to children with epilepsy.	66 (22.3)

schools in which preventing accidents involving children with epilepsy was considered part of their role. The vast majority of the school nurses (83.4%) identified supervision as the main way to prevent accidents in children with epilepsy, followed by first aid lessons to teachers (49.7%), and the creation of a safe environment (42.7%).

Only 1.4% of the school nurses would object their children had contact with children with epilepsy, although one in four (26.4%) would disagree if a person from their family decided to marry a person suffering from epilepsy. However, 83.1% of the nurses believed that the quality of life of children with epilepsy can be improved, and the main way to do so is by creating a safe and supportive environment (57.2%) and by providing information (56.9%).

The majority of the school nurses (79.3%) declared that they have knowledge gaps to practice school nursing, and 99.3% believed that they need to attend continuing education programs on school health. The main information sources they were using were scientific magazines (78.0%), books, and the mass media (56.3%).

3.3. Association of knowledge and attitudes of school nurses towards epilepsy and the occurrence of accidents

In Table 3, reported accidents by type of school are shown. From this table, it is clear that the reported accidents are significantly more frequent in special education schools.

In Table 4 there is degree of the knowledge of the nurses concerning the existence of accidents from epilepsy in the schools where they work and the care provided by the schools to prevent the accidents of children with epilepsy. Nurses working in schools where accidents from epilepsy have happened had significantly higher grades than nurses who work in a school where there have not been any accidents because of epilepsy. Moreover, nurses working in a school that cares about the prevention of accidents of children with epilepsy had significantly higher grades than nurses who work

Table 2
Degree of difficulty in dealing with chronic diseases as perceived by school nurses.

Would you prefer to deal with a child suffering from:	Mean	SD
Diabetes	1.8	0.9
Asthma	2.0	1.0
Epilepsy	2.8	0.8
Cancer	3.4	0.9

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