

Original Article

## Investigation of the Teacher's Knowledge and Attitude towards Providing First Aid in the School Environment

**Aristidis Vasilopoulos, PhD**

Assistant Professor of Nursing, University of Thessaly, Lamia, Greece.

**Christina Panagou , RN, MSc**

Teacher of Physical Education.

**Dimos Mastrogiannis, PhD**

Assistant Professor of Nursing, University of Thessaly, Lamia, Greece.

**Pavlos Sarafis, PhD**

Associate Professor of Nursing, University of Thessaly, Lamia, Greece

**Charalambos Charalambous**

Acute Trauma and Surgical Unit. North West of Anglia Foundation Trust, Huntingdon, United, Kingdom.

**Zoe Roupa , PhD**

Professor School of Nursing, University of Nicosia, Cyprus

**Eleni Siamaga, PhD**

Professor School of Nursing, University of Nicosia, Cyprus

**Correspondence:** Dr. Aristidis Vasilopoulos, University of Thessaly, 3rd Klm Old National Road *Lamia*-Athens, PC 35100 *Lamia* E-mail: arisvasilop@yahoo.gr

### Abstract

**Background:** First aid is described as the sum of care interventions which are offered to individuals suffering from acute medical conditions or trauma. The age group that are of high risk of suffering an injury are children and teenagers. In the younger age accidents are a result of the lack of the feeling of danger, in older ages are caused by reckless behaviour, the need to show off and the rebellious nature that characterises their age.

**Aim:** The main aim of the study was to investigate the primary and secondary schools' teachers' knowledge and attitudes level towards the provision of first aid in the school environment.

**Method:** Convenience sample was used in a total of 185 elementary and secondary school teachers from the prefectures of Fthiotida and Fokida in central greece. For the collection of data, an anonymous questionnaire was developed which included 6 demographic questions, the attitudes scale (4 questions) and the knowledge scale (22 questions). The Cronbach  $\alpha$  internal consistency index was set at 0.87 for the attitudes scale and at 0.49 for the knowledge scale.

**Results:** Of the total 185 teachers, 58 were male and 127 females, mean age 40-50 years old. The 65.9% of the sample believes that the provision of first aid by non-experts implements legal risks and obligations and 34.1% disagreed with this position. The t-test showed statistically significant correlation (t-test = 3.11, p = 0.002). If a student fell to the ground resulting to loss of consciousness, 63.8% of the teachers responded correctly regarding the procedures and techniques to be followed. In the question of managing a student who suffered an airway obstruction from a foreign body 69.2% answered correctly, 25.4% were unaware of the first aid techniques while 5.4% gave the wrong answer.

**Conclusions:** The study highlights teachers' lack of knowledge regarding basic first aid techniques.

**Key Words:** Teachers, first aid, school, resuscitation, attitudes, knowledge

## Introduction

First Aid is described as a set of condition related interventions provided to a wounded or suffering from acute illness individual. First aid provision is often a stressful situation for most educators, creating negative experiences and psycho-emotional transitions (Tannvik et al., 2012, Ziderman et al., 2015). Children and teenagers are particularly prone to accidents. In the younger age, accidents are due to the absence of the sense of danger, while in the older is a result of the need of demonstration, as a reaction to the laws and the advice of adults and the charm of adventure.

According to the Centre for Research and Prevention of Child Accidents, in our country every year 50,000 school accidents are recorded. 25% of all the country's accidents involve children and occur within the school environment. This figure is considered high compared to Portugal 9% and Austria 1% (Hellenic Center for Disease Control and Prevention 2013). The absence of a school nurse from most schools, delegates the responsibility to provide first aid after an accident or sudden illness to the educators. Teachers, due to the nature of their profession, have limited and often empirical first aid knowledge and skills (Faydali et al., 2018, Gagliardi et al., 1994). The training of teachers on first aid is not mandatory at any level in Greece's public education system is the educator's own choice to seek further training or specialized information. Most of the teachers have encountered an emergency during their employment. Extremities injuries and fainting episodes occupy the first places between acute care events occurring in schools, mainly happening during breaks or physical education lessons (Sonmez et al., 2014, Slabe & Fink 2012, Baser et al., 2007). Through a review of the literature, we observe that the provision of first aid in the school environment has been a major concern for the scientific community and several studies demonstrate the poor knowledge and negative attitudes of the teachers towards students in need of urgent care. A study by Lee et al., (2010) in primary schools in Korea, found that half of the teachers would refuse to have a student in their class with epilepsy as they do not know how to react and respond to a seizure crisis. A similar lack of knowledge on the treatment of seizure crises was also demonstrated in Savarese et al., (2015) study in a sample of 113 teachers. In Greece most teachers appear to possess inadequate level of knowledge towards the provision of first aid. Tolis study (2010) reports low level of teacher

knowledge regarding epilepsy and epileptic seizures. A study by Ponyrou et al., (2014) highlights the teacher's lack of knowledge in first aid provision, ranging from 8% to 84%, which gradually increased to 74% - 100% following attendance of a special eLearning program.

**Aim:** The main aim of the study was to investigate the primary and secondary schools' teachers' knowledge and attitudes level towards the provision of first aid in the school environment.

## Methods

**Study Design:** For the accomplishment of the research, a cross-sectional study was chosen to be conducted using a structured anonymous questionnaire. The reason for choosing this kind of research was based on the reliability of the results it provides as it is considered the most appropriate in the collection of data concerning a large number of participants.

**Participants:** The study was carried out using a convenience sample of 185 elementary and secondary school teachers from the prefectures of Fthiotida and Fokida. Data were collected using an anonymous and self-completing questionnaire from 1/2/2018 to 30/3/2018 during school breaks or at the teacher free time.

**Instruments:** To ensure the content validity of the questionnaire a review was conducted including the Greek and International scientific literature, through the databases MEDLINE, EMBASE and CINAHL. No tool could be identified that measures the teachers' attitudes in managing with the critical situations of cardiac arrest, strangulation by foreign body and seizure crisis with convulsions, and their attitudes towards providing first aid in the school environment (Raftopoulos & Theodosopoulou 2002).

Thus, it was considered appropriate to develop and pilot an instrument in the Greek environment. To identify any error in the formulation of the questions, which may have led to information error, a pilot study was conducted. The questionnaire was distributed to 5 teachers where they submitted their comments in writing. The final form of the questionnaire included 6 demographic questions, the scale of attitudes (4 questions) and the scale of knowledge (22 questions). The attitude scale takes values from 1 to 2 (min 4 - max 8), the mean in the attitude questions was 6.64. This result shows a positive attitude of the educators in providing first aid in the school environment. The knowledge scale takes values of 1 for each wrong answer and 2 for

every correct answer (min 22 - max 44). The mean of the correct answers was 22.98, with less than half of the questions answered correctly. Cronbach  $\alpha$  internal consistency index was set at 0.87 for the attitudes scale and 0.29 for the knowledge scale. Of the 200 questionnaires, 185 were returned (92% response rate).

**Statistical analysis:** Descriptive and inductive statistics were used, Chi-Square Test, Pearson correlation coefficient, t-test (Independent Samples t-test) as well as frequency tables and charts. The X<sup>2</sup> method was used to investigate the correlation of class gradient variables, the Pearson correlation coefficient to investigate the correlation of variables of arithmetic rankings and the t-test where one of the two variables were of categorical classification and the other numerical. The significance level was defined at  $p = 0.05$  whereas for the analysis of the data the IBM SPSS 23 statistical package was used.

## Results

**Teachers' attitudes towards first aid:** Of the 185 teachers, 58 were male and 127 females, between 40-50 years old. 18.9% of the sample was employed in primary education schools and 81.1% in secondary schools. 40% of the sample stated that they had attended at least one first aid seminar while 60% did not. Out of the 185 sample educators, 56,7% agreed that it was the individual's responsibility to be educated on providing first aid, while the 43,3% disagreed. The t-test showed that younger men tended to agree with this position (t-test = 1.10,  $p < 0.04$ ). The majority (65.9%) of the sample believes that there are legal obligations if first aid is provided, while 34.1% disagreed with this statement. However, 68.6% agreed that in case of emergency, teachers should provide first aid and not be limited to informing the paramedics, the manager of the school and the child's parents. The t-test showed a statistically significant correlation (t-test = 3.11,  $p < 0.02$ ) between age and the view that the teacher's only obligation in a situation of urgent health care problem is informing the paramedics and the parents. Older educators tend to agree more to this position than their younger colleagues. Respectively, statistically significant correlation (t-test = 3.42,  $p < 0.01$ ) was also found with more than 15 years of service.

**Teachers' knowledge of first aid:** Regarding the knowledge scale, the t-test showed a statistically significant correlation between teachers who have received certified knowledge and those who have not received certified knowledge (t-test = 5.63,  $p$

$< 0.01$ ). In particular, teachers who have been trained in providing First Aid through training seminars are more likely to have a higher level of knowledge than their non-trained colleagues. In a situation that a student falls to the ground followed by loss of consciousness, 63.8% of teachers answered correctly regarding first aid response, 19.4% responded that they were unaware of first aid techniques and procedures, while 16.8% reported that we would not take any actions. Test X<sup>2</sup> showed a statistically significant correlation between the above question and training (X<sup>2</sup> = 5.93,  $df = 1$ ,  $p < 0.01$ ). Teachers who had attended a first aid training session were more likely to answer correctly. In the question about handling a student who suffered an airway obstruction from food or foreign object, 78.4% responded correctly, 15.7% were unaware of the first aid response techniques, while 5.9% gave the wrong answer. Test X<sup>2</sup> showed a statistically significant correlation between airway obstruction and training. Teachers who had attended a first aid training session were more likely to respond correctly (X<sup>2</sup> = 17.31,  $df = 1$ ,  $p < 0.01$ ).

**Limitations:** The present research effort is a pilot study that aims to investigate the knowledge and attitudes of teachers in primary and secondary education. The study included full-time teachers who worked at least 15 hours a week in the same school unit. Contract teachers were excluded from the study. The findings of the study do not represent the knowledge and attitudes of all teachers in Greece. Future studies will confirm or reject the results of this study.

## Discussion

First aid aims to preserve the life of the individual, stabilise his condition and transfer him/her under the appropriate level of care as soon as possible. First aid is not a substitute for medical care but is a temporary support for life until the appropriate level of care is available (AlYahya et al., 2014). First aid applies to all emergencies, regardless of their severity, while the person providing them, specialized or not is called a rescuer (Ganfure et al., 2018).

Teachers, due to the nature of their profession, spend most hours of the day with children and teenagers. The school population as a form of modern society faces threats and dangers. Health risks are limited to preventing the transmission of infectious diseases, healthy psycho-emotional development, and preventing or avoiding accidents. Teachers that are competent in providing

first aid contribute to successfully addressing emergencies, preventing complications from acute events, training the students, and thus raising the awareness of volunteering.

This study shows that only a percentage of 40% have attended a First aid training session while 60% did not attend any training. The knowledge of first aid by teachers seems to have been of high interest by the scientific community, demonstrating the importance of the problem. A similar study by Josheph et al.,(2015) in India observed that 46% of the teachers had received first aid training, with knowledge level observed between 13% and 87%. In Slovenia, Slabe & Fink (2012) demonstrated that less than 20% of the sample (N = 487) could respond effectively to life-threatening conditions such as respiratory and cardiac arrest, poisoning, loss of consciousness and suffocation. A study conducted in Central Anatolia by Faydali Et al., (2018) in a sample of 331 teachers showed that only 23% had adequate level of knowledge. In Turkey, Baser et al., (2007) reported that 65.1% of teachers gave incorrect answers to first aid in case of bleeding, followed by 63.5% bee bites, and injuries 88.5%.

In Greece a study by Kementzitzis (2014) in 20 Primary and Secondary Schools found that 67% of the teachers had attended a first aid training session. A study by Pavlidou (2015) in a sample of 97 kindergarten teachers reports that 54.2% had little or no knowledge, 26% of the sample did not have any training in first aid, 22.7% of the sample did not know or knew the National Immediate Help Center telephone number, while 50% of respondents responded incorrectly to questions about the recovery posture, the symptoms of drowning, burns treatment and the pathway that has to be followed for an injured child to be taken to the hospital. In agreement with the study's results Josheph et al.,(2015), Slabe & Fink (2007), Faydali et al (2018), Baser et al., (2007), Kennetzidis (2014) and of Pavlidou (2015), showed that the proportion of first-aid trained educators is extremely low. Learning and applying First Aid enhances teachers' sense of security while increasing efficiency in emergency situations. The embarrassment, anxiety and fear in providing first aid are feelings that individuals experience, when they do not know or partly know how to provide first aid. Negative feelings are, in most cases, the main reasons for postponing or minimizing the involvement of the first respondents to the scene in emergency situations.

The present study shows that most educators would not provide First Aid to students in the school that they are employed, as they are afraid of rendering any legal responsibility. A study by Joseph et al., (2015) found a statistically significant correlation between teachers' self-confidence in providing First Aid and their education. The 66% of teachers would be willing to provide First Aid if they had received training. By carefully studying the data of the above studies, we suggest that the training of teachers will reduce the hesitations towards first aid provision, while making teachers more determined and confident. Basic life support is of high importance when an individual is at risk. Learning basic life support skills are of great importance in resuscitation, life-saving and prevention of complications in emergency situations in both the school environment and the community.

A statistically significant correlation was noted between the first response to a student that has suffered loss of consciousness and has collapsed to the ground and the education of teachers regarding first aid ( $X^2 = 5.93$ ,  $df = 1$ ,  $p = 0.015$ ). Teachers who had attended a first aid Seminar were more likely to answer correctly. A similar study by Slabe & Fink (2012) demonstrated that less than 20% of teachers could not respond to life-threatening situations such as respiratory and cardiac arrest, poisoning, loss of consciousness, and asphyxia. As a result, only a small percentage of teachers can cope well with acute and life-threatening events. The knowledge gap that is observed is likely to be due to the absence of first aid as a module from the undergraduate educator's curriculum and the lack of motives for post qualification seminars attendance.

**Conclusion:** Concluding this study highlights the lack of educator's knowledge in first aid techniques. The absence of the necessary knowledge and skills is an inhibiting factor in the initiation of first aid provision, which contrasts with the high interest and the sense of offer that they have when students face life-threatening situations.

**Ethics:** All the procedures carried out in this study, in which human participants participated, complied with its ethical standards and the 1964 Helsinki Declaration. The study was conducted after the approval from each school principles. The participation was voluntarily, and the teachers were informed by the researcher about the purpose

and subject of the study. Participants had the right to withdraw from the study at any time.

**Acknowledgments;** The authors express their appreciation to the school principals who facilitated the study as well as to all the participating teachers.

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