

# THE LEVEL OF KNOWLEDGE AND SKILLS OF FIRST AID PROVISION AMONG PUPILS OF THE 8<sup>TH</sup> GRADE OF PRIMARY SCHOOLS

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**Abstract:** *The research survey was focused on finding the level of knowledge and skills of first aid provision among pupils of the 8th grade of selected primary schools and also on the project dealing with first aid teaching for 8th grade pupils. A serious lack of information was established among the pupils who failed to pass the first aid lessons. However, the pupils who finished the first aid lessons were far from showing the perfect knowledge. The experience acquired through the research will be applied for creation of the First Aid school subject for future teachers at the Faculty of Education, Masaryk University.*

**Keywords:** *first aid, theoretical knowledge, “First Aid to Schools” project, 8<sup>th</sup> grade pupil of the primary school, Faculty of Education, Branch of study Education for Health, schooling of future teachers.*

## Introduction into the issue

The medical staff of the rescue service meet different cases of endangerment of the human life and health. The fact that everybody should do the best for the affected person in such situation is considered as granted. It is absolutely shocking for them revealing very frequently that willingness of the bystanders to provide help to another person is nearly negligible.

Category of the school age children is one of the most risky age groups where injuries occur relatively frequently. Correct first aid and treatment, though unprofessional, provided in due time can be cardinal for the child and its future.

The practice reveals that an individual, having the decisive impact on further destiny of the affected child thanks to his/her knowledge, skills and willingness to help, is usually the first link of the medical rescue chain, not the doctor or a trained specialist.

### **First aid knowledge shall become the integral part of everybody's education**

Each citizen is obliged to provide first aid by the law, namely by art. 207 of the Criminal Code No.140/1961 Sb. (as amended) which reads:

- 1) "He who fails to provide the necessary aid to the person in danger of death or with symptoms of serious health disorder, though he can do so without any danger for himself or for another person, will be punished by imprisonment for up to one year".
- 2) "He who fails to provide the necessary aid to the person in danger of death or with symptoms of serious health disorder, though he is obliged to provide such help by the character of his employment, will be punished by imprisonment for up to two years or by prohibition of activities."

### **"First Aid to Schools" project**

In 2004 the Regional Office Vysočina – Department of Social Affairs and Health Care – prepared in cooperation with the Department of Education, Youth and Sports the pilot project "First Aid to Schools". Teaching focused in particular on practical training with the minimum theory is the main objective of the project. Pupils of the 8<sup>th</sup> grades of the primary schools and relevant grades of the high schools represent the target group. Project of the Vysočina region is the single project within the Czech Republic teaching young people the laic first aid systematically and within a larger scope. During the last 4 years over 22,000 young people finished this project.

In case of the fourteen years old young people, i.e. pupils of 8<sup>th</sup> grades of the primary schools and relevant grades of the high schools, the teaching comprising 10 lessons is focused consistently on gathering practical skills. The introductory lesson is devoted to importance of the first aid schooling, to most frequent injuries, examination of the injured person, notification of injury, crisis tel. lines, communication with the operation centre staff and equipment of the first aid kit. The other lessons are broken down into possible types of provided first aid – cardiopulmonary resuscitation, bleeding, fractures, head and spinal injuries, thermic injuries. Last but not least, the time is devoted to the model situations and exhibition of intervention by the rescue service vehicle. The first aid course is completed by the test which shall reveal efficiency of the passed lessons.

*This test will establish the degree of knowledge immediately after completion of the lessons and our own research is connected closely with this fact.*

### **Objectives of the research**

We have tried to establish by our research the degree of knowledge of the pupils of the 8<sup>th</sup> grades of the primary schools who have not yet passed the teaching within the scope of the project and the degree of knowledge of the pupils who have already passed the first aid lessons some time ago. We have compared this way acquired information. The comparison has answered the question whether the first aid lessons passed within the scope of the project did had the awaited effect.

### **Methodology of examination**

The information concerning knowledge of first aid provision by the pupils of the 8<sup>th</sup> grades of the primary schools has been acquired in the primary schools of the Vysočina region. The schools were chosen randomly. The research was carried out in

the period from January 2008 till March 2008. The anonymous questionnaire contained 16 questions concerning theoretical knowledge and three general questions concerning the respondents. The chosen questions corresponded to the scope of first aid teaching within the framework of the “First Aid to Schools” project. 160 respondents were addressed (76 boys, 94 girls). 80 respondents have already passed the first aid lessons within the scope of the “First Aid to Schools” project and the remaining 80 respondents have not yet passed these lessons.

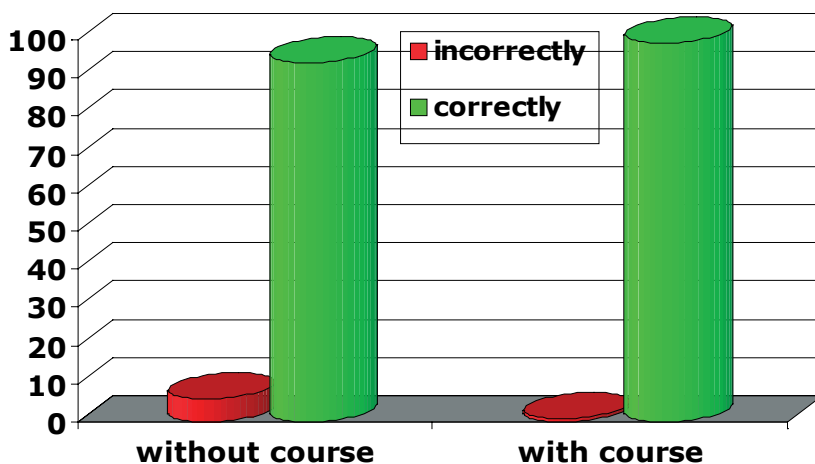
The data have been acquired in the period January–March 2008. The statistic evaluation was carried out, using the  $X^2$  test and its modification by Fisher and Yates.

**The following fields of knowledge and skills concerning the first aid have been compared:**

- 1) assessment of the urgent situation, activation of the rescue chain
- 2) commencement and realization of cardiopulmonary resuscitation (hereinafter referred to as CPR)
- 3) bleeding and its treatment (dressing)
- 4) provision of stabilization of the state of health the affected person

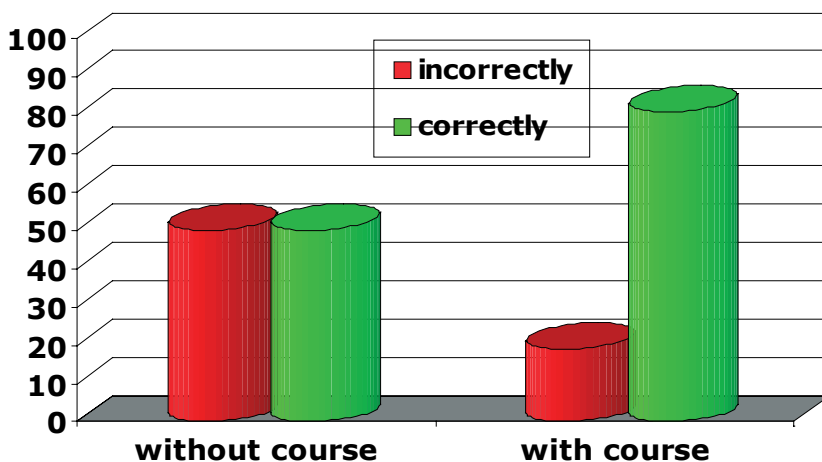
**as to 1) Assessment of urgent situation, activation of the rescue chain**

**Knowledge of the emergency call numbers (%):**



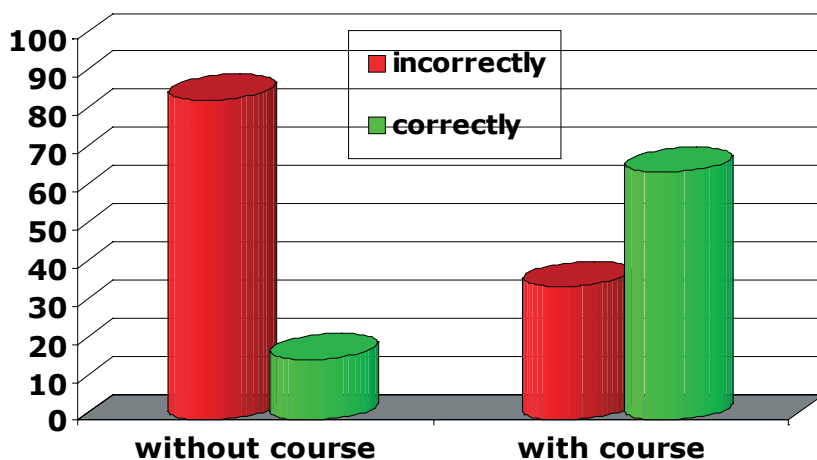
No significant differences have been found between the groups ( $X^2 = 0.22$ ,  $p = 0.639$ ). Both groups were able to call professional help (over 90 %).

**Information about urgent situation notified to the traffic control centre (%):**



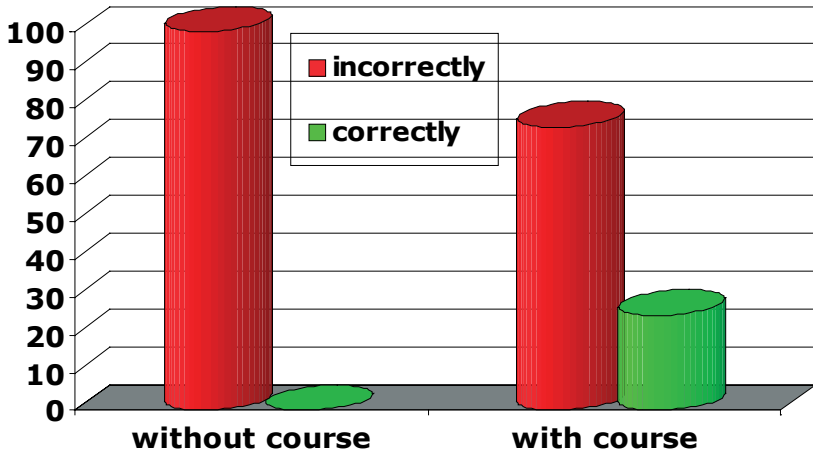
Significant differences have been found between the groups ( $X^2 = 17.32$ ;  $p < 0.001$ ). Over 80% of graduates of the first aid course would be able to release the complete necessary information to the traffic control centre.

**Assessment of urgency of arisen situation (%):**



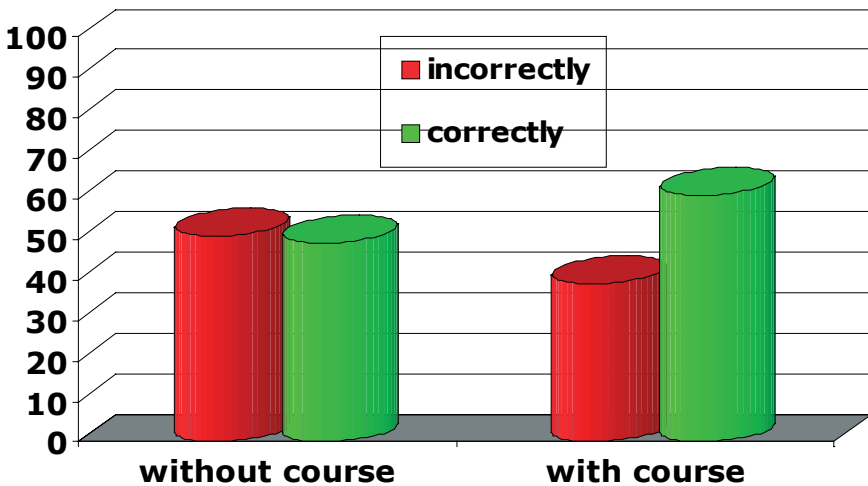
Significant differences have been found between the groups ( $X^2 = 39.41$ ;  $p < 0.001$ ). 65% of graduates of the first aid course would be able to assess the situation correctly and to chose a suitable procedure of treatment of the affected person.

**Procedure of urgent situation resolving (%):**

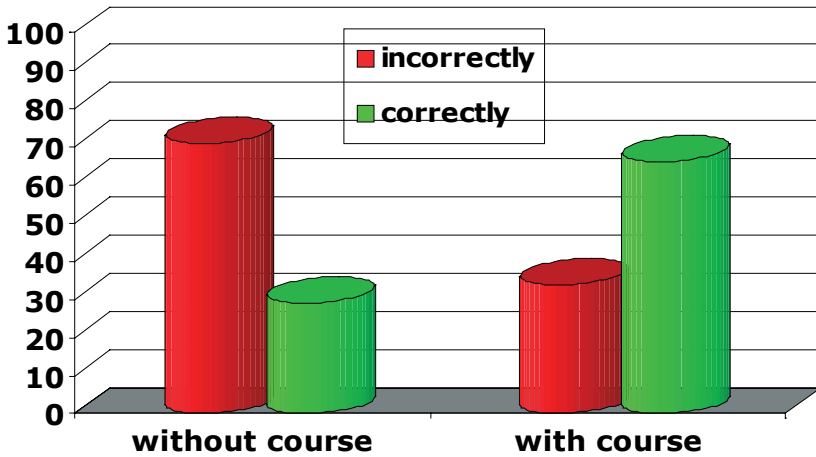


Significant differences have been found between the groups ( $X^2 = 22.86$ ;  $p < 0.001$ ). One fourth of graduates of the first aid course would be able to apply the correct procedure for urgent situation resolving – nobody in the group without the first aid course.

**Procedure in case of electric shock (%):**

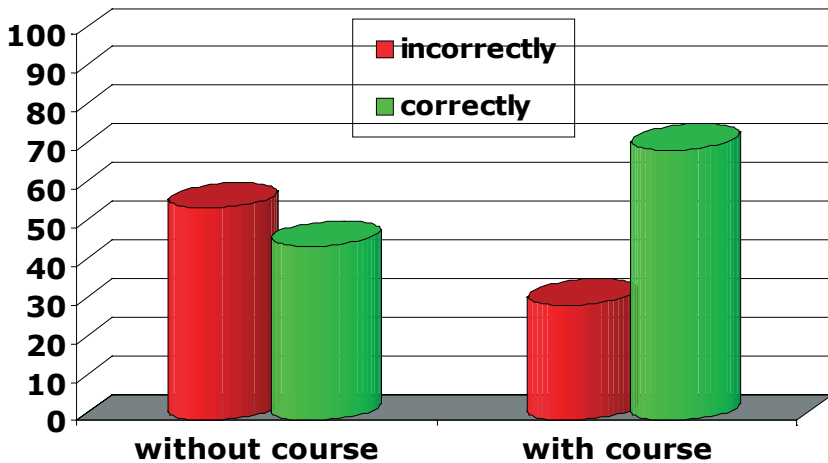


Realization of triple manoeuvre (%):



Significant differences have been found between the groups ( $X^2 = 22.56$ ;  $p < 0.001$ ). Knowledge and realization of the triple manoeuvre are by one third higher (from 30 to 66%) in graduates of the first aid course.

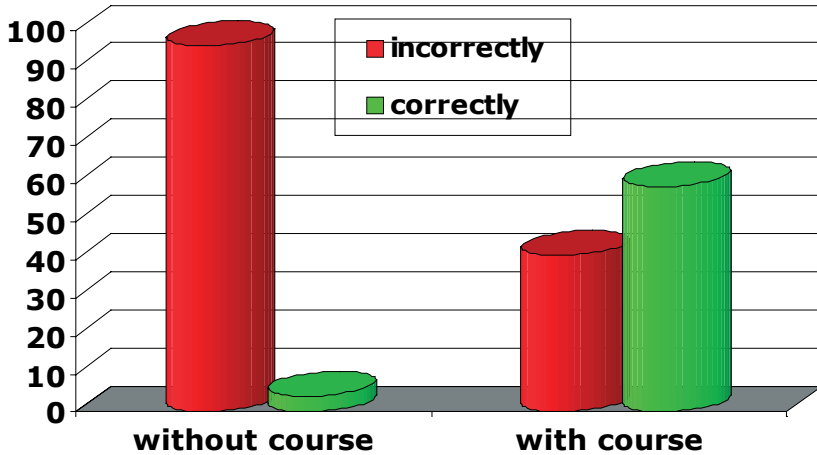
Removal of aspirated foreign body (%):



Significant differences have been found between the groups ( $X^2 = 10.23$ ;  $p < 0.01$ ). The correct procedure would be applied by 70% of first aid course graduates, but only 45% of the pupils that have not passed the course.

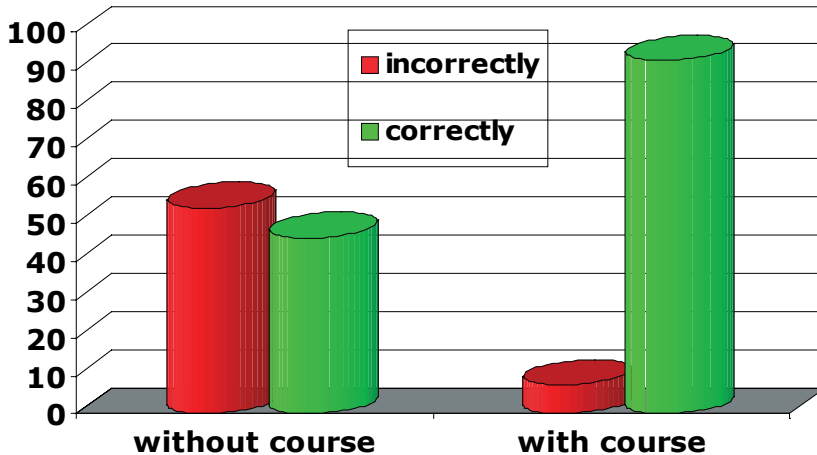
**as to 2) Commencement and realization of cardiopulmonary resuscitation (hereinafter referred to as CPR)**

**Rescue breathing and chest compression ratio during CPR (%):**



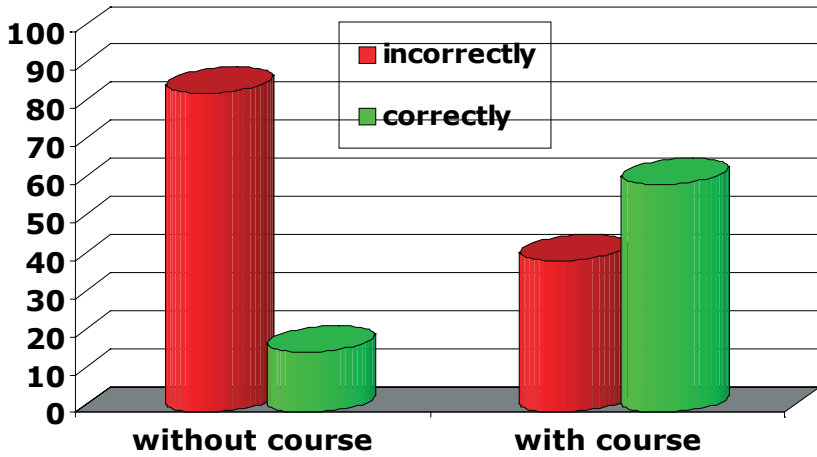
Significant differences have been found between the groups ( $X^2 = 56.32$ ;  $p < 0.001$ ). Nearly 60% of the first aid course graduates know the correct rescue breathing and chest compression ratio, but only 4% of pupils that have not passed the course.

**Air volume breathed into lungs of the affected person in case of apneusis (%)**



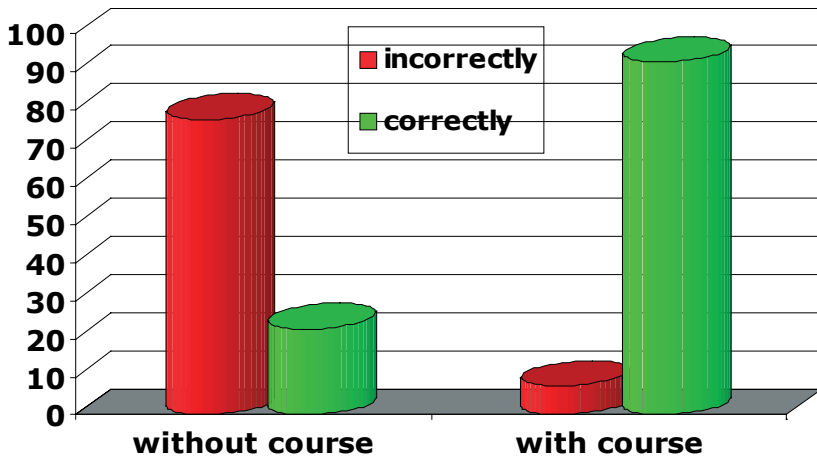
Significant differences have been found between the groups ( $X^2 = 40.27$ ;  $p < 0.001$ ). The optimum air volume would be applied during CPR by over 90% of the first aid course graduates, but only 46% of pupils that have not passed the course.

**Procedure during commencement of CPR (%):**



Significant differences have been found between the groups ( $X^2 = 32.46$ ;  $p < 0.001$ ). 60 % of the first aid course graduates would apply correct CPR procedure, only 16% of the group without the first aid course 16 %.

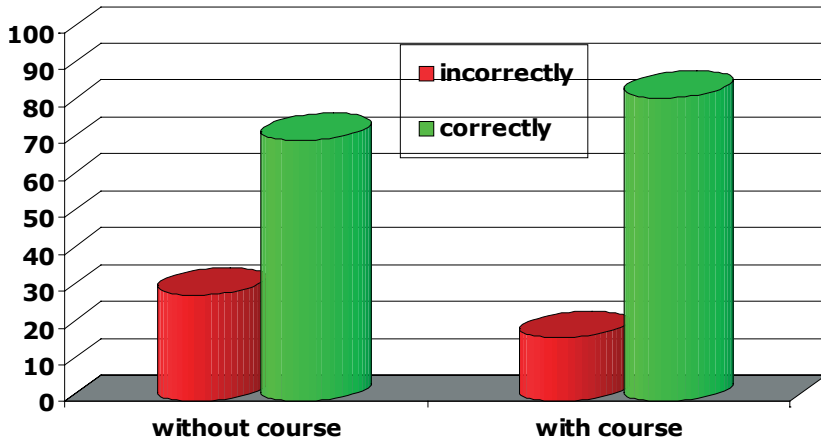
**Diagnostics of apneusis and heart failure (%):**



Significant differences have been found between the groups ( $X^2 = 80.20$ ;  $p < 0.001$ ). Over 90 % of the first aid course graduates would diagnose apneusis and circulation disorder correctly, only 22% of pupils without the first aid course would manage it.

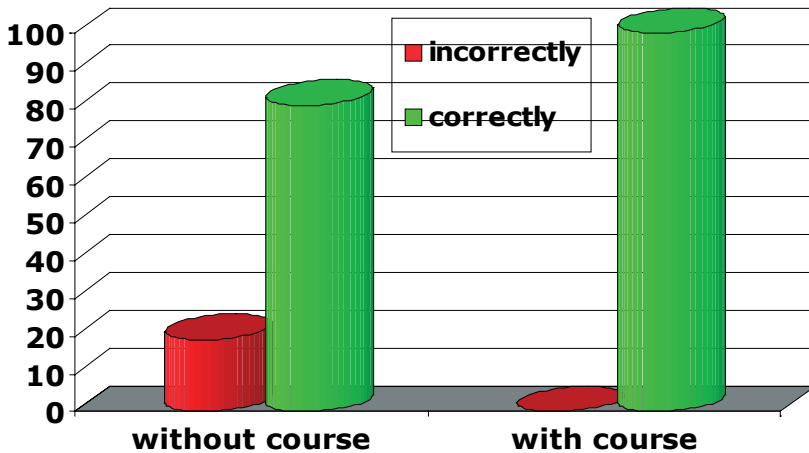


**as to 3) Bleeding and its treatment**  
**Approach in case of arterial bleeding**



No significant differences have been found between the groups ( $X^2 = 2.85$ ;  $p = 0.0945$ ). Despite in case of resolving the arterial bleeding, rate of success of the first aid course graduates would go up to 82.5% compared with the group without the course (s 71 %).

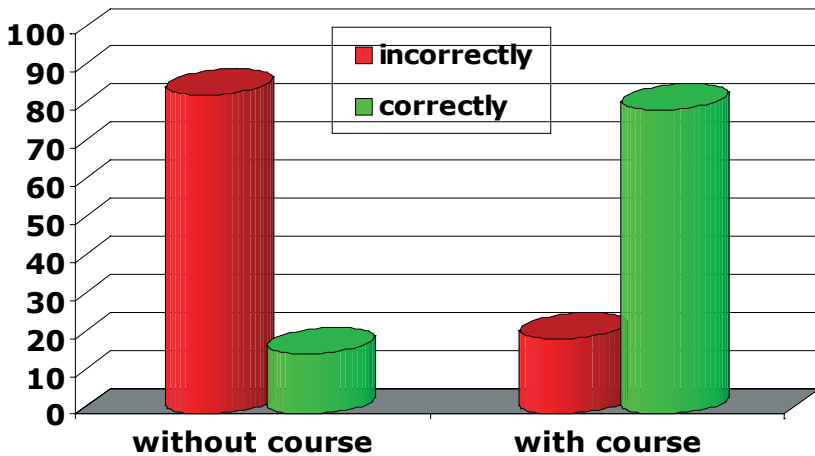
**Application of the tourniquet (pressure bandage) (%)**:



Significant differences have been found between the groups ( $X^2 = 16.55$ ;  $p < 0.001$ ). Nearly one fifth of the pupils that have not passed the first aid course would not apply the pressure bandage correctly; nobody of the course graduates would make a mistake.

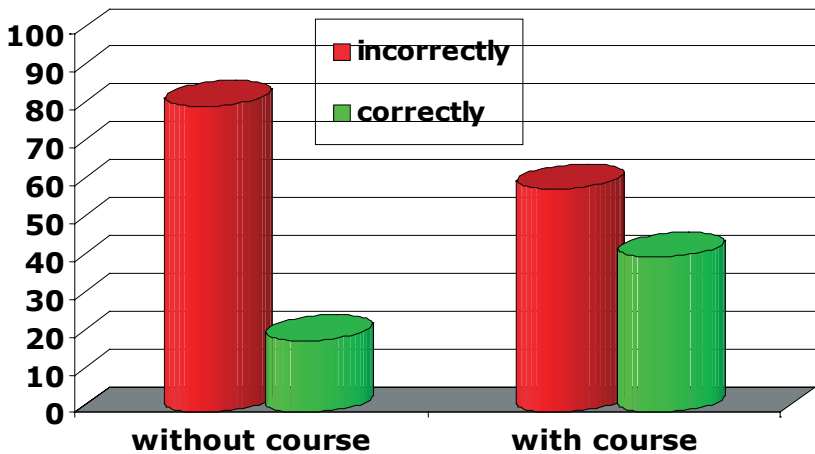
**as to 4/ – Stabilization of the affected person**

**Position of the affected person under the suspicion of spinal cord injury (%):**



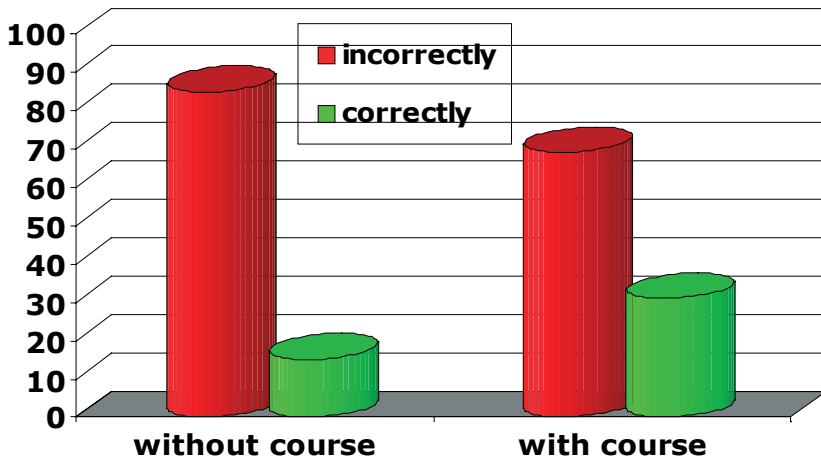
Significant differences have been found between the groups ( $X^2 = 65.12$ ;  $p < 0.001$ ). 80 % of the first aid course graduates would choose a suitable position of the affected person in case of this injury compared with low 16% of the pupils without the first aid course.

**Application of the simplest actions to stabilize fractures (%):**



Significant differences have been found between the groups ( $X^2 = 6.64$ ;  $p < 0.01$ ). One fifth of the pupils without the first aid course would manage to treat fractures suitably compared with two fifths on the side of the first aid course graduates.

### Realization of anti-shock measures (%):



Significant differences have been found between the groups ( $X^2 = 5.94$ ;  $p < 0.05$ ). Over 30% of the first aid course graduates would apply the anti-shock measures correctly compared with 15% in the group of pupils without the first aid course.

### **Summarization of Results of the Study**

- Knowledge of first aid provision are absolutely inadequate in the respondents who have not passed the schooling under the project.
- The group of respondents that has passed the first aid course within the scope of the “First Aid to Schools” project demonstrated much more better knowledge, though not always with full success.
- The highest number of mistakes was revealed in resolving the urgent situation and applying anti-shock measures, where only ca one fourth of respondents gave correct answers.
- The average success rate reached 80% in other fields.
- The group of respondents addressed by the “First Aid to Schools” project demonstrated much more better knowledge in nearly all important fields concerning first aid provision.
- The “First Aid to Schools” project has undisputable contribution for the first aid teaching.
- However even this group is far from showing the perfect knowledge in many issues of first aid provision.
- It is necessary to comprehend that the majority of knowledge concerning first aid provision is acquired in the primary schools and therefore the first aid teaching has to be prepared and realized adequately in our primary schools.
- The fact that the teachers of the first aid lessons must have a solid knowledge in this field goes without saying.

- The researches examining knowledge of the teachers in this field and organized by certain faculties (colleges) of education have revealed that many teachers would not be able to provide adequate first aid to the affected person, i.e. they are unable to transfer good knowledge to their pupils.

## **Recommendations for practice:**

- Adequate awareness of the teachers should be the basic step. It follows clearly from our preceding researches focused on knowledge of the teachers that they do not know very much about the first aid field.
- It is therefore necessary to introduce the first aid classes for the primary school teachers who transfer the knowledge concerning rescue of the human life to the pupils in their subjects.
- Incorporation of the first aid lessons into the subject Education for Health would be advisable.
- It is necessary to familiarize both the practice teachers and the future teachers, i.e. students of the faculties of education, with this issue and to grant them adequate overview of existing progressive methods and tools of teaching both for the theoretical part and for the practical first aid training.
- The latest offer of these aids and tools, either the instruction films or directly models for practical training of resuscitation, stop of bleeding, etc., is adequate and satisfactory.
- The “First Aid to Schools” project should not be the single means for first aid teaching, we are speaking about a single instruction action.
- The pupils must be given the opportunity to train and strengthen their knowledge and skills continuously in the devoted lessons (lessons of the subject “Education for Health” are ideal for such training).
- Training of model situations strengthening the knowledge acquired during theoretical lessons is considered inevitable.

## **Tasks for the Faculty of Education of Masaryk University following from the established situation**

- Department of Family Education and Education for Health of the Faculty of Education of Masaryk University shall prepare lessons of the optional subject “First Aid” for the future teachers, for the students of both the lower and the higher primary school grades.
- from the academic year 2008/09 the websites of the Department will contain quotations of the publications suitable for first aid lessons, textbooks, information about instruction films or about new models intended for practical training of resuscitation, stop of bleeding, etc.

## ÚROVEŇ ZNALOSTÍ A DOVEDNOSTÍ V POSKYTOVÁNÍ PRVNÍ POMOCI U ŽÁKŮ 8. TŘÍD ZÁKLADNÍCH ŠKOL

**Abstrakt.** Výzkumné šetření bylo zaměřeno na zjištění úrovně znalostí a dovedností v poskytování první pomoci u žáků 8. tříd vybraných základních škol a dále na projekt, který se zabývá výukou první pomoci pro žáky 8. tříd. Ve znalostech žáků, kteří výukou navrženou projektem neprošli, byly zjištěny závažné nedostatky. Ukázalo se však, že ani ti žáci, kteří výukou prošli, zdaleka neprokázali bezchybné znalosti. Zkušenosti získané výzkumem budou zúročeny pro vytvoření předmětu První pomoc do výuky budoucích učitelů na Pedagogické fakultě MU.

**Klíčová slova:** první pomoc, teoretické znalosti, projekt „První pomoc do škol“, žák 8. třídy ZŠ, Pedagogická fakulta, obor Výchova ke zdraví, výuka budoucích učitelů.