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## Analysis of the knowledge regarding as well as the ability to provide first aid by teachers of secondary schools in the Świętokrzyskie voivodeship

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### Abstract

**Introduction:** Despite the fact of completing various first aid courses, the course attendees often refrain from providing first aid due to fear. Such a barrier to provide first aid is usually created by people themselves through thinking that they will further harm the injured rather than help them. From a legal point of view every participant or witness of an accident is obliged to provide first aid. In urgent cases it is necessary to undertake the rescue operation in the first minutes after the accident.

**The aim of the study:** The aim of the research was to examine the level of knowledge about providing first aid among teachers.

**Materials and methodology:** The studies were conducted after obtaining the consent of the School Principals. The diagnostic survey method using the questionnaire technique was utilized in the realisation of this study. The results were elaborated on the basis of the data collected via a questionnaire survey research instrument.

**Conclusions:** Women constituted the strongest group- 80%, men only 20%. 40 people participated in the study, out of which 5% were aged 25 or less and 95% were aged over 25 years. The respondents who completed undergraduate studies constituted 7.5%, whereas 92.5% of people had master's degrees. The study shows that 62.5% of teachers have been employed for over 10 years, 22.5% have fewer than ten years of practice and only 15% have

been employed for a period shorter than 5 years. The majority of teachers, i.e. 85%, have completed first aid courses.

**Conclusions:** The state of the respondents' knowledge about first aid is satisfactory. A large group of respondents know the current guidelines of the European Resuscitation Council.

**Key words:** first aid, teacher, legal aspects

## INTRODUCTION

Despite the many training courses on first aid organized by companies, many individuals are afraid to provide it although they have the knowledge and skills obtained during those courses. The barrier to help others is usually created by people themselves through thinking that they will further harm the injured rather than help them. A large group of people who did not attend any training or courses on first aid think that when encountering a lying person, they can ignore them or treat them as intoxicated, which often happens. However, in many cases it is illusive. The process of providing first aid can be presented as a chain with five links, i.e. immediate actions, emergency call, first aid, transport and medical attention [1].

When providing first aid, the task is to prevent additional complications to occur until the emergency services arrive at the accident site. From the legal point of view, each participant or witness of an accident is obliged to provide first aid. In urgent cases it is necessary to undertake the rescue operation in the first minutes following the accident. First aid aims to keep the injured alive until the ambulance arrives. The following activities are considered as lifesaving: evacuation of the victim from the accident area, resuscitation, control of dangerous bleeding, recovery position placement, securing the accident area [2].

Providing first aid – teachers' attitude

Stress associated with the administration of first aid

Stress - „term understood as a class of external factors with the ability to invoke certain internal processes such as increased internal tension, anxiety, that may lead to: stimulations, causing the inability to satisfy a need; a situation where an obstacle is placed on the road to realize a goal; painful or irritating situations, e.g. by inflicting physical pain..” (annotation – medical encyclopedia) [3].

Physiological reaction of the body to stress.

The first reaction of one's body to stress is the increase of muscle tension which decreases after a certain time. However, if the stress factor is intensified, the return to the original state takes more time. If the stress factors occur often or if they are long-term and overlap, the tension may persist for a longer period of time. Moreover, stress can cause an increased heart rate, an increase in blood pressure and its outflow from the internal organs into the muscles, which – in turn – may cause ischemia of the organs as well as, if the state persists for a longer period, their disorders. Stress is also accompanied by a variety of other physiological and biological changes which are not beneficial for the organism in the long term [4].

Teachers' stress

The teacher is, contrary to the appearances, a very responsible profession which encompasses the everyday struggle with a big group of adolescents. School, as every other site, can be dangerous and young people have various ideas on how to entertain themselves while at school. Often, such ideas are dangerous for themselves and those surrounding them. As it happens in schools, various scuffles in the corridors or stairs, fights and unfortunate jumps or falls during the physical education classes may result in serious injuries. What is most important in such situations is to provide aid to the injured as soon as possible. The person that is closest and available in such cases is the teacher who should react as quick as

possible. As it is known, stress manifests differently in various people – it may take the form of panic, paralysis, crying, etc. It is not possible to predict the way one will react in a given situation, but it is possible to aid oneself with the organization of actions associated with first aid through the participation in first aid courses and through familiarizing oneself with both the theory and practice. One is not able to eliminate stress entirely, but they are able to take control over it through the acquired knowledge. Due to this reason, it is important that every teacher completed a first aid course – the pupils' safety is most important, and who will ensure it if not the teacher [5].

Training courses that school teachers should complete.

The training course on first aid should be organized by the employer, so in this case by the principal of the institution (school). The training course should include all teaching staff in order to ensure the safety of the pupils due to the specific exposure of this age group to injuries and accidents. The justification should emphasize that the teacher was able to professionally provide first aid. School is an enormous cluster of a various characters, persons and children who try to deal with stress that accompanies them in a variety of manners. It is very important that teachers can provide first aid, as they are the closest individuals and can react the quickest should an accident occur. As mentioned in the previous chapters, the first contact with the injured person is of the greatest significance, therefore it is most important that such contact is made by someone who is prepared to provide first aid [6].

Knowledge which should be acquired to professionally administer first aid

Activities which should be practiced during a first aid course should take into account the specificity of the school.

The activities the teachers should be introduced to in the first place are:

- assessment of the accident site
- the ability to call for assistance
- verification whether the victim breathes
- chest compression accompanied by rescue breaths

These are the foundations that all teachers should know. It is obvious that the skills mentioned above are not used on a daily basis, but this does not mean that they will not be useful outside the school circumstances – even on the street or at home. It is impossible to plan an accident – it may happen in the least expected moment.

One should be aware of the fact that school is a particular place, both in terms of working and – from the pupil's point of view – studying. A place that is associated with good care and safety. Therefore, to uphold this stereotype, the teachers should be able to administer first aid. This will allow both the pupils and their parents to feel safe [7].

Each teacher that completed a first aid training course should be able to behave correctly in any situation that may occur in the given moment. It is known that one will not expect miracles from a teacher that completed such a course, but there will be an expectation to react according to their abilities and secure the injured until the ambulance arrives [7].

The most common accidents that occur within the school boundaries include:

- hemorrhage
- bone fractures
- electrocutions
- sudden losses of consciousness
- epilepsy
- head injuries

Any person that has completed a first aid course knows how they should behave in all the above situations. What is most important is to: assess and secure the given injury according to the person's own abilities and available medical supplies, and to call an ambulance.

The National Emergency Medical Services Act of 8<sup>th</sup> September 2006 contains procedures that are needed to ensure that the conducted training course is valid. Each individual organizing such a course is obliged to obtain an approval of the course program. The program approval is granted by the Voivode and it may be granted if two conditions, included in article 13 of the abovementioned Act, are met. The Voivode may also reject the approval request or revoke the course program approval [7,8].

The first actions on the accident site the teacher should know

Assessment of the accident site

After the arrival on the accident site, the teacher must acquaint themselves with what happened, how many individuals are injured and what injuries they sustained. Moreover, the person providing aid should secure the accident site in order to prevent more people, or themselves, from getting injured. If the injured are still in danger of further injuries, they should be removed from the danger area if possible. The next step is to call the emergency medical services, fire department and the police. When calling the emergency number, the dispatcher should be informed of what happened, how many injured there are, what are their injuries. Furthermore, the person calling should answer any questions the dispatcher may have.

The victim may have several different injuries. The order in which they should be treated requires the assessment which one is of the greatest threat to the victim. First aid should begin with their initial treatment. There may be multiple injured, therefore the person arriving on the accident site should check which individual is the most endangered and start providing first aid beginning with that person [9].

Legal obligation to provide first aid

The legal obligation to provide first aid is defined in article 164 of the Criminal Law, as follows:

1. „anyone who fails to help a person in the immediate danger of death or serious injury, where rendering such help is possible without the risk of death or serious injury to oneself, is liable to a punishment up to three years of imprisonment.
2. Anyone not rendering help, where a medical procedure is necessary or where the conditions permit the immediate help of an institution or a more qualified person for such action, is not liable to punishment”[10]

The obligation to provide first aid has certain limitations that are associated not only with the absolute necessity to render help, but also with the ability to assess when such help can be rendered and when not. First aid can be implemented only if it is not associated with excessive risk.

Article 4 of the National Emergency Medical Services Act of 8<sup>th</sup> September 2006 states:

“should anyone notice a person or persons in the state of a sudden danger, or if anyone is a witness of an occurrence causing such a state, they are obliged to, according to their own abilities and skills, undertake immediate actions aiming to effectively notify of such an occurrence the entities established to render help to persons in the state of sudden medical danger”

Any person witnessing an accident should provide first aid to the injured individuals, even if they are not trained to do so. Providing first aid focuses not only on resuscitative actions, but also on calling qualified help and securing the accident site. Obviously, upon encountering a burning vehicle, one is not expected to approach it and extract the injured out of it, because at that point, one can become a victim as well.

Article 5 of the National Emergency Medical Services Act of 8<sup>th</sup> September 2006 states that persons rendering help take advantage from the protection granted by that act.

The article reads as follows:

1. “any person rendering help, qualified first aid and undertaking medical rescue actions takes advantage of the protection provided by the act of 6<sup>th</sup> June 1997 – Criminal law (Journal of Laws No. 88, pos. 553 with later amendments 2) for public officials
2. The person mentioned in point 1 may utilize the possessions of another person, other than their Life or health, as well as personal property to the extent necessary to save the life or health of the person being in a state of sudden medical danger” [12]

As mentioned before, the most accidents occur in schools. It is there that children are involved in accidents and fall ill.

Every teacher working with adolescents should be able to behave correctly when facing a situation that threatens the life of the pupil. This is valid not only due to the profession of a teacher, but also in regard to the contents of the Criminal Law. First aid training courses should be organized by the employer, who – in turn – should aim to make the pupils feel safe.

The education on first aid is regulated by point 2 of article 8 of the National Emergency Medical Services Act of 8<sup>th</sup> September 2006 [13].

#### Criminal law consequences of providing help

Year after year, and increasingly often, people are witnesses of many accidents occurring at home, in schools or during transportation. This issue affects all of humanity and it is publicized not only by the media. Every year, many people lose their lives in accidents. It is well worth to consider, while being a witness to an accident, if one can state with clear conscience, that they did everything to help the person that needed such help. There are many people who ignore an accident site and pass it without stopping to provide help. There are also many people who are afraid to help. Fear of the consequences or fear that one may worsen the situation takes priority over reason. A considerable role is also attributed to the time that is everyone’s most prized resource. Providing first aid is connected to devoting time, and as stated before, every minute is priceless for the injured and their time counts down beginning with the occurrence of the accident. If help is not provided immediately after the accident, the time when the injured had chance to survive will be exhausted causing the victim to die. Many people are not aware of the fact that the act of not providing first aid is punishable and underpinned by appropriate legal acts that are associated with the punishment of imprisonment [14].

Point 2. Educational courses on the provision of first aid are realized including:

- a) System physicians
- b) System nurses
- c) Paramedics – who receive salaries per the hourly rate on the basis of civil law contract.”

Any person fulfilling the following requirements may become a paramedic:

Art. 10. of the National Emergency Medical Services Act of 8<sup>th</sup> September 2006:

1. „any person possessing legal capacity,
2. employed or serving in units cooperating with the system, mentioned in art. 15 or that are members of these units,
3. in possession of a valid certificate on the completion of the qualified first aid training course, hereinafter ‘course’, and on the acquisition of the paramedic title,
4. which health state permits the provision of qualified first aid” [15].

Next, the act regulates the scope of activities that may be implemented in the appropriate situation by a paramedic that completed the qualified first aid course:

1. „cardiopulmonary resuscitation, both deviceless and with the use of devices, along with the administration of oxygen and following the instructions provided by the automatic defibrillator,
2. Staunching of external hemorrhages and wound dressing,
3. Immobilization of bone fractures, suspected bone fractures and dislocations

4. Protection from hypothermia and hyperthermia,
5. The conducting of preliminary anti-concussion actions through the proper placement of persons in the state of sudden health risk, thermal protection of persons in the state of sudden health risk.
6. Application of passive oxygen therapy,
7. Evacuation of persons in the state of sudden health risk from the accident site,
8. Psychological support for persons in the state of sudden health risk,
9. The conducting of the preliminary medical segregation.”

Each paramedic as well as a non-medical rescuer should perfectly know which rescue activities they can carry out. They should also be aware of the consequences of the failure to provide first aid [16].

#### Civil law consequences of providing first aid

The civil law classifies first aid as an ‘unasked task.’ The person undertaking a rescue activity is liable for the damage caused by the activities carried out incorrectly or negligently. The activities undertaken by a physician or a trained paramedic are assessed far more strictly when compared to a random person. A paramedic providing first aid may request compensation for the losses incurred during the provision of first aid. He or she is also entitled to a compensation for the costs incurred due to the treatment of wounds associated with carrying out the rescue action. All damages should be paid by the insurance institutions obliged to do so [17].

#### Penal consequences of providing first aid

The penal consequences of providing first aid apply to all living people above the age of 16. Failure to provide the necessary first aid to an injured person is punishable by imprisonment up to a year. However, in cases where the helping person is not trained to provide first aid and provides it incorrectly, they cannot be punished for their actions as the help they provided is rendered as good as the person’s skill permit. This exception only applies to people that do not have medical education. On the other hand, people with appropriate medical education that provide first aid incorrectly are subject to the criminal law, and therefore to the punishment of imprisonment. Should the victim die due to the injuries sustained in the accident, the rescuer that did not provide the first aid may not, under any circumstances, be held responsible for any bodily injuries or causing the death. However, he or she may be held responsible for failing to provide first aid. Therefore, whenever a random bystander fails to provide first aid to an accident victim, he or she will be held liable to the penal consequences for this failure as per art. 164 of the criminal law, even if the victim dies as a result of this action. However, if a paramedic provides first aid and causes bodily injuries or the death of the injured, either through negligence or intentionally, they will be held responsible for such results of their actions [18].

What often happens is the simultaneous occurrence of risk to the health and life of both oneself and another person, which – in turn – forces the rescuer to swiftly assess the situation and act quickly. Such circumstances can easily lead to the negligence of certain actions. However, should one be acquainted with the most important rules of providing first aid, they most certainly will not make any mistakes. Charges of negligence do not apply if anyone provides first aid in a situation of sudden emergency in accordance with their knowledge and beliefs guided by the acquired skill and experience, even if that person later states that their actions were incorrect or even harmful [19].

### **Aim of the Study**

The below study fulfills two goals: a cognitive one and a practical one. The cognitive goal of the study aims to assess the knowledge of the first aid provision rules among secondary school teachers.

On the other hand, the practical goal aims to determine the demand for the organization of training courses on the provision of first aid for teachers, as well as their knowledge of first aid rules.

### Material and methods

The diagnostic survey method, which included the use of the questionnaire technique, was utilized in the study. The author's questionnaire constituted the research tool. The questionnaire contained 42 close-ended questions, where questions 1-4 were associated with socio-demographic data of the surveyed individuals.

The questionnaire consisted of three parts where the teachers were assessed in terms of: socio-demographic data; the knowledge about the completed courses and trainings on the provision of first aid in the state of risk to health and life; the knowledge and skills related to providing first aid in the sudden cases of risk to life and health in school.

In order to assess the secondary school teachers' skills associated with the provision of first aid in the states of risk to health and life the authors used close-ended questions on a multiple-choice questionnaire.

The study was conducted following the acquisition of the permission from the Principals of three Secondary schools based in Kielce between 09.09.2018 and 07.10.2018.

What is more, the conditions, that allowed any inconveniences for the teachers to be diminished, have been met, i.e. respect for the principle of voluntary participation in the questionnaire, full anonymity, and the use of the obtained information solely for the purposes of the master's dissertation.

The data was inserted and elaborated with the use of the Microsoft Excel software and the presentation of the data of a quantitative trait was carried out in the form of tables and figures. The frequency of the occurrence of the given traits is delivered using percentages. The distribution of the quantitative traits is presented graphically using a bar chart.

### Research results

This chapter presents the analysis of the results of the questionnaire survey on the teachers' skills and knowledge associated with the rules of providing first aid in situations where there is risk to life and health.

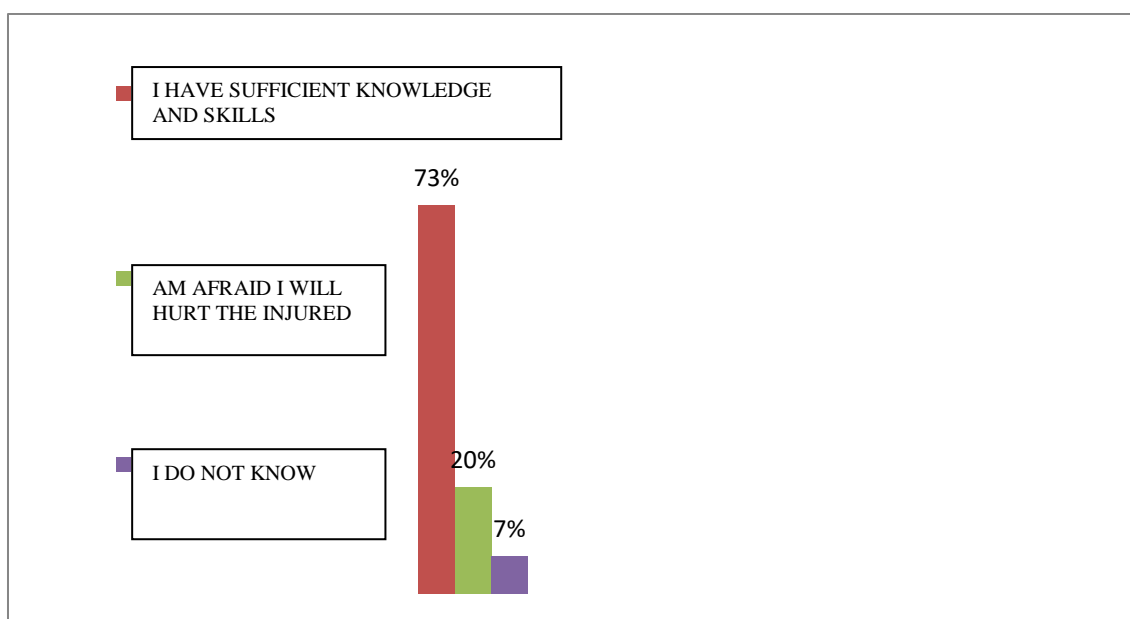


Figure no 1. Level of knowledge and skill in the scope of providing first aid.

After the completion of the courses, 73% of the surveyed claim they possess the appropriate knowledge and skills in the scope of providing first aid, 20% fear that they will hurt the injured individuals and 7% does not know how would they react when providing first aid in a situation of risk to the life and health of the injured.

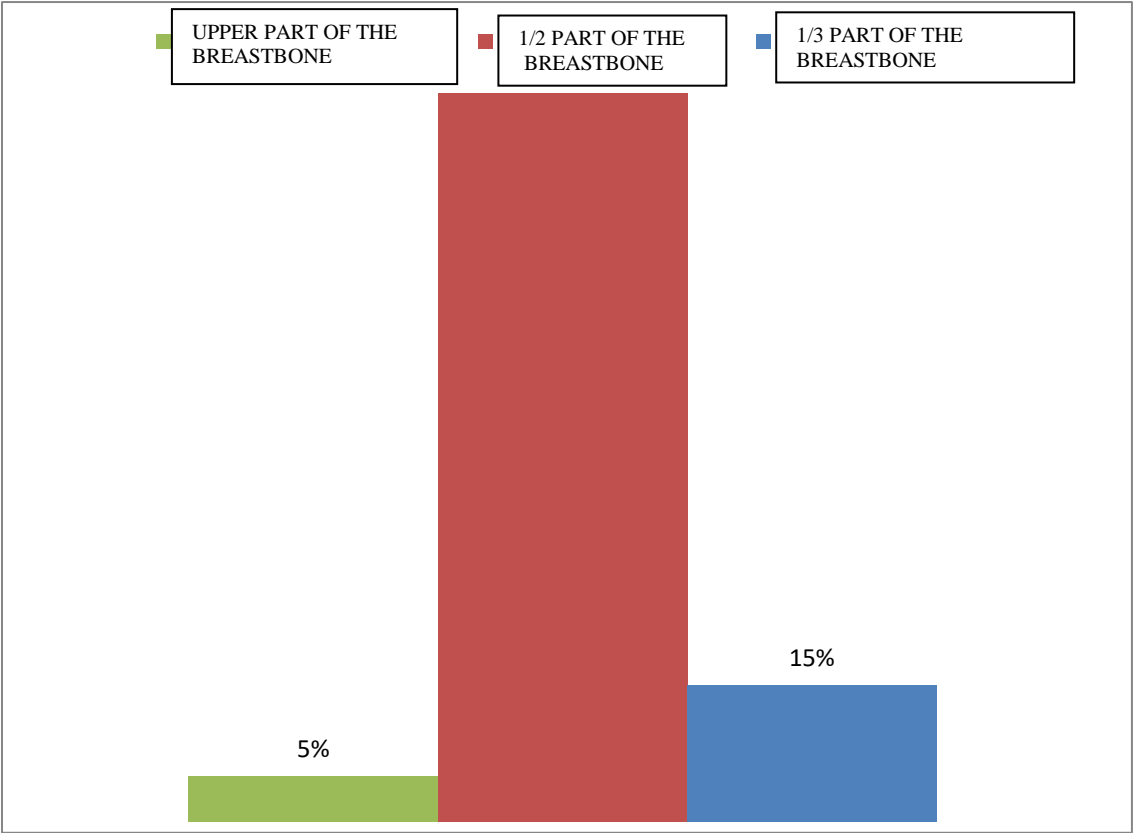


Figure no 2. Knowledge on the correct proportion of chest compressions.

Chest compressions during reanimation should be carried out in the middle of the chest, that is at  $\frac{1}{2}$  of the breastbone. The correct chest compression to rescue breaths ratio during resuscitation has been chosen by 80% of the participants.



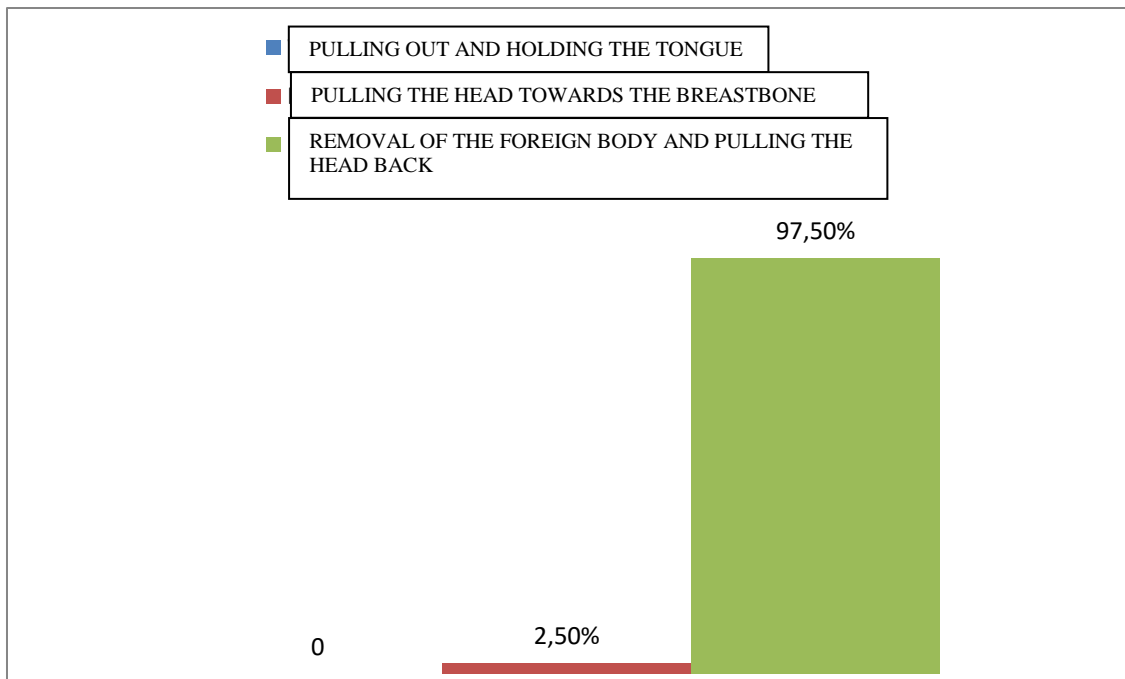


Figure no 3. The most efficient and the simplest way of clearing the airway

Among the entirety of the surveyed, 97,5% provided the correct answer and knows how to help a choking person. On the other hand, 2,5% would bend the head of the injured towards the breastbone, and thus provided an incorrect answer.

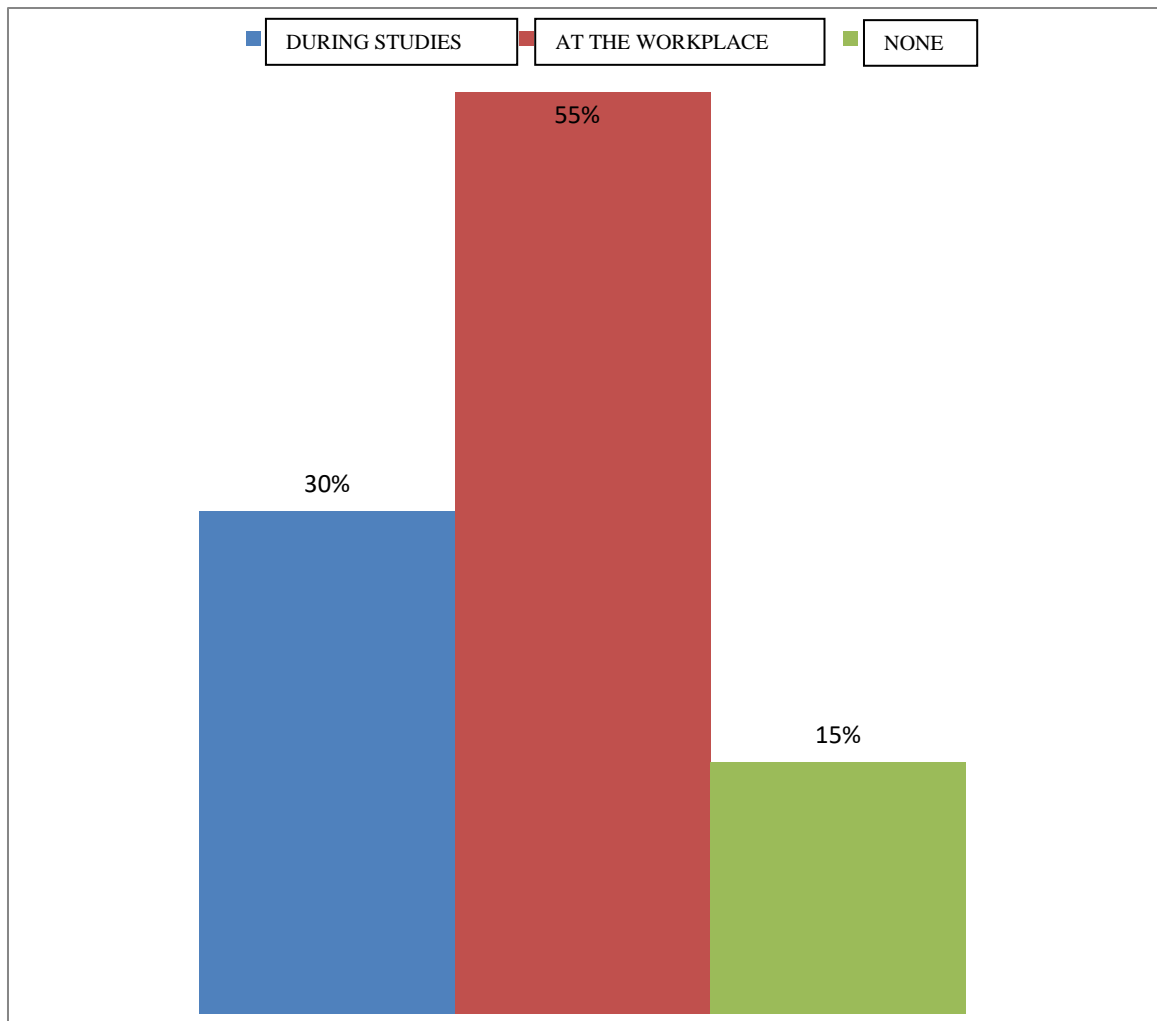


Figure no 4. Trainings and courses on the ability to provide first aid.

Most of the teachers, i.e. 85% of them, have completed first aid courses and 15% of the participants did not attend such courses.

## Discussion

This work presents research associated with the level of knowledge and skills on the provision of first aid of the teachers working in one of three secondary schools in the Sędziszów municipality. The conducted research can be compared with the results obtained by J. Wiśniewski and W.D. Majewski entitled „Ocena poziomu wiedzy nauczycieli szkół ponadgimnazjalnych w zachodniopomorskim na temat pierwszej pomocy medycznej.” According to the research conducted in Szczecin, two thirds of the teachers (and three fourths of the teachers in Gryfice) claim they are unable to provide first aid even though most of them participated in first aid courses. When it comes to the authors’ research, 85% of the teachers completed first aid courses (55% at the workplace and 30% during their studies). During the courses 50% of the surveyed possessed both theoretical and practical knowledge, therefore they know how to skillfully provide aid to an injured person. However, when asked „following the completion of the course, do you have the knowledge to autonomously provide first aid to an injured person?”, only 5% answered that the level of knowledge and skills is sufficient in that area. 35% would have doubts whether they will not further hurt the injured and 45% stated that they do not know how they would react in a situation of a risk to the injured person’s life and health. Furthermore, according to the research by J. Wiśniewski and W. D. Majewski, half of the surveyed individuals can examine the heart rate using the carotid artery, whereas in the authors’ own research this value is equal to 95% [20]. This is despite

the fact that the current guidelines of the Polish Resuscitation Council do not recommend checking the heart rate by non-professionals. When it comes to the work of K. Sosada, which focuses on the level of the teachers' knowledge on first aid in the Silesian voivodeship, close to 87% of the surveyed were able to check the heart rate in an unconscious person, which lies in agreement with the authors' own research. When focusing on the question regarding the place where the chest compressions should be applied during circulatory arrest, 80% of the teachers in the authors' own research know where to apply those and 75% know the correct frequency of performing them, whereas in the comparative sources only 50% provided the correct answer. As far as the level of knowledge on epilepsy goes, the research can be compared with the work of Z. Tokarski and M. Wojciechowska „Poziomwiedzy nauczycieli na temat padaczki w szkołach integracyjnych”. [14] In the authors' own work 50% of the surveyed claim tongue bites are the main cause of injuries during an epileptic fit and the latter 50% claim these are head trauma. The comparative work of Z. Tokarski and M. Wojciechowska shows that the main cause of injuries, selected by 70% of the participants, is tongue bites. 40 teachers participated in the study, which included 80% of women and 20% of men. Furthermore, 62.5% of the teachers have been employed for over 10 years, 22.5% have fewer than ten years of practice and only 15% have been employed for a period shorter than 5 years. To recapitulate, after a partial comparison of the research results one can state that teachers are able to provide first aid. What is needed is a system solution that improves the awareness regarding the need to provide first aid for the teachers, as they are the individuals that educate the adolescent and use their own approach to teach them how the latter should behave as adults. A teacher should constantly improve their skills to help the children and adolescents in situations of risk to health and life [22].

### **Conclusions**

1. A vast majority of the respondents know and is able to present the legal aspects associated with first aid.
2. The state of the respondents' knowledge on first aid is satisfactory. A large group of the surveyed knows the current guidelines set out by the European Resuscitation Council.
3. Most of the surveyed teachers are able to provide first aid and know the basic reanimation actions.
4. There is need to organize courses on first aid for teachers in order to further improve their skills in the area of providing it.

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