

First Aid for education professionals working with children*Primeiros socorros para profissionais da educação que atuam com crianças**Primeros auxilios para profesionales de la educación que trabajan con niños*

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Abstract:

Objective: to assess the level of theoretical knowledge before and after training on *First Aid* for professionals working with children in Municipal Early Childhood Education Centers. **Methods:** quantitative research, with a quasi-experimental design of the before and after type, with professionals from early childhood education centers through a training course named: “First Aid for professionals working with children”, carried out between September and October of 2023. Two instruments were used: one on the sociodemographic profile of participants, and another with 18 questions as a pre-test. Afterwards, both theoretical and practical training were conducted, followed by post-testing. **Results:** the average age of the professionals was 42.5 years, and most of them (76.0%) mentioned previous participation in first aid courses. After training, the overall percentage of correct answers was 97%. **Conclusion:** despite previous participation in courses and deficient knowledge about first aid care in the pre-test, there was a substantial improvement in knowledge after training, in the post-test.

Keywords: First Aid; School Health Services; Child.

Resumo:

Objetivo: avaliar o nível de conhecimento teórico antes e após uma capacitação sobre *Primeiros Socorros* para profissionais que atuam com crianças nos Centros Municipais de Educação Infantil. **Método:** pesquisa quantitativa com delineamento quase-experimental do tipo antes e depois com profissionais dos centros de educação infantil através da capacitação intitulada: “Primeiros Socorros para profissionais que atuam com crianças”, realizada entre setembro a outubro de 2023. Utilizou-se dois instrumentos: um sobre o perfil sociodemográfico e outro com 18 questões como pré teste. Posteriormente foi realizada a capacitação teórica e prática e, após isso, a aplicação do pós-teste. **Resultados:** a média de idade dos profissionais foi de 42,5 anos e a maioria (76,0%) declarou participação prévia em cursos de primeiros socorros. Após a capacitação, o percentual geral de acertos foi de 97%. **Conclusão:** apesar da participação anterior em cursos e conhecimento insuficiente sobre atendimento de primeiros socorros no pré-teste, verifica-se um aumento substancial no conhecimento após a aplicação da capacitação no pós-teste.

Palavras-Chave: Primeiros Socorros; Serviços de Saúde Escolar; Criança.

Resumen:

Objetivo: Evaluar el nivel de conocimientos teóricos antes y después de un curso de formación sobre *Primeros Auxilios* para profesionales que trabajan con niños en Centros Municipales de Primera Infancia. **Método:** Investigación cuantitativa con un diseño cuasiexperimental antes-después con profesionales de centros de educación infantil a través de la formación “*Primeros auxilios* para profesionales que trabajan con niños”, realizada entre septiembre y octubre de 2023. Se utilizaron dos instrumentos: uno sobre el perfil sociodemográfico y otro con 18 preguntas a modo de pretest. A continuación, se llevó a cabo la formación teórico-práctica, seguida del postest. **Resultados:** la edad media de los profesionales fue de 42,5 años y la mayoría (76,0%) declaró haber asistido previamente a cursos de primeros auxilios. Tras la formación, el porcentaje global de respuestas correctas fue del 97%. **Conclusión:** a pesar de la participación previa en cursos y de los conocimientos insuficientes sobre primeros auxilios en el pretest, se produjo un aumento sustancial de los conocimientos tras la aplicación de la formación en el postest. **Palabras Clave:** Primeros Auxilios; Servicios de Salud Escolar; Niño.

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INTRODUCTION

An accident is an unintentional incident that can cause injuries, and that can be prevented in any setting, such as school or other social environments. It can constitute a set of health problems. Some childhood accidents can leave physical or emotional after-effects in children or adolescents that remain in adulthood. As a result, they represent an educational and public health problem¹.

First aid is the emergency procedures and care initially provided to individuals in the event of an accident or sudden illness. This care is crucial to save lives and avoid more serious conditions².

Article 135 of the Brazilian Penal Code establishes that failure to provide assistance and lack of effective first aid are the main causes of death and irreversible damage to the victim. The first hours after an accident are the most important to ensure recovery or survival from sequelae and damage of injured people³.

In early childhood education, children are constantly discovering new objects, which puts them in dangerous situations, often leading to accidents. In this sense, it is important to emphasize the commitment and responsibility that educational institutions have for what happens to the students when they are in a school environment. It is essential that the school team is able to act in situations that require immediate care, in order to avoid major complications to the health of its students and to honor the commitment to the parents⁴.

Educational environments are spaces where a large number of children develop themselves and interact to one another, as well as an environment where different sports take place. Therefore, the environment becomes prone to accidents⁵. The importance of this topic lies in the fact that trauma, which is one of the possible outcomes of accidents, accounts for 40% of deaths in children between five and nine years old, and 18% of deaths between one and four years old. In the last few decades, the mortality rate in children under 10 years old, followed by those between 10 and 14 years old, has proportionally increased due to external causes⁶. This study aims to evaluate the level of theoretical knowledge before and after training on First Aid for professionals working with children in Municipal Early Childhood Education Centers.

METHODS

This is a quantitative research with a quasi-experimental design of the before and after type. This study was carried out between August and October of 2023 at the Municipal Early Childhood Education Centers (*Centros Municipais de Educação Infantil* - CEMEI) located in the city of Passos, in the interior of the state of Minas Gerais, Brazil.

The CEMEI aim to provide conditions for children to learn and develop in a fun and efficient way, preparing them to enter Primary School. The age group served by the CEMEI is the most susceptible to emergency situations. These have behavioral characteristics that make them more prone to accidents involving the airways, as well as to bruises and cuts, due to their lower body mass and thin skin⁷.

The study was conducted with different professionals who work at the CEMEI: teachers, school managers, pedagogical coordinators, kitchen professionals, cleaning professionals, interns and security guards. Inclusion criteria were: professionals who work in schools and were present at the CEMEI at the time of data collection. Exclusion criteria were: professionals on vacation, paid leave or medical leave during data collection. The professionals were invited in advance to the training session. The sampling was of the non-probabilistic type.

Data collection took place in a training event named "*First Aid for Professionals Working with Children*". At first, the Municipal Department of Education was personally asked to present the official letter authorizing the proposed event. The Principal and Vice-Principal of each CEMEI were then contacted to request authorization to hold the training session.

After authorization, a date/time was set for the event, and an invitation was sent to the units to publicize the educational activity and a visit was made to each CEMEI.

The sociodemographic profile of the participants was collected through a specific instrument, and the following topics were used: professional position, age, time of professional activity, educational level and three specific questions on whether they had taken First Aid courses, and if they had witnessed any accidents in the school environment in the past, and whether they believed they were capable of performing basic First Aid.

The training was carried out through a theoretical lecture presenting the basic concepts of First Aid, based on the Basic Life Support Protocols (BLS) of the Mobile Emergency Care Service (*Serviço de Atendimento Móvel de Urgência - SAMU 192*)⁸, in which the following topics were covered: FBO, Cardiac Arrest, Bleeding, Fainting, Seizures and Burns.

The researchers were trained to level their knowledge by the person responsible for the Urgency and Emergency and First Aid subject at the Universidade do Estado de Minas Gerais (UEMG) – Passos Unit, before the training and aimed at confirm knowledge on the topic covered. Using the PowerPoint™ software, with graphic representation through images, texts and figures, for theoretical presentation, practical presentation and content consolidation. There was also a demonstration of the techniques with an adult mannequin, a newborn mannequin, a splint, bandages, bag-valve-mask and an Automated External Defibrillator (AED).

The participants had the opportunity to practice on the mannequins what was taught in training. The average time for the entire event was two hours.

A questionnaire consisting of 18 questions, three for each topic, was used as a pre and post-test, focusing on assessing the level of theoretical knowledge of the interviewees regarding the provision of First Aid to children.

The data were organized in Excel™ spreadsheets, through which the results of the evaluations before and after were compared. A classification based on the number of correct answers of each participants was elaborated, of which 1 correct answer (out of 3 questions on each topic) was considered insufficient, and 2/3 correct answers was considered sufficient. The goal was for participants to achieve a minimum of 60% correct answers in the post-test.

The project was submitted to the Research Ethics Committee, with a favorable opinion, CAAE: 72844323.1.0000.5112 and Opinion No. 6,262,073. Those present at the training session and who agreed to the study signed a Free and Informed Consent Form (FICF).

RESULTS

68 active professionals participated on the study. Table 1 presents the sociodemographic characteristics and aspects related to First Aid. The average age of the professionals is 42.5 years, and most of them (76.0%) reported previous participation in First Aid courses.

Table 2 shows that, in the pre-test, the topics with the highest number of correct answers consisted of seizures (171 - 84%), burns (139 - 68%) and fainting (130 - 64%). And Figure 1 shows that there was increase of 35% in correct answers in the post-test.

Table 1. Characteristics of participants regarding age, time of professional activity, professional position, education level and information related to First Aid. Passos – MG/Brazil, 2023.

| Variables | N | % |
|--|--------------|------|
| Age | | |
| Mean (minimum - maximum) | 42.5 (18-60) | |
| Time of professional activity | | |
| Mean (minimum - maximum) | 9.9 (01-26) | |
| Professional position | | |
| Principal | 03 | 4.4 |
| Vice-principal | 01 | 1.4 |
| Teacher | 52 | 76.4 |
| Intern | 05 | 7.3 |
| General services | 03 | 4.4 |
| Cook | 02 | 2.9 |
| Security guards | 02 | 2.9 |
| Educational level | | |
| Complete Primary Education | 01 | 1.4 |
| Incomplete Primary Education | 00 | 0.0 |
| Complete Secondary Education | 06 | 8.8 |
| Incomplete Secondary Education | 00 | 0.0 |
| Complete Higher Education | 54 | 79.4 |
| Incomplete Higher Education | 07 | 10.2 |
| Previous participation in First Aid courses | | |
| Yes | 52 | 76.0 |
| No | 16 | 24.0 |
| Self-perception of readiness to perform First Aid | | |
| Yes | 26 | 38.0 |
| No | 42 | 62.0 |
| Previous contact with an event that required the performance of First Aid | | |
| Yes | 18 | 26.0 |
| No | 50 | 74.0 |

Table 2. Correct answers on the pre-test and post-test according to the themes related to First Aid. Passos – MG/Brazil, 2023.

| Variables | Pre-Test* | | Post-Test* | |
|--------------------------------------|-----------|----|------------|----|
| | N | % | N | % |
| Cardiopulmonary resuscitation | 92 | 45 | 198 | 97 |
| FBO | 117 | 57 | 190 | 93 |
| Seizure | 171 | 84 | 201 | 99 |
| Bleeding | 105 | 51 | 196 | 96 |
| Fainting | 130 | 64 | 197 | 97 |
| Burn | 139 | 68 | 198 | 97 |

*Questionnaire evaluated 03 questions, of which 1 correct answer was considered sufficient, and 2 or 3 correct answer were considered sufficient.

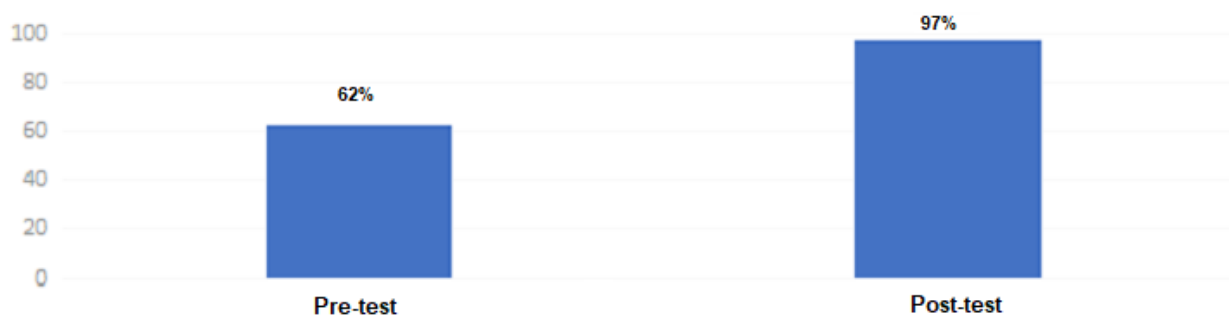


Figure 1. Correct answers in the pre-test and post-test. Passos – MG/Brazil, 2023.

DISCUSSION

Regarding sociodemographic variables, the average age was 42.5 years, ranging from 18 to 60 years. Similar data was found in another study⁹, in which the average age was between 35 and 45 years⁹.

Most participants had completed higher education (79.4%). Similar results can be seen when observing that 77% of education professionals from two schools in Belo Horizonte - MG/Brazil had completed higher education¹⁰.

The average time of professional experience in the school unit was 9.9 years. On the other hand, a qualitative study carried out in a school in a city in the state of Rio Grande do Sul found that the professionals had an average of 8.5 years of professional experience¹¹. The same study found that, when stratified by professional category, the school administrators had been in their current position for five months to four years, and all had previous experience as teachers. The female teachers had worked longer in different schools. Recreation professionals and supervisors were the professional categories with the longest time working at the unit, corresponding to between 6 and 10 years¹¹.

Regarding the results of the post-test of the professionals' training, the overall percentage of correct answers increased by 35%. Something similar was found in a study carried out in the UDUPI District, in nine elementary schools, with the participation of 150 teachers from public and private schools, with a pre-test, training and a subsequent post-test in First Aid¹². The study results showed that, after training, knowledge about emergency care increased¹². In another study, carried out in a school unit in the Northern region of the state of Rio Grande do Sul, it was found that, after completing the First Aid training, the professionals had an average increase in correct answers, from 11.13% to 19.45%¹³.

Regarding their experience with First Aid, 52 (76%) of the participants had taken a previous course, but only 26 (38%) had the self-awareness to perform the techniques, and 50 (74%) had no previous contact with accidents that required them. In another study, it was found that teachers and employees had already witnessed situations in which they needed to use First Aid and, despite this, they considered themselves unprepared to act appropriately in these situations, and often took action based on popular myths¹⁴.

It is important to emphasize that, as this study used a before and after type method, it is necessary to consider that the greater level of knowledge presented by the professionals in the first stage may be related to the knowledge they had from common sense. It was also observed that the intervention offered, as had already occurred in another study¹⁵, deepened knowledge,

promoted discussions, clarified doubts and made the participants feel more capable and confident.

There was an increase in the number of correct answers after training in all topics. The topic of cardiopulmonary resuscitation showed a high number of doubts; in this case, the number of correct answers was 92 (45%) in the pre-test, and 198 (97%) in the post-test. A similar study conducted only with teachers in Nigeria showed similar results: 41.5% in the pre-test and 85.4% in the pre-test¹⁶.

The training on "First Aid" is a coping strategy to contribute to safety and to train teachers¹⁷. In turn, its provision must go beyond the transmission of information on correct conduct; it must also include the identification of accident risks and their prevention, as well as issues related to family structure and the social roles of parents, which are factors that influence the risk behavior of students¹⁷.

The educational strategies with teachers help the group to clarify doubts and reduce fear of providing inadequate assistance, which could aggravate the victim's condition. However, it is recognized that, in addition to educational interventions, an adequate school physical structure must also be taken into consideration for effective prevention of accidents and safety¹⁸.

CONCLUSION

This study made it possible to assess the impact of First Aid training on the knowledge of professionals working with children. It was found that most participants had insufficient knowledge about First Aid in the pre-test.

After training, there was a considerable increase in the professionals' knowledge, with significant results. The limitations of this study include the small number of participants and the use of an instrument that was not validated for data collection. Therefore, the importance of health education, especially in school environments, is evident, and should be planned and carried out annually.

Considering these results, further research is suggested on continuing education about First Aid, with an emphasis not only on teachers, but on the entire school team, thus aiming to reduce possible damage caused by the lack of immediate care and failure to provide appropriate techniques in the event of accidents.

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