

## ORIGINAL ARTICLE

**EVALUATION OF FIRST AID TRAINING FOR THE TECHNICAL STAFF OF SPECIAL EDUCATION SCHOOLS**

Jackeline Gonçalves Brito<sup>1</sup>, Ingrydy Maria da Silva<sup>2</sup>, Christine Baccarat de Godoy<sup>3</sup>, Ana Paula dos Santos Jesus Marques França<sup>4</sup>

**ABSTRACT**

**Objective:** to analyze the effect of an educational activity on first aid in school accidents.

**Methodology:** a quasi-experimental, before-and-after type study, carried out with the technical staff of special schools for children with disabilities, in the state of Mato Grosso, between February and August 2017. McNemar's non-parametric test was performed to analyze the effect of the educational activity.

**Results:** 76 mid-level professionals participated, 62 (81.6%) of whom were female and 66 (86.8%) Child Development Assistants. Of the professionals, 35 (46.1%) had never participated in training or an educational activity related to first aid. There was a significant increase in correct response to all the questions after the training ( $p < .05$ ).

**Conclusion:** the professionals of the technical staff presented insufficient prior knowledge regarding first aid and the training improved the safety of the students and contributed to the society in which they are included. The importance of the integration of nurses in the school environment was evidenced.


**DESCRIPTORS:** First aid; Training; Disabled people; Special education; Children.


**HOW TO REFERENCE THIS ARTICLE:**


Brito JG, Silva IM da, Godoy CB de, França AP dos SJM. Evaluation of first aid training for the technical staff of special education schools. *Cogitare enferm.* [Internet]. 2019 [access "insert day, month and year"]; 24. Available at: <http://dx.doi.org/10.5380/ce.v24i0.60340>.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

<sup>1</sup>Registered Nurse PhD Candidate in Nursing. Federal University of Mato Grosso. Cuiabá, MT, Brazil. 

<sup>2</sup>Nursing student. Federal University of Mato Grosso. Cuiabá, MT, Brazil. 

<sup>3</sup>Registered Nurse Post-Doctorate in Public Health. Professor of Nursing of the Federal University of Mato Grosso. Cuiabá, MT, Brazil. 

<sup>4</sup>Registered Nurse. PhD in Philosophical Sciences. Coordinating Professor of the Nursing School of Porto. Porto, Portugal. 

## ARTIGO ORIGINAL / ARTÍCULO ORIGINAL

**AVALIAÇÃO DE TREINAMENTO SOBRE PRIMEIROS SOCORROS PARA EQUIPE TÉCNICA DE ESCOLAS DE ENSINO ESPECIALIZADO****RESUMO**

**Objetivo:** analisar o efeito de atividade educativa sobre primeiros socorros em acidentes escolares.

**Metodologia:** estudo quase experimental do tipo antes e depois, realizado com a equipe técnica de escolas de ensino especializado para pessoas com deficiência, no estado do Mato Grosso, entre fevereiro e agosto de 2017. Foi realizado o teste não paramétrico de McNemar para analisar o efeito da atividade educativa.

**Resultados:** participaram 76 profissionais de nível médio, 62 (81,6%) eram do sexo feminino, 66 (86,8%) eram Auxiliares de Desenvolvimento Infantil. Dos profissionais, 35 (46,1%) nunca participaram de treinamento ou atividade educativa sobre primeiros socorros. Houve significância para o aumento de acerto em todas as questões após o treinamento ( $p < 0,05$ ).

**Conclusão:** os profissionais da equipe técnica apresentaram conhecimento prévio insuficiente sobre primeiros socorros e o treinamento melhora a segurança dos alunos e contribui para a sociedade em que estão inseridos. Evidencia-se a importância da inserção do enfermeiro no ambiente escolar.

**DESCRIPTORES:** Primeiros socorros; Capacitação; Pessoas com deficiência; Educação especial; Crianças.

**EVALUACIÓN DE ENTRENAMIENTO SOBRE PRIMEROS AUXILIOS PARA EL EQUIPO TÉCNICO DE ESCUELAS DE ENSEÑANZA ESPECIALIZADA****RESUMEN**

**Objetivo:** analizar el efecto de actividad educativa sobre primeros auxilios en accidentes escolares.

**Metodología:** estudio casi experimental del tipo antes y después, realizado con el equipo técnico de escuelas de enseñanza especializada para personas con discapacidad, en el estado de Mato Grosso, Brasil, entre febrero y agosto de 2017. Fue realizado el test no paramétrico de McNemar para analizar el efecto de la actividad educativa.

**Resultados:** participaron 76 profesionales de nivel medio; 62 (81,6%) eran del sexo femenino y 66 (86,8%) eran Auxiliares de Desarrollo Infantil. De los profesionales, 35 (46,1%) nunca participaron de entrenamientos o actividades educativas sobre primeros auxilios. Hubo significación estadística para el aumento de aciertos en todas las preguntas después del entrenamiento ( $p < 0,05$ ).

**Conclusión:** los profesionales del equipo técnico presentaron conocimiento previo insuficiente sobre primeros auxilios y el entrenamiento mejoró la seguridad de los alumnos y contribuyó para la sociedad en que se encuentran inseridos. Se evidenció la importancia de la inserción del enfermero en el ambiente escolar.

**DESCRIPTORES:** Primeros auxilios; Capacitación; Personas con discapacidad; Educación especial; Niños.

## INTRODUCTION

According to the definition of the National Policy for the Reduction of Morbidity and Mortality due to Accidents and Violence, an accident is “an unintentional and avoidable event that causes physical and/or emotional injuries within the domestic environment or in other social environments”<sup>(1)</sup>. These events occupy a prominent place among the causes of infant morbidity and mortality and therefore are considered a public health problem throughout the world. However, the available data represent only the minority of accidents, since many are not attended by health services and people present at the time of the event perform the first aid<sup>(2-4)</sup>.

The school environment is one of the main places where unintentional injuries occur, therefore, through the School Health Program (SHP), the Ministry of Health and the Ministry of Education are working to expand health actions in schools. Among the goals of the SHP is the reduction of morbidity and mortality due to accidents, through health promotion activities in schools<sup>(5)</sup>.

Special education institutions, which serve the child and youth population with different functional alterations, are included in this context. These institutions aim to complement common education services by providing resources and strategies for the full learning of students with disabilities<sup>(6)</sup>.

It is necessary to consider that studies of accidents, carried out in special education schools for people with functional alterations, show a greater risk for accidents in the school environment in children and adolescents with disabilities<sup>(7-8)</sup>.

Other studies in Greece, the United States and China have also shown that children with physical, cognitive, sensory and multiple disabilities present greater risks for accidental injuries than their peers and that those with multiple cognitive deficits suffer the most serious injuries<sup>(9-10)</sup>.

Therefore, considering that the child and youth population with different functionalities spend a large part of the daytime period within educational institutions and are subject to accidents or occurrences in this environment, it is extremely important for all employees of these schools to be alert to risk situations and able to provide first aid<sup>(11)</sup>.

According to Law No. 13.722 of October 4, 2018, not only teachers, but all technical staff working in schools, must be prepared to promote student safety and recognize danger signs<sup>(11)</sup>, which makes training in basic first aid skills mandatory for teachers and staff in public and private fundamental education and in child recreation establishments<sup>(12)</sup>.

Knowledge about first aid is essential, since the correct approach in emergencies can save lives and prevent further complications<sup>(13)</sup>. In this context, health education is an efficient strategy that can be provided by nurses, to enable the community to provide first aid<sup>(14)</sup>. Health education promotes the exchange of scientific knowledge between the professional and the participants, in order to promote the autonomy and responsibility of the subjects regarding the prevention of accidents and correct and efficient action when faced with these events<sup>(14)</sup>.

This study aimed to analyze the effect of an educational activity, on first aid in school accidents, carried out with the technical staff of special education schools for people with disabilities.

## METHOD

This was a quasi-experimental, before-and-after type study with a single comparison group, carried out in special education schools of Cuiabá-MT and Várzea Grande-MT,

during 2017.

Cuiabá-MT and Várzea Grande-MT have, respectively, eight and two special education schools for children with disabilities. All the institutions were invited to participate in the study, and six accepted.

A date was set for the workers to participate in the educational activity, within working hours. Six training sessions were carried out, one in each institution, with 76 workers participating in the study. Data collection occurred between February and August 2017.

In this study, mid-level professionals and school technicians, who develop activities in constant contact with children, in different school environments: classroom, playground, library, cafeteria, bathroom, among others, were considered to be the technical staff of these special teaching institutions.

The data collection instrument was made available by the Safe Nursery Project (Projeto Creche Segura - PCS), with authorization from the author. The Safe Nursery Project is a private initiative, which is a pioneer in the training of first aid in the school environment(15).

The data collection questionnaire was structured with eight closed questions and one open question in non-technical language, investigating knowledge about how to proceed in the following situations: 1- Child falling in the school environment with head trauma; 2- Child having seizure; 3 - Trauma with loss of tooth; 4-Baby in situation of choking; 5- Older child or adolescent in situation of choking; 6-Sequence of steps when a child/adolescent is not responding and does not present pulse or breathing (cardiorespiratory arrest situation); 7- Electric shock in the school environment; 8- Hot liquid burn (scalding); and One open question asking what the SAMU (Emergency Ambulance Service) telephone number is.

The activity was programmed for an average duration of 3h30min to 4 hours. Two copies of the consent form was delivered to all present, and read aloud by the researcher that would give the training, explaining and clarifying doubts. It was emphasized that those that did not want to participate in the study could still participate in the educational activity, being able to remain in the training, without having to complete and submit the test questionnaire and the consent form.

The pre-test was performed with the delivery of the questionnaire, with a 25-minute response time, under the supervision of the researchers. After this period, the questionnaires were collected and the training began.

The first stage occurred with the presentation of the theoretical content in an expositive and dialogical way. The following topics were covered: prevention of accidents in the school environment (falls, burns, poisoning, electric shock, trauma due to convulsions and accidents with inanimate and animate forces); and first aid in the event of accidents (telephone numbers of the emergency services, as well as helping the child victim of a fall, traumatic brain injury (TBI), convulsion, shock, trauma with tooth damage, burn, airway obstruction and cardiorespiratory arrest). The participants were given the opportunity to express doubts and share experiences. This activity had an average duration of 90 minutes.

Subsequently, the practical part of the training was given and each participant was able to perform the following activities in order to memorize the content: airway clearance maneuver on a pediatric puppet (Heimlich maneuver); demonstration of the maneuver for the older child using a colleague; and cardiopulmonary resuscitation procedure (CPR) on manikins for CPR simulation (pediatric and adult). The mean time for this activity was 40-50 minutes, and varied according to the number of participants in each training session.

The post-test was then performed. Another questionnaire was delivered, containing the same questions as the pre-test, and a 25-minute response time was provided under the same conditions as the first test. A single team of researchers carried out the training, with the same methodology used in all participating institutions. The group was composed of a higher education professor, a doctoral candidate in child and adolescent health, and two

scientific initiation, nursing students.

The data were tabulated and analyzed using the Statistical Package for the Social Sciences (SPSS) version 24 software. Descriptive and inferential statistics were used to describe the characteristics of the study population and, in order to analyze the effect of the educational activity on the knowledge of the participants, McNemar's non-parametric test was performed considering that it was a paired sample and nominal data.

The present study was approved by the Research Ethics Committee of the Júlio Muller University Hospital (HUFJ) under No. 1.689.650.

## RESULTS

The study involved 76 mid-level professionals working in six special education schools, five in Cuiabá-MT and one in Várzea Grande-MT. The minimum age of the participants was 20 years and the maximum 62 years, with a mean age of 36.62 and mode and median of 36 years (standard deviation 10.25 years).

Table 1 presents the characterization of the participants regarding the teaching institution, sex and occupation. The school with the highest number of participants was School F, with 29 (38.2%), females were predominant among the professionals (81.6%), the most prevalent age group was between 40-49 years, with 26 (34.2%), and the main mid-level occupation was that of Child Development Assistant (CDAs), with 66 (86.8%). Only three schools had a nursing technician on the technical staff, two schools with a professional in each period and one school with a full-time technician, totaling 6.6% of the participants (Table 1).

Table 1 - Profile of the technical staff of the special education institutions regarding the institution, sex, age and occupation. Cuiabá, MT, Brazil, 2017 (continues)

SCHOOL	n	%
School A	2	2.6
School B	20	26.3
School C	11	14.5
School D	7	9.2
School E	7	9.2
School F	29	38.2
Total	76	100
SEX		
Female	62	81.6
Male	14	18.4
Total	76	100
AGE IN YEARS		
<30	25	32.9
30 - 39	18	23.7
40 - 49	26	34.2
> 50	7	9.2
Total	76	100

PROFESSION		
Child Development Assistant (CDA)	66	86.8
Nursing technician	5	6.6
Cook	5	6.6
Total	76	100

A significant number of the professionals (35 - 46.1%) had never participated in training or an educational activity related to first aid prior to this training. Among those who had previously received training, more than half had not been updated for more than two years (Table 2).

Table 2 - Training of the technical staff of the special education institutions regarding the prevention of accidents and first aid with children. Cuiabá, MT, Brazil, 2017

PREVIOUSLY PARTICIPATED IN TRAINING RELATED TO THE THEME	n	%
Yes	41	53.9
No	35	46.1
Total	76	100
IF YES, HOW LONG AGO?	n	%
Less than 6 months	4	9.7
Between 6 months and 1 year	5	12.2
Between 1 year and 2 years	9	22.0
Between 2 years and 5 years	11	26.8
Over 5 years	12	29.3
Total	41	100

Regarding previous training, 31 (47.0%) of the Child Development Assistants and 4 (80.0%) of the cooks had not performed any training related to first aid and accident prevention (Table 3).

Table 3 - Distribution of the technical staff of the special education institutions regarding the profession and previous training in first aid. Cuiabá, MT, Brazil, 2017

Participated in training related to first aid			
Profession	YES n (%)	NO n (%)	TOTAL n (%)
CDA	35(53)	31(47)	66(100)
NURSING TECHNICIAN	5(100)	-	5(100)
COOK	1(20)	4(80)	5(100)
TOTAL	41(53.9)	35(46.1)	76(100)



McNemar's statistical test showed that there was a significant increase ( $p > .05$ ) in correct responses to all the questions investigated. Question 3, regarding the correct procedure for dental trauma, presented the highest number of errors prior to the training, with 72 (94.7%), followed by question 2, regarding the seizure situation, and questions 5 and 6, regarding choking and cardiopulmonary resuscitation, respectively. After the training, the questions that presented the greatest number of correct responses were those related to falling in the school environment with head trauma and the telephone number of the Ambulance Service (Table 4).

Table 4 - Analysis of the answers of the technical staff of the special education institutions regarding first aid, before and after the participation in an educational activity. Cuiabá, MT, Brazil, 2017

Question of the Questionnaire <sup>a</sup>	BEFORE n (%)		AFTER n (%)		Test <sup>b</sup>
	CORRECT	INCORRECT	CORRECT	INCORRECT	
Question 1	57(75.0)	19(25.0)	72(94.7)	4(5.3)	0.001
Question 2	17 (22.4)	59(77.6)	59(77.6)	17(22.4)	0.000
Question 3	4(5.3)	72(94.7)	59(77.6)	17(22.4)	0.000
Question 4	39(51.3)	37(48.7)	63(82.9)	13(17.1)	0.000
Question 5	34(44.7)	42(55.3)	63(82.9)	13(17.1)	0.000
Question 6	34(44.7)	42(55.3)	70(92.1)	6(7.9)	0.000
Question 7	50(65.8)	26(34.2)	70(92.1)	6(7.9)	0.000
Question 8	36(47.4)	40(52.6)	70(92.1)	6(7.9)	0.000
Question 9	43(56.6)	33(43.4)	72(94.7)	4(5.3)	0.000

<sup>a</sup>The themes of the questions were: 1-Child falling with head trauma; 2- Seizure; 3- Dental damage; 4-Choking baby; 5- choking Older child/adolescent; 6- Cardiorespiratory arrest; 7- Electric shock; 8- Hot liquid burn (scalding). 9- Ambulance Service telephone number.

<sup>b</sup>McNemar's Test

## DISCUSSION

The study involved 76 mid-level professionals working in six special education schools of Cuiabá-MT (five) and Várzea Grande-MT (one). There was a significant variation among the participants' ages, however, the predominant age group (between 40 and 49 years) was similar to that in a study performed in India (Mangalore)<sup>(16)</sup>, with the mean age being similar to that found in a study in Portugal<sup>(17)</sup>.

The majority of the participants were female, which may be related to the function performed: considering that the CDA and the nursing technician perform activities related to caring for people. Similar data were found in a study that evaluated the knowledge of school employees<sup>(11)</sup> and another carried out in Cuiabá-MT, which evaluated the accident prevention knowledge of caregivers in a day care center<sup>(18)</sup>.

Among these mid-level and technical staff, the Child Development Assistants comprised the greatest number of professionals. This professional works with the children and helps the teacher in the teaching-learning process and in the development of recreational activities, as well as being responsible for the basic health care of the children (hygiene, food, rest and well-being), remaining in constant contact with the children<sup>(19)</sup>.

Considering the fact that the nursing technician plays a fundamental role in the school, it is suggested that this professional continue to carry out the training activities of the teachers and workers, periodically and under the supervision of the nurse, as guided by article 15 of Law 7498/86, which provides for the regulation of the nursing practice and other measures<sup>(5,20)</sup>.

Since not all institutions have a nursing team, it is suggested that the Family Health Strategy (FHS) nursing team, present in the neighborhood of the school unit, could perform this training regularly, strengthening the bond between the school and the FHS<sup>(5,20)</sup>.

Other studies have shown that teachers and employees of educational institutions often do not receive this information during their professional training, and even when they receive it, many do not feel fully capable and safe to carry out maneuvers if faced with a situation, highlighting the need for continuous and qualified training to increase safety<sup>(21-22)</sup>.

The present study found that a significant number of participants had not had previous training on accident prevention and first aid, which is corroborated by other studies<sup>(11-12,16)</sup>, however, diverges from the results of a study performed in pre-schools in Turkey<sup>(23)</sup>.

Excluding the presence of nursing technicians from the team, who as a result of their training are able to act in these situations, attention is drawn to the amount of CDAs that had never previously received training. Given that their role develops in close contact with the children, they may be the first to detect a risk or accident situation, with it being essential that they are able to act correctly, preserving life or reducing harm<sup>(13)</sup>.

Regarding the knowledge acquired, after the training there was a significant increase in all correct answers, corroborating the findings of other studies that showed a significant increase in knowledge after the intervention<sup>(11,13)</sup>.

There were participants that did not know how to proceed properly if faced with a fall from a height. The importance of disseminating knowledge is evidenced because, when a child falls from a height, it is essential that he/she is not moved, considering the possibility of injury to the spine, and the head-neck-body axis must be maintained<sup>(23)</sup>. In addition, children and adolescents with a disability are at higher risk for TBI than their peers, especially when the child has cerebral palsy, cognitive impairment or multiple disabilities<sup>(24)</sup>.

Seizures also occur more frequently among children with disabilities. However, in the present study, as well as in one performed in Sudan, there was evidence of insufficient knowledge of teachers regarding the correct management during a seizure: many believed that one should prevent the movements of the child's body, pull the tongue out or place objects (such as a spoon) in the child's mouth and did not worry about protecting the child's head and timing the length of the crisis<sup>(25)</sup>.

There was insufficient prior knowledge of the medium for tooth storage in traumas with dental damage. A similar result was evidenced in another study<sup>(26)</sup>, although, this was in contrast to a study carried out in Matura (India)<sup>(27)</sup>. The appropriate medium for tooth storage is cold milk, due to its composition, osmolarity and pH, with it being possible to immerse the tooth in milk for up to 3 hours. When no milk is available, saline can be used, however, this is effective for only 30 minutes. Storage inside the mouth is contraindicated for this pediatric public because of the risk of bronchoaspiration of the tooth<sup>(27)</sup>.

As in the present study, others have also shown insufficient knowledge of the participants regarding airway clearance, cardiorespiratory arrest and electric shock, with a significant increase after training<sup>(13,16,23)</sup>. In addition to the theoretical content, the practical part of the procedures of CPR and the Heimlich maneuver are essential methodologies for the learning and memorization of the content, based on the guidelines of the American Heart Association<sup>(28-29)</sup>.

Considering the data on scald burns, the immediate management of which is to cool the burned area for at least 15 minutes in cold, clean and running water, this was another



area that also showed misunderstandings in the professionals' knowledge<sup>(23)</sup>. When the burned area is not previously cooled, burns and tissue damage continue to advance to deeper layers of the skin, hyperemia increases and blisters can form<sup>(28)</sup>.

A significant number of professionals were unaware of the correct emergency telephone number, a result similar to that found in other studies<sup>(23,30)</sup>, showing the need for schools to better disclose this public information and for health services to strive to disseminate both the emergency number and the situations in which the service should be activated.

The study presented as a limitation the unavailability of some institutions to allow their workers to participate in the training. Considering the importance of these activities, it is suggested that a period for training of this nature be included in the planning of the school calendar, so that the staff can always be kept up to date.

## CONCLUSION

The majority of employees in the training sessions were the Child Development Assistants. Before the training, the knowledge demonstrated in relation to first aid faced with the main school accidents was insufficient, and the questions with almost all incorrect responses were the appropriate management of dental trauma, seizure, airway clearance and cardiopulmonary resuscitation. There was a statistically significant increase in correct responses to all the questions after the training, especially those related to falling in the school environment with head trauma and the Ambulance Service telephone number.

A significant number of the professionals had never participated in first aid training or an educational activity prior to the study, with the results obtained highlighting the importance of training for professionals who work in schools. This corroborates the proposals of the School Health Program, the National Policy for the Reduction of Morbidity and Mortality due to Accidents and Violence, and Law No. 13.722 of October 4, 2018.

The training of these technical level professionals to act in the event of accidents, performing the correct first aid procedure, improves the safety of students and contributes to the society in which they are included, since they will be able to act in other contexts when required.

The didactic strategy with practical methodology that was used in the training can be highlighted, contributing to the result presented. The opportunity for demonstrations and practicing the first aid techniques in simulated situations, allowed for greater fixation of the theoretical content and for the scientific knowledge to be related to real situations shared among the participants.

This study highlights important contributions for nursing, emphasizing the importance of including these professionals in different contexts in the community, for example in schools, developing health education activities and empowering the population on the subject.

## REFERENCES

1. Brasil. Política nacional de redução da morbimortalidade por acidentes e violências: Portaria MS/GM n.737 de 16/05/01 publicada no DOU n.96 seção 1e de 18/05/01. Brasília: Ministério da Saúde; 2003.
2. Barcelos RS, Santos IS, Matijasevich A, Barros AJD, Barros FC, França GVA, et al. Acidentes por quedas, cortes e queimaduras em crianças de 0-4 anos: coorte de nascimentos de Pelotas, Rio Grande do Sul, Brasil, 2004. Cad. Saúde Pública [Internet]. 2017 [access 04 jan 2019]; 33(2). Available at: <http://dx.doi.org/10.1590/0102-311x00139115>.

3. World Health Organisation. World report on child injury prevention. Geneva, Switz. 2008; 1–212.
4. Sengoelge M, Hasselberg M, Laflamme L. Child home injury mortality in Europe: A 16-country analysis. *Eur J Public Health*. [Internet]. 2011 [access 04 jan 2019]; 21(2). Available at: <http://dx.doi.org/10.1093/eurpub/ckq047>.
5. Brasil. Ministério da Saúde. Caderno de atenção básica no 24: saúde na escola. Brasília: Editora MS; 2009. 96 p.
6. Conselho Nacional de Educação. Resolução n. 4, de 2 outubro 2009. Institui Diretrizes Operacionais para o Atendimento Educacional Especializado na Educação Básica, modalidade Educação Especial. Brasília: CNE; 2009.
7. Ramirez M, Fillmore E, Chen A, Peek-Asa C. A comparison of school injuries between children with and without disabilities. *Acad Pediatr*. [Internet]. 2010 [access 04 jan 2019]; 10(5). Available at: <https://doi.org/10.1016/j.acap.2010.06.003>.
8. Ramirez M, Fillmore E, Chen A, Peek-Asa C. A comparison of school injuries between children with and without disabilities. *Acad Pediatr*. [Internet]. 2010 [access 04 jan 2019]; 10(5). Available at: <https://doi.org/10.1016/j.acap.2010.06.003>.
9. Sinclair SA, Xiang H. Injuries among US children with different types of disabilities. *Am J Public Health*. [Internet]. 2008 [access 04 jan 2019]; 98(8). Available at: <https://doi.org/10.2105/AJPH.2006.097097>.
10. Xiang H, Wheeler KK, Stallones L. Disability status: A risk factor in injury epidemiologic research. *Ann Epidemiol* [Internet]. 2014 [access 04 jan 2019]; 24(1). Available at: <https://doi.org/10.1016/j.annepidem.2013.10.014>.
11. Calandrim LF, Santos AB dos, Oliveira LR de, Massaro LG, Vedovato CA, Boaventura AP. First aid at school: teacher and staff training. *Rev RENE* [Internet]. 2017 [access 04 jan 2019]; 18(3):292–9. Available at: <http://dx.doi.org/10.15253/2175-6783.2017000300002>.
12. Brasil. Lei n. 13.722, de 4 de outubro de 2018. Torna obrigatória a capacitação em noções básicas de primeiros socorros de professores e funcionários de estabelecimentos de ensino públicos e privados de educação básica e de estabelecimentos de recreação infantil. *Diário Oficial da República Federativa do Brasil*, Brasília, 4 out. 2018. Seção 1:1.
13. Li F, Sheng X, Zhang J, Jiang F, Shen X. Effects of pediatric first aid training on preschool teachers: a longitudinal cohort study in China. *BMC Pediatr* [Internet]. 2014 [access 04 jan 2019]; 14(1). Available at: <https://doi.org/10.1186/1471-2431-14-209>.
14. Galdino Neto NM, Sá GG de M, Vasconcelos EMR de, Silva TM da, Santos AMR dos, Carvalho KM de. Intervenções de educação em saúde sobre primeiros socorros para leigos no brasil: revisão integrativa. *Ciênc. cuid. saúde*. [Internet]. 2017 [access 04 jan 2019]; 16(4). Available at: <http://dx.doi.org/10.4025/cienccuidsaude.v16i4.38305>.
15. Projeto Creche Segura [Internet]. 2018 [access 17 mar 2018]. Available at: <http://www.crechese segura.com.br/>.
16. Joseph N, Narayanan T, Zakaria S bin, Nair AV, Subramanian AM, Gopakumar KG. Awareness , attitudes and practices of first aid among school teachers in Mangalore , south India. *J Prim Health Care* [Internet]. 2015[access 04 jan 2019]; 7(4):274–81. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/26668832>.
17. Esteves D, Pinheiro P, Brás R, O'Hara K, Rodrigues R. Avaliação do conhecimento dos professores de educação física para reagirem a situações de emergência. *Motricidade* [Internet]. 2015 [access 04 jan 2019]; 11(1). Available at: <https://doi.org/10.6063/motricidade.3125>.
18. Costa SNG da C, Silva JMM da, Freitas BHBM, Reis AFC. Acidentes infantis: conhecimento e percepção de educadoras de creches. *Rev enferm UFPE online* [Internet]. 2017[access 04 jan 2019]; 11(10). Available at: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/>

[download/69696/24314.](#)

19. Paulino VBR, Côco V. Vozes do trabalho docente na educação infantil. SciELO em Perspectiva: Humanas [Internet]. 2016 [access 26 abril 2019]; 24(92). Available at: <http://humanas.blog.scielo.org/blog/2016/08/29/vozes-do-trabalho-docente-na-educacao-infantil/>.
20. Brasil. Lei n. 7.498, de 25 de junho de 1986. Dispõe sobre a Regulamentação do Exercício da Enfermagem e dá outras providências. Diário Oficial da República Federativa do Brasil, Brasília, 26 jun. 1986. Seção 1:1.
21. Silva LGS, Costa JB da, Furtado LGS, Tavares JB, Costa JLD. Primeiros socorros e prevenção de acidentes no ambiente escolar : os professores não em situações que da criança, gerando risco. Enferm Foco [Internet]. 2017 [access 04 jan 2019]; 8(3). Available at: <http://biblioteca.cofen.gov.br/wp-content/uploads/2018/03/Primeiros-socorros-e-preven%C3%A7%C3%A3o-de-acidentes-no-ambiente-escolar.pdf>.
22. Carmo H de O, Souza RC de A, Araújo CL de O, Francisco AG. Atitudes dos docentes de educação infantil em situação de acidente escolar. Rev. enferm. Cent.-Oeste Min. [Internet]. 2017[access 04 jan 2019];7(e1457). Available at: <http://dx.doi.org/10.19175/recom.v7i0.1457>.
23. Sönmez Y, Uskun E, Pehlivan A. Knowledge levels of pre-school teachers related with basic first-aid practices, Isparta sample. Turk Pediatr Ars [Internet]. 2014 [access 04 jan 2019]; 49(3). Available at: <http://dx.doi.org/10.5152/tpa.2014.1581>.
24. Limbos MAP, Ramirez M, Park LS, Peek-asa C, Kraus JF. Injuries to the Head Among Children Enrolled in Special Education. Arch Pediatr Adolesc Med. [Internet]. 2004 [access 04 jan 2019]; 158(11):1057–61. Available at: <http://dx.doi.org/10.1001/archpedi.158.11.1057>.
25. Elhassan MA, Alemairy AA, Amara ZM, Hamadelneel AA, Mohamed AH, Elaimer AA. Epilepsy: Knowledge, Attitude, and Practice Among Secondary School Teachers in Khartoum State. Neurol ther. [Internet]. 2017 [access 04 jan 2019]; 6(2). Available at: <http://dx.doi.org/10.1007/s40120-017-0083-7>.
26. Attarzadeh H, Kebriaei F, Sadri L, Foroughi E, Taghian M. Knowledge and Attitudes of Elementary Schoolteachers on Dental Trauma and its Management in Yazd, Iran. J Dent [Internet]. 2017 [access 04 jan 2019]; 18(3):212–8. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/29034277>.
27. Singh M, Yadav P, Ingle N, Kaur N. Evaluation of knowledge and attitude of school teachers about emergency management of traumatic dental injury. J Int Soc Prev Community Dent [Internet]. 2015 [access 04 jan 2019]; 5(2). Available at: <http://dx.doi.org/10.4103/2231-0762.155735>.
28. Atkins DL, Berger S, Duff JP, Gonzales JC, Hunt EA, Joyner BL, et al. Part 11: pediatric basic life support and cardiopulmonary resuscitation quality: 2015. American Heart Association guidelines update for cardiopulmonary resuscitation and emergency cardiovascular care. Circulation[Internet]. 2015 [access 04 jan 2019]; 132(18 Suppl 2):S519–25. Available at: <https://doi.org/10.1161/CIR.0000000000000265>.
29. Markenson D, Ferguson JD, Chameides L, Cassan P, Chung KL, Epstein J, et al. Part 17: first aid: 2010 American Heart Association and American Red Cross Guidelines for First Aid. Circulation [Internet]. 2010 [access 04 jan 2019]; 122(18 Suppl 3) S934-45. Available at: <https://doi.org/10.1161/CIRCULATIONAHA.110.971150>.
30. Slabe D, Fink R, Dolenc E, Kvas A. Knowledge of health principles among professionals in Slovenian kindergartens. Zdrav Var [Internet]. 2016 [access 04 jan 2019]; 55(3):185-194. Available at: <http://dx.doi.org/10.1515/sjph-2016-0024>.

Received: 13/07/2018

Finalized: 08/05/2019

**Corresponding author:**

**Jackeline Gonçalves Brito**

**Universidade Federal de Mato Grosso**

**Av. Fernando Corrêa da Costa, 2367 - 78060-900 – Cuiabá, MT, Brasil**

**E-mail: jackeline\_brito@hotmail.com**

**Role of Authors:**

**Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - JGB, IMS, CBG, APSJMF**

**Drafting the work or revising it critically for important intellectual content - JGB, IMS, CBG, APSJMF**

**Final approval of the version to be published - JGB, IMS, CBG, APSJMF**

---