Journal of Nursing
UFPE On Line
ISSN: 1981-8963

J Nurs UFPE on line.
2019;13:e243150
DOI: 10.5205/1981-8963.2019.243150
https://periodicos.ufpe.br/revistas/revistaenfermagem

ORIGINAL ARTICLE

CONDUCT OF THE NURSING TEAM IN CARDIORSPIRATORY ARREST IN CHILDREN*

CONDUTA DA EQUIPE DE ENFERMAGEM NA PARADA CARDIORRESPIRATÓRIA EM CRIANÇAS

CONDUCTA DEL EQUIPO DE ENFERMERÍA EN PARO CARDIORRESPIRATORIO EN NIÑOS

Larissa Paranhos Silva Campos [1], Jessica Alves Sacramento de Moraes[2] Lucinéia Santos da Silva[3], Evaldo Almeida da Silva[4], Ridalva Dias Martins Felzemburgh[5], Márcia Maria Carneiro Oliveira[6], Josielson Costa da Silva[7], Maria Carolina Ortiz Whitaker[8]

ABSTRACT

Objective: to describe the initial conduct of nursing technicians and assistants in assisting children in cardiopulmonary arrest. ***Method:*** this is a quantitative, descriptive, cross-sectional study with nursing technicians and assistants from the Pediatrics sector of a university hospital. Data was collected with a self-applying form. SPSS 21.0 was used for descriptive data analysis. ***Results:*** it was analyzed that the knowledge of the 38 participants about the initial conduct regarding cardiopulmonary arrest included the identification of the absence of respiratory movements (90%). Following, it was reported "call for help" (84%) and, when evaluated the ratio of correct answers in the conduct to be performed, 86% of professionals partially agreed the descriptions of actions. ***Conclusion:*** it is clear that the study participants have knowledge about the initial conducts in assisting cardiopulmonary arrest, however, the detection of this situation in children covers other actions that were not mentioned by most participants. It indicates the need for permanent actions carried out with the team of nursing technicians and assistants to update knowledge to enable quick decisions and responses in cases of cardiac arrest. ***Descriptors***: Nursing Assistants; Licensed Practical Nurses; Heart Arrest; Child, Hospitalized; Nursing; Knowledge.

RESUMO

***Objetivo*:** descrever a conduta inicial de técnicos e auxiliares de enfermagem na assistência às crianças em parada cardiorrespiratória. ***Método*:** trata-se de um estudo quantitativo, descritivo, transversal, com técnicos e auxiliares de enfermagem do setor de Pediatria de um hospital universitário. Coletaram-se os dados com um formulário autoaplicável. Utilizou-se o SPSS 21.0 para a análise descritiva dos dados. ***Resultados*:** analisou-se que o conhecimento dos 38 participantes sobre a conduta inicial frente à parada cardiorrespiratória abrangeu a identificação da ausência de movimentos respiratórios (90%). Relatou-se, na sequência, "chamar por ajuda" (84%) e, quando avaliada a relação de acertos nas condutas a serem realizadas, 86% dos profissionais acertaram parcialmente as descrições das ações. ***Conclusão*:** percebe-se que os participantes do estudo apresentam conhecimento sobre as condutas iniciais na assistência à parada cardiorrespiratória, porém, a detecção dessa situação em crianças abrange outras ações que não foram mencionadas pela maioria dos participantes. Indica-se a necessidade de ações permanentes realizadas com a equipe de técnicos e auxiliares de enfermagem para a atualização de conhecimento que possibilitem as decisões e respostas rápidas em casos de parada cardiorrespiratória. ***Descritores*:** Auxiliares de Enfermagem; Técnicos de Enfermagem; Parada Cardiorrespiratória; Criança Hospitalizada; Enfermagem; Conhecimento.

RESUMEN

Objetivo: describir la conducta inicial de técnicos y asistentes de enfermería en la asistencia a los niños en el paro cardiorrespiratorio. ***Método:*** se trata de un estudio cuantitativo, descriptivo, transversal con técnicos y asistentes de enfermería del sector de pediatría de un hospital universitario. Los datos se recopilaron con un formulario de aplicación automática. Se utilizó SPSS 21.0 para el análisis descriptiva de los datos. ***Resultados:*** se analizó que el conocimiento de los 38 participantes sobre la conducta inicial con respecto al paro cardiorrespiratorio incluía la identificación de la ausencia de movimientos respiratorios (90%). A continuación, se informó "llamada de ayuda" (84%) y, cuando evaluada la relación de respuestas correctas en la conducta a realizar, el 86% de los profesionales estuvieron de acuerdo parcialmente con las descripciones de las acciones. ***Conclusión:*** se percibe que los participantes del estudio presentan conocimiento sobre las conductas iniciales en la asistencia al paro cardiorrespiratorio, sin embargo, la detección de esta situación en niños cubre otras acciones que no fueron mencionadas por la mayoría de los participantes. Se indica la necesidad de acciones permanentes llevadas a cabo con el equipo de técnicos y asistentes de enfermería para actualizar el conocimiento para permitir decisiones rápidas y respuestas en casos de paro cardiorrespiratorio. ***Descriptores***: Asistentes de Enfermagem; Enfermeros no Diplomados; Paro Cardíaco; Niño Hospitalizado; Enfermería; Conocimiento.

[1,2,3,4,5,6,7,8]Federal University of Bahia / UFBA. Salvador (BA), Brazil. [1]https://orcid.org/0000-0002-9133-3008 [2]https://orcid.org/0000-0002-1860-9776 [3]https://orcid.org/0000-0001-5642-0395 [4]https://orcid.org/0000-0002-1229-4953 [5]https://orcid.org/0000-0003-0295-9998 [6]https://orcid.org/0000-0003-2294-0872 [7]https://orcid.org/0000-0002-5198-9491 [8]https://orcid.org/0000-0003-0253-3831

*Article extracted from the Undergraduate Thesis << Identification and conduct of nursing technicians facing cardiopulmonary arrest >>. Federal university of Bahia. 2018.

How to cite this article
Campos LPS, Moraes JAS, Silva LS, Silva EA, Felzemburg RDM, Oliveira MMC, Whitaker MCO. Nursing staff conduct in cardiopulmonary arrest in children. J Nurs UFPE on line. 2019;13:e243150 DOI: https://doi.org/10.5205/1981-8963.2019.243150

INTRODUCTION

It is known that the nursing staff, composed of nurses, nursing technicians and assistants, remains 24 hours a day with the patient, providing continuous assistance and care.[1] Due to this permanence bedside, it is understood that the professionals that make up this team are generally the first to act in situations of clinical worsening of users.

It is considered that acting with agility and readiness of a multiprofessional team immersed in an interdisciplinary care model, in face of signs of aggravation in patients, is crucial for the accomplishment of appropriate and decidedly therapeutic approaches,[2] using the knowledge of each particular specialty, aiming to quickly revert the patient's condition, seeking the reduction of damage.

It is understood that it is essential that nursing presents safety and speed in the detection of clinical signs of severity and, for this, the team needs training, updates and continuing and continuing education, which will contribute to providing a theoretical basis that will support the care provided,[3] In addition, through scientific evidence, it is possible to make informed decisions, providing protection for children.[4]

It is noticed that nurses, technicians and nursing assistants working in the pediatric area need to pay even greater attention to their patients. It is specified that children have several particularities that need to be taken into account[5] and they can get their pictures aggravated very quickly. It is known that early detection of signs of aggravation in this target audience can prevent future complications, the implementation of more aggressive therapies, invasive procedures and even death.[6]

It is evident that the signs of aggravation presented by a child suggest that she is not well, that some alteration is occurring and that she needs immediate attention. Regarding the breathing pattern, for example, signs such as tachypnea and intercostal retractions may indicate the severity of the condition and require immediate attention and management[7]. It is pointed out that, in an even more serious situation, some altered or abnormal condition can progress to a Cardiopulmonary Arrest (CPA).[8]

It is emphasized that cardiopulmonary arrest "constitutes the most important emergency in the pediatric area", therefore, it is essential that nursing technicians and assistants know to recognize a CPA, as well as act quickly and objectively in an attempt to reverse it, seeking to increase the survival of these children.[9] In Pediatrics, it appears that CPA presents some differences in relation to adults, making it necessary to know these particularities, in order to improve the agility of care in this situation.

In pediatric audiences, early identification of clinical deterioration can minimize complications such as respiratory failure, shock, and CPA.[10] Given the above, it is necessary to recognize how Nursing actions have been with children in CPA.

OBJECTIVE

- To describe the initial conduct of nursing technicians and assistants in the care of children in cardiopulmonary arrest.

METHOD

This is a quantitative, descriptive, cross-sectional study conducted in pediatric care units of a university hospital in Salvador (BA). It is pointed out that participated in the study technicians and nursing assistants who provided care in pediatric units during the day and night. As inclusion criteria, nursing technicians or assistants who were on duty on the collection days were selected.

Data was collected between November 2017 and April 2018, based on information obtained by an adapted Bellan questionnaire.[11] The questionnaire included questions such as "How do you detect a CPA?" And "What is the immediate course after detecting a CPA?". In addition, data such as the characterization of the nursing technician / assistant (gender, vocational training, undergraduate course, length of practice in Pediatrics and courses or refresher activities in Pediatrics) and, in the second part, were recorded. the knowledge of the nursing staff regarding the detection and initial conduct in CPA in Pediatrics. The questionnaire was applied voluntarily, individually and privately, after reading and signing the Free and Informed Consent Term.

Data was processed using the Statistical Program for Social Sciences (SPSS) version 21.0 and analyzed using descriptive statistics. The initial conducts regarding CRP in Pediatrics were classified as: correct (from 50% to 100% correct answers); partially correct (from 1% to 49% correct) and incorrect (less than 1% correct). This study was approved by the Research Ethics Committee with Opinion No. 2,149,808 and CAAE: 66505517.7.0000.0049.

RESULTS

Table 1. Characterization of nursing technicians and assistants. Salvador (BA), Brazil, 2019.

Variables	n (38)	Total (%)
Sex		
Female	35	92.1
Male	3	7.9
Professional qualification		
Nursing Technician	35	92.1
Nursing assistant	3	7.9
Graduation courses		
Nursing	10	26.3
Other areas of qualification	5	13.1
Does not have a degree	23	60.6
Length of practice in pediatrics		
0-4 years	19	50
>4 years	19	50
Conducting courses or refresher activities in Pediatrics		
Yes	26	68.4
No	12	31.6

*Other areas of training: Architecture; Right; Hospital management; Public Management and Social Work.

Participants were asked about their knowledge of CPA in Pediatrics, CPA detection and immediate management of a child in CPA, as shown in Table 2.

Table 2. Percentage of correct answers from the nursing team regarding detection and initial management in Pediatric CPA. Salvador (BA), Brazil, 2019.

Variables	n (38)	%
CPA Detection		
Absence of respiratory movements	34	89.5
Absence of carotid and femoral pulses	25	65.8
Absence of consciousness, low irritability, low responsiveness, absence of crying	15	39.5
Initial approach to CPA		
Call for help	32	84.2
Perform external chest compression maneuvers	29	76.3
Order emergency car with defibrillator	20	52.6
Start artificial ventilation	17	44.7
Install multiparameter monitoring	17	44.7
Remove objects from the oral cavity	16	42.1
Rectify airways	15	39.5

CPA: Cardiopulmonary arrest.

Participants' behaviors were evaluated as 18% correct and 82% as partially correct, highlighting the absence of incorrect answers.

The detection of CPA signals shows that 10% of the answers were correct, 87% partially correct and 3% incorrect.

DISCUSSION

It is known that, in the Brazilian nursing work process, there are professional categories that perform different and complementary functions regulated by Law No. 7.498 / 86.[12] In this study, it was found that most participants were nursing technicians, which corroborates data from the Federal Council of Nursing,[13] which indicates the qualification of nursing professionals, demonstrating that nursing technicians correspond to 73.4% of the total, while assistants correspond to just over 26%, nationally.

It is noteworthy, in the context of professional training, as a fact that draws attention in this research, the fact that more than half of the participants have, in addition to the nursing technician or auxiliary course, an undergraduate degree, most of them Nursing. This reality was portrayed, pointing to this tendency of overqualification and emphasizing that, despite the expansion of access to professional improvement, the labor market has no vacancies for this large contingent of higher education workers, corroborating the fact that, despite also being nurses, these workers need to act as technicians or assistants.[14] It is evaluated that the accomplishment of the superior course is a reality that enables the qualification and the improvement in the formation process, however, it is not a criterion that certifies the qualification in abilities for the technical-scientific exercise, as demonstrated by the findings of this study.

It is evident that investment in continuing education and training of staff is necessary to minimize possible adversities in the context of care. Approximately one third of the participants reported not having experienced or participated in courses and / or events for the pediatric update. Nevertheless, weaknesses related to conducting conducts in CPA were identified. It is necessary that Nursing, as it is a health profession, in which it is perceived the need to perform the practice based on scientific evidence, always have updated and consistent knowledge to ensure safe and quality patient care.[15] It is considered important for the nursing staff to know how to detect CPA and act quickly against this problem, since the lack of technical skills for fast and efficient care can change the prognosis of the patient, bringing consequences for quality of life in the short, medium and long term.[16]

It is noticed that the analysis of the professionals' answers allowed us to identify that 86% of the answers were partially correct and 2.6%, incorrect. Sudden CPA is uncommon in children, as they show signs of clinical deterioration and worsening, and one of the main signs is respiratory dysfunction.[10] It is pointed out by the Ministry of Health that, besides the absence of respiratory movements, it is important to pay attention to gasping, which may also be one of the prodromal signs of a CPA in Pediatrics.[17]

The absence of carotid and femoral pulses was the second alternative most noted by the participants. It is understood that the pulse to be checked in infants should be the brachial and, in children, the carotid or femoral, both for a period of ten seconds. It is noteworthy that not only the absence of pulse is indicative of CRP in Pediatrics, but also the Heart Rate (HR) below 60 Beats Per Minute (BPM), associated with irresponsiveness, which presents specific parameters according to age.[17]

Lack of awareness, low irritability, low responsiveness and lack of crying were the least marked alternative. It is understood that plantar stimulation, in babies, and calling out loud, shaking shoulders, in the case of children, are the most effective measures of responsiveness checking in pediatric audiences.[17] It is evaluated that, when checking the responsiveness of the child, the fact that she responds with crying is a positive sign, in detriment of the absence of this and other responses, thus signaling a warning factor for the unfolding in a CPA.[10]

It is identified that, regarding the immediate conduct after the identification of CPA in Pediatrics, the minority correctly indicated all the alternatives, and the highest percentage was partially correct answers. It is pointed out that the most marked alternative was “call for help”, revealing a tendency of participants to recognize the importance of group action in relation to CPA in Pediatrics. CPA is considered a complex event and requires diverse knowledge regarding the performance of quality Cardiopulmonary Resuscitation (CPA), use of defibrillator and vasoactive drugs, monitoring, obtaining advanced airways, among others. It is essential, in the in-hospital context, that the professional who identifies a child in CPA should call for help, since teamwork will be more effective and will give the patient a greater likelihood of reversal and survival without complications or sequelae, as each will play an important role in the process.[18]

It was found that performing the external chest compression maneuvers was the second most marked alternative. It is noted that chest compressions performed on a CPA victim aim to allow blood circulation, enabling minimal perfusion of organs and tissues, avoiding total hypoxia.[19] It is argued that health professionals, including technicians and Nursing assistants should be able and safe to perform these maneuvers early, soon after identifying the CPA, performing the appropriate amount of compressions and being aware of the particularities of compression depth in pediatric cases. It is recommended to perform compressions at a frequency of at least 100 for one minute per the American Heart Association guidelines[20]. It was shown in a study that professional fatigue and decreased quality, when performing compressions for a period of about six minutes, which corroborates the importance of professionals asking for help, as there is a physical strain on the maneuvers performed, therefore teamwork with relay is elementary.[19]

The request for the emergency car with the defibrillator was an alternative indicated by just over half of the participants. It is known that the defibrillator should be present in emergency trolleys as it is a device used to attempt to reverse some heart rate patterns (ventricular tachycardia and ventricular fibrillation) and re-establish rhythmic heartbeat, improving tissue perfusion and heart output. It is noted, given the importance of the emergency car and the defibrillator, that nursing technicians and assistants need to understand the importance of these items, know their location within the unit and become familiar with what is in each drawer and where the defibrillator is located to act quickly in the detection of CPA in Pediatrics.[17]

Items related to the initiation of artificial ventilation and the installation of multiparametric monitoring were presented by almost half of the study participants. It is informed that artificial ventilation can be performed through the mask-valve bag, an item present in the emergency car. This device can be connected to a 100% oxygen source and offered to the child by two ventilations every 30 compressions.[20] It is noteworthy that technicians and assistants can be trained and qualified to use this device, which can consistently

assist in pediatric CPA. In addition, multiparametric monitoring can also be performed by nursing technicians and assistants, being extremely important for the knowledge of the patient's vital sign values. Thus, it is evaluated that it is possible to have a more complete and general idea of the child's clinical condition and to observe the evolution with improvement or worsening of the condition.

It is noted that the removal of objects from the oral cavity was an alternative indicated by 16 participants. Foreign body airway obstruction (OVACE) is known to be a common event in pediatrics and may be caused, among many other factors, by choking on food, breast milk or small objects and toys.[21] Thus, it is argued that the team of technicians and assistants need to perform a careful airway inspection to see if the child has any object that impedes normal air flow that may compromise tissue oxygenation, thus preventing occurrence of a more severe condition.

It is clear that the option to "rectify airways" was the least mentioned, although it is an important approach to be taken when recognizing a CPA in Pediatrics. According to the American Heart Association, the CPA conducts its CABD algorithm that the letter “A” corresponds to the airway opening, which is considered a key step for successful CPA[20]. It is considered that the technicians and assistants should know the correct way to perform this procedure, aiming at the improvement of the child's clinical condition in CPA and allowing, for example, the introduction of artificial ventilation, using the mask-valve bag for a better oxygenation.

CONCLUSION

After analyzing the results of this study, it was noticed that the participants' conduct regarding Pediatric CPA was partially described, both regarding the detection of clinical signs suggesting that the child may progress to CPA and the initial conducts. These data indicate that participants have the ability to perceive signs suggestive of deterioration of the child's clinical condition and are able to perform initial conducts that assist in the reversal of pediatric CPA. However, it is considered necessary to recognize the singularities inherent in the age group, which require an attentive and active care team.

In conclusion, understanding that the correctly marked alternatives obtained low percentages, which undoubtedly the need for these professionals to update on the theme and skills development for assistance in cardiopulmonary arrest in Pediatrics, seeking new scientific evidence and current information. It is evaluated that continuing education can be a strategy that favors the training process, added to the interest and professional responsibility for the provision of safe and quality care for this age group. It is argued that this study contributes to broaden the discussion and strengthen strategies for the realization of permanent education related to the team of professionals working in Pediatrics.

REFERENCES

1. Camuci MB, Martins JT, Cardeli AAM, Robazzi MLCC. Nursing Activities Score: nursing work load in a burns Intensive Care Unit. Rev Latino-Am Enfermagem. 2014 Mar/Apr;22(2):325–31. DOI: 10.1590/0104-1169.3193.2419

2. Evangelista VC, Domingos TS, Siqueira FPC, Braga EM. Multidisciplinary team of intensive therapy: humanization and fragmentation of the work process. Rev Bras Enferm. 2016 Nov/Dec; 69(6):1099–107. DOI: 10.1590/0034-7167-2016-0221

3. Sales CB, Bernardes A, Gabriel CS, Brito MFP, Moura AA, Zanetti ACB. Standard Operational Protocols in professional nursing practice: use, weaknesses and potentialities. Rev Bras Enferm. 2018 Jan/Feb;71(1):126–34. DOI: 10.1590/0034-7167-2016-0621

4. Camargo FC, Iwamoto HH, Galvão CM, Monteiro DAT, Goulart MB, Garcia LAA. Models for the implementation of evidence-based practice in hospital based nursing: a narrative review. Texto contexto-enferm. 2017 Jan;26(4):1–12. DOI: 10.1590/0104-07072017002070017.

5. Oliveira CS, Borges MS. Social Representations of systematization of nursing care in the perspective of nurses who take care of children. Rev Gaúcha Enferm. 2018 Apr;38(3):1-9. DOI: 10.1590/1983-1447.2017.03.66840

6. Freitas CM, Preto EP, Nascimento CAF. Nursing interventions for the early detection of ward patients’ clinical deterioration: an integrative review. Referência. 2017 Mar/June;4(14):121–32. DOI: 10.12707/RIV17025

7. Passos SD, Maziero FF, Antoniassi DQ, Souza LT, Felix AF, Dotta E, et al. Acute respiratory diseases in brazilian children: are caregivers able to detect early warning signs? Rev Paul Pediatr. 2018 Jan;36(1):7. DOI: 10.1590/1984-0462/;2018;36;1;00008

8. Silva KCB, Maximino DAFM, Souto CGV, Virgínio NA. Conhecimento de enfermagem na parada cardiorrespiratória em crianças. Rev Ciênc Saúde Nova Esperança [Internet]. 2016 [cited 2016 June 15];14(1):87-94 Available from: http://www.facene.com.br/wp-content/uploads/2010/11/10.-CONHECIMENTO-DE-ENFERMAGEM-NA-PARADA_PRONTO.pdf

9. Tacsi YRC, Vendruscolo DMS. Nursing nursing assistance in pediatric emergency services. Rev Latino-Am Enfermagem [Internet]. 2004 May/June [cited 2016 June 15];12(3):477–84. Available from: http://www.scielo.br/pdf/rlae/v12n3/v12n3a05.pdf

10. Miranda JOF, Camargo CL, Nascimento SCL, Portela DS, Monaghan A, Freitas KS, et al. Translation and adaptation of a pediatric early warning score. Rev Bras Enferm [Internet]. 2016 Oct [cited 2019 Nov 26];69(5):888-96. Available from: http://www.scielo.br/pdf/reben/v69n5/en_0034-7167-reben-69-05-0888.pdf

11. Bellan MC, Araújo IIM, Araújo S. Theoretical training for nurses in cardiac arrest attendance. Rev Bras Enferm. 2010 Nov/Dec;63(6):1019–27. DOI: 10.1590/S0034-71672010000600023

12. Lei no 7.498/86, de 25 de junho de 1986 (BR). Dispõe sobre a regulamentação do exercício da Enfermagem e dá outras providências. Diário Oficial da União [Internet]. 1986 June 25 [cited 2018 June 25]. Available from: http://www.planalto.gov.br/ccivil_03/LEIS/L7498.htm

13. Conselho Federal de Enfermagem. Enfermagem em números [Internet]. Brasília: COFEN; 2017 [cited 2018 Aug 10]. Available from: http://www.cofen.gov.br/enfermagem-em-numeros

14. Machado MH, Wermelinger M, Vieira M, Oliveira E, Lemos W, Filho Aguiar W, et al. Aspectos Gerais da formação da enfermagem: o perfil da formação dos enfermeiros, técnicos e auxiliares. Enferm Foco [Internet]. 2016 [cited 2018 Aug 10];7(Spe):15–34. Available from: http://revista.cofen.gov.br/index.php/enfermagem/article/view/687/297

15. Danski MTR, Oliveira GLR, Pedrolo E, Lind J, Johann DA. Importance of evidence-based practice in nurse's work processes. Ciência Cuid Saúde. 2017 Apr/June;16(2). DOI: 10.4025/cienccuidsaude.v16i.36304

16. Markus AM, Souza SS. As ações da equipe de enfermagem no atendimento ao paciente em parada cardiopulmonar em emergência [dissertation] [Internet]. Florianópolis: Universidade Federal de Santa Catarina; 2013 [cited 2018 Aug 10]. Available from: https://repositorio.ufsc.br/handle/123456789/107527?show=full

17. Ministério da Saúde (BR), Secretaria de Atenção à Saúde, Departamento de Atenção Hospitalar às Urgências, Coordenação Geral da Força Nacional do SUS. Protocolos de Suporte Avançado de Vida [Internet]. Brasilia: Ministério da Saúde; 2016 [cited 2018 Aug 10]. Available from: http://portalarquivos.saude.gov.br/images/pdf/2016/outubro/26/livro-avancado-2016.pdf

18. Preto LSR, Novo AFMP, Mendes MER, Azevedo AFR. Rescuer's performance during six minutes of chest compressions in a simulated scenario. Referência. 2016 May/June;9:47–56. DOI: 10.12707/RIV15061

19. Gonzalez MM, Timerman S, Oliveira RG, Polastri TF, Dallan LAP, Araújo S, et al. I guideline for cardiopulmonary resuscitation and emergency cardiovascular care - Brazilian society of cardiology: Executive summary. Arq Bras Cardiol. 2013 Feb;100(2):105–13. DOI: 10.5935/abc.20130022

20. American Heart Association. Destaques da American Heart Association 2015 – Atualização das Diretrizes de RCP e ACE [Internet]. Dallas: AHA; 2015 [cited 2018 Aug 10]. Available from: https://eccguidelines.heart.org/wp-content/uploads/2015/10/2015-AHA-Guidelines-Highlights-Portuguese.pdf

21. Prefeitura da Cidade de São Paulo, Secretária Municipal da Saúde. Manual de prevenção de acidentes e primeiros socorros nas Escolas [Internet]. São Paulo: SMS; 2007 [cited 2018 Aug 10]. Available from: https://www.amavi.org.br/arquivos/amavi/colegiados/codime/2016/Primeiros_Socorros_Manual_Prev_Acid_Escolas.pdf

Corresponding author
Márcia Maria Carneiro Oliveira
Email: marcia.carneiro@ufba.br

Submission: 2019/11/01
Accepted: 2019/12/12