



NURSING IN BASIC LIFE SUPPORT TEACHING FOR STUDENTS OF MIDDLE SCHOOL

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ABSTRACT

Introduction: Cardiorespiratory arrest can be defined as a sudden, unexpected cessation of systemic circulation related to lack of breathing, which may be reversible by immediate intervention. **Objective:** to evaluate the previous knowledge and the degree of immediate learning about basic life support among adolescents of middle school in a public school in Belém, Pará, Brazil. **Method:** this is a descriptive, exploratory study with a quantitative approach, which was structured for the public considered lay in the subject matter. A survey was conducted on the knowledge about BLS before and after the educational action. As a teaching method, an expository class and educational video were used with easy-to-understand language, as well as practical training in resuscitation manikins. **Results:** from this, it was verified that the participants of this research had levels of knowledge and ability before the educational action that made it impossible to attend to a victim of cardio respiratory arrest. After the action these students demonstrated satisfactory levels of retention on the theoretical-practical training in SBV given, besides demonstrating safety in the practical demonstrations of CPR. **Conclusion:** Therefore, it is important to train lay people in BLS so that they can be able to recognize a PCR and the immediate maneuvers to be performed, in order to increase the chances of survival of the victim. It was found that this study provided the respondents with a relevant theoretical-practical knowledge and a satisfactory evaluation.

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INTRODUCTION

Cardiorespiratory arrest (CRP) can be defined as a sudden, unexpected cessation of systemic circulation related to lack of breathing, which may be reversible by immediate intervention. In Brazil, it is estimated that around 200,000 CRPs occur per year, however, half of the cases occur in hospitals and are

more common in adults (GUIMARÃES *et al.*, 2015; GONZALEZ *et al.*, 2013). Bhanji and others (2015) report that in the victims of CRP in the out-of-hospital setting, the main determinants of survival are linked to the timely and effective performance of the spectator with cardiopulmonary resuscitation (CPR) and defibrillation for those individuals

with ventricular fibrillation or pulseless ventricular tachycardia. The authors further describe that a small portion of cardiac arrest victims receive CPR maneuvers from a viewer, thus opening, from a learning point of view, room for improvement. Cardiorespiratory arrest remains a major public health problem, gaining a global dimension. Despite the great advances in recent years related to prevention and treatment, many are the lives lost annually in Brazil related to the CRP, although we do not have the exact dimension of the problem by the lack of robust statistics in this respect. The Brazilian legislation on the subject is relative, many attempts to a standardized use of the AED (automatic external defibrillators) have been taken, however, there are still no well defined norms and rules that systematically allow its use in the national territory (SANTOS *et al.*, 2016). Although the potential beneficial effect of cardiopulmonary resuscitation is well established, fewer than one in three cardiac arrest victims outside the hospital setting witnessed received rescue assistance from a spectator (BELÉM *et al.*, 2013).

When a CRP arises, the chances of survival for the victim vary depending on the time and quality of the interventions. The current resources allow us to recover spontaneous circulation and quality of life, provided that adequate procedures are ensured in a timely manner. If the episode occurs in the hospital setting, it is initially expected that basic and advanced life support maneuvers are triggered and performed, through which the return of vital functions is most likely to be successful. However, most CRPs happen outside health facilities, occurring in the market, in the cafeteria, at home, on the subway, or following an accident or sudden illness. Thus, the probability of survival and recovery in these situations depends on the capacity of the person who happens to know when and how to ask for help, and to initiate Basic Life Support (BLS) (BELÉM *et al.*, 2013). In this context, it is essential to take a set of emergency procedures that constitute the Basic Life Support (BLS), which can be performed by health professionals or trained lay people, which is composed of recognition of obstruction respiratory arrest, and in the application of cardiorespiratory resuscitation through the sequence of a mnemonic protocol known as the primary CABD, which means C-circulation, A-airways, B-breathing, D-defibrillation.

Basic Life Support corresponds to the first steps that can be performed outside the hospital environment by professionals or lay people who are properly trained to help victims of CRP, whose objective is to maintain vital signs until the arrival of a specialized team. Correctly and rapidly, when executed, it can decrease mortality, among other traumatic events and increase the chances of survival of the victims (SANTOS *et al.*, 2016). The maneuvers included in the basic life support are CPR maneuvers in victims of cardiorespiratory arrest, defibrillation with automatic external defibrillators (AEDs) and airway clearance maneuvers. The immediate recognition of situations that require these procedures is fundamental to prevent sequelae and save lives (NETO *et al.*, 2016). Therefore, the current of survival emphasizes the importance and the need for early and rapid recognition of a cardiorespiratory arrest for emergency services and Advanced Life Support services, quality CPR maneuvers, early defibrillation and post CPR care (NOGUEIRA *et al.*, 2018). The inefficient attendance of a cardiorespiratory arrest is directly related to the lack of knowledge and skill on the part of those involved. The reduction of morbimortality related to CPR can be solved

through training and updating according to the recommendations of the CPR guidelines (MARQUES, 2015). Education is considered a powerful ally of public health, while health is indispensable for the proper use of the educational process. Therefore, investments in these two sectors can contribute to the improvement of the community's quality of life (ARAÚJO, COSTA, 2013). In this context, middle schools for congregating large-scale adolescents are ideal laboratories because they offer access to a large part of the population between the ages of 12 and 19 who spend countless hours in malls, supermarkets, stadiums, among others with great and, once trained this population in basic life support, over time, a significant percentage of the community in general will also have received information about the procedures (FERNANDES *et al.*, 2014).

MATERIALS AND METHODS

This is a descriptive and exploratory study with a quantitative approach, carried out in a public middle school in the municipality of Belém, Pará State, Brazil, through the previous acceptance of the direction and coordination of the school when it is visited by the researchers to know the possibility of conducting the research in the institution, and for being an institution of applicability of the University of the State of Pará. The participants of the research were 13 students of both genders, with inclusion criteria being between 12 and 19 years old and being regularly enrolled in the 8th to 9th grade of the morning. The age range was based on the parameters of the Ministry of Health, which refers to the age group entitled for adolescents. For this reason, we chose to work in a school context, since the presence of individuals in this age group is notorious. A questionnaire with closed questions, based on updated American Heart Association (AHA) 2015 guidelines, and similar to the questionnaire elaborated and validated by Félix (2012), adapted to the needs of the present research with regard to language and updates of the 2015 guidelines for care of the victim of cardiorespiratory arrest. The instrument was applied before and after the educational action. With the questionnaire in hand, each participant answered the questions in manuscript form, in a time of 30 minutes.

The questionnaire was self-applicable and was in 3 parts. In the first part, the biographical data of the participant were collected. In the second part, specific questions regarding the specific knowledge about basic life support were addressed. Part 3 explored the meanings related to the mastery of knowledge and skills in BLS and application of these knowledge. The issues were elaborated on the basis of the 2015 AHA Guidelines for CPR, as well as a review of the literature on the subject in question. After the participants answered the questions of the questionnaire applied before the educational action, their answers were analyzed and then the first survey of knowledge. At that moment the researchers verified the main doubts regarding the subject worked and, based on this, elaborated the educational action. The educational action was composed of an expository and dialogued lecture highlighting the questions of the first questionnaire, as well as concepts, importance and statistical data on the subject, with the intention of favoring a reflexive thought focused on the good of the community, followed by a lesson with an instructor using a dummy / doll with demonstration and application of high quality cardiopulmonary resuscitation techniques and activation of the emergency system (survival current).

The researchers clarified to the participants that they could interrupt them at any time during the educational action, to ask questions, to socialize knowledge and experiences or to repeat something that they did not understand. After the educational action, the questionnaire was returned with the same questions from the 2nd part held before the action.

RESULTS AND DISCUSSION

According to the Statute of the Child and Adolescent Law nº 8.069 / 90, in article 2, a person with a age group of 12 to 18 is considered to be a teenager, which was evidenced by the data collected in this research, in which the ages of the participants varied from 13 to 18 years old, with predominance of 15-year-olds in both classes, corroborating one of the inclusion criteria established in this study (BRASIL, 2008). Regarding the number of students who participated in the research, the predominance of 9th grade students (61.5%) was observed, with ages ranging from 14 to 18 years old, that is, students with more maturity than the 8th grade year, which was observed during the development of the expository class and the practical training in which the latter were more dispersed, while those of the 9th grade were more focused, questioning and sought to answer questions. After the process of data collection before and after the educational action, we began the comparative analysis of the answers obtained in this period. We verified the significant amount of female participation, with a prevalence of 69.3% over the total number of participants. In addition, according to the questionnaire analysis, it was possible to quantify the number of participants per class, 38.5% of the 8th grade and 61.5% of the 9th grade, with a clear prevalence of participants.

After the data collection process was performed before and after the educational action, we began the comparative analysis of the answers obtained in this period, which were arranged divided into errors and correct answers, both being compared with the answers obtained before and after the action. Based on the information obtained in the analysis of the questionnaires, it was possible to verify the high error rate before the action, with exception of question 1 that approached approximate values of errors before and after the action, 30.7% and 33.4% respectively, which speaks about the action to be taken if a person loses consciousness. This is due to the fact that the participants feel that they should only call for help, and that the correct thing would be to check if the person responds and breathes and then call for help immediately.

Regarding question 2, which questioned what measures should be taken after finding that the victim is in CRP, the pre-action error rate was 53.9%, which reduced after the action, reaching the rate of 41, 7%. In this question, we observed that a large number of students scored in the questionnaire and verbally reported that mouth-to-mouth respiration should be performed on the victim, a fact that was clearly addressed during the action, in which we explain that this measure is no longer being used so much by contamination risks, and the rescuer should call for help, request an AED, and then start CPR. Therefore, question 3 asked about the minimum frequency of chest compressions per minute should be performed in case of CRP. For this question to be more specific, the error rate was high before the action (53.9%), but after explaining this topic during the lecture, the error rate reduced to 41.7%. Finally, question 4, corresponding to 61.6% of errors before the action, which reached the highest error rate among the previous ones,

questioned what action should be taken if the victim was unconscious, but with a pulse and breathing. In addition, it was observed that this same question, after the action, obtained a significant reduction of errors (16.7%), since the correct measure to be taken (placing the victim in lateral safety position) was quite stressed during the lectures. In spite of this, we analyzed that the prior knowledge of the students in question was somewhat empirical, as they answered without the actual knowledge of why such a measure should be taken, which was confirmed during the execution of the action. Based on the above data, there was a significant improvement in the number of correct answers, which was also evidenced during the educational action, due to the great participation and interest of the students, as they questioned what they had seen in the questionnaire, which had their doubts healed. In addition, we conclude that the educational action as a whole was essential to improving the knowledge of the participants, based on the decrease in the error rate and the excellent participation of the students who at all times were attentive and interested in what was being taught to them.

It was also possible to verify the extra question of the questionnaire (question 5), which questioned whether the trainee would be able to attend a cardio respiratory arrest if it occurs at some point, and we obtained a quantitative of 86% of students who said be able to perform care. Thus, based on everything that was observed and analyzed during the educational action, we can verify that the information gains obtained by the respondents after the educational action was satisfactory, since we obtained a good result on what we propose to do. Despite the obstacle cited, the present study demonstrated efficacy in the development of basic life support training for students, in addition it ratified the importance of education to the community, since students are extensions of knowledge to the environment in which they are inserted, since the stop cardio respiratory failure is an unpredictable fatality. However, the challenges encountered in educating a lay population on the subject are considerable, hindering situations such as the number of people to be trained, as well as the promotion of periodic training in schools for students and teachers (RIBEIRO *et al.*, 2013). Thus, students are able to understand the importance of the subject in question, which favors the training of this population and demonstrates the pertinence of being included in the school curriculum and the possible transfer of knowledge acquired to family, friends and their respective communities (TOBASE *et al.*, 2017, RIBEIRO *et al.*, 2013).

Conclusion

The objective of analyzing the prior knowledge and the degree of immediate learning among elementary school adolescents of a public school in the city of Belém-PA before and after a basic life support training was successfully achieved, ratifying the need for promotion of BLS education in schools. In spite of this, it was noticed that the participants' level of knowledge before the action was minimal. Also, we find as limitations to the beginning of this research the little interest of some students to participate, because they do not have the previous knowledge on the subject in question. In addition, there was no return of terms that should be delivered signed by those responsible, either for non-consent or withdrawal, which helped reduce the number of participants. Based on this, it was observed the need of teaching in basic life support in Brazilian schools, so that there can be an increase in the number of

people qualified. The potential benefit of empowering basic education students has its impact on the fact that a SBV-trained adolescent may be present at the scene of an emergency requiring this knowledge at a place other than school (SOAR *et al.*, 2010). In addition, this study was relevant to the academy because of the pertinence of the topic in question to be explored by academics in the area, so that they can develop educational actions with this profile and also base new research in this regard. Thus, it is expected that this study will provide the respondents with a relevant theoretical-practical knowledge, a satisfactory qualification in basic life support and the awakening to the importance of the agility of the recognition of a cardio respiratory arrest and the measures to be taken in extra environment -hospital. Thus, it is expected that this study will provide the respondents with a relevant theoretical-practical knowledge, a satisfactory qualification in basic life support and the awakening to the importance of the agility of the recognition of a cardio respiratory arrest and the measures to be taken in extra environment -hospital.

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