Suporte básico de vida: conhecimento de enfermeiras (os) que atuam na estratégia de saúde da família

Basic life support: knowledge of nurses working in the family health strategy

Soporte vital básico: conocimiento de las enfermeras que trabajan en la estrategia de salud familiar

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RESUMO
Objetivo: analisar o conhecimento das enfermeiras (os) da ESF de um município do recôncavo baiano frente ao SBV. **Método:** Trata-se de uma pesquisa epidemiológica, descritiva, realizada com 14 enfermeiras (os) de Unidades Básicas de Saúde e de Unidades de Saúde da Família em um município do recôncavo baiano, utilizando-se questionário sobre características sociodemográficas, ocupacionais e de formação geral e específica sobre SBV. Os dados foram analisados por meio de da análise descritiva das variáveis, calculando-se as frequências absoluta e relativa e medidas de tendência central e dispersão. **Resultados:** a maioria possuía conhecimento de como verificar o pulso da vítima em PCR (92,9%), sobre a frequência das compressões torácicas caso não fosse possível garantir as ventilações (57,1%), quanto a profundidade mínima das compressões torácicas (71,4%). 92,9% não sabia o local adequado para colocação das mãos e realização das compressões torácicas, 50% tinha conhecimento das situações em que pode ser utilizado o DEA; 57,1% conheciam os ritmos de PCR e 57,1% os ritmos chocáveis de PCR. **Conclusão:** Constatou-se que as enfermeiras (os) possuem conhecimento satisfatório sobre a atuação no SBV frente a PCR.
Descritores: Urgência e Emergência; Suporte Básico de Vida; Atenção Básica.

ABSTRACT
Objective: To analyze the knowledge of FHS nurses from a municipality of Recôncavo de Bahía against BLS. **Method:** This is a descriptive epidemiological research, conducted with 14 nurses from Basic Health Units and Family Health Units in a municipality of Bahia, using a questionnaire on sociodemographic, occupational and educational characteristics and about general and specific BLS education. Data were analyzed through descriptive analysis of variables, calculating absolute and relative frequencies and measures of central tendency and dispersion. **Results:** most had knowledge of how to check the victim's pulse on cardiac arrest (92.9%), the frequency of chest compressions if ventilation could not be guaranteed (57.1%), and the minimum depth of chest compressions (71.4%). 92.9% did not know the proper place for hand placement and chest compressions; 50% were aware of the situations in which AED could be used; 57.1% knew the PCR rates and 57.1% were shockable PCR rates. **Conclusion**: We found that nurses have satisfactory knowledge about the performance of BLS in relation to CRP.
Descriptors: Urgency and emergency; Life Basic Support; Primary care.

RESUMEN
Objetivo: analizar el conocimiento de las enfermeras de FHS de un municipio en el Recôncavo de Bahía contra SBV. **Método:** Esta es una investigación epidemiológica descriptiva, realizada con 14 enfermeras de Unidades Básicas de Salud y Unidades de Salud Familiar en un municipio de Bahía, utilizando un cuestionario sobre características sociodemográficas, ocupacionales y educativas, asi como formación general y específica sobre SBV. Los datos se analizaron mediante un análisis descriptivo de variables, calculando frecuencias absolutas y relativas y medidas de tendencia central y dispersión. **Resultados:** la mayoría tenía conocimiento de cómo verificar el pulso de la víctima en un paro cardíaco (92,9%), la frecuencia de las compresiones torácicas si no se podía garantizar la ventilación (57,1%) y la profundidad mínima de las compresiones torácicas (71,4%). 92.9% no conocía el lugar adecuado para la colocación de las manos y las compresiones torácicas, 50% estaba al tanto de las situaciones en las que se podía usar el DEA; 57.1% conocía las tasas de PCR y 57.1% eran tasas de PCR impactables. **Conclusión:** se encontró que las enfermeras tienen un conocimiento satisfactorio sobre el desempeño del SBV en relación con la PCR.
Descriptores: Urgencia y Emergencia; Soporte vital básico; Atención primaria.

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Introduction

Cardiovascular diseases are among the leading causes of death in men and women in Brazil, and are responsible for over 29.4% of deaths in the country each year, which means that more than 308,000 people die, mainly from heart attacks due to cardiopulmonary arrest(CPA) in Brazil yearly.[1]

CPA remains a worldwide public health problem. Despite advances in recent years related to prevention and treatment, many lives are lost annually in Brazil related to CPA, although the exact size of the problem is lacking due to the lack of robust statistics in this regard.[2]

Advances also extend to legislation on public access to defibrillation and mandatory availability of automatic external defibrillator (AED), as well as training in cardiopulmonary resuscitation (CPR), a mission that the Brazilian Society of Cardiology has been presenting for many years.[3]

CPAs have a prominent position. It can be estimated at around 200,000 CPAs per year in Brazil, half of them occurring in a hospital environment, and half in environments such as homes, shopping malls, airports, stadiums, etc.[2]

Most CPA in an out-of-hospital setting are estimated to be due to rhythms such as ventricular fibrillation and pulseless ventricular tachycardia. CPA is an event that reflects sudden, progressive clinical deterioration and is largely due to arrhythmias due to acute ischemic conditions or primary electrical problems.[4]

We known that the heart is a vital organ and extremely important for life, its inefficiency can cause several health problems, among these, the CPA. When this happens, the heart stops breathing with it and carries oxygen to the brain and other organs, causing damage to life, and may die if there is no quick and proper intervention in the first few minutes.[5]

The signs and symptoms of CPA can be observed without laboratory tests and can come in many forms and can be quickly identified by healthcare professionals or lay people who have received specialized training on basic life support (BLS).[4]

The American Heart Association (AHA) protocols are responsible for the scientific publication of the cardiopulmonary resuscitation guidelines, which are the basis of rescue protocols used by health professionals in the United States and worldwide.[4]

Thus, it is extremely important the training and qualification of professionals of Primary Care (PC), considering its great utility, since the arrival of Advanced Life Support (ALS), which in Brazil is known as Care Service Mobile Emergency (CSME), it takes a while to reach the site, so the performance of PC professionals performing the basic life support with quality and accuracy, offers greater possibilities for patient survival.[6]

The PC is understood as a strategy of reorientation of the care model, operationalized through the implementation of multiprofessional teams in basic health units. They work with health promotion, prevention, recovery, rehabilitation of diseases and grievances, and maintenance of the health of this community.[7]

Given this, it is necessary to train all professionals, especially the nurse, in identifying, recognizing and acting on a CPA. Knowing that CPR protocols are essential and that their application is of great importance for the maintenance of life of patients who have a CPA and who have already saved thousands of lives when applied correctly, it is essential that professionals in the basic network also

know act against this situation.[8]

Thus, as a SAMU rescuer, based on the healthcare provided by the service, in hospitals, on the streets and also in basic health units, I was interested in the study and the motivation to know the understanding of the health professionals of PC, specifically from the FHS (Family Health Strategy), about BLS and CPA, as I could see, throughout my academic and professional experience, that when faced this situation, few professionals are insecure to start the maneuvers, and the first initiative is to call SAMU through 192, and wait for the arrival of the team to have some intervention in the case, even knowing that the first minutes after the stop are crucial for life, which reflects a lack of knowledge on this subject.

From this perspective, the study sought to answer the following research question: what is the knowledge of nurses who work in the FHS, about the BLS, against CPA?

This article aims to assess the knowledge of nurses who work in the FHS, about the BLS, against CPA.

The research is justified by its contribution to the strengthening of discussions on the subject for science, as well as collaborates to reassess the practice in urgent and emergency situations within Primary Care, especially in USF and UBS; offers possibilities for changes in the scope of care for health professionals, encouraging the quality and efficiency of cardiopulmonary resuscitation; and for society, they imply improvements in the quality of services, changes in the care model, and the possibility of promoting greater survival for victims.

Method

This is a case study, with epidemiological and descriptive approach, carried out in Family Health Units and Basic Health Units of a municipality in the region of Bahia Recôncavo. With regard to health PH services, there are: two Basic Health Units (BHU) and 21 Family Health Units, with two Family Health Support Centers (NASF), responsible for coverage greater than 80% of Family Health of that municipality.

The study included 14 nurses who worked in these services of the AB, with at least one year in the position held. They were part of the studied territory, registered nurses in the health units of the municipality. The study did not include professionals on sick leave, vacation and / or work leave during the data collection period. The professionals were accessed by a trained researcher, and were invited to participate in the study by presenting and then signing the Informed Consent Form (ICF) to provide consent.

Data gathering took place between April and May 2018, through the application of a questionnaire previously prepared by teachers and experts in the field, in agreement with the determinations of the American Heart Association (2015) international guidelines. It was initiated after the approval of the research project by the Research Ethics Committee, authorized by the opinion number 2,623,818, and subsequent authorization to enter the field by the Municipal Health Department (SMS) of the municipality in question.

In order to reach the target public, a prior mapping of the Healthcare Basic Unit (HBU) and Family Healthcare Unit (USF) of the municipality was carried out, followed by the identification of the nurses responsible for the

management of the said units, based on visits, which were made after previous appointment, in order to present the research project and, later, application of the data gathering instrument.

The questionnaire was self-administered and supervised by a trained researcher, who controlled the time to resolve the questions and then proceeded to collect them.

Seven nurses refused to work in seven health units, because the professionals claimed that it was not relevant to participate in the research, since the service was not obliged to provide emergency care at the unit.

The data collection instrument was composed of variables organized in two blocks: socioeconomic and professional profile, including age, gender, self-reported race / color, professional education, postgraduate education, length of employment, employment relationships; and the specific approach regarding the conduct to be adopted in the BLS. Specific issues followed AHA (2015) determinations.

After tabulation, data were exported and processed in the Statistical Package for Social Sciences (SPSS) software, version 21.0 (IBM Corp.®, Armonk, United States). For the statistical treatment, the descriptive analysis of the variables was performed, by calculating the absolute and relative frequencies and measures of central tendency and dispersion, depending on the data distribution.

Results

Fourteen nurses were interviewed, predominating among the sociodemographic characteristics: females (78.6%), age range of 18-24 years (35.7%) and afro-descendants (78.6%) (Table 1).

Regarding training characteristics, most nurses had more than one employment relationship (60%), half had no postgraduate degree and, among those who had, individuals with lato sensu postgraduate studies predominated in Urgency, Emergency and ICU Nursing (57.1%). Regarding the time of professional training, just over half of the participants had up to three years of training (53.8%), working time less than one year (75.0%) and completion of the BLS course (85.7%) (Table 1).

Table 1- Percentual distribution of nurses according with sociodemographic and education features. Bahia, Brazil. (N=14)

Variables	n	%
Sociodemographic characteristics		
Sex		
Female	11	78.6
Male	3	21.4
Age Range		
18-24 years	5	35.7
25-59 years	1	7.1
60 year or more	8	57.2
Ethnicity		
Non afro-descendants	3	21.4
Afro-descendants	11	78.6

Occupational and Education features		
More than one employment (n=5)		
No	2	40.0
Yes	3	60.0
Post-graduation course		
Yes	7	50.0
No	7	50.0
Which post-graduation course? (n=7)		
Management	2	28.6
Public Health	1	14.3
Urgency and Emergency	4	57.1
Education time (n=13)		
Until 3 years	7	53.8
Over 3 years	6	46.2
Working time (n=8)		
Until one year	6	75.0
Over one year	2	25.0
Course of Basic Life Support		
Yes	12	85.7
No	2	14.3

According to the nurses' knowledge about BLS care in the face of a CPA situation, it was found that most had knowledge about the clinical signs that should be evaluated by the rescuer in the prehospital environment (78.6%); did not know the standardized CPR survival chain sequence (70.3%); knew the proper assessment of the victim's level of awareness in CPR (71.7%), the sequence of procedures / actions after the initial assessment (57.1%) and CPA sequence in adults if ventilation could be guaranteed (72, 9%).

We also identified that most of them had knowledge of how to check the victim's pulse in CPA (92.9%), on the frequency of chest compressions if ventilation could not be guaranteed (57.1%), as the minimum depth of the chest. adult chest compressions (71.4%).

Most of the nurses did not know the proper place for hand placement and chest compressions in adults (92.9%); half were aware of the situations in which AED could be used (50%); and just over half knew the CPA rates (57.1%) and the shockable CPA rates (57.1%) (Table 2).

Table 2- Percentual distribution of nurses according to knowledge about Basic Life Support. Bahia Brazil. (N = 14)

Characteristics	n	%
Clinical signs of CPA assessed by a rescuer in the prehospital setting		
Hits	11	78.6
Misses	3	21.4
CPR Survival Chain Sequence in Outpatient Environment		
Hits	05	29.7
Misses	09	70.3
The assessment of the victim's awareness level in CPA		
Hits	09	71.7
Misses	05	29.3
Sequence of procedures / actions after initial assessment		
Hits	8	57.1
Misses	6	42.9
Adult CPR Sequence If Ventilation Could Be Guaranteed		
Hits	10	72.9
Misses	04	27.1
Checking the victim's pulse on CPA		
Hits	13	92.9
Misses	01	7.1
Frequency of chest compressions. when it was not possible to guarantee the ventilation		
Hits	8	57.1
Misses	6	42.9
Minimum depth of chest compressions in adults		
Hits	10	71.4
Misses	4	28.6
Place for hand placement and chest compressions in adults		
Hits	1	7.1
Misses	13	92.9
Situations where AED can be used		
Hits	07	50
Misses	07	50
CPA Rhythms		
Hits	08	57.1
Misses	06	42.9
Shockable CPA Rhythms		
Hits	8	57.1
Misses	6	42.9

BLS: Basic Life Support; CPA: Cardiorespiratory Arrest. (n = 14); CPR: Cardiopulmonary Resuscitation; Automatic External Defibrillator: AED.

Discussion

The analysis of the knowledge of nurses who work in the FHS about the BLS allowed us to identify that these professionals have early recognition of the clinical signs evidenced in a person undergoing CPR in a prehospital setting.

The identification of these signs implies an increase in people's survival after CPA, with an estimated variation between 2 and 49%. Regarding these values, there is a direct relationship between the identification of CPA and early CPR, which means that treatment strategies increase the survival rate when these signs are identified in advance by professionals, overcoming past scenarios, in which poor knowledge was responsible for the decreased survival rate.[9] However, today, with increasing knowledge expansion strategies and public access to defibrillation, survival rates exceed 70% during early and efficient relief.[3-4]

In the FHS, the nurse is present during the entire working period and is usually the first professional to respond to CPA. Therefore, it is critical that she/she have up-to-date BLS knowledge, enabling quick decision making and immediate action with appropriate priority assessment.[10]

Highlighting the nurses' knowledge about the clinical signs evidenced in a CPA, the adequate assessment of the level of awareness of people in CPA is emphasized. In addition, nurses know the pulse to check for movement of people during an identification of instability and risk for establishing a CPA. Consciousness is assessed by tactile and sound stimulation. The provider should touch the victim / patient's shoulders and ask out loud, "are you ok?". Simultaneously, the respiration and the carotid pulse should be evaluated for a maximum of 10 seconds. If the patient is not breathing or has ineffective breaths (eg, agonic, shallow, very slow) and absence of central pulse, SAMU (192) should be triggered and an AED brought.[4,11]

It is essential that the nurse is able to provide emergency care through care strategies. The actions described are part of the recommendations of the 2015 Guidelines Update, highlighting the simultaneous execution of the steps - checking for breathing and pulse at the same time - in an attempt to reduce the time until the first chest compression.[4] A study conducted with nurses from UBS Campinas, located in the interior of the state of São Paulo-Brazil with the objective of evaluating the theoretical knowledge on the same theme also identified a high satisfaction index for the detection of a CPA in 69.8% of the professionals indicated an adequate assessment of the referred clinical condition.[10]

According to the AHA Guideline, as far as treatment strategies are concerned, specifically the actions taken during the first few minutes of an emergency response are critical to the survival of a CPA victim.[4] In this sense, nurses working in the FHS should know the survival chain as well as be able to identify a CPA in order to provide fast and quality care to these victims in the context in which they are inserted. Knowledge and skill in BLS is extremely important in preventing CPA and returning the life of the suddenly collapsed patient.[12]

When assessing the percentages of errors, it is identified that most nurses did not know the sequence of survival chain for CPA in an out-of-hospital setting, proposed worldwide by the AHA. This result corroborates a study with 70 nurses in a teaching hospital in Curitiba-PR, when asked about the correct order

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of survival chain for an adult CPA victim, only 30% of nurses knew the exact answer.[13]

According to the AHA, the use of survival chains is recommended for the effective care of a CPA victim. The sequence of critical actions of the BLS survival chain comprises rapid recognition of cardiovascular emergencies and measures to prevent respiratory arrest and CPA; quick action on any victim who suddenly becomes unconscious; high quality immediate cardiopulmonary resuscitation (CPR) efforts and rapid ventricular fibrillation (VF) defibrillation and pulseless ventricular tachycardia (DPVT) using an Automatic External Defibrillator (AED).[3-4]

It is essencially important that nurses adopt standardized language systems in their practices, such as clinical guidelines with high levels of evidence and accuracy to ensure care quality, with a view to patient safety and improved response (golden time).[14] Therefore, the use of a survival chain is recommended, as part of this apparatus, which identifies the care pathways of patients who undergo out-of-hospital CPA, since the structure elements and the necessary processes are extremely important for the nurse's performance in the context where it is inserted.

Following correct answers, identified in the tests' analysis, the nurses demonstrated knowledge about the minimum depth to be used during the chest compressions. This knowledge is essential for professionals to accurately perform CPR maneuvers, especially compressions, which, as pointed out by the AHA, are a priority in BLS.[15]

For CPR assessment and efforts to be effective, the victim should be positioned supine on a flat, rigid surface. If the team is facing a polytraumatized victim, the movement should be carefully performed, preserving the cervical spine stabilization.[15] In addition, if CPR maneuvers were performed by trained quality-assured nurses, survival may double or even triple.[2]

The AHA Guideline advises that during manual CPR, the nurse should perform chest compressions at least 5 cm deep for an adult and at most 6 cm with full return of the chest wall; and justifies that the depth of compressions is associated with a higher likelihood of favorable outcomes.[4]

The proper place for the placement of person hands in CPA, in order to perform chest compressions in adult individuals, was unknown for the nurses. According to AHA Guideline (2015), two hands (hypotenar region) should be placed over the lower half of the sternum to achieve efficiency and better compression effectiveness during CPR.[16]

We observed that little more than half of the professionals knew the sequence of procedures / actions to be adopted after an initial evaluation, as well as the sequence of CPA in adults, if it was possible to guarantee ventilation. International recommendations state that if pulse and circulation signs are absent, or if in doubt, chest compressions should be initiated immediately.

In this sense, it is necessary to adopt a sequence of actions,

which converge with the performance of 30 chest compressions, followed by two ventilations, representing a 30x2 cycle, at a minimum speed of 100 to 120 compressions / minute. We should also compress about 5cm to 6cm, allowing the full return of the chest to the initial position. Following this guideline, compressions should be applied rapidly, strongly and rhythmically to generate blood flow by increasing intrathoracic pressure or by direct compression to the heart. The correct location of the chest compression region is very important to ensure its efficiency.[3-4]

Considering that the performance of the sequence of actions after the identification of a CPA are determinant in survival with good neurological prognosis of the victims in CPA, the data found in this study are alarming, since almost half did not know the correct sequence of care after the identification of a CPA.

A study by Moraes and Paiva[10] showed that about 70% of FHS professionals are able to properly identify a CPA, however significant failures were identified in the care sequence.

Regarding the provision of ventilations to the person with CRP, after performing the thirty compressions, two pulmonary ventilations should be performed; however, the pauses for ventilation should not exceed 10 seconds.

The duration of each ventilation should be one second and observe chest elevation. Artificial ventilations may be applied by word of mouth, mouth-barrier device or by a pocket-valve-mask device(Ambu).[17]

This same reduced percentage of correct answers was identified regarding the nurses' knowledge about the recognition of cardiac rhythms evidenced in a CPA, such as the specific situations to be operated upon the use of an AED and the cardiac rhythms considered shock-sensitive by a defibrillator during a CPA.[18]

According with the AHA[4] Guideline, the rhythms that can lead to CPA include: ventricular fibrillation (VF), pulseless ventricular tachycardia (PVT), pulseless electrical activity (PEA), and asystole. In this study, the predominance of assertions corroborates the results found in the study of 11 nurses from a municipal hospital in São Paulo, which showed that 66% had adequate knowledge about the identification of PCR rates.[5]

Most CPA victims have VF or SVTP heart rate. For these victims, the initial elements of BLS are chest compressions and early defibrillation. However, once AED is available, this becomes the priority of use as these rhythms require shock delivery, i.e., unsynchronized high energy defibrillation loads.[4,15]

Regarding the use of Automatic External Defibrillator (AED), it is evident that in hospitals or institutions with AED, CPA should be started immediately and defibrillation performed as soon as the device is available. Most portable heart monitors feature multifunctionality, allowing for heart rate monitoring, defibrillation, synchronized cardioversion and electrical stimulation via transcutaneous pacemakers.[3-4] However, not all units are

equipped with this device, such as the health units that were researched, in which nurses work in this study.

Thus, it is understood that the nurse is an extremely important professional in the care of a CPA, especially in Primary Health Care (PHC), without measuring efforts to revive the individual with arrest, and should be able to recognize when The individual is progressing to CPA and rapidly assess and resuscitate. Therefore, investment in both theoretical and practical courses is indispensable.[10]

In this study, it was observed that most nurses had a BLS course. The BLS Course is the set of technical measures and procedures that aim at life support to the victim. BLS is vital until SAMU arrives. The main objective is not to aggravate existing lesions or generate new iatrogenic lesions. Fast and proper care provides up to 80% chance of survival.[3-4]

That is why courses are so important in the area, because the difference between life and death is often in the hands of the nurse (o), making this difference is a duty of every health professional, improve the technique and is always updating is of vital importance in caring for a CPA victim.

In short, nurses should seek to update and train themselves through courses aimed at this theme. BLS and ALS courses are offered regularly in Brazil, under the permission and supervision of AHA. They provide knowledge with appropriate technology and certification of professional performance.

Provide standardization of conducts in Cardiopulmonary Resuscitation, thus favoring the adoption of unique language by health professionals to perform the maneuvers effectively.[19] However, Kardon-Edgren et al[20] describe that, since cardiac arrest is an uncommon event in most environments, the use of skills is infrequent, which accentuates the loss of theoretical knowledge and practical skills by nurses working in the APS field.

Conclusion

This article assessed the knowledge of nurses who work in the FHS about the BLS against CPA. In short, satisfactory theoretical knowledge was related to the recognition of clinical signs to be evaluated by a rescuer in a prehospital setting. They adequately recognized the assessment of a victim's level of consciousness in CPA, verification of the victim's pulse, CPR sequence in adults if ventilation could be ensured and minimal compression depth.

They presented below-desired theoretical knowledge regarding the standardized survival chain sequence to be established in the case of a CPA and the appropriate location of the hand position and chest compressions in adult subjects.

Just over half of the professionals knew the sequence of procedures / actions to be adopted after an initial assessment; the recognition of cardiac rhythms evidenced in a CPA; the specific situations to be operated on when using an AED; and heart rhythms

considered shock-sensitive by a defibrillator during a CPA.

The study identified the production of primary care in urgent and emergency situations is below expectations, although most had access to some training course it is possible to state that the reduced number of correct answers in some points of the questionnaire is related to the decrease in the number of CPAs in this scenario.

After applying the questionnaires in the Basic Health Units (BHU) and the Family Health Units (FHU), we can see the constant need for training focused on basic life support (BLS) for nurses who work in the SUS gateway, since even being able to identify a CPA, they cannot correctly proceed the protocol instituted by the AHA.

Giving a patient a greater life expectancy in CPA and knowing the BLS protocols is a function of every health professional, regardless of the scenario in which they are working, and there is a greater need for investment by managers to offer resources and training in realistic simulation. these professionals with a view to quality care to SUS users.

Appropriate care for a person in a CPA situation is inherent to the performance of every nurse working in the FHS; What actions are taken in the face of a CPA and whether continuing education is offered in relation to BLS in PHC, taking into account the vision and subjectivity of the professionals who perform the care, is a function of all those involved in safe patient care.

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