Journal of Nursing
Revista de Enfermagem
UFPE On Line
ISSN: 1981-8963

ORIGINAL ARTICLE

CARDIORESPIRATORY ARREST: KNOWLEDGE OF NURSING PROFESSIONALS IN AN INTENSIVE THERAPY UNIT

PARADA CARDIORRESPIRATÓRIA: CONHECIMENTO DOS PROFISSIONAIS DE ENFERMAGEM EM UMA UNIDADE DE TERAPIA INTENSIVA

PARO CARDIORRESPIRATORIO: CONOCIMIENTO DE LOS PROFESIONALES DE ENFERMERÍA EN UNIDAD DE CUIDADOS INTENSIVOS

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ABSTRACT

***Objetivo*:** avaliar o conhecimento dos profissionais de enfermagem sobre o atendimento ao paciente em parada cardiorrespiratória (PCR). ***Método*:** estudo descritivo, exploratório, de abordagem quantitativa, com 38 profissionais de enfermagem que trabalham em uma Unidade de Terapia Intensiva/UTI. A coleta de dados foi realizada com um formulário semiestruturado, em seguida, foi realizada análise estatística simples dos dados. ***Resultados*:** dos participantes predominou o sexo feminino, destes 18,42% enfermeiros e 55,26% técnicos de enfermagem. Acerca da detecção da PCR, 66,67% dos enfermeiros responderam de forma parcialmente correta. Quanto as modalidades de PCR 42,10% dos profissionais, consideraram apenas assistolia. ***Conclusão*:** grande parte dos participantes do estudo demonstra conhecimento e preparo no atendimento ao paciente em PCR. Porém, observa-se a importância da educação permanente envolvendo as diretrizes da *American Heart Association*. ***Descriptors*:** Heart Arrest; Nursing; Intensive Care Units.

RESUMO

***Objetivo*:** avaliar o conhecimento dos profissionais de Enfermagem sobre o atendimento ao paciente em parada cardiorrespiratória (PCR). ***Método*:** estudo descritivo, exploratório, de abordagem quantitativa, com 38 profissionais de Enfermagem que trabalham em uma Unidade de Terapia Intensiva/UTI. A coleta de dados foi realizada por meio de um formulário semiestruturado. Em seguida, foi realizada análise estatística simples dos dados. ***Resultados*:** dos participantes, predominou o sexo feminino. Destes, 18,42% são enfermeiros e 55,26%, técnicos de Enfermagem. Acerca da detecção da PCR, 66,67% dos enfermeiros responderam de forma parcialmente correta. Quanto às modalidades de PCR, 42,10% dos profissionais consideraram apenas assistolia. ***Conclusão*:** grande parte dos participantes do estudo demonstra conhecimento e preparo no atendimento ao paciente em PCR. Porém, observa-se a importância da educação permanente envolvendo as diretrizes da *American Heart Association*. ***Descritores*:** Parada Cardíaca; Enfermagem; Unidades de Terapia Intensiva.

RESUMEN

Objetivo: evaluar el conocimiento de profesionales de Enfermería sobre el atendimiento al paciente en parada cardiorrespiratorio (PCR). ***Método:*** estudio descriptivo, exploratorio, enfoque cuantitativo, con 38 profesionales de Enfermería que trabajan en UCI/Unidad de Cuidados Intensivos. Los datos fueron recogidos de forma semiestructurada, luego se realizó el análisis estadístico simple de los datos. ***Resultados:*** de los participantes, prevaleció la hembra. De estas, 18,42% enfermeros y 55.26%, técnicos de Enfermería. Sobre la detección de la PCR, el 66.67% de los enfermeros han respondido de forma parcialmente correcta. Cuanto a las modalidades de PCR 42.10% de los profesionales, consideraron sólo asistolia. ***Conclusión:*** la mayoría de los participantes del estudio demuestra conocimiento y preparación en atención al paciente en PCR. Sin embargo, se observa la importancia de la educación permanente involucrando las directrices de la American Heart Association. ***Descriptores*:** Paro Cardíaco; Enfermería; Unidades de Cuidados Intensivos.

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INTRODUCTION

One of the most severe clinical emergencies, Cardiorespiratory arrest (CRA) is defined as a sudden condition of tissue oxygenation deficiency due to cessation of respiratory function and / or circulatory inefficiency. In this situation, irreparable damage can occur in a short period, since irreversible brain lesions occur shortly after five minutes of CRA.[1]

The care of patients with CRA is a set of emergency maneuvers, called cardiopulmonary resuscitation (CPR), which, aims to, artificially maintain the arterial flow to the brain and other vital organs until the spontaneous circulation returns.[2]

In this sense, the *American Heart Association* (AHA) proposes guidelines on CPR based on a wide review of the literature and diverse debates and discussions with international experts on the subject. Every five years, the analysis and publication of new recommendations takes place, which does not imply that the care with the past guidelines is insecure or inefficient.

A successful CPR depends on a sequence of procedures that can be systematized in the concept of survival chain, in addition to important determinants such as theoretical knowledge and the practical skills of health professionals, since CRA requires fast, effective and integrated actions.[5 -6]

Among health professionals, Nursing professionals are the ones closest to the patient, who are responsible for the intensive care of patients in CRA, as well as during and after CPR. Such care is provided through permanent evaluation, the performance of procedures and techniques that complement medical therapy.[7]

The Nursing team needs to be trained to verify a CRA, and must know the basic life support maneuvers. The Nursing technicians will be able to advise the nurse in this initial care and be at his disposal for the tasks that involve the needs of cardiopulmonary resuscitation. [8]

When considering that CRA is an event that occurs frequently in the Intensive Care Unit (ICU), since these units assist severely ill patients with marked hemodynamic instability, the team that works in this sector needs an improvement of their cognitive, motor and update on cardiac resuscitation maneuvers.[9] Thus, the Nursing team should participate in ongoing training and permanent education courses updating the theoretical-practical knowledge. After a period of training, it is evident that professionals improve the quality and performance of the CPR, since there is a reduction of knowledge if it is not exercised.[10-1]

It is noticed that, with the investment of the institutions in training programs for the possible entanglements of the CPR, it is fundamental an evaluation of the performance of each professional to identify the failures, thus, facilitating, the organization of training within the reality of the team.[12- 3]

It is extremely important to evaluate the knowledge of the Nursing team about CRA and CPR maneuvers, because, although the team recognizes the importance of the topic, many professionals may not have adequate knowledge about the procedures and the ideal sequence of care recommended by the AHA guidelines.

OBJECTIVE

- To evaluate the Nursing professionals' knowledge about patient care in cardio-respiratory arrest (CRA).

METHOD

A descriptive, exploratory, quantitative study, conducted in an Intensive Care Unit of a Public Hospital of high complexity in neurology and traumato-orthopedics located in the interior of the state of Pernambuco. Thirty-eight professionals, nine of them nurses and 29 Nursing technicians participated, which were clarified in relation to the method and objective of the research. Data collection that included the period from January to March, 2016, was performed after agreement through the Free and Informed Consent Term (FICT).

The information was obtained through a semi-structured form containing questions about socio-demographic data and specific questions that address patient care in CRA and post CPR, such as CRA detection, initial conduct, BLS and ALS actions, rhythms during a CRA, correct compression posture, drug delivery routes that can be used, and medications to be administered during the event.

Since the questions contained more than one correct alternative, the response pattern was evaluated considering the number of alternatives identified in each question, categorized as: correct answers when all the correct alternatives were pointed out; partially correct, when one or more correct alternatives, are no longer indicated;

Incorrect or does not know how to respond, considering the AHA guidelines, 2010.

The results were stored and analyzed in a spreadsheet (Microsoft Excel® 2003) and a simple statistical analysis of the data was performed by observing the frequencies of each isolated response and the crossing of the variables, relating to the professional category and previous qualification On CRA and CPR.

The project was submitted to the Ethics and Research Committee of the University of Pernambuco - CEP, with an approval opinion registered under No. 1,312,181.

RESULTS

Of the 38 research participants, 73.68% (28) were female. Of these, 18.42% (07) are nurses and 55.26% (21) Nursing technicians and 26.32% (10) are males, being 5.26% (02) nurses and 21.05% (08) Nursing technicians.

It was found that the majority of the professionals participating in the study, 52.63% (20), had a time of operation in the ICU between six months to one year; 26.32% (10) had more than five years of service and 21, 05% (08), for two to four years.

Regarding CPR training, only one nurse and one Nursing technician have never participated, but all those involved in the research stated that the institution offers a permanent education program and lectures on CPR are given every six months.

Table 1. Responses of the professionals regarding the detection of CRA, initial conduct, BLS and ALS actions (n = 38). Petrolina (PE), Brazil, 2016.

Variables	Profession	
CRA Detection	**Nurses (n=9)**	**Nursing Technicians (n=29)**
Correct	33.33%	68.97%
Partially Correct	66.67%	31.03%
Intial Conduct		
Correct	33.33%	58.62%
Did not know how to respond	0.00%	3.45%
Partially Correct	66.67%	37.93%
BLS actions		
Correct	77.78%	48.28%
Incorrect	11.11%	10.34%
Partially Correct	11.11%	41.38%
ALS actions		
Correct	66.67%	72.41%
Incorrect	0.00%	3.45%
Did not know how to respond	11.11%	3.45%
Partially Correct	22.22%	20.69%
General Total	**100.00%**	**100.00%**

Regarding the detection of CRA, 66.67% of the nurses answered partially correctly, due to the fact that the majority considered only the absence of the carotid and femoral pulse as a clinical sign. Regarding the first conduct of the Nursing technicians, those who answered partially correct (37.93%), considered only to call for help and the accomplishment of the external thoracic compression as initial conduct.

Table 2. Responses of the CRA training participants regarding CRA detection, initial conduct, BLS actions and ALS actions (n = 38). Petrolina (PE), Brazil, 2016.

Variables	Capacitation	
CRA Detection	**No (n=2)**	**Yes (n=36)**
Correct	50.00%	61.11%
Partially Correct	50.00%	38.89%
Intial Conduct		
Correct	0.00%	55.55%
Did not know how to respond	0.00%	2.78%
Partially Correct	100.00%	41.67%
BLS actions		
Correct	100.00%	52.78%
Incorrect	0.00%	11.11%
Partially Correct	0.00%	36.11%
ALS actions		
Correct	0.00%	75.00%
Incorrect	0.00%	2.78%
Did not know how to respond	100.00%	0.00%
Partially Correct	0.00%	22.22%
General Total	**100.00%**	**100.00%**

Of the professionals who participated in CPR training, 11.11% considered artificial ventilation as a single behavior in the BLS, while 100% of those who did not participate in the training responded correctly, and 22.22% of the training participants did not consider the continuation of the BLS as conduct For the FVO.

Regarding the CRP modality, 42.10% of the professionals considered only asystole as a rhythm, not signaling Ventricular Fibrillation (VF), Ventricular Pulseless Tachycardia (VPT) or Electric Pulseless Activity (EPA).However, all the participants of the research correctly answered about how artificial ventilation should be performed, both in the intubated patient, and in the non-intubated patient.

Table 3. Responses of professionals regarding the route of administration and drugs used during a CRA (n = 38). Petrolina (PE), Brazil, 2016.

Variables	Profession	
Route of Administration	Nurses(n=9)	Nursing Technicians (n=29)
Correct	77.78%	17.24%
Partially Correct	22.22%	82.76%
Drugs		
Correct	55.56%	31.03%
Partially Correct	44.44%	68.97%
General total	100.00%	100.00%

Regarding the route of administration of medications during a CRA, 82.76% of the Nursing technicians judged only the peripheral endovenous route and the central intravenous route. Regarding the drugs used during the CRA event, 63.16% of all the participants of the study indicated adrenaline as the only drug to be administered.

DISCUSSION

Cardiopulmonary arrest is confirmed by the following signs: absence of detectable pulse, irresponsibility and apnea or agonal breathing. [14] Although most of the professionals considered these three clinical signs, one party pointed out only the absence of a pulse. The health professional should observe the patient and identify all the signs to begin the CPR maneuvers.

The actions that increase the chance of survival of the victims of CRA are called survival currents and the links of this current are: recognition of the arrest; activation of emergency services, immediate CPR, defibrillation and advanced life support. When given to CPR soon after cardiac arrest, the chance of survival can double or even triple. [15]

In this way, the BLS consists of the initial care, that is, basic emergency procedures. In ALS, the BLS continues, to include additional resources such as drug administration, special ventilation equipment, and care after the CRA event, [2] therefore, after identifying the CRA, it is of utmost importance that after calling for help and initiating in an advanced airway (as in the ICU), it is recommended to administer ventilation every six seconds through the use of the pocket-valve-mask, equivalent to ten ventilations per minute. If

the rhythm is shockable, a shock should be applied and CPR should resume immediately for about two minutes.[16]

Regarding the CRA modalities, a large part of the study participants only reported asystole. For the management of CRA, the following should be considered: VF, DVT, asystole (absence of electrical activity) or AESP. During CPR, it should be analyzed in which of these situations the patient, has the objectives of prolonging compressions at non-shockable rhythms (asystole / AESP) and performing early defibrillation at shocking rates.[17]

In addition to the difficulty in recognizing the rhythm of CRA by the monitor, difficulties were also observed regarding the use of medications and the routes of administration of these drugs. In this context, medications should be considered as potentially useful aids and when one chooses to use some one must be alert to its indication, mechanism of action and possible side effects.[18]

Regardless of whether adrenaline is the drug of first choice in a CRA, the Nursing team should consider the importance of other medications, always attentive to the form of administration. During the event, amiodarone, lidocaine, magnesium, among others, vasopressin, in combination with epinephrine, does not offer any advantage, compared to the standard dose of epinephrine.[16]

Regarding the route of administration, one should choose between peripheral venous access (preferably, in upper limbs), central access, if there is no contraindication, besides the intraosseous route and the endotracheal route. However, intravenous or intraosseous administration is preferable than Endotracheal.

With the support of the institution, the team is trained and properly trained to perform procedures in emergency situations. This preparation will result in effectiveness and effectiveness in the CPR maneuvers. So, the success of the care depends on an integration of efforts by the team. [19]

CONCLUSION

In view of the observed aspects, the importance of the training of the Nursing team in order to prepare them to perform the maneuvers of high quality CPR is verified.

Although some of the participants demonstrated difficulties regarding the identification of CRA, initial management, BLS, modalities, routes of administration and medications used in CPR, a large part of the Nursing team working in the ICU of the hospital under study demonstrated knowledge and preparation for care to the patient in CRA.

To better understand the topic, it is suggested that other studies of greater scope be developed in order to contemplate the relevance of the care provided to the patient in CRA, reflecting the effectiveness of the quality of care and emphasizing the recommendations of the AHA.

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Submission: 2016/11/13
Accepted: 2017/06/20
Publishing: 2017/07/01

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