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ORIGINAL ARTICLE

KNOWLEDGE OF THE MULTIPROFESSIONAL HEALTH TEAM BASED IN THE POLICIES OF THE AMERICAN HEART ASSOCIATION – 2010

CONHECIMENTO DA EQUIPE MULTIPROFISSIONAL DE SAÚDE BASEADO NAS DIRETRIZES DA AMERICAN HEART ASSOCIATION – 2010

CONOCIMIENTO DEL EQUIPO MULTIPROFESIONAL DE SALUD BASADO EN LAS POLÍTICAS DE LA AMERICAN HEART ASSOCIATION – 2010

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ABSTRACT

Objective: evaluating the knowledge of the multidisciplinary health team of intensive and semi-intensive care units, with regard to emergency assistance to cardiopulmonary arrest (CPA) under the 2010 guidelines of the American Heart Association (AHA). ***Method:*** a descriptive study with a quantitative approach, developed in a public teaching hospital in Curitiba/PR. It was used as instrument a structured questionnaire with questions based on the guideline of Cardiopulmonary Resuscitation (CPR) 2010 AHA. The project was approved by the Research Ethics Committee, CAAE 01911212.4.0000.0096. ***Results:*** the team has outdated and insufficient knowledge regarding the AHA guidelines for the care of PCR in hospital environment. ***Conclusion:*** it showed the need to draw up a training program in service and institutional policies that subsidize and/or facilitate participation in events and training courses. ***Descriptors:*** Emergencies; Cardiac Arrest; Cardiopulmonary Resuscitation; Health Interdisciplinary Team.

RESUMO

Objetivo: avaliar o conhecimento da equipe multiprofissional de saúde de unidades de terapia intensiva e semi-intensiva no que se refere ao atendimento emergencial à parada cardiorrespiratória (PCR) segundo as diretrizes de 2010 da *American Heart Association* (AHA). ***Método*:** estudo descritivo com abordagem quantitativa desenvolvido em um hospital de ensino público de Curitiba/PR. Utilizou-se como instrumento um questionário estruturado com perguntas baseadas no *guideline* de Ressuscitação Cardiorrespiratória (RCP) de 2010 da AHA. O projeto foi aprovado pelo Comitê de Ética em Pesquisa, CAAE 01911212.4.0000.0096. ***Resultados*:** a equipe tem conhecimento desatualizado e insuficiente com relação às diretrizes da AHA para o atendimento à PCR no ambiente intra-hopitalar. ***Conclusão*:** evidenciou-se a necessidade da elaboração de um programa de treinamento em serviço e de políticas institucionais que subsidiem e/ou facilitem a participação em eventos e cursos de treinamento. ***Descritores*:** Emergências; Parada Cardíaca; Ressuscitação Cardiopulmonar; Equipe Interdisciplinar de Saúde.

RESUMEN

Objetivo: evaluar el conocimiento del equipo multidisciplinario de las unidades de cuidados intensivos y semi-intensivo de salud con respecto a la respuesta de emergencia a la parada cardiorrespiratoria (PCR) en las directrices de 2010 de la American Heart Association (AHA). ***Método:*** un estudio descriptivo con un enfoque cuantitativo desarrollado en un hospital de enseñanza pública en Curitiba/PR. Se utilizó como instrumento un cuestionario estructurado con preguntas basadas en la directriz de Resucitación Cardiopulmonar (RCP) de 2010 de AHA. El proyecto fue aprobado por el Comité de Ética en Investigación, CAAE 01911212.4.0000.0096. ***Resultados:*** el equipo ha anticuado y conocimientos insuficientes en relación con las directrices de la AHA para el cuidado de la PCR en el ambiente hospitalario. ***Conclusión:*** se demostró la necesidad de elaborar un programa de capacitación en el servicio y las políticas institucionales que subsidiar y/o facilitar la participación en eventos y cursos de formación. ***Descriptores:*** Emergencias; Paro cardíaco; Reanimación Cardiopulmonar; Salud Equipo Interdisciplinario.

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INTRODUCTION

The Cardiopulmonary Resuscitation (CPR) represents the major cause of death in patients with cardiovascular disease, which demonstrates the need for knowledge and attitudes on CPR by healthcare professionals.[1]

It is estimated to occur something close to 200.000 CPR a year in Brazil, of which 50% in hospital and 50% in homes, streets and places of great concentration of people such as shopping malls, airports, stadiums, etc.[2]

The guidelines that guide the actions in emergency situations seek to facilitate and optimize the decision-making facing cardiorespiratory arrest. However, what is observed is the lack of preparation and knowledge of most professionals on the proper way to provide the initial care to the victim of CPR.[1]

Every five years, the international guidelines call for CPR updated. The mission is to identifying and reviewing the evidence and relevant international knowledge in CPA and offers a consensus on care recommendations. This international evidence evaluation process involves hundreds of scientists and experts in Cardiopulmonary Resuscitation (CPR) from all over the world, who discuss and debate on scientific publications of the area.[3]

In 2010, the American Heart Association (AHA) published new guidelines call for CPR. The new protocol emphasizes the need for high-quality CPR with minimizing disruption and avoiding excessive ventilation.[3]The new guidelines include significant changes as a result of compliance with CPR, the frequency of compressions, the medications used, among other.[3]

As mentioned earlier it is estimated that half of CPR situations occur in hospitals, and the Emergency Units (EU) and Intensive Care Units (ICU) local high incidence of CPR, due to gravity and the hemodynamic instability of patients.[2,4] However, survival and prognosis depend, among other factors, the speed with which it starts the service and the quality of CPR maneuvers.[2]

It is estimated that each minute lost without service is reduced by approximately 10% chance of survival of the patient victim RCP.[5] Incorrect application of CPR maneuvers adds only a 49% survival rate, while that study shows that CPR, when performed with high quality, patient survival is double or even triple.[6] Another study reveals that when trained to meet a CPR, professionals can promote the survival of patients in up to four times when compared to professionals without training.[7] In this context, health professionals should be prepared and constantly updated on the subject, as the first to view the scene will be responsible for starting the service.[8]

OBJECTIVE

- Evaluating the knowledge of health multidisciplinary team with regard to emergency care to cardiac arrest, according to the new guidelines of the 2010 AHA.

METHOD

Descriptive study with a quantitative approach developed at the Center for Semi-Intensive Care (CTSI) and Intensive Care Unit (ICU) of a public teaching hospital in the city of Curitiba-PR, from August to October 2012. The sample consists of resident physicians, physical therapists, nurses, technicians and nursing assistants. The professionals were invited to participate in the survey, with the following inclusion criteria: belong to the multidisciplinary health team, are active in those units and the free consent to participate in research.

For data collection there was used a questionnaire with sociodemographic variables and on the identification of CPR signals; the first action to be taken before a CPR; the answering sequence; the quality of chest compressions; compression ratio x ventilation; ventilation in advanced airway; priorities in care; the use of capnography and hypothermia, drugs used in defibrillation and cardioversion. The question related to electric therapy was exclusive to top-level professionals.

Data were tabulated and analyzed using the Microsoft Excel® program by descriptive statistics and presented in figures.

The project was approved by the Ethics Committee for Research Hospital in question under the CAAE nº 01911212.4.0000.0096 and all participants signed the free and informed consent form.

RESULTS

Teams of CTSI and CTI totaled 126 professionals, 57 nursing assistants, 23 nursing technicians, 15 nurses (a resident), seven physiotherapists (five residents) and 24 medical residents the first year of medical clinic. Of these, 94 agreed to participate, representing 74.6% of the multidisciplinary team. Within the professional ranks, participated 70,2% (n = 40) of the auxiliary nursing, 69,6% (n = 16) of nursing technicians; 80% (n = 12) of the top-level nurses, 100% (n = 7) of the physiotherapists and 79,2% (n = 19) of doctors.

Regarding gender, we see a significantly female multidisciplinary team with 79,8% (n = 75) of the sample. Regarding the training time, the nursing staff (assistants, technicians and nurses), mostly (52%) are formed more than 10 years. Physical therapists have mostly represented by residents (n = 5), so that there is a low formation of longer than three years with the activation time of the service lower than a year, a situation that is repeated with respect to doctors residents.

Concerning the acquisition of knowledge, all professions indicated the disciplines of graduation/ technical course as the primary means by which acquired knowledge of CPR. The auxiliaries and nursing technicians and physiotherapists pointed training in service or other services as the second largest source of acquiring knowledge about the subject.

Nurses, doctors and physiotherapists pointed to participation in the course Advanced Cardiac Life Support (ACLS) as a source of knowledge acquisition. The course of Advanced Trauma Life Support (ATLS) and the course of first aid training were performed only by nurses (Figure 1).

	Discipline	Training	ACLS	ATLS	First responder
Assistants	65%	52,5%	-	10%	2,5%
Technicians	62,5%	56,3%	-	6,3%	25%
Nurses	66,7%	50%	33,3%	8,3%	8,3%
Physiotherapists	71%	57%	14,3%	-	-
Physicians	79%	20,8%	26%	-	-

Figure 1. Sources of acquisition of knowledge about CPR, Curitiba-PR, 2012.

Regarding the main amendments in the protocol of care CPR of AHA 2010,[3] evaluate the knowledge of professionals on: the identification of a victim in CPR; the first action to be done in CPR; the sequence of care; the depth of chest compressions and the return of the chest. For this evaluation was a correct answer according to the new guideline 2010 AHA, a non-updated according to the 2005 Protocol and two other incorrect issues.

When evaluating knowledge about the identification of signs of a victim of CPR, we found that 51,1% (n = 48) of the professionals answered as 2005 Protocol; 38,3% (n = 36) responded as the 2010 Protocol and 10,6% (n = 10) responded incorrectly. On the first action to be taken in the CPR, 58,5% (n = 55) responded in accordance with the new protocol, 35,1% (n = 33) outdated way and only 6,4% (n = 6) erroneously. Following the service, 55,3% (n = 52) responded in accordance with the new protocol, 38,3% (n = 36) according to the old protocol and 6,4% (n = 6) incorrectly.

With regard to chest compressions, most professionals (43,6%, n = 41) pointed out the incorrect answer, and 28,7% (n = 27) responded in accordance with the new protocol and 27,7% (n = 26) in accordance with the 2005 protocol.

The ratio of 30: 2 was marked by 61,7% (n = 58) of the entire multidisciplinary team. However, research showed a significant percentage of professional nursing and physiotherapy staff who indicated the relationship 15 compressions and 2 breaths: 47,5% (n = 19) of the auxiliary; 37,5% (n = 6) technical; 41,7% (n = 5) of nurses; 71,4% (n = 5) physiotherapists. Only 5,2% (n = 1) of the doctors considered this relationship.

Regarding the presence of advanced airway during a CPR, was evaluated for the correct handling of the bag-valve device (Ambu) in intubated patients to provide adequate ventilation.

Considering the answers of the whole team, only 29,8% (n = 28) judged correct hypoventilate. The majority, 43,6% (n = 41) considered it appropriate to maintain a FR within the normal range.

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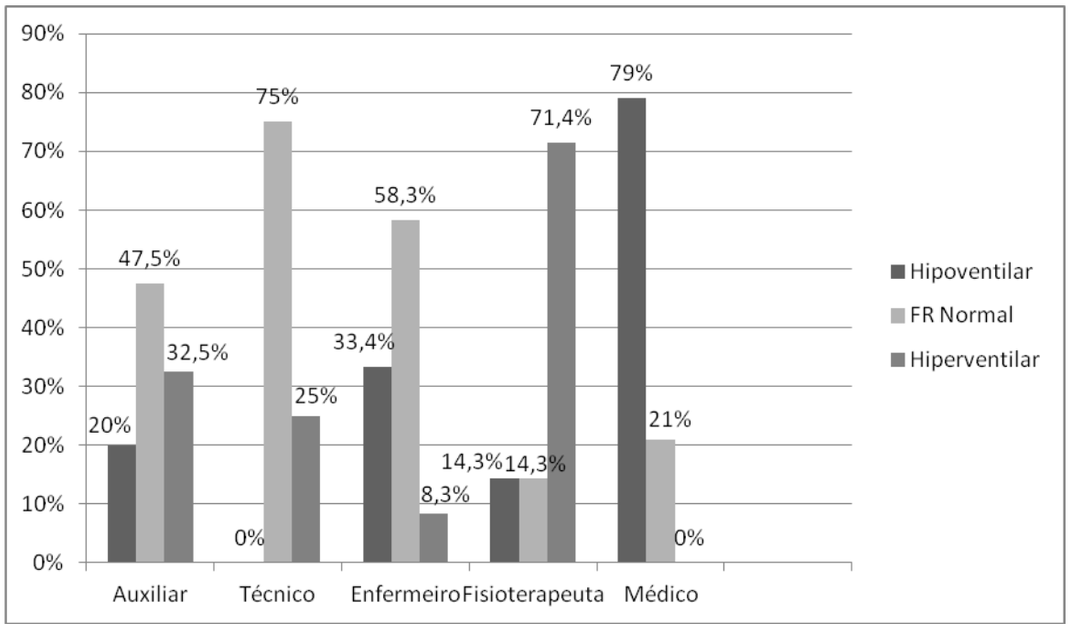

Figure 1. Adequate ventilation in advanced airway, Curitiba-PR, 2012

Figure 1 shows the distribution of responses by profession. The nursing team, mostly considered appropriate to provide a respiratory rate within the normal range 12-20 breaths per minute. Physiotherapists have already considered best hyperventilating, or provide a FR 20 to 30 breaths per minute. Only doctors had mostly 79% (n = 19) considering most suitable hypoventilate.

Regarding the Advanced Life Support (ALS), sought to assess what conduct would be inappropriate: the use of capnography to confirm and monitor the positioning of the endotracheal tube and the quality of CPR; prioritize vascular access, placement of advanced airway and drug administration in attendance to CPR, should interrupt chest compressions for their achievements; or the indication of therapeutic hypothermia in patients returning unconscious after CPR in an attempt to neurological recovery.

On the question of drug therapy (61,7% n = 58) responses of the multidisciplinary team were appropriate considering "prioritize incorrect vascular access, drug delivery and placement of advanced airway". The use of capnography considered incorrect 21,3% (n = 20) and the post-CPR hypothermia in 17% (n = 16) of responses.

Regarding medications for PCR protocol, dosages and uses of the main drugs they were asked: epinephrine, vasopressin, amiodarone, and atropine.

The multidisciplinary team (39,4% n = 37) of respondents felt wrong use of atropine. Among the professionals, only 20% (n = 8) of the auxiliary, 25% (n = 4) technical and no physiotherapist considered incorrect use of atropine in PCR. In contrast, 94,8% (n = 18) of doctors and 58,3% (n = 7) of nurses considered incorrect use. Interestingly, substitution of the first or second dose of epinephrine vasopressin was found to be incorrect by 45% (n = 18) and 44% (n = 7) and auxiliary nursing technicians, respectively.

In respect of the electrical therapy in PCR, the question was applied only to the top-level professionals. She had statements about the shockable rhythms, the number of applied shocks and synchronized cardioversion, for which participants should mark true or false.

Regarding shockable rhythms 94,8% (n = 18) of doctors, 75% (n = 9) of nurses and 71,4% (n = 5) physiotherapists considered true defibrillation VF and pulseless. However, 33,3% (n = 4) of nurses and 14,3% (n = 1) physiotherapists considered correct defibrillation in asystole and PEA.

Regarding the number of applicable shocks 94,8% (n = 18) of doctors, 71,4% (n = 5) of the physiotherapists and 66,7% (n = 8) of nurses considered correct application of just a shock and then restart the CPR maneuvers.

In synchronized cardioversion we observed that 75% (n = 9) of nurses, 74% (n = 14) of doctors and 71,4% (n = 5) physiotherapists indicated as correct application of synchronized cardioversion for atrial fibrillation, atrial flutter TV and monorphic stable.

The specific question of electrical therapy averaged 79,8% accuracy. Of the eight questions answered by all professionals, the ones most hit were: the question of relative compression x ventilation and the question of managing the SAV with 61,7% and 59,57%,

respectively.

Half of the questions had a lower accuracy to 50%, they were: questions about the frequency and depth of chest compressions (28,72%); ventilation in advanced airway (29,78%); identifying resins PCR (38.3%); and the question of drug therapy protocol (39,36%).

Finally, the survey found that 49,14% of the multidisciplinary team presented updated knowledge in CPR. When we consider only the responses of 15 professionals who conducted the course of ACLS/ATLS, this average rises to 65,5%.

DISCUSSION

The research presented professional physiotherapy and medicine formed and active in service for less than three years, in contrast, a nursing team (assistants, technicians and nurses) in which the majority is formed more than 10 years, and well distributed as the service time, presenting a mixed nursing team of young, intermediate and former employees.

It was observed a more passive team regarding the search of improvement and update of knowledge, rooted in knowledge acquired in their training and subject to professional training only if and when offered the service. A similar study corroborates this finding, to find that a minority of participants had conducted courses such as ACLS, as in this study, where only 33,3% (n = 4) of nurses and 26% (n = 5) of doctors attended the ACLS.[9]

Participants gained knowledge in specific area courses as ACLS and ATLS had greater knowledge about the new guidelines for compliance with CPR, which was evidenced by higher batting average in the survey (65,5%). Other authors found similar results, evaluating doctors and nurses, found that 71,4% and 28,6% respectively, performed the basic life support course of life (BLS) and 34.8% and 0% the ACLS course and that, compared with professionals who had not done any update showed greater knowledge and better results in meeting the PCR victims.[10]

Since 2005, AHA emphasizes the importance of high quality chest compressions recommending changes regarding compression and ventilation of 15:2 to 30:2, the new protocol 2010 further emphasizes the need for high-quality CPR with minimization of interruptions of chest compressions and avoiding excessive ventilation.[3] The survey revealed that 61,7% of staff took into consideration minimizing interruptions in chest compressions to correctly answer the question of SAV.

Under the new guideline, one of the items contributing to CPR quality is to avoid excessive ventilation, so in the presence of advanced airway should maintain a Respiratory Rate (FR) of 8-10 breaths per minute (hypoventilate).[3]

The team presented a worse performance in the question about advanced airway ventilation, in which only 29,8% of participants considered as correct hypoventilating. Similar shortcomings were also found in another study only with medical professionals, these only 29,5% correctly believe in the need to restrict number of vents to 8 to 10 per minute.[11]

On the issue that addresses the appropriate frequency and depth of chest compressions only 28,72% of the participants of the survey hit the reply, with 52,6% doctors, corroborating with similar study conducted only with doctors where the compression technique has been correctly chosen by 52,2% of the interviewees in this study the doctors to perform a self-assessment, admitted exist gaps in knowledge.[11]

The 2010 guideline emphasizes the application of CPR and early defibrillation for ventricular fibrillation/ventricular tachycardia (VF/TV) without a pulse. The vascular access, administration of pharmaceuticals and advanced airway placement, although it is still recommended, should not cause significant interruptions in chest compressions, or slow the shocks.[3]

In this issue, 61,7% (n = 58) of the multidisciplinary team answers were appropriate considering "incorrect prioritizing, vascular access drug administration and advanced airway placement".

The implementation of effective maneuvers is related with standardization of conduits, combined efforts of various professionals and unique language.[2] The team searched presented great discrepancy in responses related to ventilatory support, with only 29,8% of the multiprofessional team answered correctly. So, it was a team with multiple languages and divergent ducts, which practically does not prevent excessive ventilation as guideline 2010.[3]

The frequency and depth of chest compressions, which are directly related to the quality of the compressions, alarmingly, presented second worst performance by the multidisciplinary team, going on low setting for all professions. Studies carried out with physiotherapists and other nursing professionals in Petrolina-PE and Minas Gerais

also concluded the deficiency in this regard, showing the lack of update and knowledge on the topic.[12-5]

National and international scientific works carried out with doctors, physiotherapists and nurses of emergency services point troubling data: outdated and insufficient theoretical knowledge about CPR and the ideal sequence in the CPR.[11-8] Although many factors are associated with the competence, professional experience, as these do not offer theoretical basis and sufficient allowances to cover this deficit, the critical factor for CPR is the instruction.[2-3,18]

Searches are being carried out in order to improve the teaching and learning of health professionals, with the use of simulators, games and videos[19-20].A Swedish study that used programs with avatars as a method for pre-training or repetitive training in CPR skills identified better qualification and knowledge of medical students, compared to the traditional way of teaching.[19]

It notes the need for investment in methods of professional pre-training in universities; and an awareness of health services review their institutional policies and professional enhancement. At most, the incentive for achievement and participation in courses of the area with the main objective to provide quality health care, based on the latest scientific evidence, so that more lives are saved.[19]

CONCLUSION

The content and the instrument used for the evaluation it was verified a multidisciplinary team with insufficient knowledge to meet the CPR, even after two years of publication of the 2010 AHA guidelines; these data points to need for the elaboration of a programme of in-service training in order to meet this demand.

It was found during the search a few national studies on the subject after the publication of the new 2010 AHA guidelines, which demonstrates the need for further studies of assessment after the Protocol changes.

Another important found was that even in the work prior to publication of the new Protocol the results are similar, namely, the pros also had an insufficient level of knowledge on the subject. This corroborates to institutions to promote courses and frequent assessments of professionals who work in direct patient care, guaranteeing the quality and excellence of service.

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