

## CASE REPORT ARTICLE

### UPDATE OF NURSING WORKERS IN BASIC LIFE SUPPORT ATUALIZAÇÃO DE TRABALHADORES DE ENFERMAGEM EM SUPORTE BÁSICO DE VIDA ACTUALIZACIÓN DE TRABAJADORES DE ENFERMERÍA EN SOPORTE VITAL BÁSICO

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#### ABSTRACT








**Objective:** to report the experience of updating nursing workers on basic life support in a public hospital. **Method:** this is a descriptive study, an experience report type, with 123 nursing professionals from the clinical and surgical inpatient units and operating room, about the updating of nursing workers in basic life support. Pre-test and post-test learning instruments were applied. **Results:** it was observed that, from the 86 participants who answered the pretest and posttest instruments, 36% answered all questions in the pretest and posttest; 54.7% missed questions in the pretest section, but got it right in the posttest and 9.3% missed the answers in the pretest and posttest. The incorrect options that were highlighted were related to the correct sequence to perform cardiopulmonary resuscitation and the relationship between chest compressions and ventilation. **Conclusion:** it is necessary to perform periodic training, as it has identified an important gap in the knowledge about basic life support and the risk of negative implications for the care of critically ill patients. **Descriptors:** Education Continuing; Inservice Training; Heart Arrest; Cardiopulmonary Resuscitation; Emergencies; Nursing.

#### RESUMO

**Objetivo:** relatar a experiência na atualização de trabalhadores de enfermagem sobre suporte básico de vida em um hospital público. **Método:** trata-se de um estudo descritivo, tipo relato de experiência, com 123 profissionais de Enfermagem das unidades de internação clínica e cirúrgica e centro cirúrgico, sobre a atualização de trabalhadores de Enfermagem em suporte básico de vida. Aplicaram-se instrumentos de aprendizagem pré-teste e pós-teste. **Resultados:** observou-se que, dos 86 participantes que responderam aos instrumentos pré-teste e pós-teste, 36% acertaram todas as questões no pré-teste e pós-teste; 54,7% erraram questões na seção pré-teste, mas acertaram no pós-teste e 9,3% erraram as respostas no pré-teste e pós-teste. Verificou-se que as opções incorretas que obtiveram destaque estavam relacionadas à sequência correta para a realização da ressuscitação cardiopulmonar e à relação entre as compressões torácicas e a ventilação. **Conclusão:** faz-se necessária a realização de capacitações periódicas, uma vez que se identificou uma importante lacuna no conhecimento sobre o suporte básico de vida e o risco de implicações negativas à assistência aos pacientes graves. **Descritores:** Educação Continuada; Capacitação em Serviço; Parada Cardíaca; Reanimação Cardiopulmonar; Emergência; Enfermagem.

#### RESUMEN

**Objetivo:** informar sobre la experiencia de actualizar a los trabajadores de enfermería en soporte vital básico en un hospital público. **Método:** este es un estudio descriptivo, un tipo de informe de experiencia, con 123 profesionales de Enfermería de las unidades de internación clínica y quirúrgica y quirófano, sobre la actualización de los trabajadores de Enfermería en soporte vital básico. Se aplicaron instrumentos de aprendizaje previo y posterior al examen. **Resultados:** se observó que, de los 86 participantes que respondieron a los instrumentos de la prueba previa y posterior, el 36% respondió todas las preguntas en la prueba previa y posterior; el 54.7% erraron preguntas en la sección de la prueba previa, pero acertó en la prueba posterior y el 9.3% erraron las respuestas en la prueba previa y posterior. Las opciones incorrectas que se resaltaron estaban relacionadas con la secuencia correcta para realizar la reanimación cardiopulmonar y la relación entre las compresiones torácicas y la ventilación. **Conclusión:** se necesita capacitación periódica, ya que se identificó una brecha importante en el conocimiento sobre el soporte vital básico y el riesgo de implicaciones negativas para la atención de pacientes críticos. **Descriptores:** Educación Continua; Capacitación en Servicio; Paro Cardíaco; Reanimación Cardiopulmonar; Urgencias Médicas; Enfermería.

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## INTRODUCTION

It is observed that Permanent Education in Health (PEH) brings an innovative aspect in the ways to promote the qualification of health professionals, since it takes the work process itself as a point of analysis with capacity for change.<sup>1</sup>

It is based as a method of improving care processes and ensuring the quality and safety of patients, based on theoretical and practical training on relevant topics for the improvement of professional practice, qualification and / or updating of health professionals.

The National Policy on Permanent Education in Health (NPPEH) was instituted as a strategy of the Unified Health System (UHS) for the training and qualification of workers, through Ordinance N. 198, 2004. It was sought its improvement in 2007, Ministry of Health (MH), launching Ordinance N. 1996, which provides for the guidelines and strategies of this policy, adapting the operational norms and regulation of the pact for life.<sup>2</sup>

It is noteworthy that Decree N. 7508, of June 28, 2011, reinforces the need to advance the implementation of NPPEH as a human resources policy for UHS, focusing on valuing workers' health work, intersectoriality and integrity of care.<sup>3</sup>

It is noteworthy that the UHS Institutional Development Support Program (PROADI-UHS) contributed to the institutional development of UHS through technological interventions, management and professional training. It is reported that one of the projects belonging to this program is the managerial development of the emergency care line in the in-hospital environment, which, among other things, aims to qualify care and assistance to patients with health problems and life maintenance.<sup>4</sup>

NPPEH and PROADI-SUS aligns the PEH service of the Federal Cardoso Fontes Hospital (HFCF), which prepares the annual schedule of updates to be offered to health professionals, following the institutional demand and the tracking of notified adverse events to risk management. In this study we will approach, based on this principle, the updating of Nursing workers about the basic life support (BLS) from the perspective of the experience of the PEH service.

BLS is considered to be the basis for saving lives in a cardiopulmonary arrest (CRA) and its effectiveness depends on the implementation of a sequence of actions known as the survival chain, which includes the recognition of CRA, the activation of the immediate emergency medical service, high-quality cardiopulmonary resuscitation (CPR), rapid defibrillation, advanced life support (ALS) and post-CRA care.<sup>5</sup> This is a training about basic skills needed to care for patients with hemodynamic impairment in both prehospital and in-hospital environments.<sup>6</sup>

It is stated that, for an adequate BLS, all Nursing professionals should be up to date on such practices, often being the first to identify clinical deterioration or CRA as they directly assist the patient for 24 hours.<sup>6-7</sup>

## OBJECTIVE

- To report the experience of nursing workers updating basic life support in a public hospital.

## METHOD

This is a descriptive study, like experience report, about an update on basic life support performed by three nurses of the PEH Service of a public hospital in the state of Rio de Janeiro.

As participants in the activity, 123 Nursing workers were listed: 23 nurses, four Nursing residents, three Nursing students and 93 Nursing technicians of the clinical, surgical and surgical center units.

The updates consisted of theoretical and practical times, on days programmed with the respective Nursing coordinations, always in the afternoon, with an average duration of two hours, performed in October and November 2018.

It is noteworthy that the meetings took place in the work sectors, in spaces previously determined by the service coordinators and organized by the nurses of the PEH Service, with a bed, a CRA cart, a CPR board and oxygen support.

The following contents were addressed: definition of CRA; CPR definition; CRA recognition; C-A-B protocol; performing chest compressions (appropriate compression point, frequency and depth); airway opening; technique for measurement and insertion of oropharyngeal cannula and noninvasive ventilation. For the realization of the practical content, we used an adult CPR dummy, a pocket mask, oropharyngeal cannulas and a bag-valve-mask device.

Individually, a simulation of CRA care was performed, in which all participants should perform: assessment of level of consciousness; request for help; pulse check; assessment of breathing pattern with apnea or gasping identification; performing chest compressions; airway opening and noninvasive ventilation.

Participants were given an instrument prepared by the nurses of the PEH Service. This instrument presents pre-test and post-test sections, containing three identical questions about the theme addressed, in order to evaluate the content previously known and learned after the updates. Of the 123 Nursing workers who participated in the update on basic life support, 86 agreed to complete the learning instrument. Participants were advised that this was an instrument without identification of name or signature, where only the professional category and the answer options should be marked with an X, maintaining their anonymity. It was stated that the collected data

would be released later to the institution and used as scientific research results. Free and informed consent was given verbally, and each participant went to the nurse responsible for the training to remove the instrument.

The results of the observations made by the nurses during the updates and the pre-test and post-test instruments completed by the participants emerged and were presented through tables with absolute and relative frequencies.

RESULTS

It is noteworthy that all updates were made in the professionals' work sector due to the shortage of human resources and because they are health units with continuous service.

It was applied to 86 (69.9%) Nursing workers, among them nurses, Nursing academics and Nursing technicians, an instrument to be answered

before the update (pretest) and after the completion of the update (post test).

It is noted that the questions were related to how to identify a CRA, what is the correct sequence for performing CPR and what relationship should be made between chest compressions and BLS ventilation.

Of the 86 nursing workers, 31 (36%) answered all questions in the pretest and posttest section, eight (9.3%) missed questions in the pretest and posttest sections, and 47 (54.7%) missed the questions in the pretest section but got it right in the posttest.

75 incorrect answers were found in the pretest instruments answered by 55 participants, as shown in table 1.

Table 1. Incorrect answers in the pretest instrument reported by the study participants. Rio de Janeiro (RJ), Brazil, 2018.

Question	Answer	n	%
How do we identify a cardiopulmonary arrest?	Unconsciousness, weak breathing and no peripheral pulse	6	6.9
	Drowsiness, hypotension and bradycardia	3	3.4
What is the correct sequence for cardiopulmonary resuscitation?	Airway opening, ventilation and chest compressions	37	43
	Ventilation, airway opening and chest compressions	3	3.4
In basic life support in adults, what is the relationship between chest compressions and ventilation?	30 compressions and five ventilations	10	11.6
	15 compressions and two ventilations	16	18.6

Incorrect sequence-related options for cardiopulmonary resuscitation and the relationship between chest compressions and ventilation were

highlighted, indicating that the participants followed guidelines recommended by old protocols, as shown in Table 2.

Table 2. Frequency of pre-test instrument responses reported by participants. Rio de Janeiro (RJ), Brazil, 2018.

Question	Correct answer		Incorrect answer	
	N	%	n	%
How do we identify a cardiopulmonary arrest?	77	89.5	9	10.5
What is the correct sequence for cardiopulmonary resuscitation?	46	53.5	40	46.5
In basic life support in adults, what is the relationship between chest compressions and ventilation?	60	69.8	26	30.2

Of the 55 participants who reported incorrect answers at the pre-test moment, eight continued to present errors in the post-test instrument: two

nurses, one nursing student and five nursing technicians, according to table 3.

Table 3. Answers that remained incorrect in the post-test instrument reported by the participants. Rio de Janeiro (RJ), Brazil, 2018.

Question	Answer	n	%
How do we identify a cardiopulmonary arrest?	Unconsciousness, weak breathing and no peripheral pulse	2	2.3
	Drowsiness, hypotension and bradycardia	1	1.1
What is the correct sequence for cardiopulmonary resuscitation?	Airway opening, ventilation and chest compressions	3	3.4
In basic life support in adults, what is the relationship between chest compressions and ventilation?	15 compressions and two ventilations	2	2.3

DISCUSSION

It poses a challenge to PEH in a non-teaching hospital. It is emphasized that the facilitating professionals need to develop strategies to promote the educational process in the various service sectors, in each scenario of multidisciplinary action, allowing the inclusion of this practice in the daily work of workers.<sup>8</sup>

It was found, while the service sectors were visited, with the presentation of the proposal for updating and implementation of the theoretical-practical approach, a set of behaviors demonstrated by professionals, regardless of the activities they performed or where they provided assistance, being linked to three phases: resistance, acceptance and satisfaction.

It is evident that the resistance of professionals was related to participation in the update project and / or the adoption of new care practices. It was noticed that the holding of meetings during working hours changed the routine pre-established by the workers regarding the division of hours for the execution of care and / or managerial tasks, feeding and rest. It is estimated that the scheduling of educational activities on days that did not understand the service schedule could compromise moments of rest and leisure with the family.

It was observed that the presentation of protocol changes also caused discomfort. It is emphasized that, although the theme was based on an American protocol published in 2015,<sup>9</sup> some professionals expressed dissatisfaction when informed about the change in the airway opening sequence, good ventilation and chest compressions (ABC) for CAB, claiming that such a practice had been performed for many years.

As another difficulty found, the absence of a specific space to perform the updates stands out. The scenarios were elaborated, considering the proposal of the PEH group as an itinerant project, aiming at the qualification of a larger number of workers, in the available places moments before the beginning of the updates, despite having minimum items for its constitution, always in wards without patients.

After the resistance period of the professionals, an acceptance behavior was observed when they started to contact the theoretical-practical

content. The participants' faces and bodies expressed themselves with receptivity. It was noticed that the stance of resistance, with furrowed brows, tortured mouths and crossed arms, gave rise to a movement of plasticity with the environment. It is noteworthy that, as time went by and the theme was developed, the participants approached the bed used for the demonstration of the theoretical-practical content, many even touching or supporting some part of the body, interacting with the instructors through questions or reporting experiences on the subject in professional practice.

Expressions of satisfaction were captured at the end of the updates. It was found that the workers went to the instructors with speeches of thanks for the opportunity to participate in the training, emphasizing the importance of the topic addressed for professional knowledge, the improvement of techniques through the handling of airway devices and performing maneuvers on simulation dummy.

It is stated that the construction of scenarios with approximation to the professional reality, according to the context of the health unit, where the goals are related to the performance of tasks in a real emergency, contributes to the learning effectiveness and satisfaction of the participants.<sup>10</sup>

It is noteworthy that the use of dummy, technological resources and mobile immediate feedback devices for training provides the participant with an approach to the practical field, giving higher quality in the processes and learning results about the BLS, either in the initial phase of training or periodic review of learning,<sup>11</sup> as well as correction of hand positioning, compression point, depth of chest compressions, chest release and pulse check.

In a study of 97 workers, 88.7% of the participants did not know how to initiate CPR maneuvers before a non-breathing adult before implementing a BLS program. 91% were unaware of how to perform chest compressions and 85.6% reported incorrect answers regarding the ratio of chest compression and ventilation.<sup>12</sup>

A different result was found in a study conducted in Viçosa, Minas Gerais, where the questions that obtained the largest number of statements were related to the CAB protocol and



the number of cardiac compressions. More incorrect answers were associated with differential diagnoses, what to do after defibrillation, and CPR medications.<sup>7</sup>

In an intervention study conducted with doctors and nurses to assess the impact of training on BLS, it was shown that, prior to the course, the questions related to the physiology of CRP were the ones that obtained the largest number of errors.<sup>13</sup>

In a study conducted with 147 nurses and physicians of an emergency hospital in Goiânia, the aim was to assess the theoretical knowledge of the diagnosis and treatment of CRA in adults, asserting 48.3% of participants about the recognition of CRA. It was also found that 61.9% correctly indicated the CAB sequence and 58.5% affirmed the relationship of 30 chest compressions for two ventilations in patients without advanced airway.<sup>14</sup>

It was evidenced in a research carried out with 19 nurses from the hospital coordination, hospital infection control, urgency and emergency sectors, medical clinic, surgical clinic, operating room, intensive care center, transfusion agency and psychiatric clinic, that 47.4% participants were aware of how to recognize a CRA; 52.6% on the depth and correct number of chest compressions and 42.1% on the number of ventilations to be performed on the BLS.<sup>7</sup>

It is also noteworthy about the detection of CRA, which, in a study conducted with nursing professionals of an intensive care center, 66.7% of nurses considered only the absence of carotid or femoral pulse as a clinical sign.<sup>15</sup>

In a survey of first responders from a Mobile Emergency Care Service (MECS) in Caxias, Maranhão, it was found that 55% of respondents wrongly answered how CRA should be identified and 40% did not know the frequency and depth chest compressions according to the 2015 American Heart Association (AHA).<sup>16</sup>

It was observed that doctors and nurses from Montes Claros, Minas Gerais, before participating in a training course in BLS, demonstrated difficulty in performing chest compressions, ventilations and lack of knowledge about what to do after patient recovery.<sup>13</sup>

Early detection of a patient on CRA and immediate CPR maneuvers are essential for reducing mortality, morbidity and even irreversible brain damage. It is estimated that working in units with patients at risk of developing a CRA is a relevant aspect of continuing education in this area of study.<sup>6,13</sup>

In a study carried out to assess student learning in an online course on BLS with immediate feedback devices, in CRA care simulation, a significant difference in the average of pre and post-test scores was highlighted the contribution to the knowledge about the theme.<sup>11</sup>

Deliberate Rapid Cycle Practice (DRCP) is described as a simulation strategy that can be applied to BLS learning. Through this dynamic, the emergency situation is simulated several times until the acquisition of the expected knowledge. In addition, as the goal is reached, a new cycle begins with increasing complexity. It is a learning tool that has gained dexterity through deliberate practice.<sup>17</sup>

The aim of this study was to evaluate the impact of a permanent training program on BLS and ALS on the knowledge of nursing professionals, in a study with 213 professionals, being nurses, technicians and nursing assistants, an average of 4.1 hit points in the pretest evaluation and average of 7.26 hits after the end of the training. Associated with the low value found in the pre-test section is the average time of low professional practice, the average time of completion of training over five years and the absence of continuing education programs in most health institutions.<sup>18</sup>

Through an integrative review based on the descriptors cardiac arrest, Nursing and urgency and emergency, it was found that one of the main challenges experienced by nurses facing CRA in the urgency and emergency service, the lack of preparation of the professional on the subject, directly implying the quality of care.<sup>19</sup>

It is clear that CRA is a subject that requires continuous training, as it is an emergency little experienced by some professionals, depending on the characteristics of the clientele and the service sector, making it a highly stressful time. It is emphasized that educational actions provide better knowledge development, assertive decision making, skills and professional confidence.<sup>10,18</sup>

It is noteworthy that PEH is an indispensable tool for the updating of health professionals.<sup>1</sup> It is emphasized that the standardization of care and optimization of in-service training are actions that can positively impact the care provided to patients with favorable survival outcomes.<sup>14</sup>

## CONCLUSION

It was demonstrated that the knowledge of the Nursing team about the BLS is unsatisfactory, which can directly influence the quality of care provided at the institution.

Given this scenario, it is necessary to perform periodic training, as a significant gap in the knowledge of the care team was identified in relation to the last AHA update, which occurred in 2015, which changed the ABC sequence to CAB. On the other hand, it was shown that the learning assessment performed after in-service training obtained a significant increase in the number of correct answers in the test.

Regarding the reaction assessment, it was observed that, initially, the participants exhibit resistance behaviors to participate in the training

actions, but once accepted, the training generates satisfaction. It was confirmed that the approach of the field of action, the discussion of the work process and the use of active methodologies, such as simulation, were decisive for this result.

It is concluded that the experience of this project reveals the importance and the possibility of teaching-service integration in the permanent education of health workers, in improving the quality of care and in the construction of UHS.

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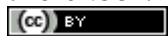
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