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## Basic Life Support as Required Subject in University Healthcare Courses: Curricular Analysis\*

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### ABSTRACT

The goal of this article is to evaluate the offer of Basic Life Support content regarding to the guidelines of the American Heart Association, and the Brazilian Society of Cardiology among the undergraduate health courses, proceeding, afterwards, to a comparative analysis between the Pedagogical Curricular Projects and the current regulations. It is a qualitative and descriptive documental research which its analysis criteria were the presence of curricular component of urgency and emergency; the presence of that subject encountered in other disciplines; subject individually approached or in conjunction with Advanced Life Support; presence of subject on the course syllabus and bibliographic reference of curricular component; relation between theoretical-practical workload and period that the discipline is offered. Five universities were chosen in the state of Pernambuco, two of them public and three others private institutions. Curricular content of Nursing, Physiotherapy and Nutrition undergraduate courses were evaluated; it was noticed a lag on the Physiotherapy and Nutrition undergraduate courses related to Nursing, regarding to the offer of Basic Life Support content on the courses curricular programs. As a result, it was clear that the construction of the undergraduate health courses curricular are contradicting the Nation Curricular Guidelines that state they need to be interdisciplinary, and cover competencies and abilities that are necessary by the trainees in their interrelation between education and society.

### KEYWORDS

University Curriculum. University education. Health education.

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## Suporte Básico de Vida Como Disciplina Obrigatória nos Cursos de Graduação em Saúde: Análise Curricular

### RESUMO

Este artigo tem como objetivo avaliar a oferta do conteúdo de Suporte Básico de Vida quanto às diretrizes da *American Heart Association* e da Sociedade Brasileira de Cardiologia nos cursos de graduação em saúde, procedendo uma análise comparativa entre os Projetos Pedagógicos Curriculares e o confronto com a legislação atual. Trata-se de pesquisa documental qualitativa e descritiva, cujos critérios de análise foram presença de componente curricular de urgência e emergência; presença da temática abordada em outra disciplina; conteúdo abordado individualmente ou em conjunto com Suporte Avançado de Vida; presença do conteúdo na ementa e nas referências bibliográficas da componente curricular; relação carga horária teórico-prática e período de oferta da disciplina. Foram selecionadas cinco instituições de ensino superior no estado de Pernambuco, sendo duas da rede pública de ensino e três da rede privada. Os conteúdos curriculares dos cursos de graduação em Enfermagem, Fisioterapia e Nutrição das cinco instituições foram avaliados; verificou-se uma defasagem dos cursos de graduação em Fisioterapia e Nutrição, em relação aos de Enfermagem, quanto à oferta do conteúdo Suporte Básico de Vida na estrutura da grade curricular. Os achados contrapõem as Diretrizes Curriculares Nacionais que preconizam a elaboração dos currículos de graduação sob uma perspectiva interdisciplinar, contemplando competências e habilidades necessárias ao desempenho do egresso na inter-relação entre educação e sociedade.

### PALAVRAS-CHAVE

Conteúdos curriculares. Ensino superior. Medicina e educação.

## Soporte Vital Básico como Asignatura Obligatoria en Cursos de Pregrado en Salud: Análisis Curricular

### RESUMEN

Este artículo tiene como objetivo evaluar el contenido del contenido de soporte vital básico con respecto a las pautas de la *American Heart Association* y la Sociedad Brasileña de Cardiología en cursos de presentación en salud, procediendo con un análisis comparativo entre los Proyectos Pedagógicos Curriculares y el currículo confrontación con la legislación vigente. Es una investigación documental cualitativa y descriptiva, de acuerdo con los criterios de análisis proporcionados por un componente curricular de urgencia y emergencia; presencia del tema cubierto en otra disciplina; contenido individualmente dirigido junto con *Advanced Life Support*; presencia de contenido en el menú y en las referencias bibliográficas del componente curricular; relación de carga de trabajo teórico-práctica y período de oferta del curso. Se seleccionaron cinco instituciones de educación superior en el estado de Pernambuco, del sistema de escuelas públicas y tres del sistema privado. Se evaluaron los contenidos curriculares de los cursos de pregrado en Enfermería, Fisioterapia y Nutrición de las cinco instituciones; una brecha en los cursos de Fisioterapia y Nutrición, en relación con la Enfermería, con respecto al suministro de soporte vital básico en la estructura del plan de estudio. Los hallazgos contrastan con las Pautas Curriculares Nacionales que defienden para la preparación de planes para el estudio del estudio desde una perspectiva interdisciplinaria, contemplando las competencias y habilidades necesarias para el desempeño del graduado en la interrelación entre educación y sociedad.

### PALABRAS CLAVE

Programa de estudios universitarios. Educación universitaria. Educación sanitaria.

## Introduction<sup>1</sup>

Education is a dynamic process of information exchange, with the specific purpose of allowing the individual to elaborate knowledge and meanings, incorporating them to his cognitive structure and to the collective cultural legacy in which he is inserted. In the educational context of health sciences and in the current globalized world scenario, it is essential that Higher Education Institutions (HEI) use methodologies that problematize situations of the work reality to be faced by the future health professional, providing the assimilation of new concepts and skills (DE VASCONCELOS FREITAS *et al.*, 2017; GOMES *et al.*, 2008).

Despite this premise, gaps between theoretical content and development of skills and competencies are still verified, or even the absence of these or those in undergraduate health courses. In the context of Cardiopulmonary Resuscitation (CPR), the development of skills and competencies in resuscitation maneuvers is considered essential, since the lack of knowledge or inadequate performance of the health professional compromises the assistance; moreover, the survival rate of Cardiac Arrest (CRA) patients is associated with improvement in CPR education (DASILVA SALAZAR, 2017; GEBREMEDHN, 2017).

CRA is defined by the abrupt interruption of vital functions, being evidenced by the sudden cessation of cardiac activity, with the victim evolving to irresponsiveness, non-palpable central pulse and absence of respiratory movements or agonal breathing (DE NASSAU, 2018; MELLO, 2019). This is a serious clinical emergency that requires early and efficient assistance, since ischemia can lead to irreversible brain damage after five minutes of electrical and circulatory collapse (ESPÍNDOLA, 2017). In view of this, CRA is understood as an important public health problem and all health professionals are expected to master the knowledge of resuscitation maneuvers, considering that, in Brazil, an estimated 200,000 CRAs occur each year (DE OLIVEIRA BOTELHO, 2016; BERNOCHE *et al.*, 2019).

Basic Life Support (BLS) is the first care for the CRA victim, through the systematic resuscitation sequence in CPR maneuvers, an emergency procedure consisting of immediate recognition of collapse, activation of the emergency system, performing early CPR and rapid defibrillation, which maintains oxygenated blood circulation until Return of Spontaneous Circulation (RSC) (AMERICAN HEART ASSOCIATION *et al.*, 2015; GEBREMEDHN, 2017). BLS interventions are crucial in increasing survival rates, because the success of resuscitation depends mainly on the effectiveness of the initial actions (TOBASE *et al.*, 2017).

Despite the relevance of the theme, it has been observed that most health professionals are not able to provide first aid to victims of CRA and that BLS is not offered as a curricular component in undergraduate health courses. According to Da Silva *et al.* (2015), the knowledge gap is due in part to the academic training of health professionals, during which

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the approaches on the subject, when they exist, are punctual and superficial, therefore, insufficient to provide the acquisition of solid knowledge necessary for the care of a victim of CRA.

At this juncture, the present article aims to evaluate the offer of BLS content in undergraduate health courses at the University of Pernambuco (UPE) in Petrolina Campus and to carry out a comparative analysis between the Curricular Pedagogical Projects (CPPs) of the respective courses of the HEIs of the Petrolina-PE-Juazeiro-BA Pole, comparing them with the current legislation.

## Methodology

This is a qualitative and descriptive research through document analysis of the Curricular Pedagogical Projects (CPPs) of the undergraduate courses in health of the UPE Petrolina Campus, proceeding to a comparative analysis between the CPPs of the health courses of four other HEIs of the Petrolina-PE-Juazeiro-BA Hub. This research is part of the project entitled Basic Life Support in undergraduate health courses: analysis of curricular content and student training, whose approval by the Ethics in Research Committee of the University of Pernambuco - CEP Reitoria - is registered under number 2.881.184.

As inclusion criteria, it was established that the HEI should have regularization with the competent bodies and authorization to operate in accordance with its mission. For the purposes of document analysis, the CPPs of all the undergraduate health courses offered by the UPE Campus Petrolina were included. Additionally, the CPPs of health courses offered by four HEIs from the Petrolina-PE-Juazeiro-BA Hub were included, being one federal institution and three private educational institutions.

The documents analyzed belonging to the health courses at UPE were made available by the coordination of these courses, and their use in the research was formally authorized through a concession form signed by the institution's directors. Moreover, the CPPs are available on UPE's institutional website. Likewise, the CPPs of the other HEIs were obtained by consulting the websites of these institutions, which make the information and the course curricula available for public access.

The criteria for analysis of the CPPs in order to verify the presence of VBS content were: presence of a curricular component of urgency and emergency; presence of the VBS theme addressed in another course; VBS addressed individually or together with Advanced Life Support (ALS); presence of VBS content in the menu and in the bibliographic references of the curricular component; equal ratio between theoretical-practical workload and the period in which the course is offered.

## Results and Discussion

The curricular contents of undergraduate health courses implemented by the CPPs constitute one of the elements of the training process that implies the development of a professional profile focused on the qualification of health care. In this sense, we believe it is relevant to investigate whether the content of BLS, as recommended by the guidelines of the American Heart Association (AHA) and the Brazilian Society of Cardiology (BSC), is included in the curricula of the respective courses, discuss pedagogical aspects and current legislation, and infer what the possible implications in health care.

From this point of view, obeying the eligibility criteria, the CPPs of undergraduate courses in health offered by five HEIs from the Petrolina-PE-Juazeiro-BA Hub were selected; two public institutions, the UPE Campus Petrolina and a federal institution, and three private HEIs. For the purpose of comparative analysis, the undergraduate courses selected were Nursing, Physiotherapy and Nutrition. The distribution of courses by HEI is presented in Table 1.

**Chart 1.** Distribution of undergraduate health courses by Higher Education Institution.

Courses	Instituições de Ensino Superior				
	Federal	Private 1	Private 2	Private 3	UPE
Nursing	X	X	X	X	X
Physiotherapy	---	X	X	X	X
Nutrition	---	---	X	X	X

Source: Data of the authors. X = Presence; --- = Absence.

### Curricular Analysis of CPPs in Nursing

The CPPs' assessment of undergraduate courses in Nursing, Physiotherapy and Nutrition of the UPE Petrolina Campus, regarding the presence of BLS content in the curriculum, showed that only the Nursing course contemplates the teaching of this theme. In this course, the content of BLS is included in the compulsory discipline **Nursing Care in Emergencies and Traumas**, offered in the 7th period, with a workload of 120 hours; however, the BLS is approached only in a class of Advanced Cardiovascular Life Support Principles (ACLS) with a theoretical workload of 4 hours and 4 practical hours. Table 2 shows the analysed criteria separated by HEI.

A similar result was observed in the analysis of CPPs of nursing courses offered by other Ies (Chart 2). All courses presented the content of BLS in their curricular matrices in mandatory disciplines; and in the federal institution, the theme is addressed in an 8-hour workload (4h theoretical and 4h practical) within the discipline **Critical Patient I**, in the 8th period. In private institutions, the BLS is offered in the discipline of **Urgency and Emergency**, in the 7th period, with a workload similar to the other courses evaluated.

**Chart 2.** Analysis of the CPPs of the undergraduate nursing course regarding the established criteria.

criteria	higher education institutions				
	Federal	Private 1	Private 2	Private 3	UPE
Presence of urgency and emergency curricular component	X	X	X	X	X
Presence of the BLS theme addressed in another discipline	X	X	X	X	X
BLS addressed individually or together with VAS	X	X	X	X	X
Presence of BLS content in the menu and in the bibliographic references of curricular component	X	X	X	X	X
Equated relationship between theoretical-practical workload and the period during which the course is offered	X	X	X	X	X

Source: Data of the authors. X = Presence; --- = Absence.

In general, all undergraduate nursing courses evaluated address the content of BLS alone or together with FVO, in the final periods of the courses, that is, already in the professional cycle, contemplate the theoretical referential in the curricular component and have a relation of theoretical and practical workload, that is, theoretical 4h and practical 4h.

It is essential that nursing graduates are stimulated and trained in BVS to provide adequate and quality care, by witnessing a victim of CRP, reducing or avoiding sequelae, decreasing the mortality rate. To this end, this theme needs to be the subject of discussion at graduation, in order to train professionals committed to the health problems of the population regardless of their specialty and field of action since, the nurse acts in direct care to the patient and is usually the first to identify the CRA (DA SILVA *et al.*, 2015).

### **Curricular Analysis of CPPs of Physical Therapy**

The analysis of the CPPs of the Physiotherapy courses offered by the five HEI selected in this research, showed that exclusively the private institution 1 contemplates the content of BLS in its curriculum, in the discipline of Urgency and Emergency, early in the 2nd period. This finding corroborates with Kawakame and Miyadahira (2015), when they state that early exposure of health students to this theme is significant, in order to develop the necessary skills right at the beginning of graduation and that can be reinforced in the following years. It is important to warn the scarce knowledge and dexterity of the majority of students in the area of health related to the BLS, being reason for alert and concern. Table 3 shows the analysed criteria separated by HEI.

It is important to point out that the absence of BLS content in the programs of the other undergraduate courses in Physiotherapy evaluated here, contrasts Resolution 501, of December 26, 2018 of the Federal Council of Physiotherapy and Occupational Therapy (COFFITO), which recognizes the role of the Physiotherapist in health care in the Emergency

and Emergency Units. Therefore, once this professional is part of the multidisciplinary health team, his training in BVS and VAS is recommended. It is worth noting that, due to the affinity with the theme, the discipline Cardiovascular and Pneumofunctional Physiotherapy could contemplate the content of the BLS, however, it is necessary to include it in the program menu, as well as in the theoretical framework of the discipline.

**Chart 3.** Analysis of the CPPs of the undergraduate course in Physiotherapy according to the established criteria.

Criteria	Higher Education Institutions			
	Private 1	Private 2	Private 3	UPE
Presence of urgency and emergency curricular component	X	---	---	---
Presence of the BLS theme addressed in another discipline	X	---	---	---
SAV	X	---	---	---
Presence of BLS content in the curriculum and in the bibliographic references	X	---	---	---
Theoretical-practical workload ratio and the period during which the course is offered	X	---	---	---

Source: Data of the authors. X = Presence; --- = Absence.

### Curricular Analysis of CPPs of Nutrition

When analyzing the CPPs of the undergraduate courses in Nutrition offered by the five selected HEI, there was a lack of BLS content in all curricular grades (Chart 4).

**Chart 4.** Analysis of CPPs of Nutrition regarding the established criteria.

Criteria	Higher Education Institutions		
	Private 2	Private 3	UPE
Presence of urgency and emergency curricular component	---	---	---
Presence of the BLS theme addressed in another discipline	---	---	---
BLS addressed individually or together with VAS	---	---	---
Presence of BLS content in the curriculum and in the bibliographic references	---	---	---
Relationship between theoretical-practical workload and the period in which the subject is offered	---	---	---

Source: Data of the authors. X = Presence; --- = Absence.

This result is worrying, because it conflicts with the understanding of the nutritionist as a health professional inserted in the context of the multidisciplinary team. In accordance with this concept, DA SILVA *et al.* (2019) states that health professionals, regardless of their specialty, should have mastery over the knowledge of BLS needed to attend CRA, as this is recognized as the most serious clinical emergency, can occur at any time and anywhere, and causes the team a lot of stress, tiredness, anxiety and exhaustion. Thus, skills should be acquired that enable them to act quickly and effectively during this emergency.

According to the Federal Constitution of 1998, in its art. 200, the Brazilian Unified Health System (SUS) is responsible for training human resources in health. In view of this, with the purpose of offering a training that enables the qualification of health care care, including the principles of SUS, the Ministry of Education (GUY) and the Ministry of Health (MH) established the National Curriculum Guidelines (Dcns) for 14 health professions (DO BRASIL, 2010; Costaa *et al.*, 2018). Dcns are used by Ies throughout the country, as a standard reference for the elaboration of their CPPs from an Inter-disciplinary perspective that directs the teaching-learning process, and should include the elements on profile, skills and skills of graduates, where the curricular contents present interrelationship between society, culture and education, in such a way that the organization of the course meets the demands of the SUS (Costaa *et al.*, 2018).

With regard to the BLS, it is essential that the students of the health courses hold theoretical and practical knowledge in order to perform the care to the victim of CRA with safety and dexterity. To this end, it is considered fundamental that the higher education institutions establish in their curricular matrices, disciplines relevant to emergency care that contemplate the BLS as the main theme, and not only insert it as content of only one class with minimum workload. These disciplines should also bring students closer to the concepts and behaviors for the BLS, as well as to the CPR protocol based on the guidelines of cardiology societies and organs as recommended by the AHA and the SBC (DA SILVA *et al.*, 2019).

In this perspective, the main focus of the SBC has been the training of health professionals in BLS with the objective of reversing CRP through adequate care, free of malpractice, minimizing morbidity and mortality and favoring greater probability of Whtr. Thus, in 2013, following the guidelines of the AHA, the SBC published the I Guideline for Cardiovascular Resuscitation and Emergency Cardiovascular Care, with adaptations aimed at meeting the Brazilian reality (DA SILVA SALAZAR, 2017; BERNOCHE *et al.*, 2019).

Success in CRA care depends not only on the availability and functionality of the resuscitation equipment, but also on the training of the multiprofessional team. In this sense, the creation of teams specialized in emergency care was conceived with the aim of providing fast and effective care to victims of CRP. In these situations, a team of professionals is triggered and moves immediately to the place of occurrence.

Based on this concept, the Institute for Healthcare Improvement (IHI) recommended in 2004 the implementation of the Rapid Response Teams (RRT) in hospitals that are triggered by the Blue Code as part of a strategy to prevent the occurrence of Pcrs and, consequently, reduce hospital mortality (GONÇALES *et al.*, 2012; SANTANA-SANTOS, 2017).

The Blue Code is a model of RRT activation for intrahospital CRP care outside critical units (intensive care unit, emergency room or surgical center). The RRT is composed of health professionals and aims at the identification and early treatment of patients, adults

and pediatrics, who present clinical deterioration or are at risk of death, outside the critical units' environment (DE LIMA LOPES *et al.*, 2012). In 2003, the SBC considered the physician and nurse as health professionals who were members of the RRT and directly responsible for the care of CRP in the in-hospital environment, but in addition recommended the training of other professionals who were not directly involved in the care, namely the physiotherapist in BLS and FVO and the nutritionist in BLS (GOMES *et al.*, 2003).

In the 2004 Code of Ethics of Nutrition Professionals, Chapter IV, which provided for professional responsibility, the nutritionist, in art. 6th Item IV, provide assistance even in emergency and emergency sectors, when it was your obligation to do so. In 2018, the Federal Council of Nutritionists (CFN) amended the code of ethics and revoked art.6, which does not agree with the Dcns of the Nutrition course that, according to Costa<sup>a</sup> *et al.* (2018), recognize that the professional needs to perform actions according to the health needs of the individual, family and/or society, from the perspective of integrality in all levels of complexity of the system.

The minimum curriculum for several undergraduate courses in the country was established in the 1960s by the Federal Council of Education (CFE), listing subjects that should compose the full curriculum of undergraduate courses offered in each institution. In 1970, the minimum curriculum of the Nutrition course underwent a review under the criticism of not following the technical and scientific development and not meeting the needs of the Brazilian reality. Finally, Resolution nº 5/2001 instituted the Dcns of the undergraduate course in Nutrition in replacement to the minimum curriculum, structuring a more qualitative approach of the course, aimed at making the student able to understand and act in front of the health needs of the population (SOARES; AGUIAR, 2010).

Still regarding the undergraduate course in Nutrition, with regard to the teaching of the BLS, it is necessary to move towards a review of the national curricular matrix. Santos *et al.* (2015) emphasize that to achieve this goal a change in national policy may be necessary, as in developed countries. This is because, although basic BLS skills are considered mandatory in all health professions, it is very difficult to ensure that this is the case in Brazil. In this context, Santos *et al.* (2015) reiterate the importance of including the content of BVS in the curriculum of undergraduate courses, regardless of the area of study, such is the importance of this knowledge for public health.

On the other hand, there have been advances in the attributions and competencies of the physiotherapy professional in the care of CRP in an intra-hospital environment. COFFITO's Resolution 501 not only recognizes the role of the physiotherapist in health care in the emergency sector, but endorses the international recognition regarding the presence of the physiotherapist as a professional qualified to compose the RRT; The training of this professional in BLS and FVO is recommended according to AHA guidelines.

This recognition of COFITTO was legitimized by the SBC which, in September 2019, published the Update of the Directive on Cardiovascular Resuscitation and Emergency Cardiovascular Care of the Brazilian Society of Cardiology 2019, ratifying not only Resolution 501, as what has been implemented worldwide, like Australia, many countries in Europe and the United States, regarding the insertion of the physiotherapist, together with the doctor and nurse, as a multiprofessional team that makes up the RRT (BERNOCHE *et al.* 2019). At this juncture, Ies that offer the undergraduate course in Physiotherapy should readjust their CPPs to meet this legal precedent, ensuring the student the development of skills and skills in BLS and SAV still in graduation, as well as their improvement during their professional career, in the form of continuing education resources.

## Final Considerations

The results of this study indicate a lag of the Curricular Pedagogical Projects of the undergraduate courses in Physiotherapy and Nutrition, in relation to those of Nursing, in the higher education network of the Petrolina Pole-PE-Juazeiro-BA, regarding the offer of Basic Life Support content in the curriculum. The findings contrast the National Curricular Guidelines that advocate the elaboration of undergraduate curricula from an interdisciplinary perspective, contemplating skills and skills necessary to the performance of graduates in the interrelationship between education and society.

Regarding the undergraduate course in Nursing, it is observed that, although the content is included in the curriculum matrix of all selected institutions, it is not possible to guarantee the efficiency of the teaching of the theme of BVS with regard to the cognitive development and the psychomotor skills of students, since this content is offered in minimum workload, in ACLS classes in disciplines that address the FVO.

as regards the physiotherapy course, the absence of the content of BLS in the curricular matrix of UPE and in the other two private HEI, violates COFFITO resolution 501, which recognizes the presence of the physiotherapist in the emergency department and requires this professional to be trained in BLS and FVO. Regarding the Nutrition course, it is necessary to insert the content of BLS in the curriculum, since the nutritionist may face a situation of CRA in his work routine, as a member of the multidisciplinary health team, and should be able to perform the BLS.

Considering the relevance and magnitude of CRP as a public health problem, it is imperative that all health professionals, regardless of their area of activity, have BLS training in accordance with the AHA and SBC guidelines. Therefore, we believe that the training of health students in BVS is fundamental, with the purpose of developing, still in graduation, cognitive and psychomotor skills for a systematized and effective care to CRP through resuscitation maneuvers, enabling greater survival of the victims.

Finally, it is necessary to recognize the limitations of this study, regarding the fact that the analysis of Curricular Pedagogical Projects is restricted to higher education institutions of the Petrolina-PE-Juazeiro-BA Pole. With regard to the University of Pernambuco, the results outline the situation of only one Campus, and the other undergraduate courses in health of the UPE, distributed in several municipalities of Pernambuco, were not analyzed. However, we risk stating that we did not find studies with similar methodology carried out in other regions of Brazil, and the comparison between regions is not the object of this article.

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