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Basic life support: A Literature Review about its relevance and level of knowledge of Health Professionals

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Abstract*—Introduction:** *Basic Life Support (SHL) is the set of measures for the care of patients in cases of cardiorespiratory arrest (CRP). In the aforementioned protocol, the primary sequence of resuscitation is defined to save lives, including immediate recognition of the disease, activation of the emergency response system, early cardiopulmonary resuscitation (CPR) and rapid defibrillation. Legal aspects infer that all health professionals should know how to recognize a PCR and treat it, that is, every health professional should have full dominion over the SBV.* ***Objective: *To analyze in the literature the relevance of the SBV and the level of knowledge of health professionals on the respective theme.* ***Methodology:*** *This is a systematic and descriptive review, carried out through searches for bibliographic references of relevant studies, in the online databases LILACS, SCIELO and other sources of information such as literary collection of Unirg University and Dialnet. The inclusion criteria were: free sources published between 2000 and 2017 in English and Portuguese. Excluding any material that did not meet the inclusion criteria.* ***Results:*** *Studies show that BvS is the basis of emergency care and its applicability correctly improves the prognosis of CRP victims. They also emphasize that training directed to professionals, encouraging the updating in CPR favors better quality care and outcome to the victim's health.* ***Conclusion:*** *The SBV can be considered the pillar for emergency care to patients diagnosed with CRP. However, the lack of theoretical baggage since the first graduation steps and the lack of constant updating make the performance of numerous health professionals in relation to the aforementioned protocol be desired, thus harming the user of the services health care.*

***Keywords*—Keywords: Basic Life Support, Cardiorespiratory Arrest, and Knowledge.**

I. INTRODUCTION

The Basic Life Support (SHL) consists of the identification and initial care of patients who were victims of cardiorespiratory arrest (CRP) and subsequent mobilization of the care team through the beginning of chest compressions, airway opening, ventilation, and early defibrillation [1].

Cardiorespiratory arrest (CRP) is defined as the stop of mechanical activity of the heart, confirmed by the absence of signs of circulation. It may result from a cardiac electrical event and can be characterized as a wristless ventricular tachycardia, bradycardia,

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ventricular fibrillation, pulseless electrical activity or yolia [2].

For the recognition of a CRP, one should first evaluate the reactivity of the victim and then observe if there is presence of respiratory and central pulse movements, synchronously [1].

To try to recover the spontaneous circulation of the patient, cardiopulmonary resuscitation (CPR) maneuvers should be performed, which are part of an agile, accurate, combined and standardized intervention, in order to achieve success in its reversal [3].

CRP is an emergency situation, with different epidemiological data, depending on the environment of its occurrence, whether extra or in hospital [1]. It is considered one of the largest emergencies in which a health professional can face each other throughout their performance, requiring them, rapid and effective conduct for reversal of the picture and better prognosis of the victim [2] [4]. For the SBV to be performed efficiently, it is necessary to rapidly identify CRP and perform CPR maneuvers. If chest compressions are not performed correctly, there may be necrosis of myocardial tissue, loss or absence of cerebral oxygenation, thus leading the patient to death or even irreversible brain lesions [5].

When CRP occurs, patients depend on the harmonious interaction of a multidisciplinary team of professionals, which may include physicians, nurses, physiotherapists, among others. What requires the team scientific knowledge and updated technical skills in order to make it capable of performing actions necessary excellence and success in the service provided [1].

In this way, health professionals should be alert to easily recognize the signals of CRP and thus succeed in care through SHL. Since the mortality rate of CRP is high and every minute in CRP 10% of the probability of reverting to the situation is lost [6].

Therefore, this work aims to analyze in the literature the relevance of SHL and the level of knowledge of health professionals on their theme.

II. MATERIALS AND METHODS

The research is characterized as a systematic and descriptive review carried out through searches for bibliographic references of relevant studies, in the online databases of the Latin-American literature and the Caribbean in Health Sciences (LILACS) and Scientific Electronic Libray Online (SCIELO) and other sources of information such as literary collection of the library of Unirg University, Dialnet and other loose online publications.

The inclusion criteria were: free sources published between 2000 and 2017 in English and Portuguese. Exclusion criteria were publications lower than in 2000, from languages other than Portuguese and English and paid. The keywords used were: Basic Life Support, Cardiorespiratory Arrest, and Knowledge.

The data collection period was from August to October 2019. After the selection of the material and reading the data, they were analyzed and discussed in order to offer a greater notion about the knowledge of health professionals about the SHL and its respective relevance.

Because it is not a study with human beings, the present study did not need to be submitted to the ethics and research committee, according to resolution 466/12.

III. RESULTS AND DISCUSSION

The crossing of the descriptors and the use of the filters made it possible to obtain a total of 36 references from which 15 were discarded because they did not fit the inclusion criteria. Thus, the sample of this study had 21 references, according to the inclusion criteria and keywords.

In Brazil, about 630 thousand people die each year with a diagnosis of sudden death. This makes cardiovascular diseases caused by cardiac arrhythmias and acute myocardial infarction become a relevant public health problem. About 50% of deaths of these individuals occur before the victim arrives at the hospital or receives care [1] [2].

In the population-based study conducted in Japan by Kitamura *et al* [7] CRP prevails in individuals with a mean age of 66.8 years, male and asystole is the first detected rhythm. The research also points out that the hospital admission rate after CRP is 29.2%, with a survival of one month, which represents 5.3% of cases and achieving favorable neurological outcome in only 1.3% of the victims.

The average survival in cardiorespiratory arrest in an extra hospital environment is 6,4%, ranging from 1,0% when the initial rhythm is asystole, reaching 16,0% when the initial rhythm is ventricular fibrillation. However, because it is influenced by several factors, survival can reach high rates of 74.,0% in patients with defibrillated ventricular fibrillation in less than three minutes [8].

Berg *et al* [9] points out that the SHL is considered the basis for care in cases of CRP and in it is defined the primary sequence of resuscitation to save lives, including immediate recognition of the disease, activation of the

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emergency response system, early CPR performance and rapid defibrillation.

According to Silva and Machado [10] the American Heart Association (AHA) Guidelines were developed so that health professionals perform cardiorespiratory resuscitation (CPR) properly and can be based on science in order to reduce death and disability.

AHA [1] points out that to perform the recognition of a CRP, one should first evaluate the reactivity of the victim and then observe if there is presence of respiratory and central pulse movements, synchronously.

In order not to delay the onset of chest compressions, the opening of the airways should be performed only after applying the first thirty thoracic compressions. Ventilations should be performed in a ratio of 30 compressions for 2 ventilations, providing sufficient amount of air to promote chest elevation. Being contraindicated hyperventilation, as it can increase intrathoracic pressure, decrease preload and consequently result in decreased cardiac output and survival [11].

Nursing professionals are usually the first to recognize and begin CPR maneuvers. However, all health professionals should know how to quickly and safely recognize CRP and treat it [12]. Fact reaffirmed by Timerman *et al* *[13]* in his study by citing that all health professionals should be able to provide basic life support and automatic external defibrillation, if necessary, to an emergency victim.

In a study conducted by Zanini *et al* *[14]*, with nurses and nursing assistants, there was a 73,7% percentage of the hit regarding the identification of CRP signals considering the absence of carotid pulses.

Brião *et al* *[15]* applied a questionnaire containing questions related to the care of patients in CRP, with the objective of identifying the level of knowledge related to this subject among nursing professionals before, immediately after and six months after and six months after Training. Initially, a theoretical step was performed on the knowledge of basic and advanced life support, followed by a practical activity, involving adequate care for the patient until the arrival of advanced support. Before training, the performance of nurses in the theoretical CRP test was lower. After being trained, 90% of these professionals achieved the recommended index for satisfactory performance. However, there was a decrease in the number of correct answers after six months.

Pereira *et al* *[16]* found that the majority of professionals interviewed (51%) believe that they are unaware of the modifications of AHA protocols, while the minority (49%), but representative, claims to have knowledge related to the subject, although insecurity and the absence of permanent health education are factors considered definitive.

Landers [17] points out that there is often unsatisfactory training since graduation in relation to knowledge about CRP and CPR maneuvers. According to the author, they have been applied in a non-superfluous way of the needs of the academic, who later reflect on professional experience, without offering subsidies for the harmonious correlation between theory and practice.

According to Tadini work [18], the physiotherapist is inductivist because he has an important role in maintaining the airways, ventilatory care and caring for serious patients and in emergency situations, should be able to recognize CRP and provide ready effective care to the victim.

Galinski *et al* *[19]* they perceived incompetent knowledge of the SBV sequence by physicians and nurses, where in the face of a CRP, 50% would open by air, 75% would start by ventilation, 86% would start external cardiac massage, while only 42% would call help.

For Corrêa *et al* *[20]*, regardless of the professional category, all health professionals have a duty to recognize such situations, and also have an obligation to recycle themselves on the subject of.

Thus, in order for a CPR to succeed and increase the patient's life prognosis, it must permeate a sequence of systematized procedures based on theoretical knowledge and practical skills of health professionals [4] [21].

IV. CONCLUSION

According to the results obtained in the studies evidenced, it can be concluded that the SHL protocol is a theme of great relevance. The same is a pillar for quality emergency care and increases survival rates of patients diagnosed with CRP. However, the lack of theoretical baggage from the first stages of graduation and constant updating make the performance of the numerous health professionals in relation to the aforementioned protocol be desired. Thus harming the user of health services. Due to these findings, changes in the theoretical baggage of academics and permanent updates of health professionals may be the transformative key to better health care to society.

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