

Measuring the impact of basic life support training on students' perception of their ability to use it: an exploratory study

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Introduction

Basic life support (BLS) is a set of well determined procedures that has a standard methodology. It was developed with the goal of training people on identifying life threatening situations, knowing how and when to call for help and how to perform the actions that can help to maintain the victim alive until qualified medical help arrives [1]. Quick access to the medical emergency system ensures the beginning of the chain of survival which is critical for the victim, since each minute without help greatly reduces the chance for survival.

The chain of survival is made up of four links or actions, that must be adequately performed and interconnected so the final result can be a saved life [1].

The four links [2], shown in figure 1, are then: (1) early activation of the medical emergency system; (2) early BLS; (3) rapid defibrillation; and (4) early advanced life support.

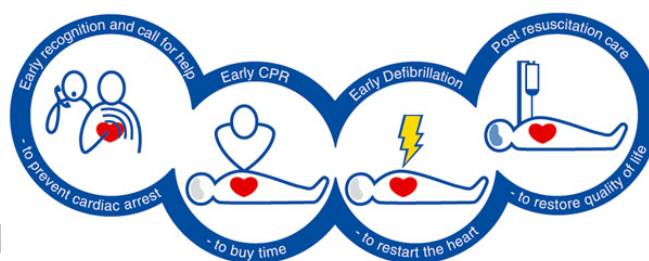


Figure 1. The Chain of Survival

(source: <https://www.resus.org.uk/resuscitation-guidelines/adult-basic-life-support-and-automated-external-defibrillation/>)

In order for this chain to work, it is essential that those that witness a critical situation are able to recognize its severity and activate the first link. For this to happen it is essential to educate and train people so they become aware that these procedures can save lives and know when and how to act. These training actions should be included, as early as possible, in people's lives and so incorporating health education in schools can help children acquire skills and competences to perform BLS, as well as the confidence required to act in an emergency situation [3].

In this work a preliminary study that measures the impact of BLS training on a set of 6th grade students' perception of their ability to use it, will be presented.

Methods

The training was performed, in March 2019, by a cardiologist from the Central Hospital of Aveiro (CHBV – Centro Hospitalar Baixo Vouga) and included students from two 6th grade classes from a school located within Aveiro region. It is important to note that this training was planned in collaboration with the school board and the

classes' teachers. The number of students in the sample were 34, mainly female (56%), and with ages between 10 and 14. It should be noticed that training, at these ages only addresses the first two links of the chain, because the trainees do not have the maturity and previous knowledge required to comprehend the issues related to the two final links (defibrillation and advanced life support).

The students answered, before the training session begun, a questionnaire that included questions related to the characterization of the sample as well as a set of 12 questions (Q1 to Q12) used to assess their perception regarding their own knowledge on BLS, evaluated using a 5 points Likert scale (1-I don't know at all; 5-I'm sure I know). The questions included issues like when to call for help (112) and when and how to perform certain actions like, for example, chest compressions. The subjects answered the same 12 questions after the training ended, so one could compare their perception before and after the session. The questionnaires were anonymous, and the answers were obtained using a codification in each pair (before-after) of questionnaires.

Results

In figure 2 the means obtained for each of the 12 questions, before and after the training, are presented.

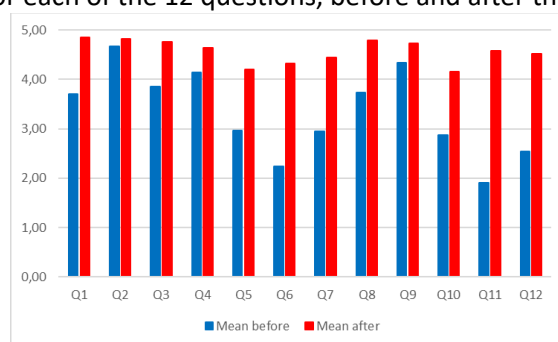


Figure 2. Means of the results obtained before and after the training session (Q1 to Q12)

Wilcoxon paired samples tests were used for data treatment and the p -values obtained (see table 1) show that, with a level of significance of 5%, there is a statistically significant difference between the median before and after the training, with the exception of question 2 (when to call 112).

Table 1. Paired samples Wilcoxon tests

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
p-value	<0,0005	0,222	0,001	0,017	<0,0005	<0,0005	<0,0005	<0,0005	0,036	0,001	<0,0005	<0,0005

Discussion and conclusions

It was possible to conclude that training improved students' perception of their ability for using BLS.

Other analyses were done to compare the differences between male and female students but there was no significant difference for most questions. Further studies are being considered with the purpose of analyzing, not only the perceptions of the trainees, but the real acquired skills regarding BLS, as well as understand the impact of the training in other type of individuals (for example, prisoners at a local facility).

Finally, although this work is a preliminary study, it has a potential to be further developed in order to provide a better understanding of the impact BLS training has on the trainees' capacity to save lives.

Acknowledgements

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ACCEPTED EXTENDED ABSTRACT