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EXTENDED ABSTRACT

P9

Basic Life Support: evaluating how training impacts the way students perceive their ability to use it

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Introduction

Basic Life Support (BLS) includes a set of specific standardized procedures. The method was developed in order to facilitate the training of people so they are able to identify life risk situations, know how and when to call for help and are also capable of performing certain actions to keep the victim alive until professional medical assistance arrives [1].

A set of four actions constitute the links of what is called the chain of survival: (1) immediate activation of the medical emergency system; (2) immediate BLS; (3) defibrillation; and (4) advanced life support [2]. Those actions must be performed quickly and adequately, in an interrelated way, in order to potentially save a life [1].

For this chain to work it is crucial that people are trained in those procedures and, consequently, know when and how to act in order to save lives. In this context, training actions ought to be included, as early as possible, in people's education by incorporating health education in schools so children can acquire the required capabilities to perform BLS, as well as the confidence to act in an emergency situation [3].

In this work a study is presented that intends to assess the impact of BLS training on 6th grade students' perception of their ability to use it.

Methods

This study was performed using data collected through questionnaires administered to students during the training sessions, specifically two sessions performed in 2019 (in March and in June). The training was carried out by a cardiologist from the Central Hospital of Aveiro (CHBV – Centro Hospitalar Baixo Vouga) and included students from several 6th grade classes, from a school located in the district of Aveiro. It should be noticed that, at these ages, training only addresses the first two links of the chain, because of the maturity level of the trainees.

After the first session, a preliminary study was performed [4] however, with the second session, the sample size (number of valid questionnaires) increased to a total of 77.

Before the training session began, the students answered, an anonymous questionnaire that included a first section used to characterize the sample and a second one with a set of 12 questions (Q1 – Q12). The answers to Q1 – Q12 were given using a 5 points Likert scale (1-I don't know at all; 5-I'm sure I know), and served as a way to evaluate the perception regarding students' own knowledge on BLS (for example, when to call 112, and when and how to perform chest compressions).

Results

A characterization of the sample is presented in figure 1 that shows, for the 77 students, how they are divided according to their gender, age and if they had any previous knowledge on BLS.

Table 1 presents the means of the differences between the rates assigned by respondents to Q1 – Q12, after and before the training. The same table also presents the p values that resulted from the Wilcoxon paired samples test performed in order to assess the perception of students about the abilities they acquired with the training. It can be observed that, at a significance level of 5%, there are statistically significant differences in the distributions for all the variables except the ones related to Q2 (when to call 112) and Q4 (when to verify if the victim is breathing).

Keywords:
Basic life support training, 6th grade students, Paired samples Wilcoxon test, Mann-Whitney test

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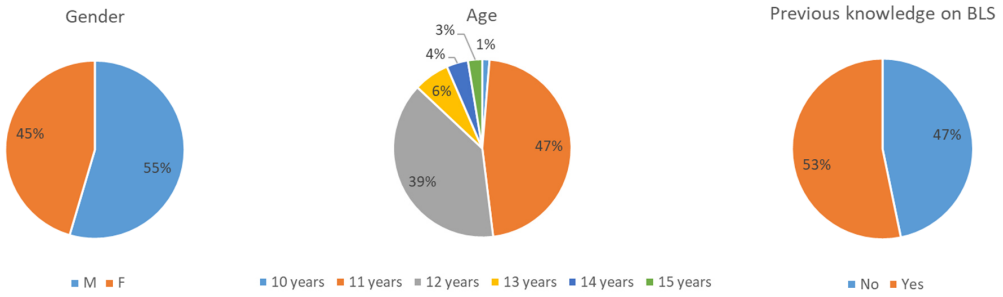

Figure 1- Sample characteristics

Table 1 - Means of the differences for the questions and *p* values - paired samples Wilcoxon tests

	Pair Q1	Pair Q2	Pair Q3	Pair Q4	Pair Q5	Pair Q6	Pair Q7	Pair Q8	Pair Q9	Pair Q10	Pair Q11	Pair Q12
Mean of the differences	1,104	0,065	0,351	0,143	0,805	1,675	1,455	0,662	0,221	1,026	2,104	1,740
p-value	<0,0005	0,423	0,014	0,174	<0,0005	<0,0005	<0,0005	<0,0005	0,030	<0,0005	<0,0005	<0,0005

Mann-Whitney tests were also performed in order to understand if there were differences between the perceptions of the students that had some previous knowledge in BLS (N1=41) and those they had not (N0=36). The p values obtained are presented in Table 2, for the answers before training and after training.

Table 2 - *p* values for Mann-Whitney tests between students with and without previous knowledge

	Before training											
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
p-value	0,996	0,988	0,118	0,475	0,004	0,974	0,401	0,042	0,006	0,005	0,712	0,178
	After training											
	Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**	**Q10**	**Q11**	**Q12**
p-value	0,264	0,551	0,994	0,525	0,183	0,888	0,268	0,679	0,506	0,275	0,780	0,110

It can be observed that, at a significance level of 5%, there are statistically significant differences in the distributions of four variables before training. Those refer to (i) when to put the victim in the lateral safety position (Q5), (ii) how to do it (Q10) and (iii) how to verify if the victim is conscious (Q8) and (iv) how to verify if the victim is breathing (Q9). In what relates to after training results, no differences were detected.

Discussion and conclusions

It was possible to conclude that training improved students' perception of their ability for using BLS and that students with previous knowledge on BLS had the perception that they were more prepared than those with no previous knowledge, but these differences were dissipated after the training session.

Other analyses were performed, namely comparing differences between male and female students, but no significant differences were found. Further studies are being considered with older students (about 14-15 years old) with the purpose of analyzing, not only their perceptions, but the real acquired skills regarding BLS, using other assessment tools, like manikins for students to simulate the chest compressions.

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