



Letter to the Editor

School children learn BLS better and in less time than adults



Sir,

The percentage of witnessed cardiac arrest that receives bystander cardio-pulmonary resuscitation (CPR) is actually low (about 30%)¹ and the main cause of this is the lack of knowledge of the CPR technique.² In Denmark, it has been demonstrated that a national campaign to teach children CPR can increase the percentage of bystander CPR and, therefore, increase the survival rate following out-of-hospital cardiac arrest (OHCA).³ Bohn et al. have also shown that school children's knowledge is good one year after having attended a 3-h BLS course (1-h theory and 2-h practice) with 1 expensive manikin (Laerdal Resusci Anne SkillReporter) per 5–6 students.⁴ On the other hand, training children is expensive and requires considerable time and effort. We want to assess whether children's knowledge of the BLS sequence is as good one year after a shorter and less expensive BLS course. We gave an anonymous questionnaire to a group of Italian school children a year after completing a 1-h BLS course (20-min theory and 40-min practice) performed according to ILCOR 2010 Guidelines and using 1 economical manikin (Laerdal MiniAnne) for each student. The questionnaire consisted of three multiple-choice questions (four possible answers of which only one was correct) on the first two rings of the Chain of Survival. The first question was about recognizing a person in cardiac arrest, the second was about the importance of the early activation of the emergency system and the third was about the correct compression:ventilation ratio. We gave the same questionnaire to a "control group" of Italian lay adults a year after having done a 5-h BLS-D course (1-h theory and 4-h practice) performed according to ILCOR 2010 Guidelines and using 1 manikin (Laerdal Little Anne) for each 5–6 attendees. The school children group comprised 170 subjects (42.4% males), mean age 12.6 ± 0.8 years. The adult group comprised 170 subjects (52.9% males), mean age 39.7 ± 13.2 years. In the school children group, the first question was answered correctly by 84.7%, the second by 40.6% and the third by 80.6%. Comparing these results to those of the adults, there was no significant difference in the first question (84.7% vs 90.6%, $p=0.14$) or in the second (40.6% vs 44.7%, $p=0.51$), but there was a statistically significant difference in the third question answers (80.6% vs 62.9%, $p<0.001$) (Fig. 1).

Considering the results of our study, it appears clear that a child's retention of BLS knowledge after a year is good even if the BLS course attended is short and cheap. Another important point highlighted by this study is that more emphasis needs to be made on the early activation of the emergency system. Compared to the adults, the children's retention was better regarding the correct compression:ventilation ratio, despite the shorter duration of the course. Our study confirms that, even if on the basis of knowledge in theory, training children is a good investment for the future and we

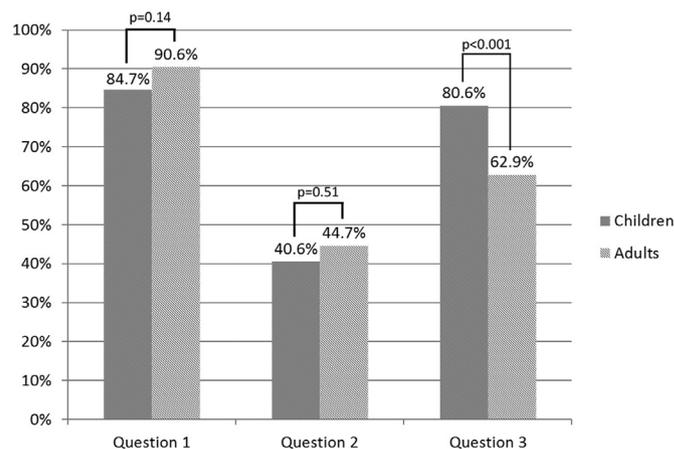


Fig. 1. The percentage of correct answers to the questions "what to do when you find a person collapsed in front of you" (Question 1), "when to call the emergency system" (Question 2) and about the correct compression:ventilation ratio (Question 3).

think that CPR courses should be made compulsory in schools for students of at least 12 years old.

Conflict of interest statement

None.

References

1. SOS-KANTO Study Group. Cardiopulmonary resuscitation by bystanders with chest compression only (SOS-KANTO): an observational study. *Lancet* 2007;369:920–6.
2. Nolan JP, Soar J, Zideman DA, et al. European Resuscitation Council Guidelines for Resuscitation 2010 Section 1. Executive summary. *Resuscitation* 2010;81:1219–76.
3. Wissenberg M, Lippert FK, Folke F, et al. Association of national initiatives to improve cardiac arrest management with rates of bystander intervention and patient survival after out-of-hospital cardiac arrest. *JAMA* 2013;310:1377–84.
4. Bohn A, Van Aken HK, Möllhoff T, et al. Teaching resuscitation in schools: annual tuition by trained teachers is effective starting at age 10. A four-year prospective cohort study. *Resuscitation* 2012;83:619–25.

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10 December 2014