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Letter to the Editor

Kids Save Lives: A blended learning approach to improve engagement of schoolchildren



To the Editor,

Mandatory nationwide training of schoolchildren is recommended by current European Resuscitation Council (ERC) guidelines¹. The Kids Save Lives (KSL) campaign, developed by ERC and endorsed by the World Health Organization (WHO) in 2015², recommends two hours of cardiopulmonary resuscitation (CPR) training annually from the age of 12 years in all schools worldwide. In August 2021, the Italian government approved a “System Saving Lives” law, representing a fundamental step forward for our country to improve community involvement in CPR. The KSL campaign was fully recognised with the mandatory introduction of CPR teaching in schools.

October 16th, in line with ERC guidelines, has been officially identified as the Italian cardiac arrest day, dedicated to raising awareness among the general population and schoolchildren³. Accordingly, with the KSL campaign, the Bologna local healthcare agency “Azienda USL di Bologna”⁴ developed a new concept of a blended learning approach specifically dedicated to schoolchildren training for primary and secondary school, using innovative technologies and tools. We enrolled 20 schools in Bologna metropolitan area, targeting to engage 2,000 students and 100 teachers through a specific four-hour innovative training programme differentiated for primary and secondary schools. For this reason, we developed two apps for virtual reality (VR) experience (available in Italian and English) specifically dedicated to primary schools, A breathtaking picnic VR⁵⁻⁶ and for secondary school School of CPR VR⁷⁻⁸. The training programme included short lectures presentation (KSL campaign, cardiac arrest adult basic life support, choking for adults, pediatric and infant), traditional skill stations (manikin and AED), and a VR experience tailored for primary and secondary school. At the end of the event, the students were assigned special homework, asking them to inform their relatives about the training content, involving parents and friends in CPR training and engagement as first responders with DAE RespondER^{7,9}, the regional first responder app active since 2017 in Emilia-Romagna. For the teachers, we created a toolkit

material specifically designed for CPR training in their school with a VR headset donated in every school^{8,10}.

From June 2022 to December 2022, we organised 4 events, and a further 15 are planned in 2023, 70 % of which are in secondary schools. Through a digital MCQ, we explored students’ knowledge about CPR, their behaviour, their motivation to intervene and their sense of presence during the VR experience. The preliminary results were positive and encouraging (Fig. 1). The main goal at the end of the project will be to evaluate the cost-effectiveness impact of this new educational approach and measure the behavioural change of schoolchildren.

Conflict of Interest

No relationship exists between any of the authors and any commercial entity or product mentioned in this manuscript that might represent a conflict of interest. No inducements have been made by any commercial entity to submit the manuscript for publication. All within 3 years of beginning the work submitted. FS is the Chair-Elect of the European Resuscitation Council, Chair of the ILCOR Social Media Working Group and ILCOR BLS Working Group members. GI is Scientific Committee member of the Italian Resuscitation Council. DDG, AM and GG have no conflicts of interest.

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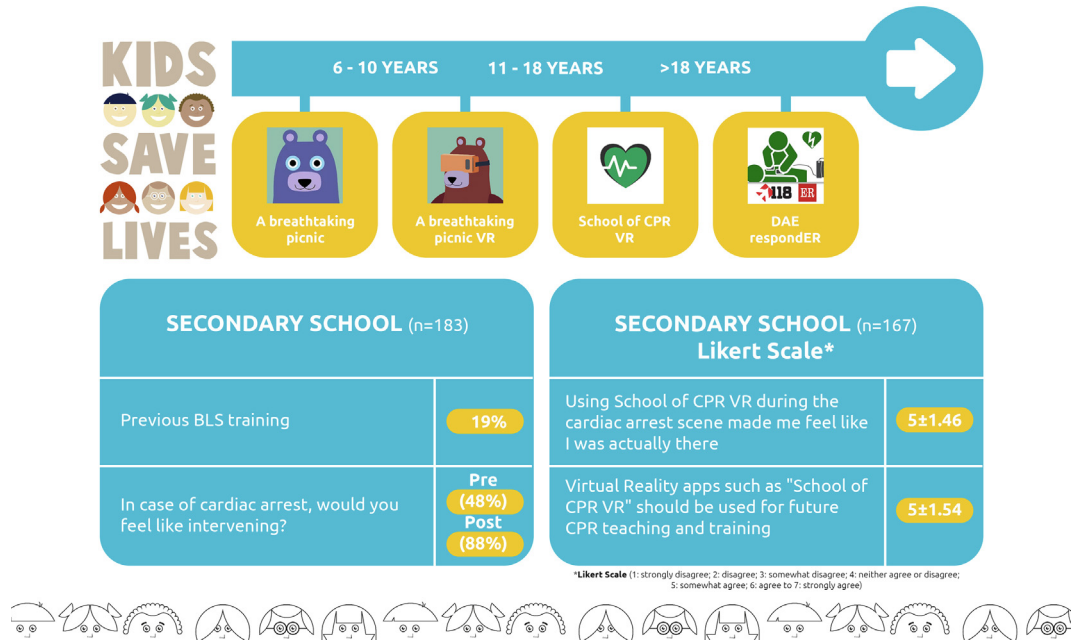


Fig. 1 – Kids Save Lives: how to save lives campaign. Preliminary results.

REFERENCES

1. Semeraro F, Greif R, Böttiger BW, et al. European Resuscitation Council Guidelines 2021: Systems saving lives. *Resuscitation* 2021;161:80–97.
2. Böttiger BW, Van Aken H. Kids save lives—Training school children in cardiopulmonary resuscitation worldwide is now endorsed by the World Health Organization (WHO). *Resuscitation* 2015;94:A5–7.
3. Scapigliati A, Semeraro F, Di Marco S, Ristagno G. Italian Resuscitation Council Executive Committee. The new Italian law “A systems saving lives” the first European former application of ERC 2021 guidelines. *Resuscitation* 2021;167:47–8.
4. Kids save lives: how to save lives at <https://www.118er.it/ksl/>.
5. A breathtaking picnic VR on Google Play at <https://bit.ly/3P7EUy3>.
6. A breathtaking picnic VR on App Store at <https://apple.co/3Fw3QMd>.
7. School of CPR on Google Play at <https://bit.ly/3Y5aBfe>.
8. School of CPR on App Store at <https://apple.co/3BfRVQg>.
9. Del Giudice D, Semeraro F, Ristagno G, et al. DAE RespondER: The Emilia Romagna app for a regional “community saving lives” system. *Resuscitation* 2019;145:34–6.
10. Semeraro F, Scapigliati A, Ristagno G, et al. Virtual Reality for CPR training: How cool is that? Dedicated to the “next generation”. *Resuscitation* 2017;121:e1–2.

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