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Student peer teaching in paediatric simulation training is a feasible low-cost alternative for education

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BACKGROUND

The World Health Organization recommends regular simulation training to prevent adverse healthcare events. We used specially trained medical students to provide paediatric simulation training to their peers and assessed feasibility, costs and confidence of students who attended the courses.

MATERIAL AND METHODS

At the Medical University of Vienna third-year students were eligible to participate voluntarily in a peadiatric simulation training. Students attended two high-fidelity simulation training sessions, delivered by peers, which were videorecorded for evaluation. The attendees then completed questionnaires before and after the training. Associated costs and potential benefits were analysed.

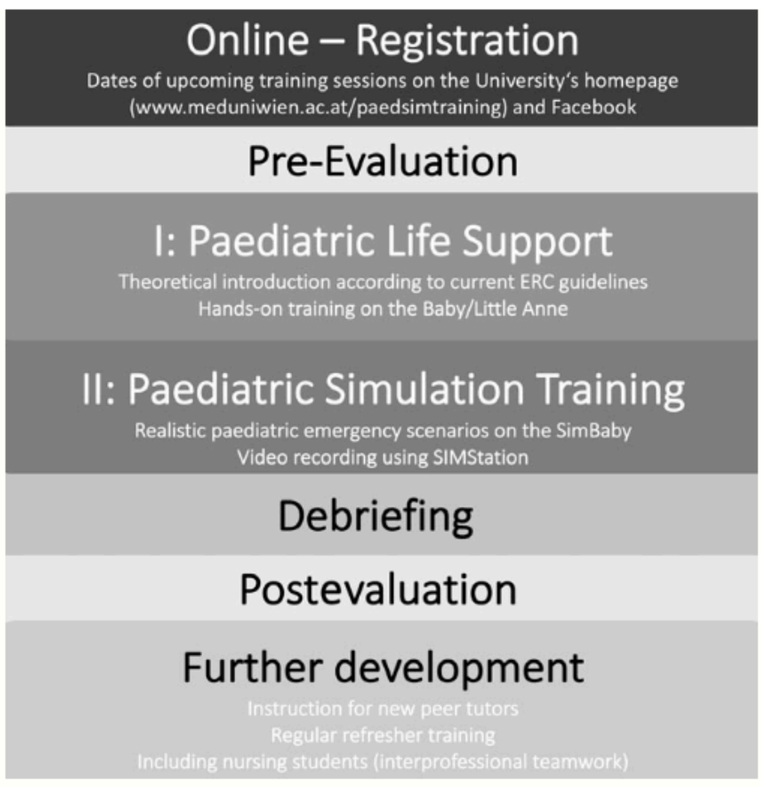

Fig. 1: Structure of the paediatric simulation training

RESULTS

From May 2013 to June 2015, 152 students attended the sessions and 57 (37.5%) completed both questionnaires. Satisfaction was high, with 95% answering their peer tutor was competent and 90% saying that peer tutors were well prepared. The attendees' confidence in treating critically ill children significantly improved after training ($p < 0.001$). The average costs for a peer tutor were six Euros per working hour, compared to 35 Euros for a physician.

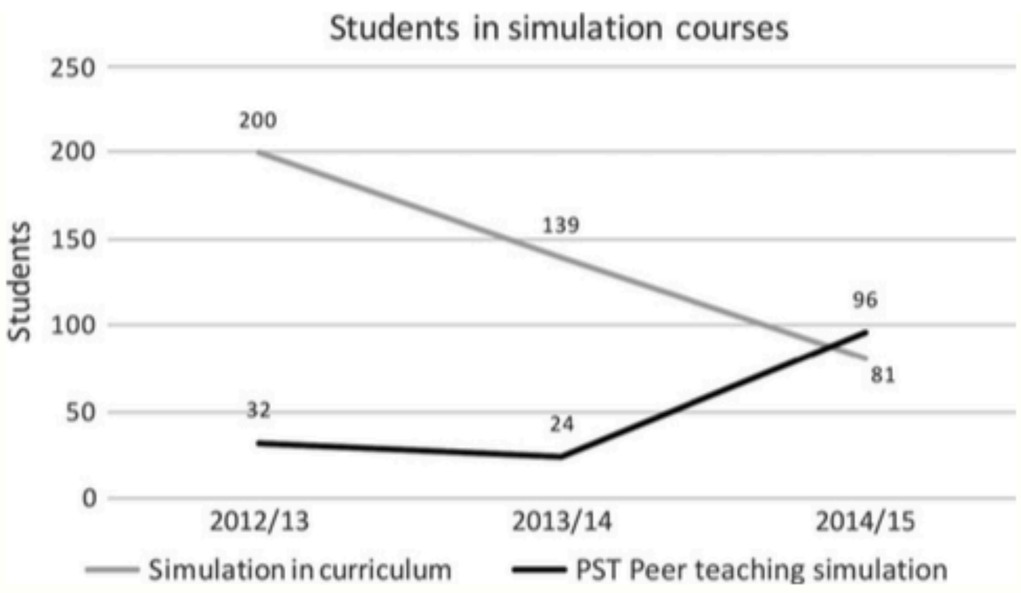

Fig. 2: Number of students in simulation-based training during curriculum vs. peer-teaching courses

	Pre-course	Post-course	p value
(1) Dealing with critical ill children (1–4)	3 (2–4)/3.5 ± 0.5	3 (2–4)/2.8 ± 0.6	p < 0.001*
(2) Paediatric advanced life support skills (1–4)	3 (2–4)/3.0 ± 0.7	2 (1–4)/2.4 ± 0.8	p < 0.001*
(3) Paediatric medication dosage (1–4)	4 (3–4)/3.9 ± 0.3	3 (1–4)/3.1 ± 0.7	p < 0.001*
(4) Improved clinical decision making (1–5)	2 (1–3)/1.7 ± 0.7	2 (1–4)/1.9 ± 0.8	p = 0.07
(5) Improved critical thinking (1–5)	2 (1–5)/2.4 ± 1.0	2 (1–4)/2.0 ± 0.8	p = 0.03*
(6) Correct medication/volume dosage (1–4)	2 (1–4)/2.1 ± 0.9	2 (1–5)/2.3 ± 1.2	p = 0.31
(7) Better teamwork (1–5)	2 (1–5)/1.9 ± 0.9	1 (1–3)/1.5 ± 0.7	p = 0.001*
(8) Improved technical skills (1–5)	1 (1–4)/1.7 ± 0.8	2 (1–5)/2.3 ± 1.2	p = 0.002*
(9) Importance of simulation in medical education (1–4)	1 (1–2)/1.0 ± 0.2	1 (1–5)/1.1 ± 0.5	1.00

Data are given as median (minimum–maximum)/mean ± standard deviation.
Questions 1–3: 1 = very secure, 2 = secure, 3 = moderate, 4 = insecure; questions 4–8: 1 = very much benefit, 2 = much benefit, 3 = some benefit, 4 = little benefit, 5 = no benefit and; question 9: 1 = very useful, 2 = useful, 3 = moderate, 4 = not useful.
*Statistical significance.

Tab 1: Results of the pre- and post- training questionnaire analyses

CONCLUSION

Using peer tutors for paediatric simulation training was a feasible and low-cost option that increased the number of medical students who could be trained and increased the self-confidence of the attendees. Satisfaction with peer tutors was high.

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