Video instruction without additional voice feedback exercises is insufficient for initial acquisition of basic life support skills in a self-learning station.

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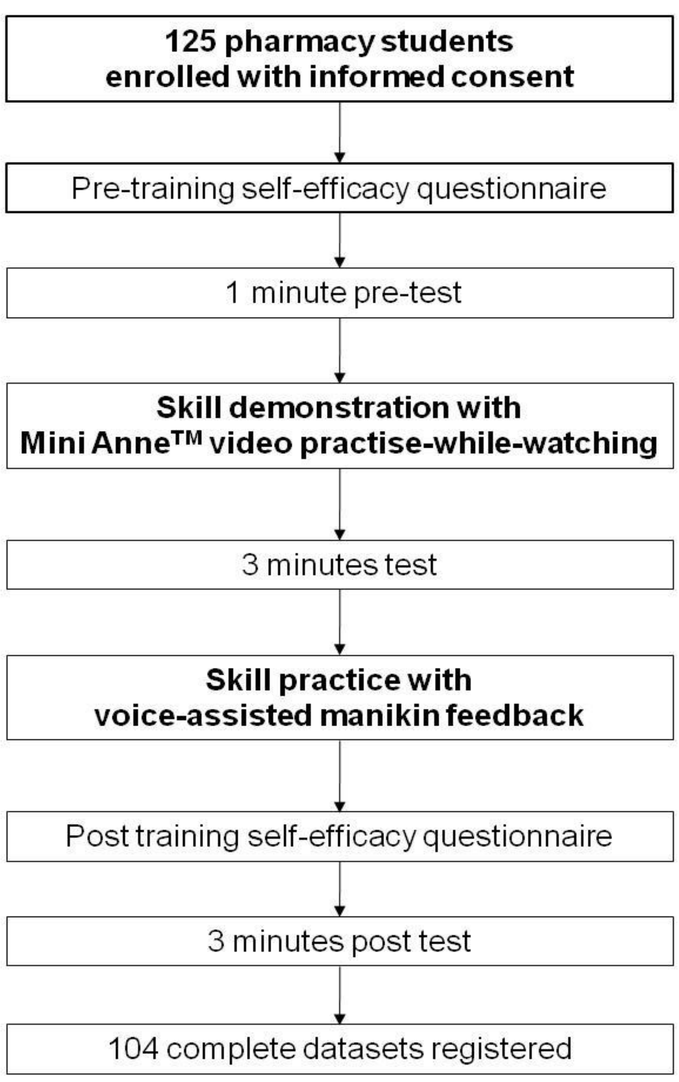
Introduction

European Resuscitation Council 2010 Guidelines encourage short video/computer self-learning (SL) courses, with minimal or no instructor coaching. We analysed the learning efficacy of an abbreviated Mini Anne™ (Laerdal, Norway) video followed by refinement with voice feedback exercises on initial acquisition of Basic Life Support (BLS) skills in a SL station.

Methods

One hundred and twenty-five pharmacy students (86% without previous training), were trained in a SL station on a manikin using learning-while-watching video instructions followed by exercises with concurrent voice feedback (Resusci Anne Skills Station™ Laerdal, Norway). The proportions of students with adequate BLS skills (mean compression depth ≥50 mm, mean compression rate 100-120/min, complete release <5 mm and mean ventilation volume 400-1000 ml) were measured at baseline, after video training and after subsequent training with voice feedback.

Fig. 1: Participants flow chart



Results

Complete datasets were obtained for 104 students, 21 datasets were lost due to incomplete recording. After video training, adequate mean compression depth was achieved in 35%, adequate compression rate in 74%, adequate mean ventilation volume in 42% and complete release in 39% of students. Compared with baseline results, only compression rate (28% vs. 74%, P<0.001) and ventilation volume (8% vs. 42%) were significantly better. After subsequent training with concurrent voice feedback the proportion of students with compression depth 50-60 mm was 89%, with compression rate 100-120/min 74%, with mean ventilation volume 400-1000 ml 71% and 56% achieved complete release. Compared with the skill level after video training, these results were a significant improvement (P<0.05), except for compression rate.

Table 1: Results at different times of the training (n=104).

	Pretest (T0)	Test after video excercise (T1)		Test after voice feedback exercise (T2)	
	Number of participants (%)	Number of participants (%)	P-value (T0-T1)	Number of participants (%)	P-value (T1-T2)
Mean compression depth ≥50 mm	30 (29)	36 (35)	0.238	92 (89)	<0.001
≥70% of compressions ≥50 mm	26 (25)	29 (28)	0.607	88 (85)	<0.001
Mean compression rate 100-120/min	29 (28)	77 (74)	<0.001	77 (74)	1
Mean ventilation volume 400-1000 ml	8 (8)	44 (42)	<0.001	74 (71)	<0.001
≥70% of ventilations 400-1000 ml	6 (6)	44 (42)	<0.001	74 (71)	<0.001
Any incomplete release ≥5 mm	60 (58)	64 (61)	0.636	46 (44)	0.010
≤30% of compressions with incomplete release ≥5 mm	74 (71)	75 (72)	1	90 (87)	<0.004

Conclusion

To acquire BLS skills, video training alone was not effective and only improved compression rate and ventilation skills in some of the students. Additional voice feedback exercises resulted in skills mastery in the majority of students.

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