

The power of assessment and feedback: successful individualized chest compression training in a self-learning station.

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Keywords

Assessment; Basic Life Support; Feedback; Self-learning.

Introduction

Assessment and feedback improve the efficacy of Basic Life Support skill training.

The purpose of the current study was to train students in a self-learning (SL) station until proficiency in chest compression, using assessment at the end of training with instant feedback and feed-forward, as well as guidance (feed-up) before retraining.

Methods

A custom-made software program was developed allowing training, retraining and testing in a SL station without instructor. Initial training (max. 40 minutes) consisted of a practice-while-watching video followed by computer exercises with voice feedback.

Before and after training performance was measured through an automated 2

minutes test. To be competent students had to achieve $\geq 70\%$ compressions with depth ≥ 50 mm and $\geq 70\%$ compressions with complete release (< 5 mm) and a compression rate between 100-120/min. Instant feedback and feed-forward was provided after the test and failed students had to retrain within 2 weeks. Retraining (max. 20 minutes and max. 3 times) was done with full BLS computer exercises. Before practising students were presented their previous test result together with feed-up.

Results

During a two months period 405 students were trained. The group consisted of 91% females and mean age was 20 years (SD 2). Twenty-seven percent of the students reported previous BLS training with 27 months mean time since last training (SD 26). Initial training was successfully completed by 279/405 students (69%). After one additional training of the not yet competent students, 365/405 (90%) were successful, after a second 388/405 (96%) and after a third 400/405 (99%). The 5 remaining students became competent after instructor-facilitated retraining.

Conclusions

A SL station with a new basic life support training program, incorporating assessment, feedback, feed-forward and feed-up, proved very effective to achieve high quality chest compression skills.

Perspectives

Long-term effectiveness of this learning strategy will be analyzed with retention testing at 6 and 12 months.