An Automated Voice Advisory Manikin System for Training in Basic Life Support Without an Instructor. A Novel Approach to CPR Training

Wik, L.; Thowsen, J.; Steen, P.A.
Resuscitation, 2001, 50, pp. 167-172

Objective: To test if an automatic Voice Advisory Manikin (VAM) with a CPR feedback system can be used to improve the basic CPR quality of paramedic students.

Methods: 24 paramedic students were tested. The students were divided into two groups, 12 in each group. Group 1 performed CPR on a manikin for 3 minutes, without any feedback, followed by 3 minutes of CPR with feedback (after a 2 minute pause). Group 2 performed the two 3-minute periods in the reverse order. For both groups all ventilation and chest compressions were continuously recorded and were evaluated according to the European Resuscitation Council and the American Heart Association guidelines for CPR.

Results: For group 1 (Figure 1), with feedback in 2nd 3-minute round of CPR, correct inflations increased from 2% to 64% and the percentage of inflations too fast decreased from 94% to 25%. Correct depth of chest compressions increased from 32% to 92%.

Fig1: Improved CPR w/ Feedback

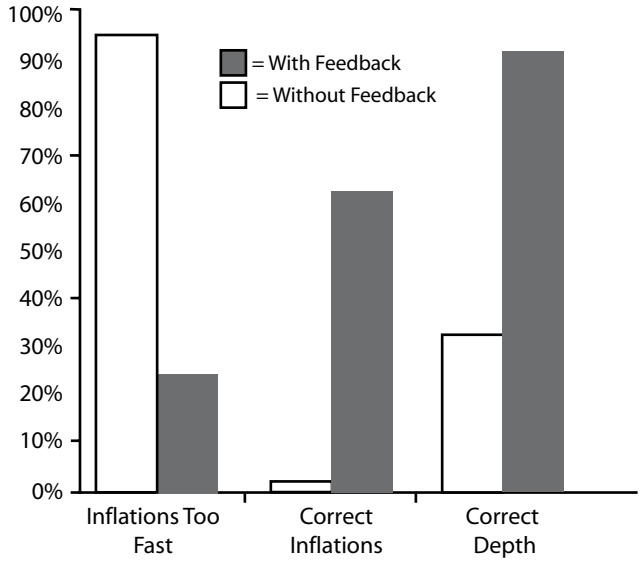
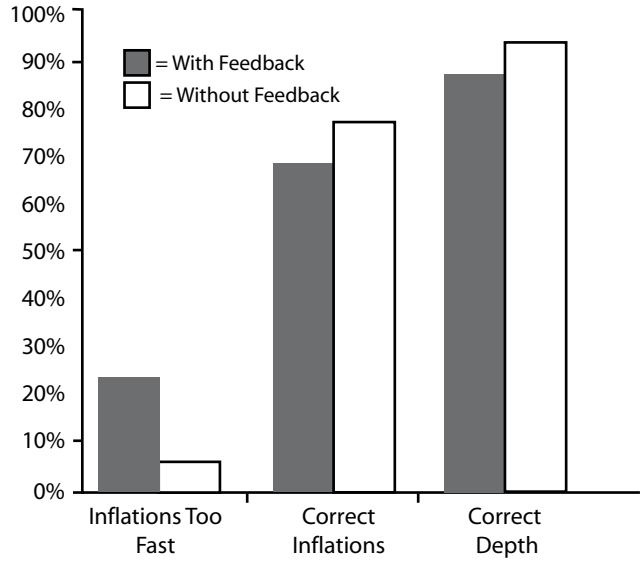


Fig2: Improved Retention w/ Feedback



For group 2 (Figure 2), with feedback in the 1st 3-minute round of CPR, the percentage of correct inflations and percentage of correct chest compression depth all improved during the first 3 minute CPR with feedback. In the second period, without feedback, there was no significant change in correct inflations. However, there was a deterioration tendency between the first and second period, and the percentage of correct compressions did not change during this period.

Conclusion: Feedback can (almost immediately) improve the basic CPR skills performance of paramedic students. In addition, when students begin with feedback, they attain a high level of performance and maintain that high level even when feedback is taken away.