EFFICACY OF A FULLY COMPUTERISED SELF-LEARNING STATION FOR INITIAL ACQUISITION OF BASIC LIFE SUPPORT SKILLS: A RANDOMISED NON-INFERIORITY TRIAL.

Mpotos N¹, Lemoyne S¹, Calle P¹, Deschepper E², Valcke M³, Monsieurs KG¹

¹Emergency Department, Ghent University Hospital, De Pintelaan 185, B-9000 Ghent, Belgium

²Biostatistics Unit, Ghent University, De Pintelaan 185, B-9000 Ghent, Belgium

³Department of Educational Studies, Ghent University, H. Dunantlaan 2, B-9000 Ghent, Belgium

Introduction

Current computerised self-learning (SL) stations for Basic Life Support (BLS) are an alternative to instructor-led (IL) refresher training but are not intended for initial skill acquisition. We developed a SL station for initial skill acquisition and evaluated its efficacy.

Methods

In a non-inferiority trial 120 pharmacy students were randomised into IL training (max six students) or training in a SL station. In the IL group, instructors demonstrated the skills and provided feedback. The SL group combined the use of an abbreviated Mini AnneTM video to acquire the skills and the Resusci Anne Skills StationTM software (both Laerdal, Norway) with voice feedback for further refinement. Differences in mean compression depth and rate, ventilation volume and proportion successful students (depth 40-50 mm, ventilation volume 400-1000 ml) were calculated and adjusted for gender, length, weight and previous BLS course using general linear and

logistic regression models. Non-inferiority margins were five mm for depth, 200 ml for volume, 20/minute for rate and a 10% difference for proportions.

Results

One hundred and seventeen participants were tested seven weeks after initial training (three drop-outs). Mean depth was 44 mm (IL) and 45 mm (SL) ($P=0.8$; mean diff. 90% CI -2.9 to 2.1), mean rate was 100/min (IL) and 98/min (SL) ($P=0.23$; mean diff. 90% CI -1 to 7), demonstrating non-inferiority. Mean ventilation volume was 486 ml (IL) and 729 ml (SL) ($P=0.001$). Proportion of successful students was 28/56 (IL) and 33/61 (SL) for depth, and 29/56 (IL) and 36/61 (SL) for ventilation, but non-inferiority tests for differences between these proportions were inconclusive.

Conclusions

Based on the differences between mean compression depth, rate and ventilation volume, skills acquired using a SL station with video-based BLS introduction were not inferior to IL training. Further studies powered for differences between proportions are needed.