Rapid Cycle Deliberate Practice Improves Retention of Pediatric Resuscitation Skills Compared with Post-Simulation Debriefing

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Introduction

Post-Simulation Debriefing (PSD)

• Allows learners to complete an uninterrupted clinical scenario
• Single period of debriefing after scenario

Rapid Cycle Deliberate Practice (RCDP)

• Micro-debriefing
• Alternates between action and brief feedback
• Focuses more on actions than frames
• Graded difficulty of scenario → mastery learning

Despite having multiple video-reviewers, inter-rater reliability had excellent agreement (0.88).

Results

• Randomized over 5x the odds of achieving defibrillation vs. PSD (OR=5.57, 95% CI 1.13-27.52, p=0.04) (Table 2)
• Time-to-event analysis: percentages to defibrillation increased at a higher rate in RCDP than PSD(Fig. 2)
• Time to compressions was less in the RCDP group, but only approached significance (p-value =0.07) due to a lack of power (0.46) (Table 3)
• RCDP group had over 5x the odds of achieving defibrillation vs. PSD (OR=5.57, 95% CI 1.13-27.52, p=0.04) (Table 2)
• Future studies should focus on best applications for rapid cycle deliberate practice.

Methods

• Population: Pediatric and EM residents returning for their second PEM rotation after a variable washout period (Figure 1)
• Single-center, Cluster-randomized trial
• Control: PSD simulation
• Intervention: RCDP simulation
• Outcomes → Primary: time to defibrillation → Secondary: time to chest compressions, team leader performance using a validated resident team leader evaluation (RTLE) tool

Conclusions

• Residents trained using RCDP were more likely to achieve defibrillation faster (OR 5.57). Initiate chest compressions earlier, and perform more effectively as team leader than those trained using PSD methods.
• This study suggests that RCDP may improve retention of pediatric resuscitation skills compared to PSD.
• Future studies should focus on best applications for RCDP with attention to knowledge and skill decay.

References

3. Suarez E, Zaschke R, Jobe J, et al. Effectiveness of educational tools between these two modalities

Figure 1. Flow of study

Figure 2: Kaplan-Meier Curve of Time Elapsed from Onset of pulseless VT to Defibrillation

Table 1. Decker Demographics (N=32)

Table 2. Odds of achieving shock by study group

Table 3. Comparison of Study Groups and Secondary Outcomes

Contact Information

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