From Fear to Confidence: The Impact of Structured ECMO Specialist Training on Self-Perceived Safety and Clinical Confidence

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Background: Extracorporeal membrane oxygenation (ECMO) management demands rapid decision-making, technical expertise, and high emotional resilience in complex clinical scenarios. Lack of confidence and perceived insecurity when managing ECMO patients may increase professional stress and negatively impact performance. We hypothesized that a structured ECMO specialist training program combining theoretical and high-fidelity simulation-based education would significantly improve healthcare professionals' self-perceived safety and confidence. Methods: A pre- and post-training self-perception survey was applied to assess perceived safety, confidence, and readiness across nine ECMO management domains. The program included didactic content, hands-on simulation with structured bundle assessment and debriefing, and video-based step-by-step instruction. Participants included nurses, physical therapists, physicians, perfusionists, and nursing technicians. Results: Ninety participants completed the pre-training survey and 99 the post-training survey. Mean self-perceived competency score increased from 3.2 to 8.6 out of 9 points, representing an overall improvement from 36% to 96%, a 169% gain. Pre-training, competency was critically low across most domains, including hand crank management (26.7%), circuit air removal (26.7%), and cannula whip identification (25.6%). Following training, all nine domains exceeded 87%, with hand crank reaching 100% and six domains surpassing 94%. Gains were consistent across all professional categories and baseline performance levels.

CON EL RESPALDO

Conclusions: Structured ECMO specialist training integrating simulation and technical education produced near-universal gains in self-perceived safety and confidence. Strengthening individual competency and preparedness may reduce professional stress and optimize performance in high-acuity ECMO environments.

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