Assessing Resident Confidence in Placing a Central Venous Catheter Before and After a Simulation-Based Training Course

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Introduction: Central venous catheters (CVCs) are an advantageous device used to deliver necessary treatment for patients with extended hospital stays. The ability to properly place a central line is an essential skill for resident trainees and physicians to be able to successfully complete. The goal of our study was to assess the confidence of residents in placing a central line before and after a simulation-based training.

Methods: This study was conducted with residents and fellows at the University of Toledo Medical Center across five different specialties in June of 2021. A voluntary survey was administered before and after a central line simulation-based training, measuring confidence through a series of 16 Likert scale questions with the answer options of: 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree. Results: Sixteen residents completed both the pre- and post-survey and 45 total residents completed the training, yielding a 35.6% response rate. Of all 16 Likert scale statements proposed on both the pre- and post-surveys, mean confidence increased significantly ($P<0.05$) across all statements. This includes confidence in the objectives of conducting, discussing, and teaching the procedure.

Conclusion: Central venous catheter simulation-based training significantly improved resident confidence in procedural proficiency. Simulation-based training is an effective method for teaching procedural skills and education to trainees, thus ultimately improving patient care.

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