

EDITOR'S CORNER

The Importance of Simulation Training in Modern Medical Education

[Matthew Finn, MD](#)Keywords [Simulation Training](#)

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Hello and welcome to the August 2024 issue of *Vascular Disease Management*. This month we are discussing a paper by Soliman et al titled [“The Impact of Early Vascular Simulation Training in Medical School Education.”](#)

The introduction to the manuscript describes the highly competitive nature of vascular training, particularly through the 5-year integrated surgical programs. For individuals with an interest in pursuing an integrated program, early interest allows applicants time to build their CVs to match or outperform the average academic output of other applicants. However, the ability to choose a career path early during medical school is challenging, as in-depth clinical exposure does not classically occur until the third year of clinical rotations.

The authors ask if exposure to specific medical fields may aid them in discovering where their interest and natural talents may lie at an earlier stage of training, providing them time to develop competitive residency applications. In response, several options are offered, such as providing specific preclinical rotations, creating shadowing opportunities, opening electives early in training, and exposing specialties via simulation. Via survey methods, this paper inquires

whether in-depth simulation training enhances surgical skill, improves readiness for clinical rotations, and boosts early interest in surgical fields.

The study was performed using a quasi-experimental design in which data is collected and compared before vs after an intervention with no control group. Students were exposed to a 1- to 2-day immersive curriculum of lectures followed by simulator time performing endovascular and open operations such as open aortic aneurysm repair, carotid endarterectomy, and open femoral bypass. Students were surveyed before and after the program, assessing their confidence and knowledge of the field using a 5-point Likert scale. Respondents reporting Likert scale responses of 1 or 2, defined as little to no knowledge or confidence with a subject, were tabulated and compared before and after the program.

Thirty-four students were included, the majority of which were in their third year of medical school. The study **Figure 3**, reproduced below, shows important improvement in overall knowledge and comfort level in the various tested parameters after the intervention, with a marked decrease in the number of students reporting Likert 1 or 2 scores (little or no knowledge/comfort with a topic) after the intervention.

Figure 3: Knowledge in Vascular Topics and Surgeries

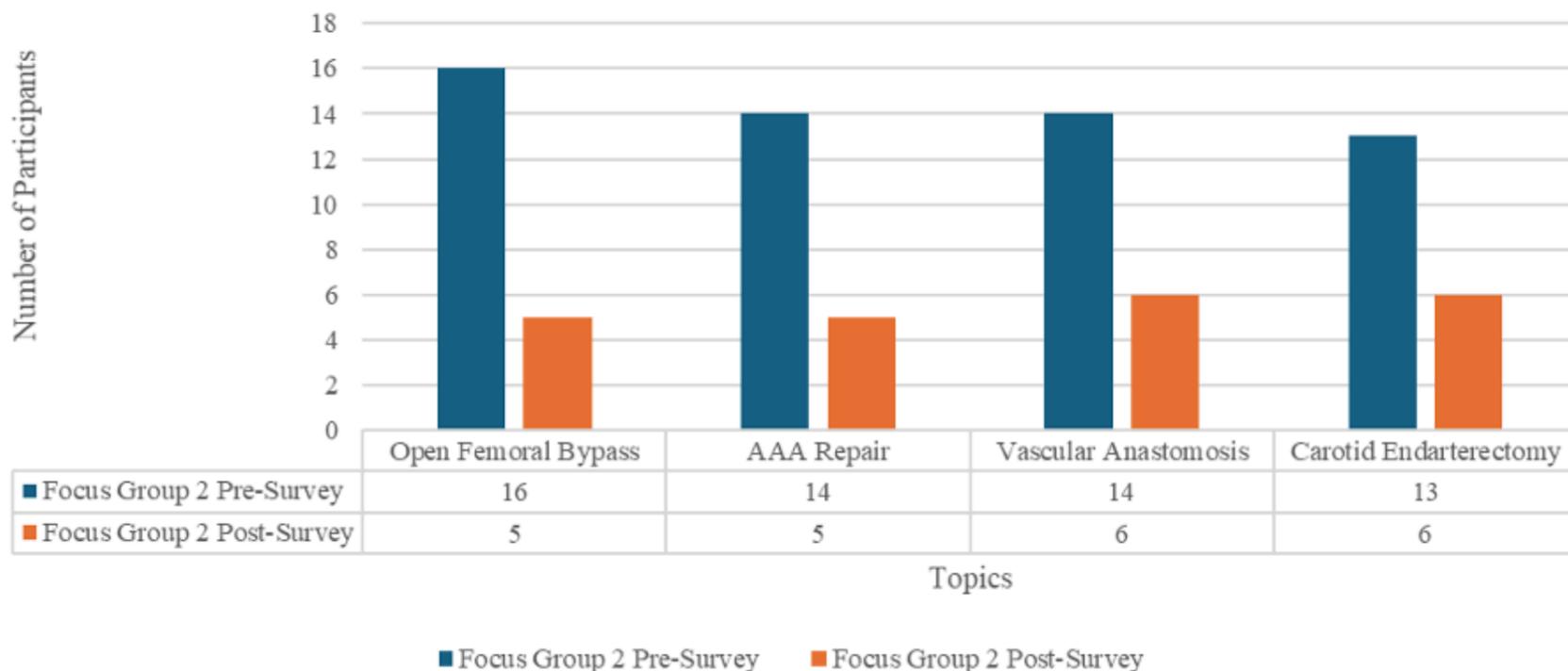


Figure 3. Focus Group 2's Pre- and Post-Experience Knowledge. Number of students who rated their knowledge as a 1 or 2 using the Likert scale in vascular topics and surgeries before and after the simulation. Abbreviation: AAA, abdominal aortic aneurysm.

This report demonstrates the importance of simulator training in modern medical education. While it may seem intuitive that surgeons and interventionists would practice on simulators, cadaveric, or animal models prior to operating on human patients, the availability of these practice environments are often limited. I believe the lay public would expect physician surgeons to have extensive practice in simulator-like environments and may be shocked to learn how limited these types of training experiences are in medical education. Furthermore, the gamification of learning through simulators may provide the opportunity for operators to advance more quickly as well as provide a means for objective assessment of knowledge and skill.

Soliman et al present another reason for utilizing simulation that I had not previously considered: it can allow medical students in-depth exposure to a field in a safe, pressure-free environment that can occur much earlier in training. This may allow in-depth exploration of various medical specialties aiding in career decision-making.

In conclusion, simulation is becoming a pivotal part of medical training. Studies such as this help document its utility and provide the impetus for further investments into simulation programs. ■

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Click here to watch a video of Dr. Finn's editorial.