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Early Introduction of Informal Surgical Skills Effect on Medical Student Knowledge, Comfort, and Attitudes toward Surgical Specialties

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Abstract

Background:

Implicit learning of the “hidden curriculum” of surgery occurs from medical students’ first exposure to surgery onward. Most medical students begin medical school without prior experience in surgery, meaning their introduction to surgery may not occur until formal clerkship experiences. Those with no previous experience, and especially those who may be underrepresented in surgical specialties, like women, may be at a disadvantage during surgical clerkships due to lack of early exposure to the informal curriculum. Lack of knowledge about surgery may result in underrepresented students being less likely to choose surgical careers, increase surgical staff burden, and increase hospital waste due to contamination from improper sterile technique.

Objective:

To determine the impact of early surgical education on first- and second-year women medical students on knowledge, comfort, and attitudes.

Methods

A basic surgical education course (SEC) was developed by the primary investigators and piloted at Oregon Health and Science University (OHSU) for first- and second-year women-identified medical student members of OHSU's chapter of the Association of Women Surgeons to determine how early exposure to various aspects of the informal surgical curriculum may influence students' decision-making regarding their choice of specialty, competence with basic skills like surgical scrubbing and navigation of the operating room (OR) status board, and confidence during future surgical clerkships. Students participated in a one-hour interactive surgical scrub workshop, a one-hour OR tour, and approximately three hours total of observation of two separate surgeries. Interested first- and second-year students self-registered for the SEC and completed surveys assessing knowledge and attitudes toward surgical careers before and after participating.

Results

17 women-identified students completed the SEC. 79% were first-year medical students, and 29% had no previous operating room experience while 42% had previously observed at least one surgery. Prior to participating in SEC, 29.17% of participants correctly identified proper surgical scrub technique and 41.67% correctly differentiated a nurse from a technology representative. Post-SEC, these percentages increased to 76.47% and 100%, respectively.

Prior to SEC, 100% of participants reported that they would be uncomfortable if asked to assist in a surgical case. After participating in SEC, 56% reported they would be extremely comfortable assisting. On a scale of 1 through 5, students ranked ease of working with surgeons as an average of 2.71, which increased to 3.41 post-SEC. Finally, students ranked ease of ability to gain surgical experience prior to formal clerkships as 2.54 on average. Although not formally measured, 60% of students remarked on their end-of-course feedback that SEC gave them the confidence and opportunities to pursue mentoring relationships with surgical faculty that remain ongoing.

Conclusions

Surgical basics education via structured courses like SEC are effective in teaching both formal and informal skills required for successful performance in surgical clerkships. At most institutions, informal skills are taught organically during surgical clerkships and through mentoring relationships with faculty. Given the informal nature of this education, students early in their training may not actively seek out mentorship out of concern they are not well-suited for a surgical career or simply because they are unaware of the importance of mentorship for professional development and future opportunities in surgery. SEC provided community, mentorship, and early experiences in surgery critical to establishing interest in a surgical career, confidence to perform well on surgical clerkships, and professional development opportunities vital to success for any medical specialty.

Learning Objectives

1. Appreciate the duration and rigor of training required for surgical careers.
2. Increase awareness of current inequalities in gender representation in surgical subspecialties.
3. Early intervention through structured curriculum teaching surgical basics is effective in increasing confidence, competence, and community for first- and second-year medical students.
4. Understand the components of the surgical “hidden curriculum” and how knowledge within this curriculum is typically taught.