Published in final edited form as:

Crit Care Med. 2017 December ; 45(12): e1300–e1301. doi:10.1097/CCM.0000000000002686.

Leadership in medical emergencies is “highly teachable”

Rebecca E. Sell, MD¹, Angela Meier, MD, PhD², Radhika Sundararajan, MD, PhD³, and
Jeremy R. Beitler, MD, MPH¹

¹Division of Pulmonary and Critical Care Medicine, University of California, San Diego

²Department of Anesthesiology, University of California, San Diego

³Department of Emergency Medicine, University of California, San Diego

Keywords

cardiac arrest; cardiopulmonary resuscitation; gender bias; simulation training; medical education

We appreciate the efforts of Amacher et al. (1) to identify opportunities for performance improvement training in cardiopulmonary resuscitation. However, we find their conclusion that women are inferior code leaders is highly flawed and exceptionally inflammatory.

Several limitations in their study warrant note. Their methods do not indicate the gender of the “trained observer,” nor whether transcripts were gender-blind, which could have been achieved via re-coding of pronouns and gender-specific names. Prior studies in emergency settings found across-the-board gender bias favoring men in assessing medical trainee competencies (2).

Additionally, their study was presented as a “learning situation, where the students could train and improve their skills,” which may produce different behaviors than real-world arrests. Female code leaders have reported feeling obligated to suspend gender norms to display expected levels of assertiveness during real-world cardiopulmonary arrest (3), a calculation that differs considerably in mock-code teaching simulations. Because male medical students on average may exhibit overconfidence relative to fund of knowledge more often than females (4), assertiveness as code leader should be considered in context with appropriateness of code interventions.

The authors note that “leadership in such situations is highly teachable” but seemingly equate assertiveness with leadership. Prior work has shown male and female medical students have a similar degree of assertiveness before starting medical school, and yet just seven months into training women report significantly less assertiveness than men (5). So, one might ask, what are medical schools teaching students?

CORRESPONDENCE TO: Rebecca E. Sell, MD, University of California, San Diego, Division of Pulmonary and Critical Care Medicine, 9300 Campus Point Drive, #7381, La Jolla, CA 92037, USA, rsell@ucsd.edu.

Copyright form disclosure: The remaining authors have disclosed that they do not have any potential conflicts of interest.

Amacher et al. argue that studying “medical students with the same professional experience [prevents] a potential bias by differing states of knowledge.” Yet, existing literature suggests “professional experience” among medical students differs considerably by gender. In a survey of students at 14 US medical schools, four in five female medical students reported personally experiencing gender discrimination or sexual harassment (6). This “professional experience” continues as women join the medical faculty, where they are six times as likely as their male colleagues to experience gender bias and sexual harassment (7). These adverse experiences facing female students and faculty, a common part of their “professional experience,” may negatively reinforce expected gender behavior in simulated clinical scenarios.

Finally, the study by Amacher et al. is ripe for misinterpretation. This *simulation* study of *students* does not reflect the experience of practicing physicians on cardiopulmonary arrest teams. This fact is unclear from the article’s title, which lends itself to problematic misrepresentation of results. For example, the associated press release from the authors’ university led with the headline “Women perform worse in CPR” (Twitter handle @UniBasel_en), a claim not substantiated by the data presented in this study.

Based on existing literature, several constructive explanations exist for why female medical students might behave differently in mock-code simulations presented as learning exercises, and why these findings may not generalize to real-world resuscitation. Recommendations stemming from such research should advocate educating all trainees and faculty, irrespective of gender, to improve awareness of and identify strategies to overcome behavioral tendencies, bias, and discrimination in resuscitation training and medical education more broadly.

Acknowledgments

FUNDING

Dr. Sundararajan’s research is supported by NIH K23MH111409. Dr. Beitler’s research is supported by NIH K23 HL133489.

References

1. Amacher SA, Schumacher C, Legeret C, et al. Influence of gender on the performance of cardiopulmonary rescue teams: a randomized, prospective simulator study. *Crit Care Med*. 2017; 45:1184–1191. [PubMed: 28622215]
2. Dayal A, O’Connor DM, Qadri U, et al. Comparison of male vs female resident milestone evaluations by faculty during emergency medicine residency training. *JAMA Intern Med*. 2017; 177:651–657. [PubMed: 28264090]
3. Kolehmainen C, Brennan M, Filut A, et al. Afraid of being “witchy with a ‘b’”: a qualitative study of how gender influences residents’ experiences leading cardiopulmonary resuscitation. *Acad Med*. 2014; 89:1276–1281. [PubMed: 24979289]
4. Theobald J, Gaglani S, Haynes MR. The association between confidence and accuracy among users of a mobile web platform for medical education. *Ann Intern Med*. 2015; 162:395–396. [PubMed: 25732296]
5. Richman JA, Flaherty JA. Gender differences in medical student distress: contributions of prior socialization and current role-related stress. *Soc Sci Med*. 1990; 30:777–787. [PubMed: 2315746]

6. Nora LM, McLaughlin MA, Fosson SE, et al. Gender discrimination and sexual harassment in medical education: perspectives gained by a 14-school study. *Acad Med.* 2002; 77:1226–1234. [PubMed: 12480632]
7. Jagsi R, Griffith KA, Jones R, et al. Sexual harassment and discrimination experiences of academic medical faculty. *JAMA.* 2016; 315:2120–2121. [PubMed: 27187307]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript