

Gender Representation in Medical Emergency Training Videos

Perpetuating Bias

Mindy Ju^{1*}, Caroline Andler^{2*}, Margaret Robinson¹, and Sandrijn M. van Schaik¹

¹Division of Pediatric Critical Care Medicine, University of California San Francisco, San Francisco, California and ²Division of Pediatric Emergency Medicine and Transport Medicine, Children's Hospital Los Angeles, Los Angeles, California

Despite the increasing number of women in medicine, gender disparities persist in health care, specifically in leadership. Women now represent almost half of medical school enrollees but represent only 16% of all department chairs (1). Female representation in other areas of leadership, such as editorial board membership and rank attainment in academic institutions, also lags behind that of male counterparts (2).

There is growing recognition that gender bias can hamper female physicians in their academic careers. A recent survey of 1,066 physician-scientists found that 70% of female physicians perceived gender bias in the academic work environment compared with 22% of male physicians (3). Moreover, there is evidence that women and men are evaluated differently (4–6), including in resuscitation scenarios (7).

The way we train healthcare professionals likely influences the development and perpetuation of the gender bias in health care. Currently, medical emergency team

training videos are one of the ways trainees receive formal education on leadership skills. These medical education practices likely affect how a trainee learns to conceptualize a “good leader” and can potentially reinforce gender biases regarding leadership in medicine. The purpose of our study was to examine how commonly used medical emergency training videos portray healthcare professionals in terms of gender and role.

METHODS

We conducted a content analysis of commonly used medical emergency team training videos for healthcare professionals. We reviewed videos from two sources: 1) Advanced Cardiovascular Life Support (ACLS; 2015) (8) and 2) Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS; 2013) training materials (9). We selected these sources because they are commonly used tools to teach healthcare professionals about teamwork and team leadership in the

(Received in original form August 28, 2020; accepted in final form November 11, 2020)

This article is open access and distributed under the terms of the Creative Commons Attribution Non-Commercial No Derivatives License 4.0 (<https://creativecommons.org/licenses/by-nc-nd/4.0/>). For commercial usage and reprints, please contact Diane Gern (dgern@thoracic.org).

*Co-first authors.

Correspondence and requests for reprints should be addressed to Mindy Ju, M.D., Division of Pediatric Critical Care Medicine, University of California San Francisco, 550 16th Street, 5th floor, Box 0106, San Francisco, CA 94158. E-mail: mindy.ju@ucsf.edu.

ATS Scholar Vol 2, Iss 2, pp 168–171, 2021

Copyright © 2020 by the American Thoracic Society

DOI: 10.34197/ats-scholar.2020-0122BR

United States. Two authors analyzed the videos to identify each actor's gender and role within the scenario. We defined medical roles on the basis of visible titles on badges, on-screen identification, or language indicating the actor's role. We identified actors in plain clothes as patients and family members, whom we did not include in the analysis. If an actor was not in plain clothes, but the role was not clearly identified, we labeled them as "other." All authors met to compare data and reached consensus on the gender and role identification through repeated review of videos. We calculated χ^2 to compare proportions. We used IBM SPSS Statistics for Windows (version 24; IBM Corp.) for statistical analysis.

RESULTS

We reviewed all 19 available clinical training videos from ACLS (10 videos) and TeamSTEPPS (9 videos). In total, these videos lasted 136 minutes (ACLS, 96 min; TeamSTEPPS, 40 min). We identified a total of 85 actors playing health professional roles: 50 women and 35 men. We identified 18 out of 85 (21%) actors as physicians. Of these, 5 (28%) were female and 13 (72%) were men (Figure 1). We found a statistically significant difference between the proportion of women and the proportion of men who portrayed physicians: 5 out of 50 (10%) women versus

13 out of 35 (37%) men ($\chi^2 = 9.087$; $P = 0.003$). These proportions were similar across both sets of videos.

DISCUSSION

In our review of commonly used medical emergency training videos, we found that a disproportionate number of men were depicted in the physician-leader role. Considering the focus of these videos, this reinforces the stereotype that male physicians are best positioned to be the leaders of healthcare teams, thereby perpetuating implicit biases about gender and leadership.

Some authors have posited that the persistent gender disparity in medicine may be due to a "pipeline" problem (fewer women entered medical school in the past) and differences between men and women regarding career choices concerning "work-life balance" (2). Others believe gender disparity is due to inherent differences between the genders. A recent study found that female medical students displayed inferior performance in cardiopulmonary resuscitation. The authors concluded that this could be partially attributed to "inferior female leadership" (10), implying that innate differences between women and men led to poorer performance by women. Although other studies have refuted these findings among practicing physicians (11),

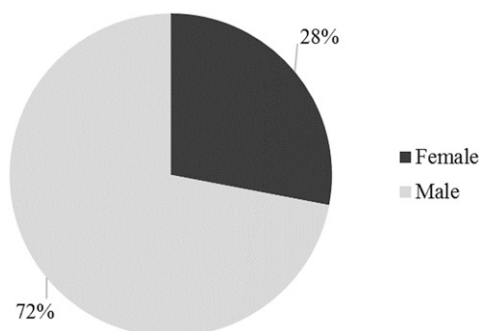


Figure 1. Percentage of physicians by gender across team training videos.

we propose an alternative explanation for gender disparity in medicine: social-identity threat.

Social-identity threat is experienced when an individual believes they may be treated negatively or devalued in a setting because of a particular social identity they hold (12). Social-identity threat can lead to stereotype threat, in which a member of a specific group characterized by a negative stereotype underperforms in situations in which that stereotype and their group membership are emphasized (12). For example, a woman leading a resuscitation team may believe that she will not be seen as a credible leader because of the social identity of female physicians as not agentic or decisive enough to lead. This can then lead to poor performance as a leader, essentially creating a self-fulfilling prophecy.

The degree of social-identity threat an individual experiences is determined by the situational cues in the environment. Studies have shown that situational cues, such as unbalanced gender representation in

promotional videos, can lead to increased social-identity threat in women compared with men (13). Thus, the unbalanced gender representation in the videos examined in our study may have a similar effect and lead women to underperform. Per their website, the American Heart Association globally trains over 2 million people a year, providing evidence for the widespread use of these training videos. This ubiquitous exposure likely influences how women are viewed as leaders in health care.

As we are training an increasing number of female physicians, we should consider the impact of our educational practices on the development of gender bias. These biases may impede women's ability to be seen—and to see themselves—as leaders in medicine. If we want to change the gendered stereotypes that exist in medicine, we need to ensure that female representation in healthcare education materials mirrors what we hope to see in actuality.

Author disclosures are available with the text of this article at www.atsjournals.org.

REFERENCES

1. Association of American Medical Colleges. The state of women in academic medicine: the pipeline and pathways to leadership, 2015–2016. Washington, DC: Association of American Medical Colleges; 2016 [accessed 2018 Nov 10]. Available from: <https://www.aamc.org/members/gwims/statistics/>.
2. Metaxa V. Is this (still) a man's world? *Crit Care* 2013;17:112.
3. Jagsi R, Griffith KA, Jones R, Perumalswami CR, Ubel P, Stewart A. Sexual harassment and discrimination experiences of academic medical faculty. *JAMA* 2016;315:2120–2121.
4. Kaatz A, Lee Y-G, Potvien A, Magua W, Filut A, Bhattacharya A, *et al*. Analysis of National Institutes of Health R01 application critiques, impact, and criteria scores: does the sex of the principal investigator make a difference? *Acad Med* 2016;91:1080–1088.
5. Dayal A, O'Connor DM, Qadri U, Arora VM. Comparison of male vs female resident milestone evaluations by faculty during emergency medicine residency training. *JAMA Intern Med* 2017;177:651–657.

6. Gerull KM, Loe M, Seiler K, McAllister J, Salles A. Assessing gender bias in qualitative evaluations of surgical residents. *Am J Surg* 2019;217:306–313.
7. Ju M, van Schaik SM. Effect of professional background and gender on residents' perceptions of leadership. *Acad Med* 2019;94:S42–S47.
8. American Heart Association. Advanced cardiovascular life support [DVD]. Dallas, TX: American Heart Association; 2015.
9. Agency for Healthcare Research and Quality. TeamSTEPPS 2.0 video training tools. Rockville, MD: Agency for Healthcare Research and Quality; 2013 [updated 2014 Mar; accessed 2018 Jul]. Available from: <http://www.ahrq.gov/teamsteps/instructor/videos/index.html>.
10. Amacher SA, Schumacher C, Legeret C, Tschan F, Semmer NK, Marsch S, *et al*. Influence of gender on the performance of cardiopulmonary rescue teams: a randomized, prospective simulator study. *Crit Care Med* 2017;45:1184–1191.
11. Meier A, Yang J, Liu J, Beitler JR, Tu XM, Owens RL, *et al*. Female physician leadership during cardiopulmonary resuscitation is associated with improved patient outcomes. *Crit Care Med* 2019;47:e8–e13.
12. Burgess DJ, Joseph A, van Ryn M, Carnes M. Does stereotype threat affect women in academic medicine? *Acad Med* 2012;87:506–512.
13. Murphy MC, Steele CM, Gross JJ. Signaling threat: how situational cues affect women in math, science, and engineering settings. *Psychol Sci* 2007;18:879–885.