535 | Perspectives on Gender Impact on Research in Academic Emergency Medicine in Canada: A Mixed-Methods Study

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Background and Objectives: Gender bias continues to impact clinical and academic careers, and SAEM is committed to advancing gender equity in emergency medicine (EM). However, data on the influence of gender on career trajectories of pediatric emergency medicine (PEM) physicians remain limited. This study aimed to identify gender influences on research productivity and leadership among PEM physicians.
Methods: We conducted an explanatory sequential mixed-methods study consisting of a cross-sectional survey followed by qualitative interviews. A 25-item survey was administered to 113 physician members of the Pediatric Emergency Research Canada (PERC) network and analyzed using descriptive statistics. Semi-structured qualitative interviews were conducted to provide context and further explain survey findings. Interviews were transcribed, blinded, and iteratively coded by three independent raters.
Results: The survey response rate was 73%, yielding 78 complete surveys, including 46 women or gender-diverse participants (59%) and 32 men (41%), with a mean of 16.5 years in research. 58% of participants strongly agreed that gender inequity exists in PEM research, with women and gender diverse participants significantly more likely to agree than men (OR: 8.56; 95% CI: 2.92–25.04). All genders identified that multiple factors can impact research productivity, including age and parental leave. We conducted 1 focus group ($n = 5$) and 3 interviews with women. Findings affirmed the survey results. Two major gendered challenges for PERC women emerged: (1) opportunity imbalance, such as barriers to accessing resources, and (2) imbalance in family and professional responsibilities grounded in differing societal expectations for women. These challenges were recognized by all genders. Participants proposed three equity-focused solutions: (1) increase institutional transparency in allocation of resources and leadership application procedures, (2) ensure diverse mentoring and leadership opportunities, and (3) revise evaluation standards to create equity-oriented approaches to research productivity & recognition.
Conclusion: This study identified barriers to gender equity in PERC and proposes several solutions, with shared motivation across genders to advance change. If implemented, the recommendations presented may create a more equitable environment in PERC and advance SAEM's commitment to closing the gender gap.

536 | Implicit Bias in Diagnostic Testing for Pulmonary Embolism: The PERCEIVE-PE Study

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Background and Objectives: Although evidence-based algorithms guide testing once pulmonary embolism (PE) is suspected, far less is known about how clinicians arrive at the decision to suspect PE in the first place. This gap is critical since PE remains frequently misdiagnosed. We hypothesized that PE testing is influenced by implicit biases regarding patient sex and race.
Methods: We designed an electronic survey that described the history and examination of 7 fictional adult ED patients with chest symptoms. Using a $2 \times 2 \times 2$ factorial design, participants randomly received 1 of 8 versions of each case that differed by sex (female/male), race (Black/White), and a case-specific clinical factor. Each case had 2 outcomes. Question 1 (Q1) asked participants to rate their concern for 5 conditions (including PE) on a 0-to-100 visual analog scale (VAS). In Question 2 (Q2), participants chose tests they would order in each case; we used a binary outcome of whether PE tests (e.g., D-dimer or computed tomography) were ordered or not. Pilot testing by 16 ED physicians showed good test-retest validity (Pearson's $r = 0.84$) and criterion validity (higher VAS score in cases with higher Wells scores). We used linear mixed-effects regression (Q1) and logistic mixed-effects regression (Q2) to examine each factor, with fixed effects for case (sex; race; case order) and participant traits (sex; race; age; clinical role). Crossed random intercepts for participants and cases were used to account for repeated measures.
Results: We invited 2011 ED physicians and advanced practice providers via in-person appeals at a conference and email invitations to staff at 37 EDs in 12 health systems. The study had a 43% response rate ($n = 863$) and 78% completion rate ($n = 673$), including participants from 27 US states and Canada. Cases with female patients had a higher reported PE risk ($\beta = 5$, 95% confidence interval [CI] [3.2, 6.8], $p < 0.001$) and higher odds of testing (odds ratio [OR] = 1.6, 95% CI [1.4, 2], $p < 0.001$) compared with males. Patient race was not significantly associated with perceived PE risk ($\beta = -0.7$, 95% CI [−2.5, 1.1], $p = 0.43$) or odds of PE testing (OR = 0.9, 95% CI [0.8, 1.1], $p = 0.48$).
Conclusion: Implicit sex bias, but not racial bias, appears to influence PE diagnostic evaluation. Since females have a lower incidence of PE than males, this heuristic could contribute to low-value testing (via over-testing) in females and diagnostic failures (via under-testing) in males.