25 Gender Disparities in Emergency Medicine Faculty Evaluations by Residents

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Background: Faculty evaluations are needed for professional development. Multiple studies have shown gender implicit biases in these processes across multiple specialties, affecting advancement. No studies to date have examined Emergency Medicine (EM) faculty evaluations for gender-based differences.

Objectives: In this study, we sought to determine if faculty evaluations in MedHub by residents had any gender-based differences across all categories including teaching, availability, patient care, systems-based practice, and overall performance.

Methods: We performed a retrospective, cross-sectional study at a single, 3-year EM training program in a high-volume, urban, academic medical center. The study was approved by the Institutional Review Board with waiver of written informed consent. The study examined 567 evaluations of 30 residency core faculty members by 56 EM residents between July 1, 2019 to July 1, 2021. The population was defined as EM core faculty members. The primary outcome was faculty rating on a 5-level scale across 5 domains: teaching, availability, patient care and professionalism, systems-based practice, and overall rating. The main predictor was the gender of the faculty member being evaluated. We used logistic regression to measure association between faculty gender and rating score, dichotomized as low (score of 1-3) and high (score of 4-5).

Results: Female faculty scored lower than male faculty for every evaluation question, except "places the patient's interest first" for which there was no difference (p-value <0.05). When compared with males, females have 0.36 times the odds of being scored a 4 or 5 on their overall rating, on average.

Conclusions: Female faculty were more likely to score lower than males for nearly every evaluation question by residents, including overall performance. More studies are needed to understand the reasons for these differences and address any potential implicit biases.

Table 1. Frequency and percentage of female versus male faculty scoring 4 or 5 by category.

Category	Subcategory	Male		Female		Univariate OR	95%CI	p-value
		Freq	%	Freq	%			
Teaching	Exhibits enthusiasm and interest in teaching residents?	251	87.15	180	74.77	0.44	0.27-0.69	<0.05
	Willing to explain thought process behind workup/treatment/disposition decisions?	281	97.57	198	92.52	0.31	0.12-0.76	<0.05
	Asks questions in a non-threatening way?	242	84.03	157	73.36	0.52	0.34-0.81	<0.05
	Uses bedside teaching to demonstrate history-taking and physical exam skills?	239	82.99	157	73.36	0.56	0.37 0.87	<0.05
	Provides reference or other materials that stimulated me to read, research, and review pertinent topics?	252	87.5	149	69.63	0.33	0.21-0.52	<0.05
Availability	The faculty makes him or herself openly available for discussion, questions and consultations about various aspects of Emergency Medicine?	258	89.58	167	78.04	0.41	0.25-0.68	<0.05
	Encourages active housestaff participation?	282	90.97	170	79.44	0.38	0.23-0.65	<0.05
Patient Care	Places the patient's interests first?	285	92.01	187	87.38	0.6	0.33-1.08	0.087
	Treats each team member in a courteous and respectful manner?	259	89.93	161	75.23	0.34	0.21-0.56	<0.05
	Demonstrates a thorough understanding of Emergency Medicine including policies, procedures and patient care?	270	93.75	181	84.58	0.37	0.20-0.67	<0.05
Systems Based Practice	Provides useful feedback including constructive criticism to team members?	239	82.99	154	71.96	0.53	0.34-0.81	<0.05
	Balances service responsibilities and teaching functions?	252	87.5	164	76.64	0.47	0.29 0.75	<0.05
	Overall rating of attending performance.	258	88.89	159	74.3	0.36	0.22-0.58	<0.05

26 Hands On Training Lateral Canthotomy and Inferior Cantholysis Using Three-Dimensional Model

Andrew Crouch, Quinn Piibe, Terry Lefcourt

Background: Orbital compartment syndrome (OCS) is due to an acute rise of intraocular pressure and has a high risk of permanent vision loss if not treated promptly.

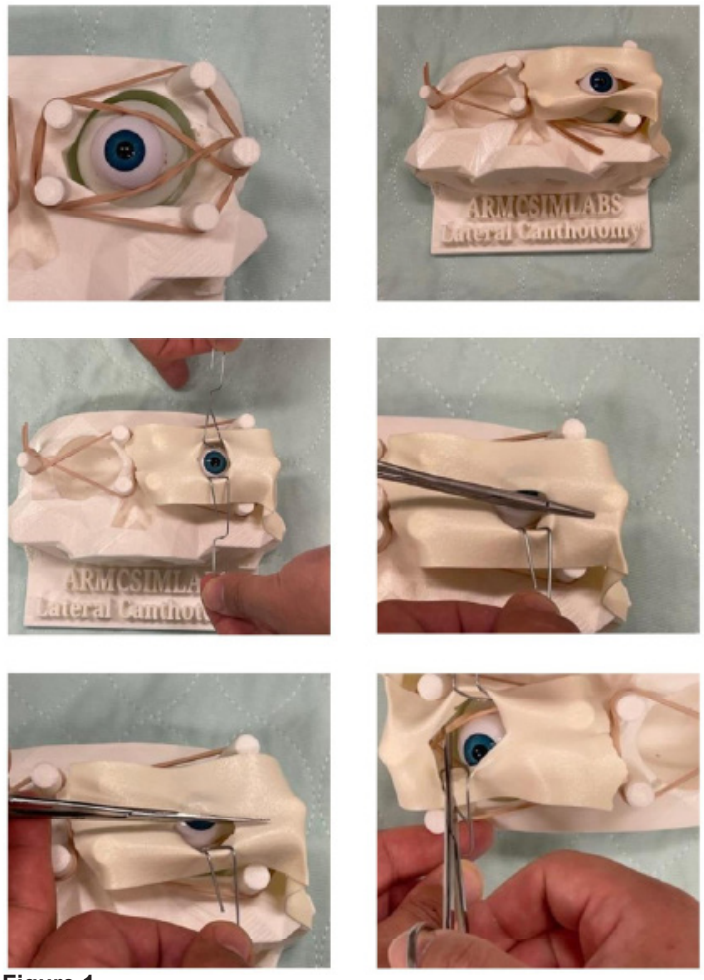

Figure 1.

Lateral Canthotomy and Inferior Cantholysis (LCIC), if performed within two hours of injury, leads to the highest chance of visual preservation. OCS has an incidence of 0.4%-0.65% in patients with orbital fractures. Due to the rare incidence, up to 90% of emergency physicians do not feel confident managing OCS. Simulated training is often the only way that providers gain procedural competency on rare procedures such as LCIC. Although some providers have access to cadaveric models, they are frequently not feasible or cost-effective. Previous low-cost trainers do not have feedback indicating successful cantholysis or have prolonged assembly time.

Objective: We propose a reusable, low-cost 3D printed device to train providers performing LCIC. We hypothesize that performing simulated LCIC will improve provider comfort in performing LCIC.

Methods: An observational prospective pre and post survey using a six point Likert scale from strongly agree to strongly disagree was conducted from March to September 2022 in the medical office building of a level II trauma center. A convenience sample of 32 medical students, residents, and physician assistant fellows viewed an instructional simulator set-up video, assembled the model themselves, and performed the simulated LCIC in addition to the surveys.

Results: 53% strongly agreed and 40% agreed the model was easy to set up and use while none disagreed. 78% agreed or strongly agreed they were comfortable performing LCIC following simulation compared to 43% prior to the simulation. 88% of those who had previously performed the procedure agreed or strongly agreed it was an adequate simulation of a true LCIC.

Conclusions: This model enhances provider comfort and skill at a low cost with rapid set up compared to high fidelity or cadaveric simulations.

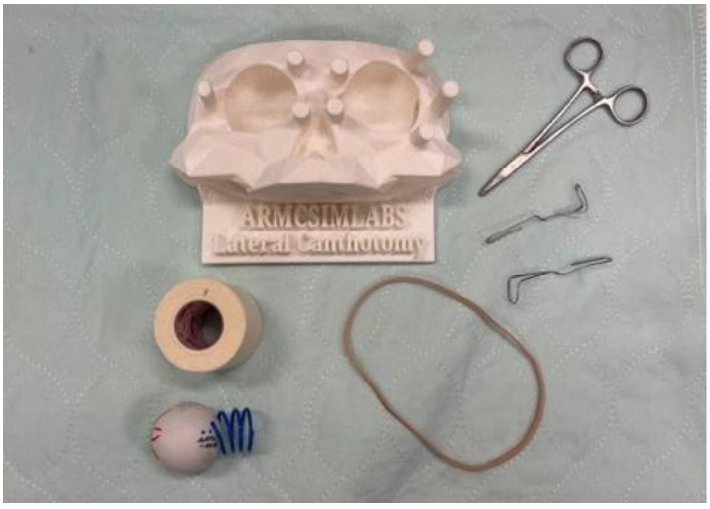

Figure.

27 Heart Rate and Variability as Indicators of Stress in Emergency Medicine Faculty and Residents During Simulation

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Background: The emergency department (ED) is a stressful clinical environment. Stress activates the sympathetic nervous system, which leads to physiologic responses such as increase in heart rate and heart rate variability. Studies have shown a relationship between heart rate variability (HRV) and cognitive performance. As a training tool, simulation attempts to mimic real world conditions including the reproduction of physiologic stress reactions in learners.

Objectives: We sought to assess physiologic indicators of resident stress and measure cognitive performance during a simulated clinical scenario.

Methods: A wearable device was used to measure heart rate, heart rate variability (HRV) and electrodermal activity (EDA) at two ACGME accredited emergency medicine (EM) residency programs during a simulation scenario. All residents at participating sites were eligible to participate. A standardized simulation protocol was utilized. Before and during the scenario, participants completed a cognitive test (Trail Making Test) and time for completion was noted. We calculated and reported descriptive statistics.

Results: Twenty-six residents participated including 7 PGY1s, 8 PGY2s, and 11 PGY3s. 11 (42.3%) participants were females, 15 (57.7%) male, and mean age was 30.7 years. The mean heart rate range was 59.11-117.46. Average percentage of time the heart rate was above 120, 130, and >160 were 2.475%, 0.88%, and 0.041%. HRV showed the mean standard deviation of the interbeat interval was 87 milliseconds(ms). EDA showed a trend of increasing throughout the scenario. Mean time for completion of cognitive test was 54.07 seconds before and 46.90 seconds during the simulation.

Conclusions: Simulation induced physiologic stress as evidenced by increased heart rates, HRV, and EDA. The cognitive test was completed in less time showing cognitive arousal during the simulation.

28 Impact of a Grading Committee for a Fourth-year Emergency Medicine Clerkship

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Background: As Step 1 has moved to pass/fail it has