ACS 2025 Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting

P-E-04

Research Abstracts

Does Implicit Bias in Raters Affect their Assessment of Skill in Surgery Videos?

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Introduction: Human decision-making is susceptible to error from cognitive and implicit biases. Error in assessments of surgical skill adversely impacts surgeons' lifelong learning. While there is evidence of implicit biases in various aspects of surgery, including evaluation of surgeons, it does not address implicit bias on video-based assessment (VBA) of surgical skill. Our objective was to determine how much implicit bias in raters alters VBA of surgical skill obtained through crowdsourcing.

Methods: We recruited crowd raters through Amazon MTurk. We asked qualified raters to watch a pair of 30-second videos of capsulorrhexis and select which video showed better skill. All raters completed the Implicit Association Test. We randomly allocated the raters to two groups. In the information group, we showed raters fictitious images and names of surgeons of White and Black race. In the control group, we gave raters no information about the operating surgeon. We used ratings from an expert surgeon to rank videos, which provided a rank distance between videos in each pair as a measure of difficulty in assessing skill. Our primary outcome was the relative parity between pairs of videos with discordance and concordance in the race of the operating surgeon. Our secondary outcome was parity conditional on rank distance.

Results: We allocated 19 and 18 raters to the information and control groups, respectively. The relative parity was 0.86 (95% confidence interval [CI], 0.68 to 1.09) overall, 0.78 (95% CI, 0.57 to 1.07) for pairs with small rank distance (pairs difficult to rate), and 1.00 (0.69 to 1.44) for pairs with large rank distance (pairs easy to rate).

Conclusions: Implicit bias for race affects raters' assessment of surgical skill by up to 14%. Our estimate has a large variance, the disparity was diminished when assessment was easy and magnified when assessment was difficult.