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## Clinical Improvement Interventions for Residents and Practicing Physicians: A Scoping Review of Coaching and Mentoring for Practice Improvement.

MacKenzie C, Chan TM, Mondoux S. Clinical Improvement Interventions for Residents and Practicing Physicians: A Scoping Review of Coaching and Mentoring for Practice Improvement. *AEM Educ Train*. 2019 Apr 24;3(4):353-364. PMID: 31637353

Coaching is becoming increasingly common in medical education. The authors sought to review the literature on coaching and mentoring in both graduate medical education and for practicing physicians. They found 126 relevant articles. Most of the coaching literature comes from surgical specialties (37%). The literature in Emergency Medicine is limited (3 articles). These articles focused primarily on mentorship and not coaching. Of the reviewed articles, only 24% evaluated satisfaction of the learners and 2% looked at knowledge acquisition. Most of the articles were not research studies but opinion pieces (68%). No articles assessed how participants skills changed over a long period of time.

Although the article discusses both coaching and mentoring the focus is on coaching. We have limited evidence supporting coaching improving outcomes in medicine. Even though coaching is becoming more common, and is being mandated in certain situations, there is no clear definition. Those developing such programs need to be cautious and to do their best to explicitly define what they want coaches to do in their context. Based on the authors work coaching appears to include the elements of: repeated clinical observation in the clinical environment and feedback on skills and performance in this realm. At this time there is very limited empiric evidence supporting coaching and research, even with low level outcomes, that would add to our knowledge.

- Aaron Danielson, MD, MAS

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# Quarterly Medical Education UPdate



## Traumatized Residents - It's Not Surgery. It's Medicine

Jackson T, Zhou C, Khorgami Z, Jackson D, Agrawal V, Taubman K, Nelson P, Truitt MS. Traumatized Residents - It's Not Surgery. It's Medicine. *J Surg Educ.* 2019 Nov - Dec;76(6):e30-e40. PMID: 31477549.

This study aimed to determine prevalence of screening positive for post-traumatic stress disorder (PTSD) among resident physicians in 7 medical specialties; general surgery, emergency medicine, obstetrics and gynecology, anesthesiology, internal medicine, psychiatry, and surgical specialties. Prior studies have shown a higher prevalence of PTSD in surgical residents than in the general population (prevalence 3.5%); the authors hypothesized that due to the rigors of training, surgery would have higher rates than other disciplines. Using a database of resident emails created from FREIDA, an anonymous, cross-sectional national survey was conducted from September 2016 to May 2017. The survey included demographic and occupational data, career/work-life satisfaction questions, and validated screening tools for PTSD and physician burnout (PBO). 11,860 residents received the survey and response rate was 16%. Results showed an overall rate of 20% of participants screening positive for PTSD with an additional 30% deemed "at risk". PTSD was more prevalent among all residents than in the general population, however no statistical significance existed among specialties, with a range of 14% in emergency medicine to 23% in obstetrics and gynecology. Similar results were seen for PBO screening.

After multi-variate analysis, eight variables were identified as significant risk factors for a positive screen: female gender, age > 30, post graduate year 2 or greater, frequent public embarrassment, feeling unhealthy, emotional exhaustion, unsafe patient load, hostile hospital culture, and overall job

specialties showed variation, with emotional exhaustion and feeling unhealthy being the two most frequent overlapping factors. Bullying by attendings, residents, or other staff was the most common stressor cited among those who answered yes to a PTSD screening question, the exception being anesthesia residents who most frequently cited overwhelming work responsibilities. The authors point out that recognizing that all medical specialties have unique stressors, and empathizing with our residents and colleagues, is important in creating a healthy, cooperative work environment. Awareness of the prevalence of PTSD symptoms and risk factors may help us focus our efforts to support and educate our resident physicians and colleagues.

- Amy Stubbs, MD



## Bias in Radiology Resident Selection: Do We Discriminate Against the Obese and Unattractive?

Maxfield CM, Thorpe MP, Desser TS, Heitkamp DE, Hull NC, Johnson KS, Koontz NA, Mlady GW, Welch TJ, Grimm LJ. Bias in Radiology Resident Selection: Do We Discriminate Against the Obese and Unattractive? *Acad Med.* 2019 Nov;94(11):1774-1780. PMID: 31149924

Implicit bias is an important topic that has been associated with disparities in healthcare across our nation. This bias is usually discussed in relation to medical care provided to patients; however bias has the potential to occur in all facets of our work, including in the residency application process. In this multi-center study, the authors designed a protocol to evaluate how facial attractiveness and obesity influenced reviewers of radiology resident applicants. Using fabricated residency applicants (presented to reviewers as part of their regular review process) with stock photos from the internet, they assessed how the visual appearance

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of the applicant may have altered interview invitations. Seventy-four reviewers from five United States radiology residency programs reviewed up to 76 fake applicants (total of 5447 reviews conducted). They found that USMLE step 1 scores were the strongest predictor of reviewer ratings with applicant facial attractiveness also strongly predicting their rating. Obesity was also found to be a significant predictor of ratings, but less so. Interestingly, these applicant characteristics, based solely on a photo were noted to be as influential in ratings/applicant selection for interviews as traditional medical school performance metrics. The discussion briefly touches on previous studies related to this type of bias, but note that nothing has been published related to the higher education selection process. The authors conclude that selection committees should consider strategies, such as removing applicant photos from the review process, to eliminate appearance-based bias in the interview selection process.

-Sam Lubner, MD, MPH



### A Reliability Analysis of Entrustment Derived Workplace-Based Assessments

Kelleher M, Kinnear B, Sall D, Schumacher D, Schauer DP, Warm EJ, Kelcey B. A Reliability Analysis of Entrustment-Derived Workplace-Based Assessments. Acad Med. 2019 Sep 17. PMID: 31567170.

Many EM residency programs use end-of-shift assessments to provide feedback to trainees; with the introduction of the Next Accreditation System, the

226 EM milestones are often used as the framework for these workplace-based assessments (WBA).

Evidence for such WBA are lacking, and the authors in this study used generalizability theory to examine the reliability and attributable facets of variance within a WBA system used by an IM program. In this study, faculty assessed 15-80 observations each month for each resident over a 3-year program. These data were compared to a modified application of generalizability theory that assumed that resident entrustment would rise over time and would be affected by the true entrustment level of a resident in a given month, difficulty of the observed task, severity of the rater and difficulty of the rotation. The authors found that the largest source of variance (37% of observed variance) was due to raters, and the next largest was residents (19%). They concluded that the reliability of WBA would be improved (i.e. variance decreased) if the number of assessments and raters were to increase. This aligns well for our specialty where the dominant rotation (in the ER) is relatively homogeneous, multiple faculty work with the same resident in a short time period, and daily assessments are the norm. It would be interesting to apply the authors' framework to an EM program to validate their conclusions. The major limitation of the study is that the comparison standard (modified generalizability theory) has itself not been validated; it is still unclear as to what can be a usable gold standard for determination of resident (or for that matter, physician) performance.

-Nikhil Goyal, MD

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