

# Quarterly - Medical Education - UPdate



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## Association of Doximity Ranking and Residency Program Characteristics Across 16 Specialty Training Programs

Feinstein MM, Niforatos JD, Mosteller L, Chelnick D, Raza S, Otteson T. J Grad Med Educ. 2019 Oct;11(5):580-584. PMID: 31636829

Doximity's Residency Navigator has been an issue of contention, especially in the field of emergency medicine. Despite the fact that EM organizations have stated this is not a valuable tool to evaluate residencies, medical students continue to use it. This information is then used to guide application choices, acceptance of interview invites and alter rank lists. Doximity uses multiple factors to establish these ranks, both objective and subjective. However, Doximity has not publicly indicated how they use the data and how they weigh the different components of data to rank programs. The hypothesis of these authors is that this system favors larger programs which by default have higher numbers of voters, ultimately giving biased results and a strong negative correlation between residency program size and ranking. This study looked at the Doximity ranking of programs for the 2018-2019 academic year across 28 specialties, 16 of which had complete data available. The authors then used a multivariable linear regression model to evaluate program size as a predictor of rank. The authors found that program size was a significant predictor of rank after adjusting for NIH funding, medical school rank, and program age. Increasing the resident program size by 1 was associated with an improvement in Doximity rank by 1.8 ranks across specialties and 1.5 ranks in EM. The association between size and program rank may be due to the evaluation method Doximity uses being inadvertently biased against smaller programs. However, the association may in fact be an indication that larger programs may have more resources, are part of large medical centers, and are appropriately ranked higher. Despite its limitations, this study does highlight some of the potential problems within Doximity's rank systems, especially when their methods are not clearly transparent. - (Chris Freeman, MD)

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Q-ME-UP

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## Dissecting the Contemporary Clerkship: Theory-based Educational Trial of Videos Versus Lectures in Medical Student Education

Yiu SHM, Spacek AM, Pageau PG, Woo MYC, Curtis Lee A, Frank JR. AEM Educ Train. 2019 Jul 16;4(1):10-17. PMID: 31989065

This quasi-experimental controlled study investigates the effectiveness of videos compared with traditional lectures for teaching medical students trauma assessments. The motivation behind this study is really to further explore the effectiveness of the flipped classroom. If this study finds that video learning is inferior to the traditional lecture, this would argue against the approach of the flipped classroom, and vice versa. In some prior studies, videos have gotten a bad rap. They have led to poorer learning outcomes compared to the traditional lecture, but the authors point out that it is unclear whether the makers of these videos subscribed to any particular pedagogical methodology. The authors support Mayer's multimedia design principles, which specifically focus on decreasing cognitive load. The videos used in the authors' study all adhere to Mayer's principles. This study enrolled 113 third-year medical students beginning their mandatory EM rotation. On the third day of their rotation, half of the students watched a video regarding the "approach to trauma" and the other half attended a lecture on the same topic. The lecture and the video were both provided by the same faculty member. On the eighth day of the rotation, all students were given an OSCE in trauma assessment and management (primary outcome). They were also given multiple-choice tests at day 0 (pretest), day 8 (post-test), and week 5-6 (knowledge retention test). Ultimately, the lecture group performed better on the OSCE and this was statistically significant; however, the authors concluded that it was not educationally significant given that the difference was only 1.29 points; they had decided *a priori* that a

difference of at least 2 points was necessary in order to be an educationally significant difference. There was no statistically significant difference in the groups regarding performance on the multiple-choice test. Ultimately, the authors concluded that "videos strictly adhering to Mayer's multimedia design principles could replace traditional lectures in medical student skill acquisition and application." - (Anne Messman, MD)



## Do Professionalism Lapses in Medical School Predict Problems in Residency and Clinical Practice?

Krupat E, Dienstag JL, Padrino SL, Mayer JE Jr, Shore MF, Young A, Chaudhry HJ, Pelletier SR, Reis BY. Acad Med. 2019 Dec 31. PMID: 31895703

In this very interesting manuscript, the authors present a prospective cohort study that links professionalism lapses in medical school with future professionalism concerns in residency and beyond. This differs from previous data which have, in a case-control design, looked at residents or practicing physicians with professionalism issues to identify early indicators for the same. The study population was all medical students who graduated between 1993-2007 at @harvardmed and @CWRUSOM, who had professionalism complaints that required a committee appearance. Each of these students were matched with 2 controls based on medical school, gender, underrepresented status in medicine and year of graduation. The index cohort (108 students) and control cohort (216 students) were compared for differences at four time points: medical school prematriculation data (e.g. MCAT scores, country of birth), medical school performance (e.g. clerkship grades, USMLE scores), residency performance (survey of PDs or faculty), and post-training information (state medical board sanctions, malpractice suits). While prematriculation data were similar, the index cohort was found to have lower performance in medical school and residency. - (Nikhil Goyal, MD)

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## Which Applicant Factors Predict Success in Emergency Medicine Training Programs? A Scoping Review

Yang A, Gilani C, Saadat S, Murphy L, Toohey S, Boysen-Osborn M. *AEM Education and Training* 2020; 00: 1-11

Selection of residents requires a great deal of time and resources. These authors conducted a review of the evidence behind selection factors in predicting applicant success in Emergency Medicine (EM) Residency. They conducted a search of PubMed, Scopus, ERIC and Web of Science and the grey literature from 1992 to February 2019. They found 15 articles, 1 unpublished manuscript, and 11 meeting abstracts. An important caveat is that there is heterogeneity in the definition of "success" including outcomes based on: In Training Exam (ITE) performance, Emergency Medicine Board Exam Performance, and Faculty evaluation of resident clinical performance. These findings are a useful summary to direct intern selection and future research in this area. Notably they found limited, and mixed, literature supporting the predictive validity of in person interviews, EM away rotations and standardized letters of recommendation. USMLE scores were predictive of ITE performance and national board exam performance but not of clinical performance. USMLE was also the most common factor studied. They found no single factor that was strongly predictive of performance. More research is needed to determine the relationships of these factors with performance.

- (Aaron Danielson, MD, MAS)



## Factors That Predict for Representation of Women in Physician Graduate Medical Education

Chapman CH, Hwang WT, Wang X, Deville C. *Med Educ Online*. 2019;24(1):1624132; PMID: 31199206

Recently, there has been significant discussion about the fact that women are underrepresented as physicians in multiple specialties. Publications have revealed data demonstrating the inequity, but there is limited information about identified causes. The authors of this paper investigated the relationships between representation of women in GME and a number of medical school and residency application factors. They used 2013-2014 data from the JAMA GME supplement, the AAMC FAMOUS database, the NRMP Charting Outcomes in the Match document, and the NRMP Program Directors survey. Representation of women as trainees ranged from 13.7% to 82.5%. Multivariable analysis demonstrated that factors associated with specialties having a lower percentage of female trainees were: not being part of the third year core clerkships, having a lower step 1 score and having lower percentage of female faculty members. They determined that for each 1% increase in female faculty, the percentage of female trainees increased by 1.45%. Importantly, these associations cannot be considered causal based on the study methodology. However, this study suggests that future research may want to focus on enhancing female mentorship and increased exposure to non-core clerkship specialties as means to increase the proportion of underrepresented women in certain specialties.

- (Samuel D Lubner, MD, MPH)

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