Title: The Path to Medical School: Does First-Generation Status Matter?

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Purpose: The experiences of first-generation college students (FG) are well documented.\(^1\) Data indicate that compared to continuing-generation college students (CG) peers (i.e., students who have at least one parent with a bachelor’s degree), FGs are more likely to be older, come from families with low incomes, and be from groups underrepresented in medicine.\(^2\) Although FG college students comprise approximately 15% of medical-school matriculants, comparatively little is known about their path to medical school.\(^3\) Our purpose was to examine differences between FG and CG medical school aspirants’ likelihood of medical-school application, acceptance, and matriculation.

Approach/Methods: We obtained individualized, de-identified records of all 2001-2006 Association of American Medical Colleges (AAMC) Pre-Medical College Admission Test (MCAT) Questionnaire (PMQ) respondents with follow-up through 2012. Using Chi-square tests, we measured proportional differences between FG and CG for each outcome (2-sided P values reported). In separate multivariable logistic regression models, we examined the odds of each outcome for FG (vs. CG), adjusting for gender, race/ethnicity, MCAT prep course, paid employment, college summer academic enrichment program, college laboratory research apprenticeship, and MCAT score, reporting adjusted odds ratios (aOR) and 95% confidence intervals (CI).

Results/Outcomes: Of 246,780 PMQ respondents, we included 211,216 (80.4%) with complete data for analysis. Significant bivariate differences were observed by generation status (FG vs CG) in applying to medical school (67.6% [142,847/211,216] overall; 58.0% [30,320/52,302] FG vs. 70.8% [112,527/158,914] CG; P < .001); and in being accepted to medical school (60.5% [86,486/142,847] overall; 48.5% [14,708/30,320] FG vs. 63.8% [71,778/112,527] CG; P < .001). The majority of medical students matriculated in medical school if accepted (97.8% [84,604/86,486] overall; 97.6% [14,348/14,708] FG vs. 97.9% [70,256/71,778] CG; P = .013). In multivariable logistic regression models adjusting for race/ethnicity, MCAT score and other variables of interest, FG remained less likely than their CG peers to apply (aOR 0.84, 95% CI 0.82-0.86) or be accepted (aOR 0.85, 95% CI 0.83-0.88) to medical school. FG and CG were equally likely to matriculate into medical school if accepted (aOR 0.94, 95% CI 0.84-1.06).

Discussion: These findings from a national cohort study of PMQ respondents indicated that FG were less likely to apply to medical school and be accepted to medical school than their continuing-generation counterparts even after controlling for gender, race/ethnicity, MCAT prep course, paid employment, college summer academic enrichment program, college laboratory research apprenticeship, and MCAT score. No significant difference was observed in the likelihood of FG and CG to matriculate into medical school once accepted. Further research is crucial to learn why these disparities exist and ways to effectively support FG.
**Significance:** Although there may be other unmeasured variables, our results indicate significant disparities exist in medical-school application and acceptance between FG and CG PMQ respondents. In 2018 a FG indicator was added to the American Medical College Application Service application for schools to use during the holistic review admissions process. More research is needed to inform how best to support these and other underrepresented students as they navigate the medical education pipeline.