

Mastermind Approach Raises GPA and MCAT Scores

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ABSTRACT

Introduction: Health care access disparities exist at the population level and medical education has a historic underrepresentation of minority students. These students often lack the social, academic, and financial resources that cultivate and sustain interest in medical careers. Data also suggests that minority students frequently have lower undergraduate grade point averages and test scores.

Methods: A random, pilot sample of 5 schools counties federally-designated as Health Provider Shortage Areas and/or Medically Underserved Areas was compiled. All students interested in a career as a physician were recruited for participate in a one-year, teleconference style mentorship program which included didactic lectures about the field of medicine, academic resources, study skills training, access to physicians and current medical students, and group discussions.

After one year, a survey was electronically mailed to the participants. Pre- and post-intervention outcome measures included perceived level of anxiety, stress and burnout, grade point average, MCAT scores, and interest in serving medically underserved communities.

Results: A total of 76 students were enrolled, mentored by physicians and provided academic support. Forty-two (55.3%) were male and 34 (44.7%) were female. An overwhelming number of students (65; 86.7%) reported decreased stress, anxiety, and burnout. MCAT scores increased 79.1% among those who took the test, with an average overall score improvement of 3.37 points. Sixty percent reported an increase in their GPA. The average GPA increase was 0.39 on a 4.0 scale (~10% increase). Finally, 72 students (94.7%) reported an interest in practicing in medically underserved communities.

Discussion: This study demonstrates that tele-mentoring programs are effective in increasing the academic competitiveness of disadvantaged premedical students. Physician mentorship and sound career advice appears to decrease stress, anxiety and burnout. Geo-targeting premedical students for mentorship appears to be a viable way to locate and increase the number of competitive disadvantaged premedical students.

PURPOSE

To describe preliminary data from a revolutionary medical career mentorship program that seeks to provide physician mentors and academic support for disadvantaged premedical students.

INTRODUCTION

Health care access disparities exist at the population level and within the medical education pipeline itself. There are 65 million people living in Health Provider Shortage Areas (HPSA), according to the U.S. Department of Health and Human Services. Currently 20% of Americans live in rural areas, but only 9% of physicians live there.¹ It is well known that cultural backgrounds affect the doctor-patient relationship and there has been historic underrepresentation of minorities in medical education.^{2,3} Minority students often lack the social, academic, and financial resources that cultivate and sustain interest in medical careers. Furthermore, available data suggests that minority students frequently have lower undergraduate grade point averages, Medical College Admission Test (MCAT) scores, and United States Medical Licensing Examination (USMLE) Step 1 scores.² Fortunately, USMLE Step 2 scores and beyond increase to meet national averages.

The 2003 Graduate Medical Education Survey administered by the Association of American Medical Colleges suggested that minority medical students don't choose to serve medically underserved populations based on their own ethnicity or socioeconomic status.^{4,5} This may mean that programs guaranteeing medical school slots to applicants purely on the basis of race don't work because they are based on the premise that physicians often serve people

like whom they were born and raised. Additionally, the U.S. Supreme Court has instructed us to abandon race-based recruitment.⁶

Historically, academic Premedical Enrichment Programs are relatively rare and limited by class size and access to a university campus. The Medical Mastermind Community was developed in 2008 to bridge the gaps in academic and social support for future physicians by providing scientific education, personalized career counseling, and a long-term supportive community for participants. A Mastermind Group is defined as group of 2 or more people working together in harmony towards a common goal, originally codified by Napoleon Hill.⁶⁻⁸ For the purposes of this study, collaborative groups included premedical students, medical students, residents and licensed physicians who shared the common goal of increasing the chance of premedical students' matriculation into medical school.

METHODS

A list of 363 colleges and universities located in counties federally-designated as Health Provider Shortage Areas and/or Medically Underserved Areas was compiled. A random, pilot sample of 5 undergraduate universities was contacted and recruited for participation. All students interested in a career as a physician were invited to participate in a one-year, teleconference style mentorship program which included didactic lectures about the field of medicine, academic resources, study skills training, access to physicians and current medical students, and group discussions.

After one year, a survey was electronically mailed to the participants. Pre- and post-intervention outcome measures included perceived level of anxiety, stress and burnout,

Grade Point Average (GPA), MCAT scores, and interest in serving medically underserved communities. This study was approved by the institutional review board at the American Institutes for Research.

RESULTS

A total of 76 students were enrolled, provided informed consent, and were mentored by physicians and provided with academic support for one year. Forty-two (55.3%) were male and 34 (44.7%) were female. An overwhelming number of students (65; 86.7%) reported decreased stress, anxiety, and burnout after one year. Forty-three students were able to report changes in MCAT scores, while 32 had not yet taken the test. Seventy-nine percent of students reported increased MCAT scores. The average overall MCAT score improvement was 3.37 points, with a range of 0-10. Fifty-one students were current undergraduates, able to report GPA changes, while 25 were Post baccalaureate. Sixty percent reported an increase in their GPA. The average GPA increase was 0.39 on a 4.0 scale (~10% increase), ranging from 0-1.5. Finally, 72 students (94.7%) reported an interest in practicing in medically underserved communities.

CONCLUSIONS

This study demonstrates that tele-mentoring programs can be effective in increasing the academic competitiveness of disadvantaged premedical students. Physician mentorship and sound career advice appear to decrease the likelihood of stress, anxiety and burnout. This also supports earlier work that suggested that culture of origin and life experiences help shape physician's preferences of practice settings.² Geo-targeting premedical students

for mentorship appears to be a viable way to locate and increase the number of competitive disadvantaged premedical students in the applicant pool.

Future research should involve cohorts powered to evaluate the impact of this recruitment methodology on the medical education pipeline. For example, do physicians born and raised in medically underserved communities truly serve in culturally similar conditions after their training? Longitudinal studies are needed to assess the medical school matriculation rates of consistently and appropriately mentored, *previously disadvantaged* premedical students.

REFERENCES

1. Ferguson WJ, Candib LM. Culture, language, and the doctor-patient relationship. *Fam Med*. 2002;34(5):353-61.
2. American Medical Student Association. [Internet] Study group on minority medical education: findings from literature search and anecdotal data. Final report. 1996. [cited 2012 Apr 25] Available from http://www.amsa.org/AMSA/Libraries/Committee_Docs/study_meded.sflb.ashx
3. Hill N. Think and Grow Rich. Cleveland (OH): The Ralston Society; 1937.
4. Association of American Medical Colleges [Internet]. 2003 Medical School Graduation Questionnaire. All Schools Report. [cited 2012 Apr 25] Available from <https://www.aamc.org/download/90068/data/gq-2003.pdf>
5. Vela MB, Kim KE, Tang H, Chin MH. Improving underrepresented minority medical student recruitment with health disparities curriculum. *J Gen Intern Med*. 2010;25(25 Suppl 2):S82-5.
6. Williams D. Science of personal achievement: an interview with Executive Director of the Napoleon Hill Foundation, Judy Williamson., in *Medical School Podcast*, ed. by Daniel Williams Premedical Solutions, LLC, 2010.
7. Williamson J. [Internet] Positive Mental Attitude Course. Napoleon Hill Foundation, 2012 [cited 2012 Apr 26] Available from <http://www.nhfclass.com>
8. United States Department of Health and Human Services. Medically Underserved Populations (Mups) and Health Provider Shortage Areas (Hpsas)', (2012) <<http://ersrs.hrsa.gov/>> [cited 2012 Apr 26 2012].

Figure 1: Increase in Overall MCAT Scores After One Year of Tele-Mentoring with the Medical Mastermind Community.

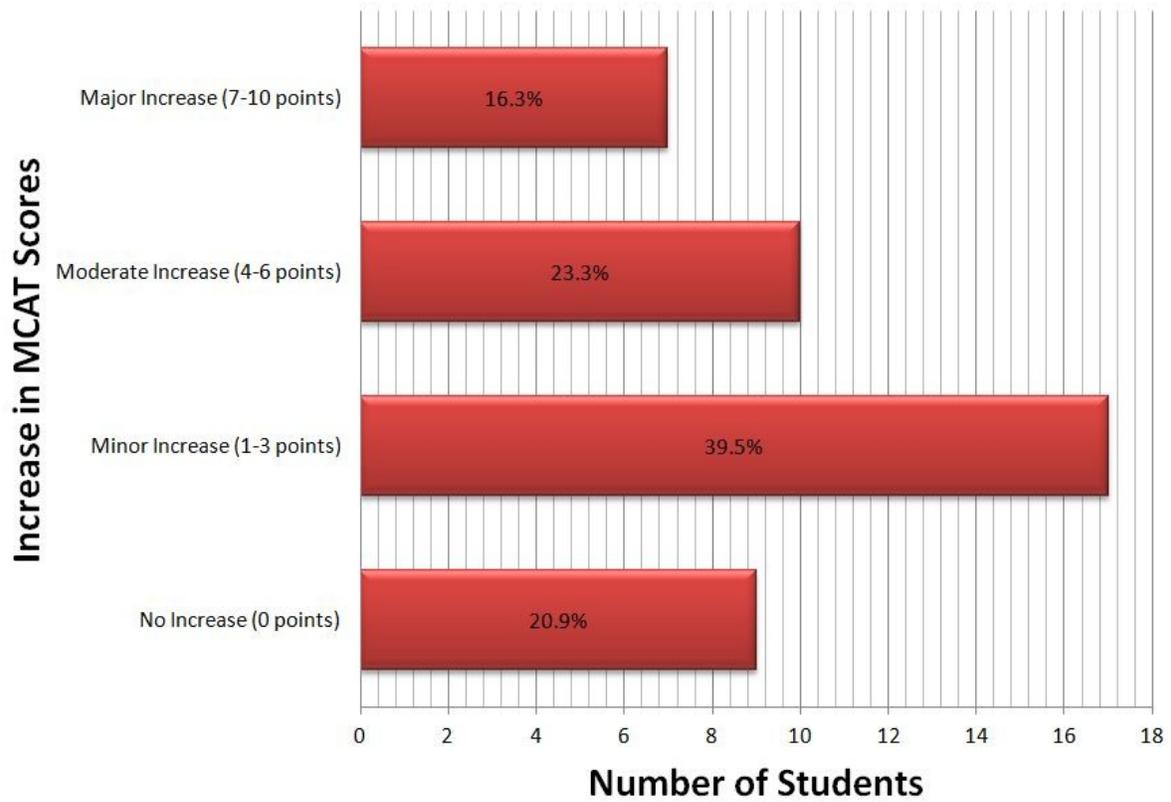


Figure 2: Increase in Grade Point Average (GPA) After One Year of Tele-Mentoring With the Medical Mastermind Community.

