



The Mastermind Approach To Increasing Diversity Among Medical Students

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Manuscripts

Review

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Increasing diversity of medical students: the mastermind approach

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Running head: Increasing diversity of medical students

For Review

What problem was addressed?

Health care access disparities exist at the population level and medical education has a historic underrepresentation of minority students.¹ 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 national test scores.¹ Historically, academic premedical enrichment programs are scarce and limited by class sizes and access to a university campus.

What was tried?

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. 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.

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.

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4 After one year, a survey was electronically mailed to the participants. Pre- and post-
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6 intervention outcome measures included perceived level of anxiety, stress and burnout, grade
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8 point average, MCAT scores, and interest in serving medically underserved communities.
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11 12 13 14 **What lessons were learned?** 15

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17 A total of 76 students were enrolled, mentored by physicians and provided academic support.
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20 Forty-two (55.3%) were male and 34 (44.7%) were female. An overwhelming number of
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22 students (65; 86.7%) reported decreased stress, anxiety, and burnout after one year. Forty-
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24 three students were able to report changes in MCAT scores, while 32 had not yet taken the
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26 test; Seventy-nine percent of these students reported increased MCAT scoresThe average
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28 overall MCAT score improvement was 3.37 points, with a range of 0-10.
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32 Fifty-one students were current undergraduates, able to report GPA changes, while 25 were
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34 post baccalaureate. Sixty percent reported an increase in their GPA. The average GPA increase
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36 was 0.39 on a 4.0 scale (~10% increase), ranging from 0-1.5;
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40 This study demonstrates that tele-mentoring programs are effective in increasing the academic
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42 competitiveness of disadvantaged premedical students. Physician mentorship and sound career
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44 advice appears to decrease stress, anxiety and burnout. Geo-targeting premedical students for
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46 mentorship appears to be a viable way to locate and increase the number of competitive
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48 disadvantaged premedical students.
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52 A larger cohort needs to be followed to elucidate if physicians born and raised in medically
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54 underserved communities truly serve in culturally similar conditions after their training,
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56 possibly helping alleviate health disparities. Longer longitudinal studies are needed to assess
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4 the medical school matriculation rates of consistently and appropriately mentored, *previously*
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6 *disadvantaged* premedical students. Other studies could include MCAT and USMLE scores
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8 which normalize among minority groups earlier in the education process, burnout
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10 interventions, and overall career satisfaction.
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