

Medical Students Rate Black Female Peers as Less Socially Connected

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Abstract: *Background:* Social and cultural outcomes are critically important in medical education. A large medical school located in the United States implemented a learning community model intended to promote social and cultural growth among its medical students. The purpose of this study was to evaluate the degree to which medical students from the same peer cohort were socially connected across racial and sex groups.

Methods: Because most assessments involving social and cultural outcomes involve self-reported data of a personal nature, the possibility of social desirability bias is increased. To mitigate this threat, this study utilized a novel method for measuring medical students' social connectedness by having peers in one's advisory college provide social connectedness ratings about one another.

Results: While surface level results did not reveal any significant differences, a closer inspection of data revealed Black females were less socially connected with medical student peers from their cohort than other peer groups.

Discussion: Possible explanations for this are discussed. Future research should continue to investigate the experiences of Black females in medical schools so as to better understand the needs of this important and valuable subpopulation of students.

Keywords: Medical education ■ Women ■ Minorities ■ Outcomes ■ Assessment ■ Social measures

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Tam¹ suggests there are four broad types of learning outcomes: intellectual; emotional; social; and cultural. Of these four broad categories, research² suggests that most educators place a high value on the intellectual development of students, but only a moderate value on the others. In the context of medical education, social and cultural outcomes also tend to receive less attention than intellectual and mental/emotional outcomes. This is likely due to medical education's emphasis on developing students with a sufficient fund of medical knowledge, and the more recent emphasis on mental health and wellness. Although social and cultural outcomes tend to receive less attention than intellectual outcomes, these outcomes remain critically important to the education of a well-rounded medical professional.

A large body of research has illustrated the educational benefits that arise when social and cultural outcomes are achieved. For example, research has reported increased leadership and teamwork skills,^{3–5} prejudice reduction,^{6,7} diminished social barriers,^{8,9} increased comfortability with diverse groups,¹⁰ increased respect and tolerance for differing viewpoints and perspectives,⁶ increased cross-racial and cross-cultural understanding,^{3,4} increased social engagement,¹¹ increased sense of belonging,¹² and a more satisfied college experience.^{5,8} The purpose of this study was to evaluate the degree to which medical students from the same peer cohort were socially connected across racial and sex groups.

BACKGROUND

The Advisory Colleges (AC) program is a 'house system' learning model that focuses on advising, career and professional development at a large U.S. medical school. The goal of this program is to enhance the sense of community in the medical school and give students a greater opportunity to get to know others. The AC program is guided by a points system in which students from each college compete throughout the academic year to gain "college points". Events include a variety of educational, community and service events. Through these events, students are provided numerous opportunities to get to know fellow members of their AC on a variety of levels. Because each class is so large (n = 184), six distinct colleges were created with each college consisting of approximately 30 students per program year. In an effort to promote diversity and inclusivity, students are randomly assigned to colleges based on race and sex variables.

Extant research from medical schools using similar learning community approaches based on house system models^{13,14} has reported a number of positive social and cultural outcomes. However, it is important to note that most assessments of social and cultural outcomes rely on self-reported data. While self-reported data have been repeatedly evidenced to be valid in many contexts, studies involving personal topics have long been recognized as

being at increased risk for social desirability bias (SDB). To that end, it is necessary to employ robust research designs to more objectively assess socio-cultural outcomes.

METHODS

Measuring social outcomes

There are numerous methods available for assessing social outcomes. The most common techniques involves group level analyses of social growth measures, individual measures obtained from pre/post surveys, and students' responses to questionnaires that are intended to measure social-related outcomes (e.g., campus climate surveys, student engagement surveys, etc.). A major criticism of each of the aforementioned approaches is that each relies of self-reported data, and studies involving the topic of social issues are often fraught with social desirability bias (SDB). In short, SDB typically refers to a distortion of responses in a socially desired direction, with participants typically presenting themselves (intentionally or not) in an overly favorable light.¹⁵ Socially desirable responses pose a significant validity threat as it results in an increase in measurement error.¹⁵ In an effort to more objectively evaluate the degree to which students were socially connected across racial and sex groups, a novel research design using Rasch measurement models was employed.

Rasch measurement

Problems pertaining to the analysis of raw scores as measures have been well-documented in the psychometric literature.^{16,17} Rasch measurement models have long been recognized as a powerful family of psychometric models that overcome the many problems and limitations associated with raw score analyses. Additionally, because Rasch models use maximum likelihood estimation procedures to estimate parameters, Rasch models are particularly robust for analyzing datasets containing a significant amount of missing data.¹⁸ For the present study, the Rasch Rating Scale Model¹⁹ was used to linearize the data (into logits) and produce objective measures of each student's social connectedness with peers in his or her respective AC. Because Rasch measurement output is reported in logits, measures were rescaled onto a continuum ranging from 0 to 100 to aid interpretation. A value of 0 represented the lowest possible score one could obtain and 100 represented the highest possible score one could obtain.

Design

As noted previously, most studies involving students' social outcomes are of a self-reported nature. This study offered a unique design inasmuch as each student was asked to provide a rating about the degree to which they

have a social relationship with each of the other members in their AC. A design of this nature was critically important, as medical students are routinely encouraged to develop strong social skills and be able to interact with persons from a variety of diverse backgrounds, and may be tempted to overestimate their involvement and connectedness with others. Thus, the measures produced from other students' ratings about a student are more likely to be accurate than a self-reported measure in which students might, intentionally or not, present themselves as being more socially connected than they actually are.

Sample and instrumentation

A total of 184 s year medical students comprised the sample frame for this study. Because each student was assigned to one of six ACs it was necessary to construct six unique surveys. Each survey consisted of two parts. The first section involved rating other students, and the second section asked students questions about the AC program and their social preferences. More specifically, items appearing on the first section of the survey presented photo vignettes and names for each student in that person's respective AC. Respondents were asked to rate the extent to which they knew each of the other members within their AC using a 7-point visual analog scale (VAS) with the anchors: 1 – 'Do not know' and 7 – 'Know very well'. Each student was asked to provide approximately 30 ratings. The second section of the survey asked students to rate various aspects of the AC program (e.g., which events they found most beneficial, perceived benefits, etc.) and a number of questions about their social relationships with members both within and outside their respective AC. These items provided supplementary data to the connectedness measures and provide greater clarity for interpreting results.

Of the 184 surveys administered 129 were completed, resulting in a 70% response rate. Qualtrics survey software was used to administer the electronic surveys. Permission to use students' photos was obtained from all students prior to launching the study. The institution's Institutional Review Board (IRB) declared the study Exempt.

Analysis

Data analysis consisted of several steps. First, data for each AC were analyzed separately with the Rasch Rating Scale Model using Winsteps²⁰ measurement software. A measure of social connectedness with it associated standard error (as determined by peer ratings) was produced for each student. Next, a comprehensive spreadsheet was produced that contained relevant demographic data and social connectedness measures and standard errors for

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