Medical Students' Self-Reported Empathy and Simulated Patients' Assessments of Student Empathy: An Analysis by Gender and Ethnicity

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Medical Students' Self-Reported Empathy and Simulated Patients' Assessments of Student Empathy: An Analysis by Gender and Ethnicity

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Abstract

Purpose

To examine the contribution of students' gender and ethnicity to assessments by simulated patients (SPs) of medical students' empathy, and to compare the results with students' self-assessments of their own empathy.

Method

In 2008, the authors used three different tools to assess the empathy of 248 third-year medical students. Students completed the Jefferson Scale of Physician Empathy (JSPE), and SPs completed the Jefferson Scale of Patient Perceptions of Physician Empathy (JSPPPE) and a global rating of empathy (GRE) in 10 objective

structured clinical examination (OSCE) encounters.

Results

Of the 248 students who completed an end-of-third-year OSCE, 176 (71%) also completed the JSPE. Results showed that women scored higher than men on all three measures of empathy. The authors detected no significant difference between white and Asian American students on their self-report JSPE scores. However, the SPs' assessments on the JSPPPE and on the GRE were significantly lower, indicating less empathy, for Asian American students.

Conclusions

A tool for SPs to assess students' empathy during an OSCE could be helpful for unmasking some deficits in empathy in students during the third year of medical school. Because the authors found no significant differences on self-reported empathy, the differences they observed in the SPs' assessments of white and Asian American students were unexpected and need further exploration. These findings call for investigation into the reasons for such differences so that OSCEs and other examinations comply with the guidelines for fairness in educational and psychological testing as recommended by professional testing organizations.

Empathy is a pillar of the patient–physician relationship. Sir William Osler[1] stated, "The physician needs a clear head and a kind heart; his work is arduous and complex, requiring the exercise of the very highest faculties of the mind, while constantly appealing to the emotions and finer feelings." Because of the importance of empathy in the context of patient care, the Association of American Medical Colleges has advocated the enrichment of empathic skills as one of the educational objectives of medical school.[2] In addition, the American Board of Internal Medicine (ABIM) has recommended that humanistic values including empathy be

cultivated and assessed as an essential outcome in graduate medical education.[3] Thus, if medical schools are to follow these recommendations and develop and assess each student's empathic qualities, they must have access to a credible assessment tool.

Empathy

Defining empathy

Empathy is an inherently ambiguous concept; researchers have described it as difficult to define and hard to measure.[4] Despite a lack of consensus regarding its definition, various descriptions or characterizations of the term are available in the literature.[5(pp3–15)] Some researchers have described empathy as a *cognitive* attribute,[6,7] which means that it predominantly involves *understanding* another person's concerns. Others have described empathy as an *affective* or *emotional* characteristic,[8,9] which implies that it primarily involves *feeling* and sharing another person's pain and suffering. Still, a third group views empathy as both affective and cognitive.[10,11]

A clear conceptualization of empathy is critically important because such a conceptualization not only can serve as a guideline for an operational definition of the term but also can provide a framework for the development of a content-specific instrument for measuring empathy in the context of medical education and patient care. Strategies to enhance empathy[12] can also be more appropriately developed based on the conceptualization of empathy.

In the context of patient care, we defined empathy (key terms italicized) as a predominantly *cognitive* (rather than affective or emotional) attribute involving an *understanding* (as opposed to a feeling or sharing) of patients' experiences, concerns, and perspectives, combined with both a capacity to *communicate* this understanding and an *intention to help* by preventing and alleviating pain and suffering.[5,12,13]

Measuring empathy

Some research tools, which have been described elsewhere, exist for measuring empathy in the general population,[5(pp63–74)]

but none are content-specific to medical education or relevant to patient care. Some investigators have used the following four instruments to study empathy in medical education research: (1) the Interpersonal Reactivity Index,[10] (2) the Empathy Scale,[14] (3) the Emotional Empathy Scale,[15] and (4) the Balanced Emotional Empathy Scale (BEES).[16] With the exception of the BEES, extensive psychometric data are available for these instruments[5(pp66–69,72–73)]; however, as previously mentioned, they are not specific to medical education and patient care.

Thus, several years ago, in response to this gap, we developed (using our description of cognitively defined empathy [above]) the Jefferson Scale of Physician Empathy (JSPE). We have previously reported our step-by-step procedures in the development of the JSPE as well as data in support of its validity and reliability.[5(pp87–115)]

Study Purpose

As indicated in the definition of empathy, one key element in empathic engagement is a physician's capacity to communicate his or her understanding to the patient. This engagement implies that a concordance between a physician's self-report of empathy and the patient's perception of physician empathy should exist. Although investigators have examined the aforementioned link in actual physician–patient encounters,[5,17,18] they have not yet given sufficient attention to the contributions of gender and ethnicity to the assessments made by simulated patients (SPs). Thus, given that almost every medical school in the United States currently administers a high-stakes objective structured clinical examination (OSCE) that includes SPs, these examinations afford an opportunity for medical educators to uncover a subset of learners who may have an empathy deficit. An assessment tool that is complementary to the self-assessment empathy instrument, especially one that is useful to and can be used by SPs, would more effectively screen and identify individuals who have potential deficits in this essential quality.

Also, in another study, we reported the relationships between students' self-reported empathy and SPs' assessment of students' empathy, but we did not take students' gender and ethnicity into consideration.[19] Thus, we designed this study to examine the contribution of students' gender and ethnicity to the evaluations by SPs of student empathy and to compare the results with students' self-assessments of their own empathy.

Method

Participants and ethical approval

We included in our study the 248 students (125 men, 123 women) who completed a comprehensive OSCE near the end of their third year of medical school in 2008. Thomas Jefferson University's institutional review board granted an exemption for this study; thus, no informed consent was necessary. We did not compensate students for their participation, but we did assure them that individual responses would be confidential and that their responses would not be part of their academic records.

Measurements

We used the following three instruments to measure student empathy: the JSPE, the Jefferson Scale of Patient Perceptions of Physician Empathy (JSPPPE), and a global rating of empathy (GRE).

1. JSPE. This student empathy self-assessment tool contains 20 items answered on a seven-point Likert-type scale (7 = strongly agree, 1 = strongly disagree). This scale has recently received broad attention by researchers in medical education, and it has been translated into 38 languages to date. Previous research has evidenced the JSPE's construct validity,[5,20,21] criterion-related validity,[21,22] predictive validity,[23] internal consistency reliability,[20,21] and test–retest reliability.[20] Similar underlying construct and psychometric properties have been reported among students in dental school,[24] nursing students,[25] Mexican medical students,[26] Japanese[27] and Korean[28] medical students, and Italian physicians.[29] An example (reverse scored) of a typical item on this scale is "Because people are different, it is difficult to see problems from patients' perspectives." The score on this scale is the sum of item scores; a higher score indicates a more empathic orientation in patient–physician relationships.

2. JSPPPE. This scale contains five items describing empathic engagement of the physician (or medical students) as perceived by patients (or SPs). An example of a typical item is "[This physician (or student)] understands my emotions, feelings, and concerns." Each item is answered on a seven-point Likert-type scale (1 = strongly disagree, 7 = strongly agree). The score of this scale is calculated by the sum of item scores received from all SPs, and—similar to the JSPE—a higher score indicates a more favorable view of students' empathy by the SPs.

Psychometric evidence in support of this scale has been provided both by Kane and colleagues[17] with internal medicine residents, and by Glaser and colleagues[18] with family medicine residents. Kane and colleagues[17] reported a correlation of 0.75 between scores of this scale and those of patients on an ABIM-developed[30] scale measuring physicians' communicative skills, humanistic qualities, and professionalism. Glaser and colleagues[18] note significant correlations between scores of the JSPPPE and items measuring humanistic approaches to patient care (e.g., "asks how I feel about my problem," $r = 0.55$; "always is in a hurry," $r = -0.50$). The reported correlation between scores of the JSPPPE and self-reported JSPE scores in that study is 0.48 ($P < .05$)[18]; in the study by Kane and colleagues,[17] the reported correlation is 0.24 ($P > .05$, nonsignificant).

3. GRE. SPs used a five-point scale (5 = excellent, 4 = very good, 3 = good, 2 = fair, 1 = poor) to indicate global ratings of students' empathy assessed in the following single item: "EMPATHY AND SUPPORT: Reflected and legitimized your feelings and concerns. Created a nurturing atmosphere."

SPs in OSCE stations

The Jefferson Medical College OSCE is similar in format both to the United States Medical Licensing Examination Step 2 Clinical Skills[31] and to assessments conducted at many schools. Like at so many U.S. medical schools, the OSCE takes place during the clinical years to provide a summative assessment in core skills sets. A passing score is required for graduation. Students have 15 minutes to perform a focused history and, in most cases, a physical examination on each of

Table 1

Group Comparisons Among Third-Year Students at Jefferson Medical College on the Self-Report Jefferson Scale of Physician Empathy (JSPE), and Simulated Patients' Evaluations Using the Jefferson Scale of Patient Perceptions of Physician Empathy (JSPPPE) and a Global Rating of Empathy (GRE), 2008

Demographic	No. (% of 248)	JSPE*		JSPPPE		GRE	
		Mean (SD)	Effect size	Mean (SD)	Effect size	Mean (SD)	Effect size
Gender†			0.32		0.46		0.63
Men	125 (50)	106.4 (13.3)		232.1 (21.4)		32.5 (5.1)	
Women	123 (50)	110.4 (11.8)		241.4 (18.5)		35.4 (4.1)	
Ethnicity‡			0.19		0.56		0.43
White	176 (71)	108.9 (12.6)		238.9 (20.5)		34.4 (4.8)	
Asian American	55 (22)	106.4 (13.7)		227.7 (19.6)		32.3 (4.9)	

* Scores of the JSPE were available for a total of 176 students. The number of observations in different analyses varies because of missing data.

† Results of t test for gender differences: For JSPE ($t_{(174)}$ = 2.1, $P < .05$), for JSPPPE ($t_{(246)}$ = 3.6, $P < .01$), and for GRE ($t_{(246)}$ = 5.0, $P < .01$).

‡ Results of t tests for ethnic differences: For JSPE ($t_{(161)}$ = 1.0, $P = .31$, nonsignificant), for JSPPPE ($t_{(229)}$ = 3.6, $P < .01$), and for GRE ($t_{(229)}$ = 2.9, $P < .01$).

10 SPs. A faculty committee determines, on the basis of the objectives of the medical school and the major clerkships required in the third year, the OSCE's case content, which includes a mix of acute and chronic conditions. The SPs are trained to complete checklists and ratings, including the JSPPPE and the GRE.

Ethnicity

To determine ethnicity, we classified students, a priori, into three groups: students who self-identified as white (n = 176), students who self-identified as Asian American (n = 55), and "Other" (n = 17). The Asian American group included students with a variety of ethnic backgrounds (e.g., Korean, Japanese, Chinese, Pakistani, Asian Indian); no group was large enough to be classified as an independent group. Because of its small sample size, we excluded the "Other" ethnic category (i.e., African Americans, American Indians, Hispanics, and those with unspecified ethnicity) from our statistical analyses.

Statistical analyses

We used a t test for group comparisons and set the probability of type I error at .05 for statistical significance. We also calculated effect size estimates to determine the clinical (i.e., the practical) significance of the findings.[32] We used SAS (version 9.1 for Windows, Cary, North Carolina) to perform our statistical analysis.

Results

Participation

Of the 248 medical students who completed the comprehensive, end-of-third-year OSCE, 176 of them (71%) completed the JSPE. Similar numbers of men and women completed the JSPE: 87 and 89, respectively.

We compared mean scores of the JSPE, JSPPPE, and GRE by students' gender and ethnicity (Table 1).

Comparisons by gender

As shown in Table 1, the women's mean score on the JSPE (110.4) was significantly higher than that of the men (106.4). We also observed similar patterns of gender differences on the scores of the JSPPPE and on the GRE assessed by SPs.

Comparisons by ethnicity

We compared students who self-reported as white with students who self-reported as Asian American on the three empathy measures. Although we detected no statistically significant difference between the two groups on the self-reported JSPE, we did observe that, on average, SPs rated white students higher than their Asian American counterparts on both the JSPPPE and the GRE.

These findings demonstrate that although there was no significant difference between the two groups on self-reported empathy, the Asian American compared with white students were assigned a lower level of empathy by SPs.

Discussion and Conclusions

The finding of gender difference on measures of empathy in the favor of women is consistent with the empirical findings reported in the literature. Previous research has attributed this gender difference to evolutionary and social learning factors.[20–22,33] Although the gender difference was statistically significant, the effect size of 0.32 for self-reported empathy is not large enough to warrant a clinically (i.e., practically) important gender difference on self-reported empathy[32]; however, the effect sizes for gender difference from SPs' evaluations (0.46 for the JSPPPE, and 0.63 for the GRE) are clinically significant.

The finding of no significant difference on the self-reported JSPE scores between ethnic groups is consistent with the previous research findings among dental students[24] and nursing students[25]; however, the finding that SPs' evaluations of student empathy favor white students, as compared with Asian American students, needs further exploration. The magnitude of the effect size estimates (0.56 for the JSPPPE, and 0.43 for the GRE) indicates that the difference is not trivial. We speculate that some of the cultural mannerisms (including accent) of some of the Asian American students may have led to a different assessment of their communication skills, as compared

with those of white students, by SPs, hence jeopardizing a fair assessment of Asian Americans' empathic skills.

Consistent with this speculation, several studies have reported less-than-favorable preconceived attitudes toward Asian Americans. One study,[34] for example, noted negative and prejudicial characterizations of Asian Americans; a group of college students consisting primarily of white students viewed Asian Americans as unassimilated and inapproachable. Another group of researchers found through a telephone survey that Asian Americans were perceived by 1,221 adults (all 18 years and older residing in the United States) as generally humorless and unassimilated.[35] The results of a third study showed significant interaction between SPs and the ethnicity of international medical graduates (IMGs): Ratings were higher when the SP and IMG were of the same race.[36] Asian physicians, among groups of Hispanic, African American, and white candidates assessed for clinical skills by SPs, obtained the lowest average satisfaction ratings.[36]

Although some studies have reported no ethnic influence in SPs' assessments,[37] other studies show significant interaction between SP and examinee ethnicity.[38,39] Our findings, as well as those of others, may call for further scrutiny of the fairness and validity of SPs' assessments of the social skills of students who are from different ethnic groups. SPs' awareness of cultural differences and similarities between themselves and the students, as well as their training about idiosyncratic interpersonal styles among different ethnic groups, may improve the validity and fairness of the OSCE for ethnic minority groups. The issue of possible bias in SPs' assessment of medical students' interpersonal and social skills, including empathy, needs to be further tested in order for OSCEs and other examinations to comply with the guidelines for fairness in testing and test use as recommended in the Standards for Educational and Psychological Testing.[40]

Some research has shown that SPs can more reliably assess well-defined technical skills (e.g., history taking, physical examination) than they can social skills (e.g., empathy, teamwork,

leadership).[41,42] Additional factors such as cultural stereotypes, language barriers, and idiosyncratic verbal and nonverbal communication can contribute to the assessment of social skills of Asian American medical students.

Limitations of our study include the fact that the study sample was from a single private medical school, which limits generalizability. In addition, the OSCE is inherently a regimented, standardized, checklist-driven evaluation with its own limitations[19] that can lead to unfair evaluations of ethnic minority students who may not "play the game"[43] as well as others. In the present study, we did not examine the interactions between gender and ethnicity of students and SPs on assessments of students' empathy. Future researchers could investigate the effects of such interactions on assessment of students' social skills, including empathy in multiple academic centers.

Research shows that the JSPE has efficacy in discovering individuals' empathy [13,20–23,25–29,33]; however, a complementary tool for SPs to assess students' empathy during an OSCE could be helpful. Using the JSPPPE and GRE in the OSCE environment might unmask some deficits in empathy during the third year of medical school. However, ensuring fairness in testing by providing convincing evidence in support of the validity of such evaluations of ethnic minority medical students by SPs is also critically important.

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