Empathy Between Physician Assistant Students and Standardized Patients: Evidence of an Inflation Bias

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Purpose Empathic communication with patients is an essential component of quality primary care. This study examines the ability of physician assistant (PA) students to communicate empathically in clinical interviews with standardized patients.

Methods In their first year of training, PA students conducted 3 clinical interviews with standardized patients over a 6-month period in 2014, during the second half of their didactic year. Each interview was evaluated for empathy by 4 individuals: the students themselves, their standardized patients, their clinical instructors, and third-party observers.

Results Students consistently rated their empathic abilities more favorably than did patients, clinical instructors, or observers, with mean differences ranging from 0.56 to 1.92 and averaging 1.09 on a 9-point scale. Students' evaluations were most dissimilar from those of patients (difference *M* = 1.12) and most similar to those of observers (difference *M* = 1.06). The assessments of all 4 raters varied over time: students rated themselves as significantly more empathic in April (time 2) than in July (time 3) of their didactic year. Patients rated students as significantly less empathic in January of the didactic year (time 1) than at time 2 and as significantly more empathic at time 2 than time 3. Instructors rated students as significantly less empathic at time 1 than at either time 2 or time 3. Finally, observers rated students as significantly more empathic at time 1 than at either time 2 or time 3.

Conclusions PA students consistently overestimate their empathic abilities during their first year of training. Given the importance of empathy in clinical care, increased didactic efforts focused on developing and conveying empathy may be warranted in PA education.

Feature Editor's Note:
Most physician assistants (PAs), if asked, would say they are empathetic; it is a hallmark of our profession. But what if patients were asked if the PA caring for them was empathic? In addition to getting a different perspective, we also may find that we get different results. In this study, PA students measured their own empathy, but others external to the students were also asked to rate the students' skills of empathy. The results are both interesting and a call to each of us. If empathy is a hallmark of our profession, PA educators must be intentional in reinforcing this attribute, by modeling as well as by instructional strategies.

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INTRODUCTION

In the relationship between health care providers and their patients, few interpersonal characteristics are as consequential as the provider's ability to convey empathy. Empathic communication behaviors, both verbal and nonverbal, denote a provider's aptitude for understanding patients' experiences and adopting their perspectives. Not only does that skill support accurate information processing and diagnosis on the part of the provider, it also reassures patients, increasing their satisfaction and compliance and decreasing their likelihood of claiming medical malpractice. Empathy is useful in many provider–patient relationships, but perhaps most especially in the context of primary care. A robust literature has illuminated the effects of empathic communication from physicians.[1] The purpose of this study was to examine perceptions of empathic communication by physician assistants (PAs), given their increasing role in primary care.[2]

Although at least 8 conceptual definitions of empathy can be articulated from the empirical and clinical literature,[3] most emphasize the ability to understand what another person is thinking or feeling[4–6] and to share those thoughts and feelings.[7,8] A robust literature already attests to the benefits of empathic communication in the physician–patient relationship for both patients and their doctors. Specifically, empathic communication on the part of doctors translates into 1) higher satisfaction on the part of their patients[9–11]; 2) better symptom resolution and improvements in physiological and functional status[12,13]; 3) higher patient adherence to prescribed treatment regimens[14,15]; 4) fewer medical errors,[16] better diagnostic ability,[17] and lower levels of burnout on the part of physicians[18]; and 5) a decreased probability of being sued for malpractice.[19] Comparatively few studies have examined the correlates or outcomes of empathic communication by practicing PAs or PA students, but in a survey of 1291 PAs, nurse practitioners, and midwives, Martin and Bedimo[20] found that higher levels of empathy translated into greater comfort with treating patients with HIV/AIDS and greater willingness to provide care to HIV-infected individuals. In a larger

randomized sample of US PAs, Talley et al[21] confirmed that the majority of PAs display high empathy and positive attitudes when it comes to treating patients with HIV/AIDS.

Studies with physicians, PAs, and nurses all support the conclusion that empathic communication by a provider has positive effects on both the provider and the patient. This naturally begs the question of what constitutes empathic communication. We advance the claim here that, to a great extent, the level of empathy demonstrated in a communicative encounter is a matter of perception. Even if providers believe that they are communicating empathically, that does not necessarily mean their patients share that assessment.

Indeed, multiple studies have demonstrated an "inflation bias," wherein individuals assess their own abilities and performances more positively than others assess them, both in general and the health care setting.[22,23] In a meta-analysis of studies comparing physicians' self-assessments of professional skills and competencies with those of external parties (including standardized patients, third-party reviewers, supervisors, and family members of patients), for instance, Davis et al[24] observed strong evidence for an inflation bias. Across professional domains, they found that physicians' self-assessments were more positive than those of external assessors and showed weak to no association with external evaluations. In fact, those physicians who performed least well by external assessment tended to self-assess most positively.

On the basis of the inflation bias, we make 2 predictions:

- Hypothesis 1: PA students rate their own empathic communication performance more positively than do patients, instructors, and third-party observers.
- Hypothesis 2: The assessments of patients, instructors, and observers are significantly intercorrelated.

And we asked 3 research questions:

- Research question 1: How do the external perceptions compare with each other?
- Research question 2: How are these assessments correlated with those of PA students themselves?
- Research question 3: Having assessed empathic communication at 3 points in time, how did the assessments of students, patients, instructors, and observers vary over time?

METHODS

Participants

Participants (N = 38) were students enrolled in the first year of a 2-year Master of Science degree in PA studies at the A.T. Still University. There were 14 men and 24 women whose ages ranged from 21 to 45 years (M = 28.03 years, SD = 5.60). Thirty-two students (84.2%) identified as Caucasian, 6 (15.8%) were Asian/Pacific Islander, 2 (5.3%) were Native American/Alaskan, and 2 (5.3%) claimed other ethnic backgrounds. (These percentages sum to >100 because participants could claim more than one ethnicity.)

Procedure

Participants were recruited from among the entire first-year PA student class by means of an email announcement from the PA department chair and a verbal presentation to the class from the first author. Out of 50 students in total, 38 volunteered to take part in the study (a response rate of 76%). They were first directed to a Web site to complete an online questionnaire that collected demographic information and assessed their trait level of empathy.

On 3 subsequent occasions, participants conducted mock clinical interviews with professional standardized patients (SPs). The first round of interviews occurred in January, approximately half way through the first year of the PA program, whereas the second and third rounds took place in April and July, respectively. In all, 13 SPs, with an average of 3.38 years of experience as an SP, worked with the research team on this study. All were trained by the third author, who has worked professionally as a standardized patient educator and medical education assessment consultant since 2007, to accurately role-play case details and to rate PA students' empathy levels. Seven SPs were used for each round of clinical interviews. During the first round, SPs were trained to portray symptoms consistent with hypertension. In the second round, they depicted a neurological disorder/headache and in the third round presented symptoms consistent with chronic obstructive pulmonary disorder. SPs received approximately 4 hours of training before each round of interviews and were paid for time spent in training and interviews.

The clinical interviews took place in rooms equipped with medical examination tables. In each interview, participants greeted their assigned SP and asked questions about symptoms and lifestyle intended to lead to a differential diagnosis. During the second and third round of interviews, they also conducted a physical examination. Each interview was audiotaped and videotaped and was also observed live, using closed circuit TV, by a clinical instructor in the PA program.

Immediately after each clinical interview, participants, SPs, and clinical instructors all completed assessments of the participants' empathic communication. Subsequently, undergraduate students at a different university watched each interview as third-party observers and assessed participants' empathic communication. As a result, each participant received 4 separate evaluations of his or her empathy level for each of 3 interviews.

Empathic communication (as reported by participants, SPs, instructors, and third-party observers) was measured by a modified version of the Jefferson Scale of Patient Perceptions of Physician Empathy.[25] The 5-item Likert-type scale elicits assessments of empathic communication behaviors performed by a health care provider during a specific patient interaction. Modifications included replacing the term "physician" with "physician assistant" and creating third-person versions for use by SPs, instructors, and third-party observers, as well as the first-person version used by participants. The current study used 9-point scales in which higher scores reflect greater empathy. For illustrative purposes, we also measured state empathy using a similarly modified version of the Jefferson Scale of Physician Empathy.[26] The 20-item Likert-type instrument assesses respondents' perspective-taking ability, tendency to provide compassionate care, and ability to "stand in the patient's shoes." Descriptive statistics, internal reliabilities, and intercorrelations for all measures are shown in Table 1.

The procedure was approved by the Bioscience Institutional Review Boards of Arizona State University and A.T. Still University.

Table 1: Reliability Estimates, Means, Standard Deviations, and Intercorrelations for Self- and Other-Reported Variables (N = 38)

Variable	α	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Trait empathy	0.78	7.65	0.72	—											
2. T1 Self-empathy	0.91	7.42	1.20	0.12	—										
3. T1 Patient empathy	0.91	5.75	2.25	0.21	0.27*	—									
4. T1 Instructor empathy	0.95	5.50	2.06	0.27	0.44**	0.58**	—								
5. T1 Observer empathy	0.92	6.69	1.80	0.14	0.01	0.25	0.22	—							
6. T2 Self-empathy	0.91	7.61	1.03	0.05	0.66**	−0.06	0.23	−0.19	—						
7. T2 Patient empathy	0.96	6.91	1.75	0.21	0.05	0.38*	0.36*	−0.03	0.07	—					
8. T2 Instructor empathy	0.97	6.84	1.91	0.18	−0.04	0.13	0.20	0.31	0.02	0.37*	—				
9. T2 Observer empathy	0.93	6.59	1.89	−0.07	−0.06	−0.01	0.11	−0.16	0.11	0.17	0.11	—			
10. T3 Self-empathy	0.93	7.13	1.32	0.15	0.61**	0.01	0.12	−0.11	0.58**	−0.05	−0.01	0.09	—		
11. T3 Patient empathy	0.89	6.15	1.73	−0.03	0.27	0.26	−0.03	−0.01	−0.01	−0.07	−0.13	0.31	0.36*	—	
12. T3 Instructor empathy	0.97	6.57	1.76	0.01	0.23	−0.18	−0.03	0.01	0.05	0.16	0.22	0.19	0.39*	0.23	—
13. T3 Observer empathy	0.95	5.70	2.15	0.03	0.06	0.14	0.21	−0.20	0.03	0.08	−.03	0.26	0.12	0.28	0.12

All measures used 1–9 scales.

T1, T2, and T3 refer to the time period.

*P < .05; **P < .01. Probability values are 2-tailed.

RESULTS

The first hypothesis proposed that PA students rate their empathic communication within patient encounters more positively than do SPs, clinical instructors, and third-party observers, and the first research question asked how the scores of SPs, instructors, and observers compared with each other. The third research question asked how perceptions of PA student empathy varied over time. A mixed-model multivariate analysis of variance (MANOVA) was used to obtain omnibus effect sizes. Within-subjects factors were role (4 levels: student, patient, instructor, observer) and time (3 levels). Participants' gender was the between-subject factor, and PA students' empathy was the outcome variable. SPSS version 22 (IBM, Armonk, NY) was used for the statistical analyses.

Box's M test showed equality of covariance matrices (P > .05). At the multivariate level, the MANOVA produced significant main effects for role, $\Lambda = 0.56$, $F_{3,32} = 8.27$, $P < .001$, partial $\eta^2 = 0.44$; and for time, $\Lambda = 0.79$, $F_{2,33} = 4.10$, $P = .02$, partial $\eta^2 = 0.21$. Univariate effects, which used Huynh–Feldt-corrected df due to violation of compound symmetry assumptions, were significant for role, $F_{3,102} = 10.51$, $P < .001$, partial $\eta^2 = 0.24$; time, $F_{2,270.42} = 3.72$, $P = .03$, partial $\eta^2 = 0.10$; and the role-by-time

interaction, $F_{4.99,169.95} = 3.12$, $P = .01$, partial $\eta^2 = 0.08$. All other effects were nonsignificant at the univariate level.

As Table 2 shows, SP students rated their own empathic communication performance more positively than did patients, instructors, and third-party observers at all 3 time periods, confirming hypothesis 1. In response to research question 1, observers rated PA students as more empathic than did patients and instructors at time 1, but less empathic than instructors at time 3. Observer, patient, and instructor evaluations were not significantly different at time 2, and patients and instructors never differed significantly from each other.

Figure 1 depicts the empathic communication scores of students, patients, instructors, and observers over time. In response to research question 3, pairwise comparisons showed that students rated themselves as significantly more empathic at time 2 than at time 3. Patients rated students as significantly less empathic at time 1 than at time 2 and as significantly more empathic at time 2 than time 3. Instructors rated students as significantly less empathic at time 1 than at either time 2 or time 3. Finally, observers rated students as significantly more empathic at time 1 than at either time 2 or time 3.

The second hypothesis proposed that the assessments of patients, instructors, and observers are significantly

Table 2: Comparisons of Empathic Communication Scores for Physician Assistant Students as Rated by Students, Patients, Instructors, and Observers by Role Within Time (N = 38)

Time	Student Score	Patient Score	Instructor Score	Observer Score
January (Time 1)	7.42$_a$	5.75$_b$	5.50$_b$	6.69$_c$
April (Time 2)	7.61$_a$	6.91$_b$	6.84$_b$	6.59$_b$
July (Time 3)	7.13$_a$	6.15$_{b,c}$	6.57$_b$	5.70$_c$

Within rows, scores with different subscripts differ significantly from each other at P < .05, per pairwise comparisons. Significance tests were one-tailed for hypothesis 1 and 2-tailed for research question 1.
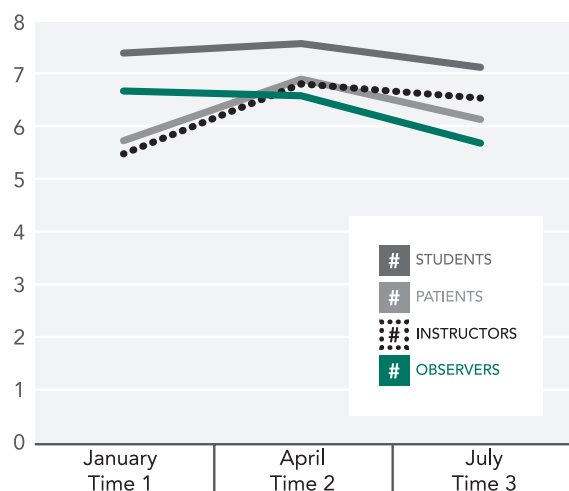
Figure 1. Empathic communication scores for physician assistant students as rated by students, patients, instructors, and observers over time (N = 38)

intercorrelated, and the second research question asked how these assessments were associated with those of the PA students. As shown in Table 1, patients' scores were significantly correlated with instructors' scores at time 1 and time 2, but not at time 3. Neither patients' scores nor instructors' scores were correlated with observers' scores at any time period. Hypothesis 2 is only partly supported. In response to research question 2, students' scores were significantly correlated with those of patients and instructors, but not observers, at time 1 and time 3. Students' scores were not significantly related to those of patients, instructors, and observers at time 2.

DISCUSSION

This study examined the communication of empathy in the relationship between patients and students training to become PAs. Empathic communication is associated with multiple outcomes in the relationship between physicians and patients, so as PAs assume an increasingly greater role in primary care, it is worth investigating their empathic abilities as well.

Drawing on the well-documented inflation bias, we expected that PA students would rate their own empathic abilities more favorably than would patients, instructors, and observers. This hypothesis was confirmed at all 3 time periods. Indeed, students' self-evaluations were substantially higher than those of others, with mean differences ranging from 0.56 to 1.92 and averaging 1.09 on a 9-point scale. Students' evaluations were most dissimilar to those of patients (difference M = 1.12) and most similar to those of observers (difference M = 1.06).

With few exceptions, the evaluation of students' empathic communication made by patients, instructors, and observers converged, not differing significantly from each other. Considered in concert with students' consistently high self-ratings, these findings not only reflect the expected inflation bias but perhaps ought to be of concern to those training the students, as elaborated below.

Notable, too, was the pattern of evaluations over time. By and large, students, patients, and instructors evaluated the students as increasing in empathy from time 1 to time 2 and as decreasing from time 2 to time 3, whereas observers' scores

simply decreased over time. Particularly substantial were the changes in empathy scores from patients and instructors from time 1 to time 2, representing increases of 1.16 and 1.34, respectively, on a 9-point scale. We suspect that the improvements in empathic ability from time 1 to time 2 (except as evaluated by observers) reflect an increase in students' comfort levels with the interactions, which would be understandable given that time 1 represented their first encounter with a patient during their training. Such an explanation does not account for the consistent decrease in empathy scores from time 2 to time 3, however, which we surmise may have been a function of the difficulty of the medical case portrayed. Unlike in the 2 previous clinical interviews, the case presented in the third interview required PA students to perform a physical examination. Although students may have been more comfortable with the question-and-answer portion of the interview as a result of their practice, that comfort may have been overshadowed by the novelty and complexities of the physical examination, resulting in a net decrease in perceived empathic skill.

These findings of temporal variation are noteworthy insofar as they highlight the state-like nature of empathic communication. Empathy can be—and often is—treated conceptually and operationally as a trait, in that some individuals have a stronger propensity than others to act in an empathic manner. Nonetheless, even those with high levels of trait empathy can behave in relatively nonempathic ways during a given interaction, and vice versa. That observation highlights the benefit of measuring empathic communication as a state, specific to each individual interaction, rather than relying only on global empathy assessments. Equally noteworthy in this regard is the observation that, in this study, trait empathy was not significantly related to state empathy as evaluated by any of the raters—students, patients, instructors, or observers—for any of the 3 clinical interviews. Empirically, it appears that measures of trait and state empathy may assess substantially different constructs.

Our findings have implications both for the interpersonal relationship between PAs and patients and for PA student educational practices. On one hand, it is encouraging that all 4 raters (students, patients, instructors, and observers) evaluated the students' empathic abilities above the theoretic midpoint of the scale (ie, 5 on a 9-point scale) at all 3 time periods. As descriptive data, these scores suggest that the PA students performed reasonably well with respect to their empathic communication skills. Given the voluminous research linking empathic ability from health care providers to positive outcomes for patients, these findings are heartening.

On the other hand, it is potentially troubling that students' self-evaluations were exaggerated relative to those of others. In the relationship between physicians and patients, it is patients' perceptions of the provider's empathic ability—not the perceptions of the providers themselves—that significantly predict both the intention to sue for malpractice[19] and the actual filing of malpractice claims.[27] If the same is true for PAs practicing in primary care, then PAs who overestimate their empathic communication skill would have a falsely secure sense of their protection against malpractice exposure. Thus, a beneficial approach may be to educate both medical and PA students, during their training, in evaluating their empathic abilities from patients' perspectives rather than from their own.

Like all studies, this one benefited from certain methodological features and was constrained by others. Conducting

assessments and observations as an integral part of the PA students' training, rather than as a side activity, bolstered the external validity of our clinical interviews. The use of SPs, although perhaps a detriment to external validity, increased the internal validity of the study by maximizing consistency in the stimuli to which the students were asked to pay attention. Similarly, having 4 ratings of empathic communication at each time period provided a broader look at the students' empathic abilities than any single perspective could have offered.

Perhaps the most significant limitation was the sample size of 38 students. Given that several significant effects emerged, the sample size obviously provided adequate statistical power; yet, small samples attenuate external validity, and there would be merit in replicating these observations with a larger sample.

An important next step in this research would be to develop and test instructional units for increasing empathic communication behavior among PA students. In relationships with patients, the PA's ability to convey a sense of empathy is likely associated with numerous benefits, according to existing research with health care providers. Developing pedagogical units aimed at teaching, training, and rehearsing empathic communication skills—and then testing their efficacy experimentally—would be a beneficial extension of this research. Another extension, already underway, is to determine how empathic communication with patients during the didactic portion of PA student training predicts students' performance on important professional outcomes during the clinical portion of their training, such as their evaluations by preceptors and their scores on licensing examinations. To the extent that empathic communication skills predict these outcomes, schools would be well-advised to implement new pedagogical tools for teaching empathic communication or to augment existing efforts.

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