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## Jefferson Scale of Patient's Perceptions of Physician Empathy: Preliminary Psychometric Data

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**Aim** To develop a brief scale for measuring patient's perceptions of their physician's empathic engagement and to provide preliminary evidence in support of aspects of the scale's psychometrics.

**Method** Study comprised 225 patients, out of 436 patients (52% response rate) seen by 166 residents in the internal medicine residency program at the Jefferson Hospital Ambulatory Clinic as part of their ambulatory training at Thomas Jefferson University Hospital. A 5-item questionnaire entitled the Jefferson Scale of Patient's Perceptions of Physician Empathy was developed and administered to the study participants. Its factor structure, item-total score correlations, and correlations with several relevant criterion measures were examined.

**Results** Factor analysis indicated that the scale was measuring a single factor of empathic engagement. Item scores and total scores of the Jefferson Scale of Patient's Perceptions of Physician Empathy yielded significant correlations with the American Board of Internal Medicine patient ratings form and with selected items from other relevant instruments measuring physicians' humanistic behavior and the appraisal of physicians' performance.

**Conclusions** A brief scale for assessing physician empathy from the patients' perspective showed good psychometric characteristics and can be used for the assessment of patient outcomes.

Empathy has been described as an important element of professionalism in medicine (1-3). The importance of empathy as the foundation for positive relationships between patients and physicians has been discussed in medical education and health care research (4-7). Physician empathy and effective communication skills increase patients' satisfaction, improve patients' compliance, and enhance physicians' ability to diagnose and treat their patients (6,8). Improved outcomes may be a result of better compliance or the activation of psychological factors that are formed in trusting relationships (1,9).

Viewed from the contrasting perspective, a lack of empathy can have negative effects on clinical outcomes. Resident's humanistic qualities, communication skills, and professionalism are considered important components of the trainee's evaluation by both the American Board of Internal Medicine, which certifies internists, as well as the Accreditation Council for Graduate Medical Education, which accredits programs in American Medical Schools (<http://www.acgme.org/outcome/comp/compHome.asp>).

While the new outcomes project of the Accreditation Council for Graduate Medical Education does not specifically call for an evaluation of physician empathic concern; interpersonal communication with patients, cultural sensitivity, and professionalism are key components of the new evaluation process. Specifically, residents are expected to form effective therapeutic relationships with patients and families, to build relationships through listening, narrative or non-verbal skills, and to develop skill in education and counseling of patients and their families (<http://www.acgme.org/outcome/comp/compHome.asp>), all of which are relevant to physician-patient empathic engagement. Patients are considered as an important source for the assessment of these skills. Therefore, it is important to develop an instrument to assess patient's perceptions of physician empathic engagement. This study was de-

signed to examine the psychometric properties of such an instrument.

## Methods

### Participants

Data for this study were collected in 2003 and 2004 for internal medicine residents at different levels of training at Thomas Jefferson University Hospital and from patient encounters in the resident ambulatory clinic, Jefferson Hospital Ambulatory Clinic. Complete data (with no missing responses) were available for 225 patient encounters with 166 residents.

### Instruments

Based on a review of literature, we developed the Jefferson Scale of Patient's Perceptions of Physician Empathy. This is a brief instrument (5-item) intended to measure patient's perceptions of his/her physician's empathic concern and understanding (Table 1). Patients were asked to respond to each item on their physicians by using a 5-point Likert-type scale (from 1 = strongly disagree to 5 = strongly agree). It takes a few minutes to answer the scale.

To examine the validity of the Jefferson Scale of Patient's Perceptions of Physician Empathy we used The American Board of Internal Medicine patient rating form intended to measure aspects of physician communication skills, humanistic qualities, and professionalism in medicine (10). This form was developed by the American Board of Internal Medicine to be used as part of a comprehensive evaluation for physician recertification and presents an opportunity to assess physician-patient relationships at all levels of medical education and practice. The American Board of Internal Medicine patient rating form used in this study included 9 items, each answered on a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). A "not applicable" option was also available.

**Table 1.** Factor coefficients, item-total score correlations, and correlations with American Board of Internal Medicine patient rating form for the items of Jefferson Scale of Patient's Perception of Physician Empathy\*

Items	Factor coefficients	Item-total score correlations	Correlations with ABIM patient rating form
Understands my emotions, feelings and concerns.	0.90	0.90	0.69
Seems concerned about me and my family.	0.89	0.91	0.64
Can view things from my perspective (see things as I see them).	0.81	0.85	0.70
Asks about what is happening in my daily life.	0.76	0.84	0.54
Is an understanding doctor.	0.73	0.77	0.67

\*The Jefferson Scale of Patient's Perceptions of Physician Empathy items were answered on a 5-point Likert-type scale (1 = Strongly Disagree, 5 = Strongly Agree). All correlations were statistically significant ( $P < 0.001$ ).

Also, five items that were conceptually relevant to empathic physician-patient engagement were selected to be used as additional criterion measures for the validity study (Table 1). Four of these items were adapted from the Physicians' Humanistic Behavior Questionnaire developed by Weaver et al (11), and one item was adapted from a questionnaire intended to measure patients' appraisal of physicians' performance developed by Matthews and Feinstein (12).

Finally, we used scores of the Jefferson Scale of Physician Empathy that was administered to a sub-sample of residents to examine the concordance between patient's perceptions of physician empathy and physician's self-reported empathy. The Jefferson Scale of Physician Empathy is a 20-item scale with sound psychometric support that measures physician empathic orientation and behavior (13-15).

#### Procedures

The approval of our institutional review board was obtained for this project. Patients were approached in the waiting room upon checkout after completing their visit with their resident physician at the Jefferson Hospital Ambulatory Clinic. Patients were asked by a trained research assistant to voluntarily and confidentially complete the survey containing 3 demographic questions, plus 19 survey items (5 for the Jefferson Scale of Patient's Perceptions of Physician Empathy, 5 criterion measures, and 9 for the American Board of Internal Medicine patient rating form) as a part of a quality improvement project within the residency program at Thomas Jefferson

University Hospital (web-extra material). The resident's name was printed on the survey that was anonymously completed by the patient. To maintain complete confidentiality, the patients were guided to a private location, away from the physician treatment areas to complete the survey. The research assistant would offer to read and record the patient's responses if this was requested by patients. Additionally, patients were told that their participation or refusal would in no way influence the care they received.

#### Statistical analyses

Principal component factor analysis was used to examine the dimensionality of the Jefferson Scale of Patient's Perceptions of Physician Empathy. We calculated the Pearson product-moment correlation coefficients for the validity study.

#### Results

A total of 436 patient rating forms were received. Of these, 225 (52%) were complete with no missing data that were used as the units of analyses in this study. In factor analysis of data, only one factor emerged with an eigenvalue greater than one (eigenvalue = 3.7), indicating that the Jefferson Scale of Patient's Perceptions of Physician Empathy is a uni-dimensional scale measuring only one underlying factor interpreted as "empathic engagement." The factor coefficients are reported in Table 1.

The item-total score correlations were all positive and statistically significant ( $P < 0.001$ ), and ranged from a low of 0.77 to a high of 0.90 with

a median correlation of 0.85, indicating that all items contributed substantially to the total score (Table 1). Inter-item correlations ranged from a low of 0.54 to a high of 0.75 with a median of 0.65 ( $P < 0.001$ ).

The reliability coefficient (the Cronbach  $\alpha$  coefficient of internal consistency) for the Jefferson Scale of Patient's Perceptions of Physician Empathy was 0.58 which is relatively low, but with only five items in the scale it can be considered satisfactory.

The score distribution of the Jefferson Scale of Patient's Perceptions of Physician Empathy was skewed toward the upper tail of the distribution reflected in the mean score of 23.8 on a scale with a maximum score of 25, indicating that patients expressed an extremely positive view of the residents' empathic engagement (Table 2).

**Table 2.** Descriptive statistics for the Jefferson Scale of Patient's Perception of Physician Empathy

	Descriptive statistics
Mean	23.8
Standard deviation	2.54
Possible range	5-25
Actual range	10-25
Cronbach $\alpha$ reliability	0.58

Correlations between each item of the Jefferson Scale of Patient's Perceptions of Physician Empathy and the total scores of the American Board of Internal Medicine patient rating form ranged from a low of 0.54 to a high of 0.70 (Table 1). All these correlations were statistically significant ( $P < 0.001$ ) with a median of 0.67, indicating that the items of the Jefferson Scale of Patient's Perceptions of Physician Empathy were significantly related to the evaluation of physicians' communication skills, humanistic qualities, and professionalism as measured by the American Board of Internal Medicine patient rating form, thus providing support for the validity of the items.

Also, correlations between the total scores of the Jefferson Scale of Patient's Perceptions of

Physician Empathy and scores for each item of the American Board of Internal Medicine patient rating form were examined. The highest correlation ( $r = 0.75$ ) was obtained for the following item of the American Board of Internal Medicine patient form: "(this physician) is interested in me as a person; does not act bored or ignore what I have to say." The lowest correlation ( $r = 0.49$ ) was found for the following item: "(this physician) explains what you need to know about your problems and what to expect in plain language." The median correlation was 0.60, and all correlations were statistically significant ( $P < 0.001$ ).

The correlation between the total score of the Jefferson Scale of Patient's Perceptions of Physician Empathy and the average scores of the American Board of Internal Medicine patient ratings was 0.75 ( $P < 0.001$ ), providing support for the criterion-related validity of the Jefferson Scale of Patient's Perceptions of Physician Empathy (Table 3).

**Table 3.** Validity coefficients for the Jefferson Scale of Patient's Perception of Physician Empathy expressed as correlation coefficient between scale result and six criterion measures\*.

Criterion measures	Validity coefficients
ABIM Patient Rating Form <sup>†</sup>	0.75
Shows concerns for my feelings and needs, not just my physical status. <sup>‡</sup>	0.86
Asks me how I feel about my problems. <sup>‡</sup>	0.79
Arranges for adequate privacy when examining or talking with me. <sup>‡</sup>	0.61
Is always in a hurry. <sup>‡</sup>	-0.50
Takes my wishes into account when making decisions. <sup>§</sup>	0.76

\*The Jefferson Scale of Patient's Perceptions of Physician Empathy items were answered on a 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree). All correlations were statistically significant ( $P < 0.001$ ).

<sup>†</sup>Total scores on the American Board of Internal Medicine (ABIM) patient rating form (10).

<sup>‡</sup>Adapted from the Physicians' Humanistic Behavior Questionnaire (11).

<sup>§</sup>Adapted from Patients' Appraisal of Physicians' Performance (12).

Correlations between the total scores of the Jefferson Scale of Patient's Perceptions of Physician Empathy and the selected items from the Physicians' Humanistic Behavior Questionnaire (11) and from the patient's appraisal of physicians' performance (12) were all statistically significant ( $P < 0.001$ ; Table 3). The correlation be-

tween scores of the Jefferson Scale of Patient's Perceptions of Physician Empathy and the item that describes physician as being always in a hurry was expectedly negative, indicating that being in rush is not conducive to empathic engagement in the patient care context. These findings further support the criterion-related validity of the Jefferson Scale of Patient's Perceptions of Physician Empathy.

Data for both the Jefferson Scale of Patient's Perceptions of Physician Empathy and the Jefferson Scale of Physician Empathy were available for a small number of residents ( $n = 27$ ). Correlation coefficient of the two scales for this group of residents was 0.24, which did not reach the level of statistical significance ( $P = 0.223$ ).

## Discussion

Several conclusions can be drawn from the findings of the present study. First, the results of factor analysis suggest that the Jefferson Scale of Patient's Perceptions of Physician Empathy measures a single factor that can be entitled physician's empathic engagement as perceived by the patient. Second, findings that each item of the Jefferson Scale of Patient's Perceptions of Physician Empathy and its total scale score were significantly correlated with the responses on the selected criterion measures, including the total scores of the American Board of Internal Medicine patient rating form provide evidence for the criterion-related validity of the Jefferson Scale of Patient's Perceptions of Physician Empathy. Third, a lack of significant correlation between patient's perceptions of physician's empathic engagement and the resident's self-reported empathy deserve further clarification. A lack of relationship on empathic understanding between therapists and patients has been reported (16) and explained by factors such as residents' inability to communicate their empathic understanding to their patients, or patients' viewing empathic engagement differently from physicians.

In another study with residents in a family medicine program, a significant correlation ( $r = 0.48$ ,  $P < 0.050$ ) was observed between the Jefferson Scale of Physician Empathy and the Jefferson Scale of Patient's Perceptions of Physician Empathy scores (data not shown). We expected to find a significant overlap between scores of the Jefferson Scale of Patient's Perceptions of Physician Empathy and the Jefferson Scale of Physician Empathy in the present study. The non-significant correlation we observed between these two measures could be due to the skewed score distribution of the Jefferson Scale of Patient's Perceptions of Physician Empathy, restriction of range, and the ceiling effect. We examined the distribution of scores of the Jefferson Scale of Patient's Perceptions of Physician Empathy for the residents who completed the Jefferson Scale of Physician Empathy and found that a great majority (78%) of them obtained the maximum score on the Jefferson Scale of Patient's Perceptions of Physician Empathy, leading to a severe skewed distribution and an extreme ceiling effect. The true relationship between variables cannot be fully captured with such an extreme ceiling effect. More empirical research is needed to examine factors that contribute to the relationships between physicians' self-reported empathy and patients' perceptions of their physicians' empathy in clinical encounters.

It is generally believed that patient's perceptions of a caregiver's empathy is associated with a positive treatment outcome (8,16), but empirical evidence in support of this proposition is rarely available. One reason for the scarcity of empirical evidence is the absence of a psychometrically sound instrument for measuring patients' perceptions of their physicians' empathic engagement when rendering care. Although additional studies are needed to further examine different aspects of psychometrics of the Jefferson Scale of Patient's Perceptions of Physician Empathy in groups of physicians in different specialties and patients in different settings (outpatient, hospi-

talized), our preliminary findings suggest that it is feasible to use this scale to study predictors and outcomes of patients' perceptions of physician empathy.

The external validity (generalization of the findings) of this study is limited because of the convenient sampling that included only residents in one residency training program who were not necessarily the primary caregivers of the patients. In this study, we used patients rather than the residents, as the unit of observation. Some of the residents were evaluated by more than one patient. Our analyses showed that the pattern of findings remained generally unchanged when residents were used as the unit of observation.

Despite the study limitations, the findings generally suggest that it is feasible to use patients' ratings of residents' humanistic attributes in a residency clinic setting. This is important for the Accreditation Counsel for Graduate Medical Education outcome project that emphasizes the centrality of the patient in the evaluation of residents. We believe that greater use of the patients' assessments of their care provider's empathy as part of the evaluation of residents could have a significant impact upon the enhancement of professionalism in medicine.

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