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**Supplemental Appendix. Statistical Analysis Multilevel Modeling**

We used multivariate analysis to determine whether the Rochester Participatory Decision-Making Scale (RPAD) accounted for unique variance in patients' and standardized patients' perceptions of the physician-patient relationship. To ease interpretation, the Measure of Patient-Centered Communication (MPCC), RPAD, and standardized patient, and patient perception scales were standardized to a mean of 0 and standard deviation of 1. Analyses with the patient-derived perception measures as dependent variables also included patient covariates (described above), physician factors (age, sex, specialty, and rural practice), and mean standardized patient visit duration. For the analyses with the standardized patient survey-derived measures as dependent variables, the analyses included physician factors, visit duration, and a dummy variable indicating whether the visit was a standardized patient with ambiguous symptoms or unambiguous symptoms (gastroesophageal reflux disease [GERD]).

Analyses were conducted for patient outcomes and for standardized patient outcomes, as multilevel models using PROC MIXED in SAS (Version 8.2, SAS, Inc, Cary, NC) to allow for the nesting of observations within physician (included as a random effect). The standardized patient analyses also included a separate random effect for the nesting of observations within the standardized patient. We conducted a series of analyses for each dependent variable, including and excluding, in turn, the RPAD, and MPCC components, to determine which of the objective measures of physician-patient communication (RPAD and MPCC components) contributed to the explained variance in the dependent variables. Optimal models were selected based on Akaike's and Bayes Information Criteria and physician variance component reduction. We report parameter estimates for the models including the RPAD and the 3 MPCC components.

**Patient Survey**

A research assistant in the waiting room of each primary care physician approached 50 consecutive patients aged 18 to 65 years to complete a 10-minute survey. Patients ratings of their physician were measured using the 5-item Health Care Climate Questionnaire (HCCQ), which measures autonomy supportiveness and patient involvement in decision making with items such as, “I feel that my physician has provided me options about my health.” We used the Primary Care Assessment Survey (PCAS) subscale to measure “physician knowledge of the patient as a person” (4 items). With this scale, patients rate how well they think their doctors know them on such items as, “How would you rate your doctor's knowledge of what worries you most about your health.” Patient trust in the physician was measured using the PCAS trust subscale (8 items) with items such as, “I can tell my doctor anything, even things that I might not tell anyone else.” Patient satisfaction was measured using a single question (“All things considered, how satisfied are you with your regular doctor?”) derived from the Patient Satisfaction Questionnaire.

**MPCC**

The audio recordings were also coded using the MPCC. The MPCC was based on a scale developed in 1986, then revised in 1995 and 2001; current and earlier versions demonstrate an interrater reliabilities of 0.80-0.83 and show a correlation of 0.85 with global ratings of the physician patient relationship experienced communication researchers. It measures 3 aspects of patient-centered communication. Component 1 (Exploring Both the Disease and the Illness Experience) measures the degree to which the physician explores the patient’s symptoms, ideas, expectations, feelings and the effect of the symptoms on functioning. Component 2 (Understanding the Whole Person) measures the degree to which the physician explores the
patient's family, social network, job, and interests as they relate to the patient's medical complaints. Component 3 (Finding Common Ground) measures the degree to which the physician explains the findings and involves the patient in generating a diagnostic and treatment plan, the construct most closely related to participatory decision-making. Higher scores indicate greater patient involvement in decision making. Three coders were trained to code the audiotapes using the MPCC system; 1 investigator (CGS) was the trainer, 2 research assistants coded the transcripts while listening to the audio recording and brought questions to the trainer. The interrater reliability between the 2 research assistants was 0.79 for the overall MPCC scale. While interrater reliabilities for Components 1 and C component 2 were 0.67 and 0.89, the reliability for Component 3 was only 0.43. This compares favorably with the 0.73 reliability for the MPCC total score found by the authors of the scale; reliabilities for individual components are not available.  

Reference List