House Staff Nonverbal Communication Skills and Standardized Patient Satisfaction

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OBJECTIVE: To examine the association of physician nonverbal communication with standardized patient (SP) satisfaction in the context of the "quality" of the interview (i.e., information provided and collected, communication skills).

DESIGN: Observational.

SETTING: One university-based internal medicine residency program.

PARTICIPANTS: Fifty-nine internal medicine residents.

INTERVIEWING: The 59 residents were recruited to participate in 3 SP encounters. The scenarios included: 1) a straightforward, primarily "medical" problem (chest pain); 2) a patient with more psychosocial overlay (a depressed patient with a history of sexual abuse); and 3) a counseling encounter (HIV risk factor reduction counseling). Trained SPs rated physician nonverbal behaviors (body lean, open versus closed body posture, eye contact, smiling, tone of voice, nod, facial expressivity) in the 3 encounters. Multiple regression approaches were used to investigate the association of physician nonverbal behavior with patient satisfaction in the context of the "quality" of the interview (SP checklist performance, measures of verbal communication skills), controlling for physician characteristics (gender, post-graduate year).

RESULTS: Nonverbal communication skills was an independent predictor of standardized patient satisfaction for all 3 patient stations. The effect sizes were substantial, with nonverbal communication predicting 32% of the variance in patient satisfaction for the chest pain station, 23% of the variance for the depression-sexual abuse station, and 19% of the variance for the HIV counseling station.

CONCLUSION: Better nonverbal communication skills are associated with significantly greater patient satisfaction in a variety of different types of clinical encounters with standardized patients. Formal instruction in nonverbal communication may be an important addition to residency.

KEY WORDS: doctor-patient communication; nonverbal communication; standardized patients.

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An estimated 60% to 65% of the meaning in a social encounter is communicated nonverbally.¹ Nonverbal

communication is intimately related to verbal communication; it often anticipates, substitutes for, augments, accentuates, or, importantly, contradicts verbal communication and is a primary vehicle for expressing emotion. Further, nonverbal cues may be less susceptible to censorship than verbal cues and therefore may be more reliable indicators of what is being communicated.²

Nevertheless, although often cited as unambiguous, the evidence that the nonverbal communication in the patient-physician encounter influences patient outcomes (such as patient satisfaction) is mixed. Several studies have found no association of patient satisfaction with various nonverbal behaviors.³⁻⁵ The few studies that do suggest an association of nonverbal communication with patient satisfaction have important limitations. For example, Larsen and Smith videotaped 34 patient-physician visits, coding them for nonverbal communication. Nonverbal behaviors associated with higher patient satisfaction included forward body lean and attentive body orientation; behaviors associated with decreased satisfaction were relaxed hands, increased touching and increased eye contact, which the investigators had hypothesized would increase satisfaction.⁶ The unexpected paradoxical results undermine the confidence one has in the study's positive results. A second limitation of this study is that patient satisfaction was uniformly very high, with mean satisfaction scores of 28.8 on a 30-point scale, and with 24 the lowest rating, indicating that patients were generally satisfied regardless of nonverbal behaviors. Larsen and Smith's study appears to be the primary study of nonverbal communication cited in the meta-analysis of correlates of provider behavior by Hall et al.,⁷ which suggests that nonverbal behavior is associated with greater patient satisfaction. Reliance primarily on 1 study with such mixed results undermines confidence in the possible association. In another widely cited study, DiMatteo et al. noted that resident physicians who were able to interpret nonverbal cues had more satisfied patients.⁸ However, no actual patient-physician encounters were videotaped, the correlation with satisfaction was modest ($r = .35$), and the satisfaction instrument was unreliable (reliability ranged from 0.12 to 0.61). Therefore, the preponderance of evidence would surprisingly suggest that nonverbal communication skills do not influence patient perceptions or patient satisfaction.

A reason for these lukewarm findings may lie in the methodologies used in these studies. In general, a limitation of studies of physician communication is that they tend to focus either on what was said (where interview "quality" is judged by a list of items asked or not asked) or on how it was said (e.g., whether open-ended questions were used). Studies generally do not investigate both what

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was said and how it was said. Nonverbal communication skills may be very important in the context of competent physician data gathering and information providing, and may indeed exert independent effects on patient satisfaction, over and above information sharing. To our knowledge Roter et al. conducted the only study of how the behavior of the physician (communication skills, voice tone) correlates with the medical information provided, and how these correlate with patient satisfaction.⁹ They found that satisfaction was positively correlated with the amount of information provided and the amount of counseling given. However, a major limitation of this study was that the satisfaction measured was from "analogs" (university students) listening to an audiotape of a physician-standardized patient (SP) encounter. Whether the patients themselves were more satisfied is not reported. And because they were impressions of listeners, nonverbal communication (apart from vocal tone and "quality") could not be taken into account.

The purpose of our project was to overcome the methodologic limitations of prior studies of nonverbal communication and patient satisfaction by examining the association of physician nonverbal communication with standardized patient satisfaction in the context of the "quality" of the interview (data gathered, information provided, counseling given, and various communication skills). We hypothesized that better physician nonverbal communication would be associated with greater standardized patient satisfaction, controlling for physician communication skills and information provided/transferred.

METHODS

Internal medicine and medicine-pediatrics residents from 1 university-based internal medicine residency program were recruited to participate in 3 different standardized patient encounters. The encounters took place in 3 examination rooms located in the residents' usual continuity clinic space. Participants were recruited from December 1998 to March 1999 from a convenience sample of those on less time-intensive rotations (i.e., not on inpatient or intensive care rotations). Residents were told that this was a study to assess how "communication" varied in different patient situations. The residents provided written informed consent, with no penalty for not participating. In addition, they were provided a \$25 honorarium for participating. The study design and consent process were approved by our institutional review board.

Residents participated in 3 different clinical encounters, encounters that might require different communication techniques and skills. The scenarios included: 1) a relatively straightforward, primarily "medical" problem (chest pain), where information gathering would seem paramount; 2) an encounter of primarily counseling (HIV risk factor reduction counseling), in which information-providing would seem paramount; 3) a patient with more psychosocial overlay (a depressed patient who, if ques-

tioned empathetically and in-depth, is an adult survivor of sexual abuse), where advanced communication skills would seem necessary. Each encounter was limited to 15 minutes to more realistically approximate the time constraints of clinical practice and to ensure uniformity of time for each resident. All standardized patients were women. For the chest pain and adult survivor of sexual abuse stations, the same standardized patient was used each time. For the HIV station, 2 different standardized patients played the role at various times, depending on availability. The standardized patients were those frequently used in our institution's standardized patient program in the evaluation and instruction of students and residents (generally there is at least 1 weekly SP exercise for some level of learner). The SPs were not aware of the study hypothesis or that the focus of this study was nonverbal communication, and had routinely used these checklists (including patient satisfaction and nonverbal communication) in other SP exercises.

Case-specific checklists were developed by consensus of the investigators following standards of usual educational practice in the standardized patient literature.¹⁰ Checklists consisted of "essential" items that should be asked or provided in certain patient encounters. Each checklist consisted of 40 to 60 items, with several items in each station rating communication skills (use of open-ended questions, summarization, etc). Items on these checklists were in a yes/no format (did or did not ask). Standardized patients completed the checklist immediately after the interview. Each of these already very experienced standardized patients were trained by the investigators for 3 to 5 hours until they had over 90% agreement with the investigators in completing checklists. For the 40 to 60 items on the standardized patient checklist, items were classified by consensus of the investigators as either information gathered, information counseled (for the HIV counseling station only), and general verbal communication skills (used open-ended questions, etc). The number of items performed in the category was divided by the total number of checklist items in the category to yield the information gathered, information counseled, and communication checklist scores.

Nonverbal skills were measured on a 7-item form developed by the investigators for our institution's standardized patient program, based on frequently cited nonverbal behaviors/skills in the literature.^{2,11} In the development phase of this form, to demonstrate that SPs can reliably and feasibly evaluate nonverbal communication in an encounter, videotapes of several different standardized patient encounters were viewed by 2 independent coders, who rated physician nonverbal communication using the same scale as the standardized patients. Inter-rater correlations were high between the SPs and the 2 coders, with a median κ of 0.80 for all nonverbal items. Two items with $\kappa < 0.70$ (rate of speech, volume of voice) were not included in the final form. The final form consisted of 7 nonverbal behaviors ranked on a 7-point

scale. The 7 nonverbal items included: facial expressivity (1 = unexpressive, blank; 7 = very expressive, emotional); frequency of smiling, of eye contact, and of nodding (1 = infrequent; 7 = very frequent); body lean (1 = backward, 7 = forward); body posture (1 = closed, 7 = open); and tone of voice: (1 = unexpressive, monotone; 7 = very expressive, emotional). Extent of agreement of independent coders with the standardized patients can be illustrated using the average distance between the 2 coders and the SPs on the 7-point rating scales. Average distance between the 3 raters on all items was 1.12 scale positions, suggesting that ratings from standardized patients immediately after the encounter are consistent with those of independent coders viewing videotapes of the encounter. Therefore, for the purposes of this project, we used standardized patients' ratings of the physicians' nonverbal behavior as judged immediately after the encounter.

Measures of internal consistency (coefficient α) for the 7-item nonverbal scale during this study were 0.83 for the depression/sexual abuse station, 0.68 for the chest pain station, and 0.82 for the HIV counseling station, suggesting good reliability but also high inter-item correlations. For the purposes of this study and presentation of results, a nonverbal index score was created for each station, consisting of the mean rating across all 7 nonverbal items.

Standardized patients also completed a 5-item checklist on general patient satisfaction, on a 7-point scale, with 1 = strongly disagree and 7 = strongly agree. Items were variations of those derived from commonly used patient satisfaction instruments, focusing on interviewing and listening skills.¹² Items included: 1) I was satisfied with the physician and my visit; 2) the resident was easy to talk to; 3) the resident seemed open to my questions; 4) the resident listened to what I was saying; and 5) the resident was empathetic and warm. Coefficient α for this form was 0.93 for the depression/sexual abuse station, 0.87 for the chest pain station, and 0.94 for the HIV counseling station. The standardized patient satisfaction score was computed as the mean score of the 5 satisfaction items.

Analyses included simple Pearson's correlation of the information gathering and counseling checklist scores, communication checklist scores, nonverbal index, and patient satisfaction score. Multiple regression analyses

were conducted with the dependent variable of standardized patient satisfaction, and independent variables of nonverbal communication index score, information checklist scores (information gathered and counseled), and communication skills checklist scores, with control variables coded for resident gender and year of postgraduate training.

RESULTS

Sixty-one internal medicine and medicine-pediatrics residents were solicited to participate (of a total of 86 total residents in the program; the other 25 were on vacation or on time-intensive rotations during the recruiting period, nearly all of them interns). Two residents declined to participate, so 59 total residents completed the 3 standardized patient exercises. Of these residents, 24 (41%) were women, 12 (20%) were in their first postgraduate year, and 100% were U.S. medical graduates.

Table 1 presents the descriptive statistics for the information checklist scores, communication checklist scores, nonverbal index scores, and standardized patient satisfaction. Table 2 presents the simple Pearson's correlation between checklist scores and the measures of nonverbal communication and standardized patient satisfaction. As can be seen, greater standardized patient satisfaction was strongly associated with better nonverbal and verbal communication across all 3 types of patient encounters, although verbal and nonverbal communication significantly correlated only in the chest pain station. Standardized patient satisfaction was associated with poorer information checklist score on the chest pain station, and was only positively correlated with the information checklist score on the HIV counseling items.

In the regression models, standardized patient satisfaction was strongly associated with nonverbal communication for all 3 stations (all $P < .0001$). R^2 for the models were: chest pain .45, HIV counseling .56, depression/sexual abuse .43. Figure 1 depicts variables associated with greater standardized patient satisfaction, and the percentage of the unique variance in patient satisfaction each variable explained. As can be seen, nonverbal communication is the most significant predictor of standardized

Table 1. Descriptive Statistics for Information and Communication Checklists, Nonverbal Index, and Standardized Patient Satisfaction Score for Sample of 59 Residents

Patient Station	Information Checklist Mean % Items Asked (SD), Range	Communication Checklist Mean % Items Performed (SD), Range	Nonverbal Index Mean (SD), Range on 7-point Scale	Satisfaction Index Mean (SD), Range on 7-point Scale
Sexual abuse	57.2 (11.2), 33 to 82	85.5 (13.6), 40 to 100	6.66 (0.73), 3.0 to 7.0	6.19 (1.1), 2.8 to 7.0
HIV		75.2 (27.3), 33 to 100	5.49 (1.08), 1.7 to 6.75	5.80 (1.12), 2.8 to 7.0
Information	52.4 (20.4), 10 to 80	—	—	—
Counseling	39.6 (21.6), 0 to 87	—	—	—
Chest pain	71.8 (12.2), 43 to 94	81.1 (23.6), 17 to 100	5.23 (1.06), 3.3 to 7.0	4.98 (0.99), 4.0 to 7.0

Table 2. Correlation Among Information Checklist Scores, Communication Checklist Scores, Nonverbal Index, and Satisfaction Score for Entire Sample of 59 Residents for the 3 SP Stations

Correlation	Sexual Abuse	HIV	Chest Pain
Satisfaction score with information checklist	$r = .04$		$r = -.29^*$
Information Counseling	—	$r = -.03$	—
Satisfaction score with nonverbal index	$r = .56^\dagger$	$r = .61^\dagger$	$r = .76^\dagger$
Satisfaction score with communication score	$r = .39^\ddagger$	$r = .34^*$	$r = .34^\ddagger$
Communication scores with information checklist	$r = .20$		$r = .26^*$
Information Counseling	—	$r = .33^*$	—
Communication score with nonverbal index	$r = .14$	$r = .07$	$r = .49^\ddagger$
Information checklist with nonverbal index	$r = -.13$		$R = -.33^\ddagger$
Information Counseling	—	$r = -.03$	—
	—	$r = .23$	—

* $P < .05$.

$^\dagger P < .001$.

$^\ddagger P < .01$.

patient satisfaction across all 3 patient encounters. Item checklist performance was a predictor of satisfaction for the HIV counseling items only. Verbal communication skills remained a significant predictor of standardized patient satisfaction to a modest degree for the HIV station and depression/sexual abuse station. Greater resident experience was associated with greater standardized patient satisfaction, especially for the more “medical” chest pain station, compared to the stations with more psychosocial overlay.

DISCUSSION

As can be seen, greater standardized patient satisfaction was strongly associated with better nonverbal behaviors in all 3 types of patient encounters. The major addition of this project to the nonverbal communication literature is that we have also taken into account the “quality” of the interview in terms of data gathered, information counseled, and “quality” of verbal communication skills. Our findings demonstrate that for 3 very different types of patients and patient encounters, whether the encounter involved a straightforward “medical” problem, counseling, or a more psychosocial overlay, nonverbal communication was a primary predictor of standardized patient satisfaction. Interestingly, this suggests that nonverbal communication is as important in patient encounters involving straightforward medical conditions as it is in more psychosocially laden encounters.

We had hypothesized that nonverbal communication would emerge as an important predictor of standardized patient satisfaction, but that it would do so only if the methodologic limitations of prior work were overcome; i.e., if the “quality” of the interview were taken into account. For example, in their study, Larsen and Smith⁶ used first-time patient encounters (with real patients), and had mixed results, with some nonverbal behaviors associated with patient satisfaction and some not. We believed an explanation for these mixed results was that this study did not take into account the “quality” of the data gathered, information counseled, or verbal communication skills, and that not accounting for this resulted in the attenuation of their findings. To our surprise, in our study the “quality” of the interview apart from nonverbal communication played little role in eventual standardized patient satisfaction. However, perhaps “controlling” or accounting for these other elements in the interview reduced background “noise” in the analyses, reduced error and unexplained variance, and allowed nonverbal communication to emerge as an important predictor of standardized patient satisfaction. Future research should continue to investigate the ways in which verbal and nonverbal communication and information sharing interact to influence patient satisfaction and other patient outcomes.

The lack of an association of better checklist performance and standardized patient satisfaction was especially surprising, given that the SPs were those we have used for student and resident examinations, who are trained to believe better item checklist performance equates with a better encounter. Nevertheless, these SPs were most satisfied with residents on the basis of their nonverbal behavior, rather than the items they did or did not ask. Interestingly, standardized patient satisfaction was decreased with better checklist performance on the “straightforward medical” chest pain station, and better checklist performance on that station was correlated with lower-rated nonverbal communication. Perhaps some

FIGURE 1. Percentage of unique variance explained in patient satisfaction in 3 standardized patient encounters (59 residents) in regression analysis; significant predictors only shown. HIV, HIV counseling station; SA, depression/sexual abuse station; CP, chest pain station.

(or many) of these residents were asking a whole panoply of medical questions, perhaps in rapid shotgun "Joe Friday" fashion, and in the process of gathering more technical information may have been exhibiting poorer nonverbal behaviors in their questioning fashion.

Several limitations to our study must be kept in mind when interpreting our results. First, the patients in this study were standardized rather than "real" patients, although there is evidence that satisfaction measured in a standardized patient exercise correlates with a physician's "real" patient satisfaction.¹³ Nevertheless, future studies should investigate actual physician-patient encounters. Second, our measures of communication skills were not sophisticated, in that they consisted of communication skills performed or not performed as assessed by a checklist. More elaborate communication measures might yield more insight into how verbal communication interacts with nonverbal communication. Third, by the nature of the SP exercise, our encounters portrayed first-time patient encounters. Future studies should consider how nonverbal communication might vary in follow-up visits, with more established patients and a firmer patient-physician relationship. Fourth, this represents work from 1 institution, 1 residency program, and 3 types of scenarios. In addition, all SPs were women. Multisite, multidiscipline studies are needed, with patients of both genders, to determine how the association of nonverbal communication and satisfaction may vary in other situations. Finally, we have investigated the association of nonverbal communication with 1 patient outcome, patient satisfaction. Other outcomes plausibly influenced by nonverbal communication could include adherence to therapeutic regimens, adherence to diagnostic plans, counseling on a behavior change, and actual behavior change—all areas that would be ripe for future study.

Nevertheless, despite these limitations, we conclude that better physician nonverbal communication skills are associated with significantly greater patient satisfaction in a variety of different clinical encounters with standardized patients. In our experience, nonverbal communication is at most paid lip service by physicians, residents, and students, and is not viewed by them as a critical aspect of the clinical encounter—certainly not as important as words being said or information gathered. For many clinical decisions, the "quality" of information gathered is of course critical. But for patient satisfaction, this may not be sufficient; physicians must be attentive and mindful of

their nonverbal behaviors if they are to enhance patient satisfaction, independent of what is being said or of what is gathered. Many of our residents exhibited good nonverbal behaviors naturally, but many did not; and perhaps our findings, bolstered as they are by demonstrating an effect on a patient outcome (satisfaction with care), provide evidence that an important addition to student and resident training would be formal training in nonverbal communication skills.

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REFERENCES

1. Burgoon JK. Nonverbal signals. In: Knapp ML, Miller GR, eds. *Handbook of Interpersonal Communication*. Beverly Hills, Calif: Sage Publications; 1985:344–90.
2. Nardone DA, Johnson GK, Faryna A, Coulehan JL, Parrino TA. A model for the diagnostic medical interview. Nonverbal, verbal and cognitive assessments. *J Gen Intern Med*. 1992;7:437–42.
3. Koss T, Rosenthal R. Interactional synchrony, positivity, and patient satisfaction in the physician-patient relationship. *Med Care*. 1997;35:1158–63.
4. Bensing J. Doctor-patient communication and the "quality" of care. *Soc Sci Med*. 1991;32:1301–10.
5. Comstock LM, Hooper EM, Goodwin JM, Goodwin JS. Physician behaviors that correlate with patient satisfaction. *J Med Educ*. 1982;57:105–12.
6. Larsen KM, Smith CK. Assessment of nonverbal communication in the patient-physician interview. *J Fam Pract*. 1981;12:481–8.
7. Hall JF, Roter DL, Katz NR. Meta-analysis of correlates of provider behavior in medical encounters. *Med Care*. 1988;26:657–75.
8. Di Matteo MR, Taranta A, Friedman HS, Prince LM. Predicting patient satisfaction from physicians' nonverbal communication skills. *Med Care*. 1980;18:376–87.
9. Roter DL, Hall JA, Katz NR. Relations between physician behaviors and analogue satisfaction, recall, and impressions. *Med Care*. 1987;25:437–51.
10. Goiter S, Rethans J, Scherpier A, et al. Developing case-specific checklists for standardized patient-based assessments in internal medicine: a review of the literature. *Acad Med*. 2000;75:1130–7.
11. Friedman HS. Nonverbal communication between patients and medical practitioners. *J Social Issues*. 1979;35:82–99.
12. Smith RC, Lyles JS, Mettler JA, et al. A strategy for improving patient satisfaction by the intensive training of residents in psychosocial medicine: a controlled, randomized study. *Acad Med*. 1995;70:729–32.
13. Tamblyn R, Abrahamowicz M, Schnarch B, Colliver JA, Benaroya S, Snell L. Can standardized patients predict real-patient satisfaction with the doctor-patient relationship? *Teach Learn Med*. 1994;6:36–44.