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Perceptions of medical interactions between healthcare providers and American Indian older adults

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ABSTRACT

Cultural competence models assume that culture affects medical encounters, yet little research uses objective measures to examine *how* this may be true. Do providers and racial/ethnic minority patients interpret the same interactions similarly or differently? How might patterns of provider–patient concordance and discordance vary for patients with different cultural characteristics?

We collected survey data from 115 medical visits with American Indian older adults at a clinic operated by the Cherokee Nation (in Northeastern Oklahoma, USA), asking providers and patients to evaluate nine affective and instrumental interactions. Examining data from the full sample, we found that provider and patient ratings were significantly discordant for *all* interactions (Wilcoxon signed-rank test $p \leq 0.02$). However, discordance typically reflected a trend in which providers were more critical of their own behaviors than were patients. These findings suggest that providers serving American Indian patients often create greater satisfaction than they believe.

We then distinguished cultural subgroups of patients, comparing *magnitude* of provider–patient discordance on specific interactions for patients at different levels of *American Indian* and *White American* cultural identity. Patients who affiliated strongly with American Indian cultural identity more closely shared providers' reduced evaluation for several variables related to *information exchange*, as compared to patients who identified weakly. These results flag interactions that providers and their most culturally distinctive patients *both* experience as challenging.

Introduction and background

High-quality medical interaction between healthcare providers and patients is associated with improved outcomes including recall, adherence, satisfaction, hospitalization, and health (Roter & Hall, 1992). Among the "key communication dimensions" of interaction quality is provider–patient concordance, or the ability of providers and patients to arrive at similar conclusions about circumstances relevant to the medical visit (Haug & Ory, 1987; Stewart, Meredith, Brown, & Galadja, 2000). For example, provider–patient concordance on the nature of the medical problem (Bass et al., 1986), similar prioritizing of problems (Starfield et al., 1981), as well as shared expectations for follow-up and treatment (Starfield et al., 1979; Stewart et al., 2000) have all been associated with improved health outcomes.

In practice, provider–patient concordance is frequently low. Parties to the medical visit often disagree about such important issues as patients' diagnosis and prognosis (Curtis, Patrick, Caldwell, Greenlee, & Collier, 1999), expressed

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end-of-life preferences (Haidet et al., 1998; Hancock et al., 2007), understanding (Temple et al., 1998), and health status (Kwoh et al., 1992; Rakowski, Hickey, & Dengiz, 1987). There is also significant divergence over goals of treatment (Quirt et al., 1997) and reason for visit (Britt et al., 1992; Freidin, Goldman, & Cecil, 1980). One study reported "virtually no correlation between patients' and physicians' ratings of effectiveness of treatment" (Wyshak & Barsky, 1995, p. 111).

Studies comparing provider–patient concordance on "what happened" during medical visits – perceptions of interactions that occurred and their quality – are rare. However, one such study of 125 medical visits found considerable physician–patient discordance – particularly for interactions related to psychosocial and lifestyle issues, less for interactions related to technical, medical tasks (Ritchey, Yoels, Clair, & Allman, 1995). Another study of 26 surgeon–patient interactions reported greater discordance for psychosocial than treatment issues; however, discordance on psychosocial issues typically resulted from patients' tendency to perceive interactions more positively than the provider did (Temple et al., 1998).

Concordance among elders

Issues of provider–patient concordance have been studied specifically in elders. Two studies found concordance on goals of care was significantly lower for older compared with younger patients. Similar lack of agreement characterized major medical topics – history, symptoms, medications, test results, preventive measures – that providers and patients believed they discussed (Adelman, Greene, & Charon, 1991; Greene, Adelman, Charon, & Friedmann, 1989). Another study found providers and older patients disagreed at least half the time on issues ranging from progress in treatment to patient understanding (Rakowski et al., 1987). When evaluation of elder patients' health status is the variable studied, concordance can be as low as 13% (Linn, Linn, & Knopka, 1978), and one recent study found *no* association in provider–patient perceptions of health status for males $\geq$75 years (Mann et al., 2001).

Concordance, culture, and competence

Characteristics of providers and patients are related to expectations and interpretation in the medical encounter (Haug, 1996; Roter & Hall, 1992). Researchers have developed particular concern for understanding how patients' *cultural* characteristics may affect interaction. They advocate "culturally competent" strategies for care, in which healthcare providers adapt communicative and other behaviors to patients' cultural needs (Cooper & Roter, 2002).

Proponents of cultural competence do not deny structural contributors to pervasive racial/ethnic health disparities (Smedley, Stith, & Nelson, 2002); they warn that concern for provider–patient relationships must not distract from "problems of institutionalized racism and socio-economic pluralism that should be addressed with far-reaching…public health action" (Dreher & MacNaughton, 2002). Yet cultural competence researchers maintain that provider–patient interaction *also* has a role in health disparities, and that more sensitive strategies for delivering care may contribute – via enhanced patient satisfaction and adherence – to reducing them (Ashton et al., 2003; Brach & Fraser, 2000; Perloff, Bonder, Ray, Ray, & Siminoff, 2006). An emphasis on cultural competence increasingly influences medical school curricula (Barzansky & Etzel, 2003). The Office of Minority Health (2000) has urged healthcare organizations to provide culturally competent care, and organizations serving diverse populations have implemented many new programs (Wynia & Matiasek, 2006).

Yet models for culturally competent care have limitations. While the appropriate concern of cultural competence approaches is clearly providers' and patients' *cultural* characteristics, the majority of health research in diverse populations depends upon single-item measures of *race* (Ahdieh & Hahn, 1996; Lin & Kelsey, 2000). Reliance upon race as proxy for culture prevents researchers from asking whether persons socially classified as the same race may belong to subpopulations with different cultural identities – and, thus, distinct medical interaction needs. This concern is expressed in the growing complaint that cultural competence models are too often grounded in racial stereotypes: lists of dos and don'ts governing care of, for example, "the African American patient" (Betancourt, 2004; Dreher & MacNaughton, 2002; Kleinman & Benson, 2006).

Another limitation of cultural competence approaches is their neglect of American Indians. Although this population confronts a range of serious health disparities (Indian Health Service, 2004), few empirical studies of medical interaction focus on, or even include, American Indians. Nor have researchers typically differentiated cultural subpopulations within the broad, racial category.[1] Accordingly, researchers know little of how the experience of American Indian patients in medical care compares to providers' perceptions: the patterns of concordance and discordance for particular interactions. We are equally ignorant of the role of culture in such comparisons. This neglect curtails researchers' ability to theorize sources of medical miscommunication and their ability to assist practitioners in enhancing interactions.

Research questions

Both research and practice in culturally competent healthcare will benefit from an inquiry comparing provider and patient evaluations for medical interactions. Do certain interactions trouble American Indian patients, while providers experience them as unproblematic? How common is the reverse? Do patterns in provider–patient perceptions vary in subgroups of American Indian patients with different cultural characteristics?

[1] "Race," as understood by contemporary social scientists, is a *social* rather than a biological classification (Krieger, 2000). For American Indians, this social classification is inscribed in federal and tribal law. For the purposes of this analysis, the term "American Indian race" describes individuals who hold formal, tribal citizenship.

Interactions during the medical visit

The literature on medical interaction conventionally distinguishes "affective" (or "socioemotional") and "instrumental" (or "task-oriented") components (Ong, de Haes, Hoos, & Lammes, 1995). Affective behaviors involve emotional displays, while instrumental behaviors involve "technically based skills used in problem solving," including skills facilitating communication (Roter, Hall, & Katz, 1987).

In the affective domain, studies find that providers' behaviors, including shared laughter and friendliness, are associated with high patient satisfaction (Greene, Adelman, Friedman, & Charon, 1994; Simpson, Mohr, & Redman, 2000) and fewer malpractice suits (Levinson, Roter, Mullooly, Dull, & Frankel, 1997). Affective issues are important for older patients (Snider, 1980) and may be particularly significant for interactions with American Indians (Dean, 2003).

But when does friendliness cross over into intrusiveness? What counts as joking? Affective behaviors can be treacherous territory for cross-cultural interaction. Different groups use different conventions for communicating both friendly interest (Devine, Evvett, & Vasquez-Suson, 1996; Rawls, 2000) and respect (Bailey, 1997), with potential consequences for medical interaction. In one study, African Americans were almost twice as likely as White patients (16% vs. 9%) to report "disrespectful" treatment during a recent medical visit (Collins et al., 2002).

Anecdotal and observational reports, along with qualitative studies of American Indian patients, likewise draw attention to misunderstandings arising from culturally distinctive means of displaying respect. These can include interactional norms involving eye contact, touch, interruptive patterns, and speech speed – all of which may be more distinctive among older adults (Garwick, 2000; Hendrix, 2001; Reid & Rhoades, 2000; Satter, Veiga-Ermert, Burhansstipanov, Pena, & Restivo, 2005). Several authors stress the place of humor as a coping mechanism in many tribes, but simultaneously warn that uninformed attempts at humor with Native patients may be misinterpreted as ridicule (Dean, 2003; Dixon & Iron, 2006; Kelly & Brown, 2002).

In the instrumental domain, studies show that patients' satisfaction increases with the amount of information they relate and receive, and the number of questions they ask (Ong et al., 1995; Roter, 1977). However, minorities frequently encounter frustration with such task-related issues. They report less "participatory" visits than majority patients (Cooper-Patrick et al., 1999), and they complain of inadequate information, incomprehensible explanations, and few opportunities to question (Graves & Shavings, 2005; Green et al., 2005). In research involving American Indians, patients repeatedly raise concerns that interviews are rushed (Garwick, 2000; Kelly & Brown, 2002) and ask providers for patience (Hendrix, 2003). Minority patients may also give different accounts of instrumental aspects of clinical encounters than providers, as in a study where patients reported that providers did not discuss problems that providers said they did (Rohrbaugh & Rogers, 1994).

But do patients pick up signals providers send to invite questions? Do they recognize providers' attempts to check understanding or show attentiveness? Do they construe different behaviors as markers of hurriedness? Time pressure is a common concern for older patients (Snider, 1980), and some authors warn that, among American Indians, behaviors that providers commonly use to indicate task-orientation – such as a "down to business" attitude – may be interpreted as rudeness and prompt patients to withhold information (Kramer, 1992). Such considerations necessitate research on whether particular affective and instrumental behaviors are experienced similarly or differently by providers and patients, with attention to the role of culture.

Research aims and the implications of the research

This paper draws on survey data collected from providers and American Indian patients subsequent to a medical visit at a Cherokee Nation clinic in northeastern Oklahoma. We first examine the full patient sample, without distinguishing cultural subgroups. We compare provider and patient ratings of specific interactions, and we identify interactions for which provider–patient ratings are most similar and different. Second, to examine the role of culture in perception of interactions, we investigate differences in *magnitude* of difference in provider–patient ratings in patient subgroups defined by level of affiliation with (1) *American Indian* and (2) *White American* cultural identity.

Method

Setting

The Cherokee Nation, headquartered in Tahlequah, Oklahoma, is the second largest American Indian tribe, with >225,000 citizens. Under a self-governance agreement with the U.S. Congress, it receives direct funding to deliver healthcare services to enrolled tribal members. Services are provided through the Cherokee Rural Health Network, comprising two hospitals and six tribally managed outpatient clinics that provide healthcare without charge. Data were collected at the chronic care unit of one clinic, chosen in consultation with the Cherokee Nation Institutional Review Board because it serves American Indian patients with widely varying cultural characteristics.

Patient characteristics

Patient participants were American Indians ≥50 years ($n = 115$). The age limitation reflected special tribal concern for this vulnerable subpopulation. Patients were eligible to participate if they understood English well enough to comprehend survey questions and if judged mentally competent by the in-take nurse; no exclusions were necessary. All patients had an appointment for treatment of a chronic condition, such as diabetes or cardiovascular disease. All were legal citizens of a federally recognized Indian tribe, usually Cherokee.

We assessed 115 unique patient visits. Although high patient flow occasionally required recruitment to cease, we invited participation from >90% of eligible patients. Refusal rate was 27%, calculated as a percentage of the total

number of patients who were eligible and invited. Women were more likely than men to refuse, and refusers were, on average, about 2 years older than participants.

Healthcare provider characteristics

At the time of research, primary care was provided by four physicians and three mid-level practitioners (one nurse practitioner, two physicians' assistants). Each reported about 20 clinical encounters daily. The specialization of all providers was family practice; all participated.

Data collection

Fliers describing the study were distributed to patients arriving for appointments on 11 consecutive clinic days in July–August 2001. During the clinic in-take process, a nurse screened patients for eligibility and asked if they wished to learn about the study. To maximize comfort among bilingual participants, interested patients received a description from a Cherokee/English translator who secured written consent. After their medical visit, patients completed survey questions about specific interactions. The questionnaire also asked about personal characteristics, including level of affiliation with American Indian and White American cultural identities. The questionnaire was designed to permit self-administration; however, a substantial number of respondents (27%) asked to have it read to them. Statistical comparisons showed no significant patterns of outcome in self-administered vs. interviewer-administered forms. Patients received a $15 store gift certificate.

We obtained provider characteristics by survey before data were collected from patients. Providers also completed a questionnaire for each patient immediately after each visit. Items asked about interactions during the visit, paralleling the patient questionnaire. Written consent was secured from providers; they were not compensated.

After researcher collaboration on study design with personnel in the tribal Health Services and the Cultural Resources Department, the study was approved by the Cherokee Nation and Boston College Institutional Review Boards. To ensure practical utility of the research to the tribe, researchers agreed to provide tribal briefings and to collect and summarize results in a handbook for use in provider training (Manson, Garroutte, Goins, & Henderson, 2004).

Measures

Independent variables

Results from two indices of patients' self-rated cultural identity provided the main independent variables. American Indians, even members of the same tribe, constitute a multicultural population. This is particularly true of the large, geographically dispersed, Cherokee Nation. Some tribal members identify strongly with tribal culture; others identify strongly with the dominant culture. Accordingly, while all sampled individuals were legally recognized tribal members, they varied in cultural identity. Respondents' American Indian and White American cultural identities were assessed by *separate* survey measures. Questions were originally developed using a broad-based sample of American Indian respondents in nine states, including Oklahoma (Oetting, Swaim, & Chiarella, 1998) and have been validated in additional research (e.g., Garroutte, Kunovich, Jacobsen, & Goldberg, 2004).

One set of questions asked about *White American* cultural identity. The first item asked about the extent to which patients "live by or follow the White American way of life." The second item asked the same question about the patient's family. A question asking about the personal importance of following Christian beliefs was dropped from the final index because it was not correlated with the other items. Response options ranged from zero ("not at all") to three ("a lot"), and were summed and averaged to create an index of White American cultural identity. Because distribution of this index was highly skewed, with 60% of the patient respondents choosing the highest possible value, we dichotomized responses (low/high).

A separate set of questions inquired about *American Indian* cultural identity. The first item asked about extent to which patients "live by or follow the American Indian way of life." The second item asked the same question about the patient's family. A third item asked the importance of "follow[ing] religious or spiritual beliefs that are based on traditional Indian beliefs." Ordinal response options again ranged from zero to three. Responses were summed and averaged to create an American Indian cultural identity index. Given that, we had to dichotomize White American identity, we also dichotomized this index, allowing for easier interpretation.

Importantly, the American Indian and White American identity indices are independent (although correlated, with $r = -0.28$); respondents' scores on one index do not determine their scores on the other. Thus, respondents can describe themselves as monoculturally White, monoculturally Indian, or bicultural to varying degrees. They can even score themselves low on both indices, indicating an identity marginal to both cultures.

Dependent variables

Both patients and providers reported on interactions during the medical visit by indicating extent of agreement/disagreement with nine parallel statements. Items were selected from a longer, widely used measure allowing for patients' evaluation of care (e.g., Bertakis, Roter, & Putman, 1991). Selected questions targeted areas of interaction that are associated with high-quality medical interaction but pose potential stumbling blocks to cross-cultural interaction. Because of their emphasis in the literature, we focused on behaviors related to providers' emotional displays and on two instrumental aspects of interaction: information exchange and pacing of the medical visit. Items addressing affective dimensions of care were:

- My healthcare provider and I laughed and joked together during my visit.
- My healthcare provider seemed annoyed.
- My healthcare provider was friendly and warm.
- My healthcare provider made me feel important.

Items addressing instrumental dimensions of care were:

- My healthcare provider explained things to me in words I could understand.
- My healthcare provider asked whether I understood the information he/she gave me about my condition or treatment.
- My healthcare provider seemed to be in a hurry.
- My healthcare provider missed important information that I gave him/her.
- My healthcare provider encouraged me to tell him/her everything I thought important.

Possible responses ranged from 1 (strongly agree) to 5 (strongly disagree).

Note that our measures, and their interpretation, are more complex than those typically used. Our measures ask "what happened" during the medical visit and also invite evaluation. Respondents express strength of agreement *or* disagreement about occurrence of interactions that are related positively *or* negatively to quality of care. Thus, they reveal relationships requiring careful interpretation. For example, when provider and patient agree that provider used understandable words, their *concordance* suggests a mutually satisfactory interaction; however, should both parties *disagree* with this statement, concordance will still be perfect – but will suggest an interaction that both parties experience as difficult. By contrast, *discordance* might result when one respondent strongly agrees that the provider was friendly while the other strongly disagrees. We will want to know which interactions reveal such patterns, and also which *party* perceived the interaction more negatively.

Covariates

Patient measures

These included self-reported demographic (age, sex, marital status, tribal affiliation) and socio-economic (education, income) measures. Age and education were considered continuous measures. Sex and marital status were indicator variables with females and unmarried respondents used as reference groups. Respondents' primary tribal affiliation was treated as an indicator variable with non-Cherokees used as the reference. A single question inquired about the combined income, before taxes, of all people living in the household in the calendar year; income information was reported in descriptive statistics but excluded from multivariate analyses because of missing data.

Provider measures

We collected providers' age, sex, race, marital status, scores on American Indian and White American identity indices, and tribal affiliation (if any). Providers also reported training (doctor, nurse practitioner, physician's assistant, other). Because there were only seven providers in the study, we could not use these measures in multivariate analyses.

Visit characteristics

Number of previous visits with same provider was measured by a dichotomous indicator with <2 visits used as reference. Time in waiting room was measured by a dichotomous indicator with waited ≤ 30 min used as reference.

Statistical analyses

To describe our sample, we conducted univariate analyses and examined means and percentages for patient, provider, and visit characteristics. Second, we graphically examined the joint distribution of provider and all patient evaluations of interactions; this allowed us to describe extent and patterning of concordance (provider and patient gave the same response to an item) and discordance (provider's response differed from patient's) for each interaction, while ignoring cultural differences among patient subgroups. We conducted a Wilcoxon signed-rank test for each behavior to detect significant discordance and then calculated average magnitude (absolute values) of discordance for each behavior to determine which behaviors were associated with the largest differences in perception.

Finally, we used fixed-effects regression models to explore relationships between *magnitude* of provider–patient discordance and patients' affiliation with American Indian and White cultural identities. This revealed whether particular patient cultural subgroups had significantly larger or smaller differences from providers in their interpretation of interactions. In addition to the two identity variables, models used patient and visit characteristics as controls. To avoid losing cases, four missing data points on control variables were replaced with modal category values.

Fixed-effects models are ideally suited to our multilevel data, since patients are nested within providers, but the number of providers is too limited ($n = 7$) to allow direct evaluation of the effects of their characteristics. The lack of independence of providers and patients is explicitly accounted for by modeling the provider-specific influences with fixed-effect terms. This method controls for effect of systematic variation associated with any provider characteristic (race, sex, etc). Based on results from fixed-effects models, we calculated mean discordance scores (adjusted for covariates) for the two levels of identification with American Indian identity (low/high). All data analyses were performed using Stata 10.0.

Results

Table 1 shows characteristics of providers and patients. All patients were legal citizens of a federally recognized Indian tribe, usually Cherokee; the same was true for 4 of the 7 providers. Importantly, however, patients and providers differed in self-rated cultural identity. While patients were more evenly distributed across levels of the cultural identity indices, providers *all* self-identified as high on the White American identity index, and all but one self-identified as low on the American Indian identity index. Among patients, there were more women than men. Most had completed high school and had seen the same provider at least twice.

Combinations of provider and patient interaction ratings for the full patient sample appear in Fig. 1. Circles

Table 1
Characteristics of providers and patients

Characteristics	Providers ($n = 7$)[a]	Patients ($n = 115$)
Demographic characteristics		
Age, mean years (range)	47 (26–62)	63 (50–89)
Male (%)	57	40
Race (%)		
American Indian	57	100
White	43	0
Primary tribal affiliation (%)		
Cherokee	29	92
Other tribe	29	8
None	43	0
Married or living with partner (%)[b]	100	63
Socio-economic characteristics		
Education		
≥12 years (%)	100	65
Mean years (range)		11.7 (1–19)
Family Income < $10,000/year (%)[c]		21
Visit characteristics		
Previously seen provider (%)[b]		
Never		4
Once		6
Twice or more		90
Waited > 30 min (%)[d]		10
Ethnic identity		
American Indian Identity		
Mean score (range)	0.3 (0–2.0)	1.4 (0–3)
Response categories (%)		
Low	86	67
High	14	33
White American Identity		
Mean score (range)	2.9 (2.0–3.0)	2.5 (0.5–3.0)
Response categories (%)		
Low	0	33
High	100	67

[a] Four physicians and three mid-level providers.
[b] Due to missing data, patient $n = 114$.
[c] Due to missing data, patient $n = 86$.
[d] Due to missing data, patient $n = 113$.

falling *on* the diagonal indicate complete provider–patient concordance in evaluation of a specific interaction. Circles *above* the diagonal indicate patient–provider discordance with *patient* giving the higher rating; values *below* diagonal indicate discordance with *provider* giving the higher rating.

Wilcoxon signed-rank tests showed significant discordance for *all* nine interactions ($p \leq 0.02$). The graph reveals that patient ratings were typically very high and that discordance typically resulted from providers rating their *own* behaviors less positively than patients did. An exception was the item asking if provider had laughed and joked. Pairs of scores for this variable were especially widely dispersed, indicating considerable provider–patient discordance. Moreover, as Fig. 1 indicates, discordance here resulted from an atypical pattern in which patients rated providers *lower* than providers rated themselves, reporting that they had joked *less* than providers perceived.

Fig. 2 shows average, absolute provider–patient discordance for each behavior, again looking at the full patient sample. The *largest* average discordances are observed for items inquiring whether provider asked for understanding, joked, or was friendly.

Additional analyses (not shown) indicate that patients' ratings of interaction outcomes did not vary significantly across providers, meaning that on average patients did not give higher or lower ratings to any provider. By contrast, provider self-ratings did vary, meaning that some providers were more self-critical; depending on outcome, between 32% and 77% of variance in provider ratings were attributable to differences across providers. Providers did not vary in self-ratings across patient subgroups, suggesting that providers believed that they behaved identically with all patients.

Next, we distinguished patients on separate measures of American Indian and White American cultural identities. This allowed us to observe distinctive patterns in *magnitude* of discordance by cultural subgroup. Results from fixed-effects models appear in Table 2. These models showed *no* differences in magnitude of discordance by patients' level of affiliation with White American identity but revealed significantly different levels of discordance by patients' level of American Indian identity for several items.

These results are also represented in Fig. 3, which compares adjusted mean discordances among patients at low- and high levels of American Indian identity.

Significantly *lesser* discordance among patients rating themselves high (as opposed to low) on American Indian identity is observed for items asking whether provider checked understanding ($p \leq 0.01$), missed information ($p \leq 0.002$), and encouraged patient to tell everything ($p \leq 0.005$). Additional calculations (not shown) indicated that lesser provider–patient discordances resulted from a pattern in which patients affiliating at a high level with American Indian identity typically rated providers more negatively than those affiliating at a low level; *lower discordance in this cultural subpopulation thus results because patient ratings converged with providers' relatively self-critical ratings*.

Discussion

A primary goal of our analysis was to compare provider–patient evaluations of interactions. We began by analyzing the full sample of patients who satisfied legal criteria as American Indians, without distinguishing subgroups of patients based on cultural characteristics. Results suggested that providers and patients often left the medical encounter with significantly different perceptions of "what happened." Nevertheless, interpretation of these findings suggests "good news" from a patient-centered perspective: as in a previous analysis of a small number of surgeon–patient interactions in the general population (Temple, et al., 1998), discordance typically resulted from patients' tendency to evaluate provider behaviors very positively, while providers rated themselves more harshly.

The pattern of low provider self-ratings is consistent with other research in the general population, which has shown providers, for example, rating patients' emotional

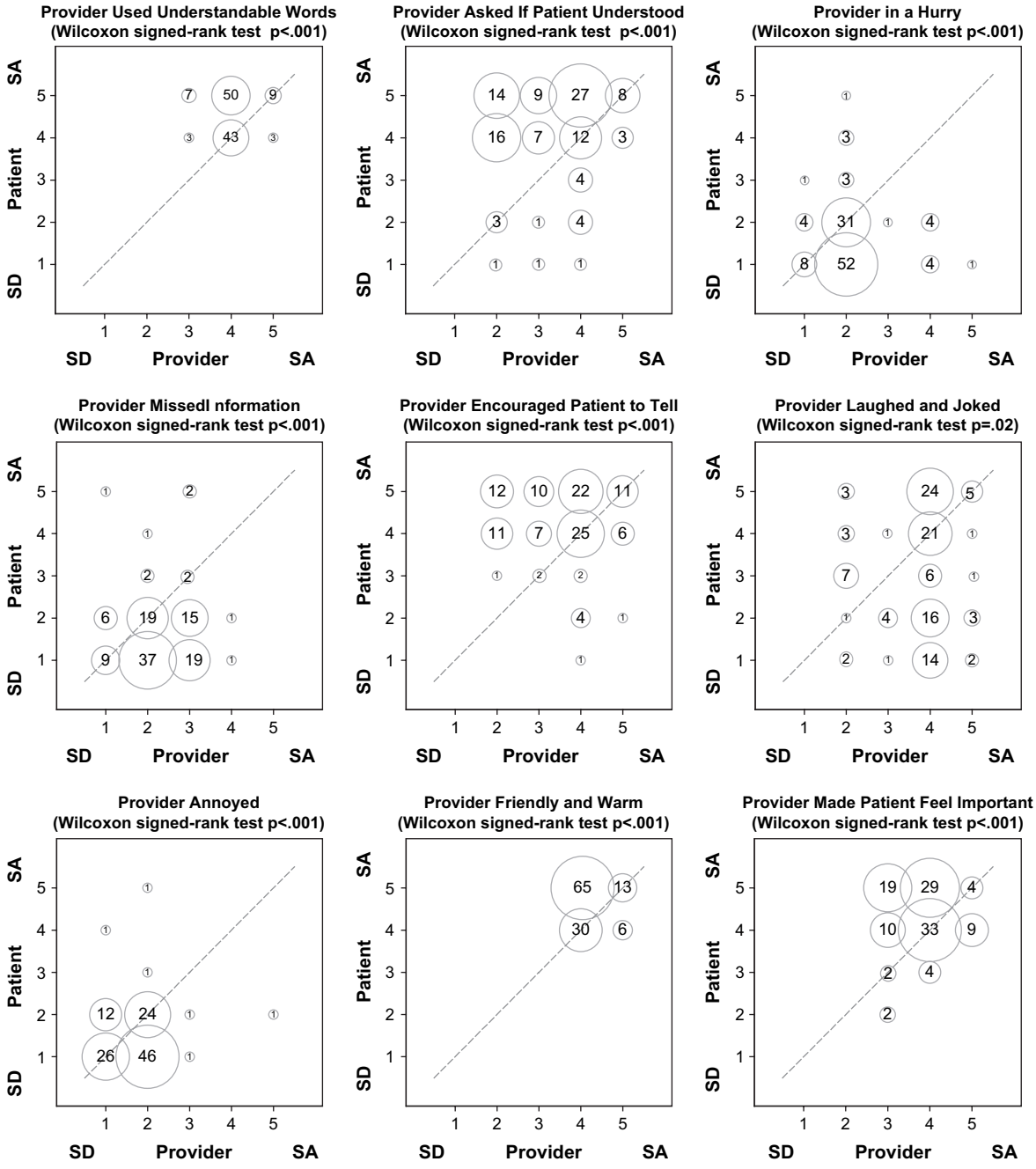

Fig. 1. Provider and patient evaluations of nine provider behaviors. Note: SA = strongly agree, SD = strongly disagree.

states more negatively than patients (Jennings & Muhlenkamp, 1981) and judging treatment less effective (Wyshak & Barsky, 1995). Our analyses suggest that providers met American Indian patient needs *better* than they thought, especially in regard to asking about patient understanding and encouraging patients to tell everything – items for which patients gave providers the highest scores relative to providers' self-ratings.

Notably, provider–patient discordance on the item inquiring about *joking* departed from the pattern of self-critical providers. For this item, discordance usually resulted from providers' tendency to perceive that they had joked *more* than patients perceived. This suggests, consistent with observational and anecdotal reports (Dean, 2003; Kramer, 1992), that humor may be an area in which providers should pay special attention in order to avoid

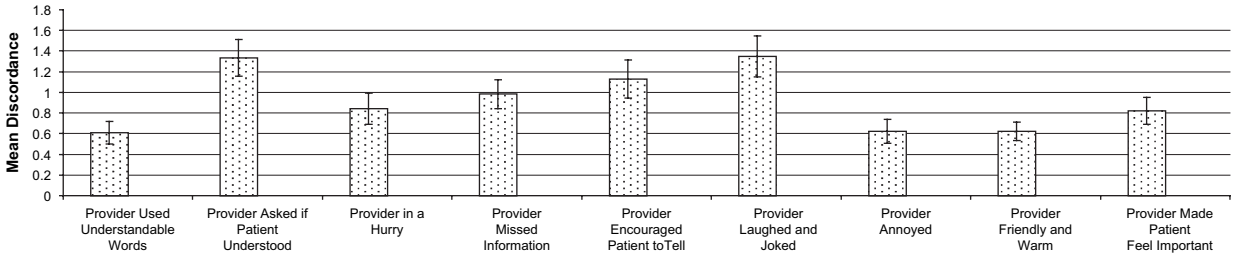

Fig. 2. Mean absolute values of provider–patient discordance.

miscommunication with American Indian patients, regardless of their cultural characteristics. It is possible that unmeasured variables – perhaps related to social distance from provider – complicate joking relationships in this population.

After investigating extent of provider–patient discordance in the full sample, we looked for patterns in *magnitude* of discordance in subgroups of American Indian patients distinguished by their cultural characteristics. Patients who rated themselves high on the measure of American Indian cultural identity were especially culturally distinctive from providers, who gave themselves much lower average scores on this index.[2] Findings nevertheless revealed that, for most variables, magnitude of discordance was unrelated to patients' American Indian cultural identity. This was notably true for variables related to affective behaviors commonly mentioned in anecdotal reports and the qualitative literature as sources of distress for American Indian patients; these included questions about providers' friendliness, joking, annoyance, and making patient feel important. Patients in our sample often gave providers the highest possible ratings for these items, especially friendliness and absence of annoyance. We also observed no relationship between American Indian cultural identity and magnitude of discordance for two instrumental behaviors: use of understandable words and pacing of visit. Such findings underscore the need for more research, including both qualitative *and* quantitative studies of medical interaction, which may tap different sources of provider and patient concern.

At the same time, magnitude of discordance *was* significantly different for several behaviors, being *smaller* for patients who scored high on American Indian cultural identity than for those who scored low. Crucially, this lesser discordance occurred when providers and patients converged upon a relatively *low* rating for these interactions. Interestingly, behaviors where magnitude of discordance varied by patients' cultural identity all focused on instrumental behaviors related to information exchange: whether provider had missed information, checked understanding, and encouraged disclosure. Here, lower discordance can be interpreted as an indicator of concerns that are *shared* between providers and a subgroup of patients: it flags areas of interaction that providers and their most culturally distinctive patients *both* see as challenging.

Our measures cannot tell us what *exactly* contributed to shared provider–patient perceptions of "something amiss," but research on interaction norms in Native populations might offer guidance to future research (Garwick, 2000; Hendrix, 2001). In the meantime, providers may wish to pay special attention to interactions involving information exchange – perhaps asking their American Indian patients for guidance on how to accomplish such tasks more smoothly for patients who strongly identify with American Indian culture.

Finally, we investigated differences in magnitude of discordance in subgroups of patients who described themselves at different levels of *White American* identity. Here we found no significant differences. The reasons that American Indian identity was related to magnitude of discordance, while White American identity was not, are unclear and a matter for future research. Nevertheless, divergent findings for the separate identity measures illustrate the importance of allowing respondents to report multiple cultural identities.

This analysis has limitations. Data were drawn from a single tribal clinic that overwhelmingly serves Cherokee patients. Because American Indian tribes exhibit marked cultural and other differences, our results should be generalized with caution. Moreover, even within the Cherokee Nation Rural Health Network, different clinics serve geographically dispersed populations with different cultural and socio-economic characteristics; sampling at other clinics might produce different results. The Cherokee Nation Institutional Review Board has approved research allowing us to address this possibility through additional sampling.

Our 73% participation rate raises a second limitation. We cannot know how non-participants – who were older than participants and thus, perhaps, more highly affiliated with American Indian cultural identity – might answer. However, if patients' distinctive cultural characteristics do affect medical interactions, as our results suggest, the participation of more older patients would likely have only made our findings more pronounced.

A third limitation is that while we compared provider and patient ratings of interaction, we cannot determine whose perception was more accurate nor conclude that variations in magnitude of discordant perceptions indicate differing quality of care.

[2] The reduced scores of even our racially American Indian providers on American Indian *cultural* identity might be explained by differences between values of the healthcare system and of many American Indian tribes (Hendrix, 2001); such differences may prompt the most culturally distinctive Native youth to self-select against medical education.

Table 2
Fixed-effects models predicting absolute values of provider–patient discordance

Variables	Provider used understandable words ($n = 115$)	Provider asked if patient understood ($n = 111$)	Provider in a hurry ($n = 113$)	Provider missed information ($n = 115$)	Provider encouraged patient to tell ($n = 115$)	Provider laughed and joked ($n = 115$)	Provider annoyed ($n = 114$)	Provider warm and friendly ($n = 114$)	Provider made patient feel important ($n = 112$)
Ethnic Identity									
High American Indian identity	−0.16	−0.49**	−0.29	−0.52**	−0.47**	−0.41	0.16	0.08	−0.09
High White American identity	0.17	−0.04	0.26	−0.10	0.15	−0.09	0.25	0.10	0.10
Controls									
Age	0.00	−0.01	−0.01	0.00	−0.01	−0.01	−0.01	0.00	0.00
Male	−0.23*	−0.17	−0.29	−0.33*	−0.17	−0.37	0.04	−0.07	0.02
Cherokee	0.11	0.56*	−0.08	0.36	0.62*	0.25	0.03	−0.04	0.33
Married	0.06	0.05	0.00	0.16	0.04	0.54*	−0.04	0.12	0.08
Years of education	−0.03	−0.07*	−0.03	−0.01	−0.04	−0.04	0.01	0.03	−0.01
2 or more prior visits	0.31	0.07	−0.06	0.17	−0.04	0.16	−0.11	0.10	0.12
Waited > 30 mins	0.29	0.26	1.04**	0.19	0.43	0.63	0.40	0.06	0.11
Constant	0.49	2.11*	1.78*	0.89	1.56*	2.10	0.92	−0.13	0.25
R-squared	0.16	0.11	0.18	0.15	0.07	0.11	0.07	0.08	0.04

* $p < 0.05$; ** $p < 0.01$.

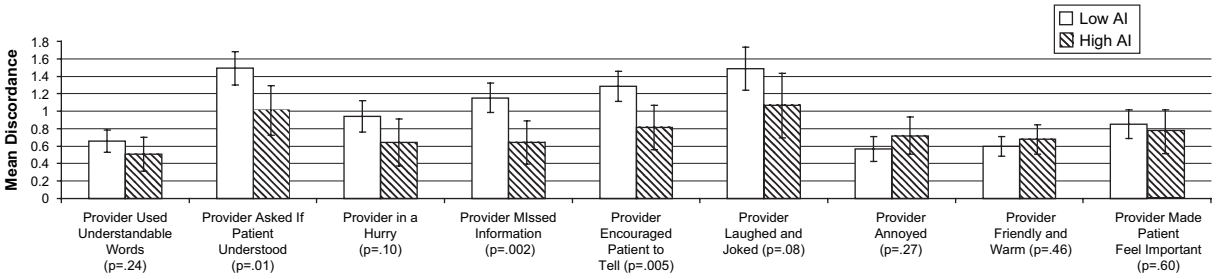

Fig. 3. Adjusted means for provider–patient discordance by patients' level of affiliation with American Indian identity.

Fourth, reasons for an absence of relationship between magnitude of discordance and White American identity are unclear, requiring additional investigation. Finally, observed relationships may have been influenced by unmeasured variables, such as the culturally linked response styles that have been observed in other racial/ethnic populations but remain unstudied in American Indians.

Conclusion

This analysis contributes to the literature on cultural competence in healthcare. Our article is the first to use objective measures to test whether providers and American Indian patients perceive medical interactions differently. Results support the conclusion that they often do. When patients' cultural characteristics are not considered, discordance usually results because providers are more critical of themselves than are patients. Yet results also suggest that patients' cultural identities are important to medical interaction. We identified interactions for which providers, and their patients who highly identified with American Indian culture, were significantly more likely than other patients to share *reduced* evaluations.

Results will interest researchers theorizing the dynamics of medical communication with diverse populations, informing attempts to examine effects of cultural identity on medical interaction. They may also interest tribal and other healthcare organizations as they implement national standards on culturally competent care (Office of Minority Health, 2000).

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