Longitudinal Care Improves Disclosure of Psychosocial Information

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Background: While longitudinal primary care is thought to promote patient rapport and trust, it is not known if longitudinality helps overcome barriers to communication that may occur when the patient and physician are of different ethnicities and/or sexes.

Objective: To examine if longitudinal pediatric care ameliorates disparities in parent disclosure of psychosocial information associated with ethnic and gender discordance between parent and physician.

Design: Longitudinal, observational study of parent-physician interaction at early visits and over the course of 1 year.

Participants: Parents (90% African American and 10% white mothers or female guardians) and their infant’s assigned primary care physician (white first- and second-year pediatric residents).

Main Outcome Measure: Parents’ psychosocial information giving measured by the Roter Interaction Analysis System.

Results: Sex- and race-related barriers to disclosure of psychosocial information were evident early in the parent-physician relationship. At early visits, African American mothers made 26% fewer psychosocial statements than white mothers; this discrepancy was not affected by physician sex. At early visits, white mothers made twice as many psychosocial statements when seeing white female compared with white male physicians.

Conclusions: Patient-centeredness is an important factor promoting psychosocial information giving for African American and white mothers, regardless of physician sex. Longitudinal relationships facilitate mothers’ disclosure to physicians of a different ethnicity or sex, but only if physicians remain patient-centered.

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Primary care settings provide most mental health care for children and adults in the United States.1,2 In a survey of US primary care practices, however, depressed African American and Hispanic adults were less likely than depressed white subjects to have their condition detected.3 Problems with communication between patients and physicians may explain part of these discrepancies. A study of California families found that parents of Hispanic and African American children reported weaker feelings of affiliation with their child’s physician than parents of white children. Parents of Asian and Hispanic children reported poorer communication.4 In The Commonwealth Funds’ 2001 Health Care Quality Survey, 23% of African Americans, 27% of Hispanics, and 33% of Asian Americans reported having trouble communicating with their physician, compared with 16% of whites.5 One of the most common results of poor communication was patients not asking questions they otherwise would have liked to ask.

Physician sex also influences discussion in medical visits. Sex is a particularly important issue in pediatrics, where women make up about two thirds of the enrolled residents.6 A meta-analysis of physician sex in communication found that female physicians engage in significantly more active partnership behaviors, positive talk, psychosocial counseling, psychosocial question asking, and emotionally focused talk.7 Behavioral differences in the communication styles of female physicians are reciprocated by patients.8 Patients of female physicians talk more overall, make more positive statements, discuss more psychosocial information, and express more partnership building than patients of male physicians.

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Our goal in this project was to examine the extent to which longitudinal care may reduce disparities in patient disclosure of psychosocial information. Longitudinal care is believed to promote increased trust and mutuality between patients and physicians although not all studies find this to be the case. We studied visits between white pediatric residents (male and female) and mothers (African American and white) of young infants. These visits have a dual role of monitoring the infant's health and of detecting parental emotional or social problems that may influence child development. We divided our analysis into 2 parts: (1) How do sex and ethnicity relate to interactions at early (first or second) visits between mothers and pediatricians? (2) Do sex and ethnicity influence the way in which interactions evolve over the course of subsequent visits?

**METHODS**

**SETTING**

The study was conducted in the pediatric primary care clinic of an urban teaching hospital. Children have assigned primary care providers (first- and second-year pediatric residents) whom they see for health maintenance and, when possible, for acute care.

**STUDY DESIGN**

The study design was descriptive, using a prospective, longitudinal design. Data were collected as part of a clinical trial (the SAFE Home Project) designed to test the effect of anticipatory guidance on parents' injury prevention practices. Physicians participating in the SAFE Home Project were randomized to receive either standard injury prevention training (a single 1-hour seminar on injury prevention) or special training in injury prevention counseling (two 2½-hour sessions with role playing and demonstration) and use of preventive devices such as stair gates and cabinet latches. Physicians who received the special training did counsel more about injury prevention, but parents who saw these physicians were no more likely to engage reassurance, and partnership building. The RIAS coding protocol is described in an earlier work.

**CODING OF TALK DURING VISITS**

Parent-physician talk was recorded using audiotape and then coded using the Roter Interactional Analysis System (RIAS). The RIAS coders listen to audiotapes and classify each speaker's utterances into one of several exclusive categories including information giving, question asking, empathy, and partnership facilitation (ie, talk that facilitates mutual conversation). Coder reliability is monitored by duplicate coding of a random 10% sample of audiotapes by a second coder throughout the coding period. Correlation coefficients for individual RIAS categories ranged from 0.75 to 0.97. In this analysis we examine 2 communication measures developed by adding together individual items from the RIAS coding. Parents' psychosocial information giving at each visit is our primary outcome measure. It is the sum of items in our measure of the physicians' patient-centeredness. Patient-centeredness can be seen as having 3 components (interpersonal sensitivity, partnership, and medical information giving) (Table 1) and is associated with increased patient satisfaction and treatment adherence, as well as increased disclosure of psychosocial information. Our measure of patient-centeredness was the sum of physician talk in medical and psychosocial information giving, asking psychosocial questions, showing empathy, giving reassurance, and partnership building. The RIAS coding process also allows observation of the order in which utterances are
made. In this analysis, we noted, within each visit, the order of the parent's first statement giving psychosocial information and the physician's first partnership-building statement.

STATISTICAL ANALYSIS

Data in this study pose special issues for analysis. The multiple visits of each parent-physician pair (in the longitudinal portion of the study), and the visits of multiple parents with the same physician, are not statistically independent in the sense that factors common to the physician or parent could be influencing what is measured. After exploratory analyses using standard statistical tests ($\chi^2$ and $t$ tests, ordinary linear and logistic regression), we computed final results using generalized estimating equations—based procedures in the statistical software Stata Version 6.0 (Stata Corp, College Station, Tex). These procedures compute population-averaged statistics (eg, differences in psychosocial information giving) that consider the nonindependence of observation. These procedures also require few assumptions about the distributions of the variables explored. We used generalized estimating equation—based linear regression to examine multiple visits over time by individual parent-physician pairs and included descriptors of physicians (sex, injury study group) as covariates to account for nonindependence of visits by multiple parents with the same physician.

HUMAN SUBJECTS

Parents and primary care providers gave informed, written consent for participation. The study was approved by the Joint Committee on Clinical Investigation of the Johns Hopkins Hospital, Baltimore, Md.

## RESULTS

### PATIENT-CENTEREDNESS AT EARLY VISITS

Physician's patient-centeredness was strongly associated with mother's psychosocial information giving, regardless of the mother's ethnicity and the physician's sex ($\text{Pearson } r=0.64, P<.001$; regression coefficients by ethnicity given in Table 2). All 3 major components of patient-centeredness (interpersonal sensitivity, partnership, and medical information giving) were correlated with the mother's psychosocial information giving, although the correlation between the medical information component of patient-centeredness showed a weaker relationship than the interpersonal sensitivity and partnership components ($\text{Pearson } r=0.27, 0.64$, and $0.66$, respectively, all $P<.001$).

Timing of physician's patient-centered talk also appeared important for mother's disclosure. Physicians' partnership statements preceded mothers' first psychosocial information giving 77% of the time (106 of 138 visits; $P<.001$, 2-sided Wilcoxon signed rank test). Patient-centered talk tended to come before psychosocial information giving for both African American (96 [77%] of 124 visits, $P<.001$) and white mothers, although for the white mothers, we had only a small number of observations and the tendency was not statistically significant (10 [71%] of 14 visits, $P=.18$).

### INTERACTIONS AT EARLY VISITS

At early visits, African American mothers gave less psychosocial information to physicians than did white mothers. African American mothers made an average of 80 psychosocial utterances in their first visit compared with 101 made by white mothers (average difference 21.2 utterances; 95% confidence limits [CLs], 1.6, 40.8).

African American mothers older than 24 years disclosed more psychosocial information to their infants' physician than younger mothers (Table 2). Older mothers made an average of 15.4 more psychosocial information utterances per visit than younger mothers (95% CLs, 2.3, 27.8). Physician sex was not associated with African American mothers' psychosocial information at these early visits.

Among white mothers, physician's sex (female) was associated with greater psychosocial information giving (average difference compared with male physicians 176.5 utterances per visit; 95% CLs, 74.9, 278.1), but mothers' age was not. Educational level was not significantly associated with psychosocial information giving by either African American or white mothers.

### CHANGES IN PSYCHOSOCIAL INFORMATION GIVING OVER TIME

In contrast to differences in psychosocial disclosure by African American and white mothers during early visits, psychosocial information giving did not differ by mothers' ethnicity when averaged over a 1-year period (average difference of 4.8 utterances per visit between African American and white mothers; 95% CLs, −10.7, 20.3).

<table>
<thead>
<tr>
<th>Statement Categories</th>
<th>Example of Conversational Utterances</th>
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<tbody>
<tr>
<td>Parent psychosocial information giving</td>
<td></td>
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<tr>
<td>Concerns about relationships</td>
<td>Mother: &quot;My husband has been annoyed that I don't spend as much time with him.&quot;</td>
</tr>
<tr>
<td>Parent feelings and lifestyle</td>
<td>Mother: &quot;I have been feeling pretty worn out.&quot;</td>
</tr>
<tr>
<td>Behavior and development concerns about child</td>
<td>Mother: &quot;Do you think he should be talking more?&quot;</td>
</tr>
<tr>
<td>Physician's patient-centeredness</td>
<td></td>
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<tr>
<td>Interpersonal sensitivity</td>
<td>Physician: &quot;How have you been feeling?&quot;</td>
</tr>
<tr>
<td></td>
<td>Physician: &quot;I can really sympathize with you.&quot;</td>
</tr>
<tr>
<td></td>
<td>Physician: &quot;Lots of mothers feel down about now, but let's see what we can do to help.&quot;</td>
</tr>
<tr>
<td>Partnership</td>
<td>Physician: &quot;We can work on that together.&quot;</td>
</tr>
<tr>
<td></td>
<td>Physician: &quot;Let me make sure I understand what you are worried about.&quot;</td>
</tr>
<tr>
<td>Medical information giving</td>
<td>Physician: &quot;That sort of a rash is pretty common at this age, and it is likely to go away by itself in a few weeks.&quot;</td>
</tr>
</tbody>
</table>
The apparent reason for this contrast was that, adjusted for physicians’ patient-centeredness (as well as mothers’ age), African American mothers’ psychosocial information giving tended to increase over time (an increase of 2.3 utterances per visit; 95% CLs, 1.3, 3.3), while for white mothers it remained constant (average change per visit 1.5 utterances; 95% CLs, −1.1, 4.1).

Change in mothers’ psychosocial information giving over time was related to physician sex. The increase in psychosocial information giving by African American mothers was observed when they were paired with female physicians (average change per visit 2.9 utterances; 95% CLs, 1.7, 4.1) but not with male physicians (average change per visit −0.12 utterance; 95% CLs, −1.9, 1.7) (Figure 1).

The opposite sex relationship was observed among white mothers (Figure 2). White mothers paired with male physicians increased their psychosocial information giving over time (average change 5.9 utterances per visit; 95% CLs, 1.3, 10.5) while there was no change over time for white mothers paired with female physicians (average change 1.0 utterances per visit; 95% CLs, −1.9, 3.9). Even when averaged over time, white mothers still gave more psychosocial information to female as opposed to male physicians (on average 22.0 more utterances per visit; 95% CLs, 8.9, 35.2). In contrast, averaged over time, African American mothers gave similar amounts of psychosocial information to female and male physicians (average difference of 2 utterances per visit; 95% CLs, −1.1, 10.0). This was consistent with the finding, noted earlier, that physician sex was also not associated with African American mothers’ psychosocial disclosure at early visits.

Patterns in these visits give a glimpse of mechanisms involved when mothers see pediatricians of a different ethnicity or sex than their own. For African American mothers seeing white physicians, psychosocial information giving at initial visits is less than that of white mothers, regardless of physician sex. When paired with female white physicians, however, African American mothers gradually increase their psychosocial information giving over time. This effect was sufficiently pronounced that, averaged over the entire study period, mother’s ethnicity was not associated with differences in psychosocial information giving.

For white mothers, seeing a male white physician was initially associated with giving less psychosocial information compared with seeing a female white physician, but again, there was evidence of an increase over time.
Longitudinal primary care is thought to promote trust and patients' willingness to share sensitive information, but differences in ethnicity and sex may prove to be barriers. We found no prior studies that were able to examine how sex and ethnic-discordant patient-physician relationships evolve over time.

In this study, examination of visits early in a mother-pediatrician relationship demonstrated ethnic and sex-related barriers to mothers' disclosure of psychosocial information. Longitudinal care, however, demonstrated the potential to improve communication. The study has 2 important lessons for clinicians. First, across sex and ethnic differences, patients responded to a clinician's patient-centered style by giving more psychosocial information. Second, mothers involved in long-term cross-ethnic and cross-sex interactions with physicians gradually did increase the amount of psychosocial information they were willing to disclose, but this potential was only partially realized because patient-centeredness tended to decrease over time.

We observed the potential of a longer-term cross-ethnic and cross-sex interactions with physicians to increase the amount of psychosocial information they were willing to disclose, but this potential was only partially realized because patient-centeredness tended to decrease over time.

As we noted, there are real gains in mothers' information giving during the course of a longitudinal relationship. However, white mothers overall still gave less psychosocial information to male white physicians compared with female white physicians.

These results are both consistent with and extend prior observations about sex and ethnic difference in physician-patient relationships. Prior studies have found that African American patients report lower levels of participation in decision making and less satisfying communication when they see white physicians. Prior studies also find that patients tend to give female physicians more psychosocial information. We observed the potential of a longitudinal relationship to ameliorate the negative communication consequences of at least some permutations of ethnic and sex discordance on communication. When seeing a white female physician over time, African American mothers seem to build a relationship within which more information of a potentially sensitive and intimate nature is shared. For white mothers, what may be initial reserve with white male physicians may also be lessened over time.

Figure 1 and Figure 2 exaggerate the consequences of longitudinality by assuming that patient-centeredness stays at a constant level. In prior analyses of these same data, we found that patient-centeredness remains strongly associated with mothers' psychosocial information giving during the course of a longitudinal relationship, but that, on average, it decreases over time. As we noted, there are real gains in mothers' information giving, but it is likely that these gains could be greater if physicians maintained or increased their levels of patient-centeredness.

The greatest lesson to us is that even among the group of well-intentioned and well-trained residents, there is much going on in the interactions with patients of which they are probably unaware. Or if they are aware, they do not know how to deal with the material. The residents are experiencing barriers to communication set up by their own style, and by sex and ethnic differences that for the present, we in pediatric education take as the cost of doing business.

A major caveat is that our data allow us to examine only a few of the many permutations of relationships that must be considered when studying ethnicity and sex in medical interactions. We cannot generalize our results to other combinations of physician and patient ethnicity, or to interactions with male rather than female patients, or to medical rather than pediatric visits. Results also might be different in a group of more advantaged parents, or with more experienced physicians, although decreased participatory decision making and satisfaction have also been described among middle-class, African American patients visiting experienced community physicians. Finally, we do not have a longitudinal control group in which mothers had their follow-up visits with different physicians. We would like to believe that our longitudinal results represent the benefits of seeing the same physician for most of a child's care, but it is possible that these new mothers were getting more comfortable with pediatricians in general (male or female, depending on the situation), or with the clinic staff, rather than building a relationship with one pediatrician specifically.

Our results need replication in larger and more diverse populations, but they suggest 2 important conclusions. First, ethnicity and sex interact with each other and with longitudinality to shape physician-patient communication. Both interventions and observational studies need to consider these interactions. Second, the results suggest that one way to address ethnic disparities in mental health care may be to promote longitudinal primary care relationships.

An important caveat is that to overcome disparities, longitudinality seems necessary but insufficient. Patient-centeredness is a second essential element. Patient-centeredness can be taught and readily learned. Unfortunately, training in physician-patient communication remains a small and underdeveloped aspect of pregraduate and postgraduate medical education. Our results suggest that communication training—with a special emphasis on maintaining patient-centeredness over time—could be an important addition to continuity experiences.

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