

Race, Gender, and Partnership in the Patient-Physician Relationship

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STUDIES HAVE SHOWN THAT African Americans and other minority patients often receive differential and less optimal technical health care than white Americans.¹⁻¹⁶ It is uncertain how much of these racial differences in health care and outcomes can be explained by patient cultural factors, health care professional biases, or health care system biases. Differences in socioeconomic status and health insurance coverage between patients only partially explain the observed racial differences in health care.^{7,17,18}

Race and ethnicity have been cited as important cultural barriers in patient-physician communication.¹⁹⁻²² However, cross-cultural factors in patient-physician communication are largely unexplored. Problems in communication due to cultural differences between patients and physicians often contribute to a disparity in the understanding that patients and physicians have regarding the cause of disease and the effectiveness of available treatments.^{23,24} One study showed some enhancement of communication when physicians and patients belonged to the same ethnic group; however, the match between the physician and patient with respect to the explanatory model of illness and expectations for the visit were equally important in determining outcome.²⁵

Context Many studies have documented race and gender differences in health care received by patients. However, few studies have related differences in the quality of interpersonal care to patient and physician race and gender.

Objective To describe how the race/ethnicity and gender of patients and physicians are associated with physicians' participatory decision-making (PDM) styles.

Design, Setting, and Participants Telephone survey conducted between November 1996 and June 1998 of 1816 adults aged 18 to 65 years (mean age, 41 years) who had recently attended 1 of 32 primary care practices associated with a large mixed-model managed care organization in an urban setting. Sixty-six percent of patients surveyed were female, 43% were white, and 45% were African American. The physician sample (n = 64) was 63% male, with 56% white, and 25% African American.

Main Outcome Measure Patients' ratings of their physicians' PDM style on a 100-point scale.

Results African American patients rated their visits as significantly less participatory than whites in models adjusting for patient age, gender, education, marital status, health status, and length of the patient-physician relationship (mean [SE] PDM score, 58.0 [1.2] vs 60.6 [3.3]; $P = .03$). Ratings of minority and white physicians did not differ with respect to PDM style (adjusted mean [SE] PDM score for African Americans, 59.2 [1.7] vs whites, 61.7 [3.1]; $P = .13$). Patients in race-concordant relationships with their physicians rated their visits as significantly more participatory than patients in race-discordant relationships (difference [SE], 2.6 [1.1]; $P = .02$). Patients of female physicians had more participatory visits (adjusted mean [SE] PDM score for female, 62.4 [1.3] vs male, 59.5 [3.1]; $P = .03$), but gender concordance between physicians and patients was not significantly related to PDM score (unadjusted mean [SE] PDM score, 76.0 [1.0] for concordant vs 74.5 [0.9] for discordant; $P = .12$). Patient satisfaction was highly associated with PDM score within all race/ethnicity groups.

Conclusions Our data suggest that African American patients rate their visits with physicians as less participatory than whites. However, patients seeing physicians of their own race rate their physicians' decision-making styles as more participatory. Improving cross-cultural communication between primary care physicians and patients and providing patients with access to a diverse group of physicians may lead to more patient involvement in care, higher levels of patient satisfaction, and better health outcomes.

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Few studies have related differences in the quality of interpersonal health care to patients' and physicians' ethnicity or to ethnic concor-

dance or discordance in the patient-physician relationship. These studies have found that racial and ethnic differences between physicians and pa-

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tients do influence physicians' communication and decision making.^{8,26-29} In the Medical Outcomes Study, minority patients rated their physicians' decision-making styles as less participatory than nonminority patients did.³⁰

Studies investigating the influence of patient gender on communication in the medical visit show that female patients generally receive more information, ask more questions, and have more partnership-building with physicians than male patients.^{28,31-33} Less is known about the communication style of female physicians. A few recent studies have shown that female physicians exhibit more empathy and engage in more positive talk, partnership-building, question-asking, and information-giving compared with their male counterparts.^{30,34-36}

The quality of interpersonal care is important to patients. Studies have shown that increasing patient involvement in care via negotiation and consensus-seeking improves patient satisfaction and outcomes.³⁷⁻³⁹ Specifically, visits in which the physician uses a participatory decision-making (PDM) style are associated with higher levels of patient satisfaction.⁴⁰ Recent studies of patient-physician communication in primary care show the highest levels of patient satisfaction and the lowest level of malpractice claims with the psychosocial pattern, which is characterized by psychosocial exchange and an almost equal distribution of patient and physician talk.⁴¹⁻⁴³

Our study questions were as follows: (1) Do minority patients rate their physicians' decision-making styles as less participatory than white patients? (2) Do the patients of minority physicians rate their physicians' decision-making styles as less participatory than the patients of white physicians? and (3) What is the association between race and gender concordance or discordance in the patient-physician relationship and PDM style?

METHODS

Study Design and Population

The data for this analysis were collected in the baseline survey for a ran-

domized clinical trial evaluating an intervention to improve care of primary care patients with depression. We identified all primary care practices with more than 200 enrollees from a large mixed-model independent practice association and network-style managed care organization (NYLCare) with primary care capitation in the Washington, DC, metropolitan area for our sample target. Washington, DC, and its Maryland suburbs have a large percentage of minorities compared with the national average. Additionally, this managed care organization has historically served geographic areas that have high African American patient and physician populations. Two thirds of the practices agreed to participate, and 85% of those actually provided data. Patients from a total of 32 practices, representing general internal medicine and family practice, were interviewed. Most practices had fewer than 5 physicians. For larger practices, a maximum of 5 physicians were included. The physician sample included 64 primary care physicians. There were 36 white physicians (56%), 16 African American physicians (25%), 10 Asian physicians (15%), and 2 Latino physicians (3%). The physician sample included 40 men (63%) and 24 women (37%).

The original sampling procedure for patients was for the office receptionist to identify all consecutive NYLCare patients who came to see the physician on recruitment days. Race and other patient demographics were not included in the sampling scheme. The mean and median number of patients contributed per physician was 28.

The study procedures were reviewed and approved by the Johns Hopkins Medical Institutions Joint Committee on Clinical Investigation. After giving informed consent, 2481 patients (87% of those eligible) who were insured by the managed care organization, aged 18 years or older, and had visited their primary care physician within the preceding 2 weeks were interviewed on the telephone between November 1996 and June 1998. No Medicare or Medicaid patients were enrolled in this managed care

organization at the time of this study. Patients had to respond to the question about self-defined race/ethnicity and all 3 questions regarding PDM style to be included in this analysis. Of the 2481 patients, 665 patients did not answer all 3 of the questions regarding PDM style or did not self-identify into a racial group. Therefore, there were 1816 patients in our main analyses. Individuals with incomplete responses were slightly younger than the study respondents, more educated, less likely to have known their physician for at least 1 year, and had higher self-rated overall health status. Additionally, incomplete response rates were lower for African Americans (21%) than for whites (26%) and other races (26%) (χ^2 , $P < .01$). There were no gender differences between the study respondents and those responding to fewer than 3 questions. More than 400 of the incomplete responders answered "I don't know" or "I am not sure" to at least 1 of the 3 questions. None of the characteristics of incomplete responders suggest these individuals did not understand the questions. Since our incomplete responders were more healthy and less likely to have known their physician for at least 1 year, it is likely that these patients do not have enough experiences with medical decisions upon which to base an evaluation of their physicians' partnership style. Fewer than 10 patients refused to answer all 3 questions.

Study Variables

Our main independent variables included patient race/ethnicity, physician race/ethnicity, physician gender, and race and gender concordance or discordance in the patient-physician relationship. Covariates for the analyses included factors related to race and to PDM style in previous studies. Patient factors included age, gender, education, marital status, self-rated perceived health (5-point scale from poor to excellent), and length of the patient-physician relationship.

Because patient satisfaction and PDM style have been highly associated in previous studies, we wanted to see if the association would be similarly strong within each racial group. The mea-

sure of patient satisfaction included questions about the patients' level of satisfaction with the following: (1) overall health care; (2) their physicians' technical skills, such as thoroughness, carefulness, and competence; (3) their physician's explanation of their problem and its treatment; and (4) their physicians' personal manner, such as courtesy, respect, sensitivity, and friendliness. Each question was scored on a scale from 0 to 4, from "not at all satisfied" to "extremely satisfied." The scores were added together, divided by 16, and multiplied by 100 to arrive at the satisfaction score.

Our main dependent variable was PDM style, originally described in 1995 by Kaplan and colleagues.³⁰ The PDM style is defined as the propensity of physicians to involve patients in treatment decisions and is measured as the aggregate of 3 items, each rated on a 5-point scale from 0 (never) to 4 (very often), as follows: (1) If there were a choice between treatments, how often would this doctor ask you to help make the decision? (2) How often does this doctor give you some control over your treatment? and (3) How often does this doctor ask you to take some of the responsibility for your treatment? The highest possible score is 12. By convention, the raw score is divided by 12 and multiplied by 100 to arrive at a 0- to 100-point scale. A higher score means the visit was more participatory.

Analyses

Generalized estimating equations (GEEs) were used to analyze the relationship between PDM style and patient race/ethnicity, physician race/ethnicity, race and gender concordance or discordance in the patient-physician relationship, and all other covariates. The GEE method was preferred over linear regression because of its ability to account for the clustering effects of any existing within-physician correlation and the different number of patients per physician, while producing valid and robust results.^{44,45} In the multivariate model, we adjusted for patient age, gender, edu-

cation, marital status, health status, and length of the patient-physician relationship. In subsequent models, we also included physician gender and race.

We also used GEEs to study the relationship between patient satisfaction and PDM style for the overall sample and by patient race/ethnicity. We explored unadjusted and adjusted models.

RESULTS

Characteristics of Study Sample

Characteristics of the patient sample are shown in TABLE 1. About half the patients had been seeing their physician for

more than 3 years. The mean overall health status was 77.2 on a 0- to 100-point scale, with approximately 60% reporting that they felt their health was very good or excellent. Approximately 60% of the patients were seeing a male physician and 40% were seeing a female physician. Almost half the patients were seeing white physicians, 27% were seeing African American physicians, and 26% were seeing physicians of other races. There were statistically significant differences among patient race/ethnic groups in several variables. African American patients were slightly older,

Table 1. Characteristics of Patient Sample*

	Total (N = 1816)	Race/Ethnic Group		
		White (n = 784)	African American (n = 814)	Other (n = 218)
Age, y				
18-29	15	19	12	16†
30-39	28	25	29	31
40-49	32	30	33	31
50-65	25	26	25	22
Gender				
Male	34	39	28	41‡
Female	66	61	72	59
Education				
High school or less	36	27	45	35‡
Some college	24	22	27	22
College graduate	21	26	15	26
Graduate school	19	25	13	17
Marital status				
Married	55	60	47	68‡
Separated/divorced/widowed	19	15	24	12
Never married	26	24	29	20
Self-rated health status				
Poor/fair	11	7	14	8‡
Good	28	26	31	30
Very good	40	43	37	39
Excellent	21	24	18	23
Length of relationship with primary care physician, y				
<1	20	18	20	25‡
1-3	28	26	28	37
>3	52	55	52	38
Race of physician seen				
White	47	67	30	39‡
African American	27	13	43	16
Other	26	19	26	46
Gender of physician seen				
Male	61	66	56	61
Female	39	34	44	39

*All data are percentages.

†Differences among racial/ethnic groups, χ^2 , $P \leq .01$.

‡Differences among racial/ethnic groups, χ^2 , $P \leq .001$.

more likely to be women, less likely to be married, less educated, had poorer perceived health, and were more likely to see African American physicians than white patients (Table 1).

Relationship of Patient Characteristics to PDM Style

Several patient factors were associated with PDM style in unadjusted analy-

ses. Patients aged 40 to 65 years rated their visits as more participatory than patients younger than 30 years. Patients with a graduate school education had more participatory visits than those with a high school education or less. Patients with better ratings of their own health status had more participatory visits with physicians. Patients who knew their physician for 3 years or

longer rated their visits as more participatory than patients who knew their physician for less than 1 year. In this sample, there were no differences in PDM style ratings by patient gender or marital status (TABLE 2).

Relationship of Patient Race to PDM Style

There were significant differences in PDM scores among patient racial groups in unadjusted analyses. African Americans and other minority patients rated their physicians as having lower PDM scores than did white patients. In models adjusting for patient age, gender, education, marital status, health status, and length of the patient-physician relationship, African Americans had significantly less participatory visits than whites. Asian, Latino, and other minority patients also rated their physicians as less participatory, but the results did not achieve statistical significance. Adding physician gender and physician race to the model attenuated the relationship between PDM style and patient race; however, African American patients still rated their visits as less participatory than white patients (TABLE 3).

Relationship of Physician Race and Gender to PDM Style

There were no significant differences between minority and white physicians with respect to patient ratings of PDM style in unadjusted analyses. Similarly, in analyses adjusting for patients' age, education, health status, and length of the patient-physician relationship, there were no

Table 2. Relationship of Patient Characteristics to Participatory Decision-Making (PDM) Style*

	No. of Patients	PDM Style Score, Mean (SE)	P†
Age, y			
18-29	278	72.7 (1.3)	Reference
30-39	514	73.5 (1.6)	.61
40-49	577	76.8 (1.5)	.008
50-65	433	77.5 (1.6)	.003
Gender			
Male	626	75.2 (1.0)	Reference
Female	1190	75.4 (1.0)	.84
Education			
High school or less	653	74.2 (1.0)	Reference
Some college	438	74.8 (1.3)	.63
College graduate	381	75.8 (1.4)	.25
Graduate school	338	77.9 (1.4)	.008
Marital status			
Married	1003	75.6 (0.8)	Reference
Separated/divorced/widowed	338	76.5 (1.2)	.51
Never married	469	73.8 (1.3)	.13
Self-rated health status			
Poor/fair	194	71.4 (1.6)	Reference
Good	517	73.8 (1.8)	.004
Very good	720	76.2 (1.7)	.001
Excellent	379	77.9 (1.9)	.001
Length of relationship with primary care physician, y			
<1	360	73.9 (1.2)	Reference
1-3	516	74.0 (1.5)	.95
>3	933	76.8 (1.4)	.04

*The PDM style score is based on 3 questions and ranked on a 0- to 100-point scale. Higher scores mean the physician is more participatory.
†P values are from generalized estimating equations.

Table 3. Relationship of Patient Race to Participatory Decision-Making (PDM) Style*

Patient Race	No. of Patients	Model 1†		Model 2‡		Model 3§		Model 4	
		Unadjusted Score, Mean (SE)	P	Adjusted Score, Mean (SE)	P	Adjusted Score, Mean (SE)	P	Adjusted Score, Mean (SE)	P
White	784	77.1 (0.9)	Reference	60.6 (3.3)	Reference	59.3 (3.3)	Reference	59.8 (3.4)	Reference
African American	814	73.9 (1.2)	.007	58.0 (1.2)	.03	56.6 (1.2)	.02	57.5 (1.2)	.07
Other minority	218	73.8 (1.7)	.05	58.3 (1.7)	.17	56.9 (1.7)	.17	57.9 (1.7)	.26

*The PDM style score is based on 3 questions and ranked on a 0- to 100-point scale. Higher scores mean the physician is more participatory. P values are from generalized estimating equations.

†PDM score by patient race (unadjusted).

‡Adjusted for patients' age, gender, education, marital status, and length of the patient-physician relationship.

§Adjusted for patients' age, gender, education, marital status, health status, length of the patient-physician relationship, and physician gender.

||Adjusted for patients' age, gender, education, marital status, health status, length of the patient-physician relationship, physician gender, and physician race.

significant differences between minority and white physicians with respect to PDM style. However, physician gender was related to PDM style. Female physicians had more participatory visits with their patients than male physicians in adjusted analyses (TABLE 4).

Relationship of Race and Gender Concordance or Discordance to PDM Style

To study the potential influence of race concordance or discordance between physicians and patients on PDM style, we stratified patients according to the race/ethnicity of their physicians and measured the relationship between PDM style and patient race within each physician race group, adjusting for patient age, gender, education, marital status, health status, and length of the relationship. African American patients had significantly less participatory visits with white physicians than white patients ($\beta = -4.3$, $SE = 1.7$, $P < .02$, adjusted). Asian and Latino patients had less participatory visits with African American physicians than African American patients; however, these results were based on very small sample sizes. There were no significant racial differences in PDM scores among patients seeing Asian or Latino physicians. However, there were only 2 Latino physicians in the study sample; therefore, reliable conclusions regarding the PDM style of Latino physicians cannot be drawn (data not shown).

To explore the overall significance of racial and ethnic concordance in the patient-physician relationship, we conducted an analysis to assess the relationship between race/ethnic concordance between physicians and patients and PDM style. Because of previously described relationships between physician gender and PDM style, we looked at the effect of both race and gender concordance or discordance. Patients in race-concordant relationships with their physicians rated their physicians as significantly more participatory than patients in race-discordant relation-

ships ($\beta = +2.6$, $SE = 1.1$, $P < .02$, adjusted). Gender concordance between physicians and patients was not significantly related to PDM style (TABLE 5). Participatory decision-making style was highest in relationships that were race and gender concordant ($\beta = +4.3$, $SE = 1.5$, $P < .01$, adjusted) compared with relationships that were race and gender discordant (data not shown).

Patient Satisfaction and PDM Style

Patient satisfaction with technical and interpersonal aspects of care was highly associated with PDM score ($\beta = +0.5$, $SE = 0.02$, $P < .001$, adjusted). The relationship between patient satisfaction ratings and PDM style was similar for all racial groups. Asian and Latino patients, but not African American patients, were significantly less satisfied than whites. Patient gender was not re-

lated to satisfaction. Both race concordance and gender concordance were significantly and positively associated with patient satisfaction.

COMMENT

In this study, African American patients had significantly less participatory visits with their physicians than white patients. This finding persisted after adjusting for potential confounders in the relationship between patient race and physician decision-making style. There were no significant differences between minority and white physicians with respect to patient ratings of PDM style. Female physicians had more participatory visits with patients than male physicians. Patients in race-concordant relationships with their physicians rated their physicians as significantly more participatory than pa-

Table 4. Relationship of Physician Characteristics to Participatory Decision-Making (PDM) Style*

Characteristic	No. of Patients	Model 1†		Model 2‡	
		Unadjusted Score, Mean (SE)	P	Adjusted Score, Mean (SE)	P
Physician race					
White	860	76.3 (1.0)	Reference	61.7 (3.1)	Reference
African American	489	74.2 (1.7)	.23	59.2 (1.7)	.13
Other minority	467	74.3 (1.8)	.28	59.9 (1.7)	.30
Physician gender					
Female	707	76.9 (1.4)	.09	62.4 (1.3)	.03
Male	1109	74.5 (0.8)	Reference	59.5 (3.1)	Reference

*The PDM style score is based on 3 questions and ranked on a 0- to 100-point scale. Higher scores mean the physician is more participatory. P values are from generalized estimating equations.
 †PDM score by physician race or physician gender (unadjusted).
 ‡Adjusted for patients' age, gender, education, marital status, health status, and length of the patient-physician relationship.

Table 5. Relationship of Race and Gender Concordance in the Patient-Physician Relationship to Participatory Decision-Making (PDM) Style*

Concordant Status	No. of Patients	Model 1†		Model 2‡		Model 3§	
		Unadjusted Score, Mean (SE)	P	Adjusted Score, Mean (SE)	P	Adjusted Score, Mean (SE)	P
Race concordant	958	76.6 (1.1)	.02	62.6 (1.1)	.05	61.1 (1.1)	.02
Race discordant	858	74.0 (0.9)	Reference	60.4 (2.9)	Reference	58.5 (3.0)	Reference
Gender concordant	949	76.0 (1.0)	.12	62.2 (1.0)	.12	63.3 (1.0)	.11
Gender discordant	867	74.5 (0.9)	Reference	60.7 (3.2)	Reference	61.7 (3.0)	Reference

*The PDM style score is based on 3 questions and ranked on a 0- to 100-point scale. Higher scores mean the physician is more participatory. P values are from generalized estimating equations.
 †PDM score by race- or gender-concordant status (unadjusted).
 ‡Adjusted for patients' age, gender, education, marital status, health status, and length of the patient-physician relationship.
 §Adjusted for patients' age, gender, education, marital status, health status, length of the patient-physician relationship, and physician gender (race-concordant analysis) or physician race (gender-concordant analysis).

tients in race-discordant relationships. Gender concordance was not significantly related to PDM style. The data suggest that all patients prefer participatory visits, as patient satisfaction was highly associated with PDM score for patients in all ethnic groups.

This study adds to a growing body of research indicating that ethnic differences between physicians and patients are often barriers to partnership and effective communication.^{19-22,30} A number of physician factors may account for these problems. First, physicians may unintentionally incorporate racial biases, such as racial and ethnic stereotypes, into their interpretation of patients' symptoms, predictions of patients' behaviors, and medical decision making.^{4,6} Second, physicians may lack understanding of patients' ethnic and cultural disease models or attributions of symptoms. A third possibility is that physicians are often not aware of or have expectations of the visit that differ from patients' expectations. There are also patient factors that might contribute to less participatory visits. Factors such as language barriers, low health literacy and educational status, and lack of self-efficacy regarding managing one's health may be more prevalent among ethnic minority patients.

Why do patients seeing physicians of the same ethnic background as themselves rate their physicians as more participatory? Physicians and patients belonging to the same race or ethnic group are more likely to share cultural beliefs, values, and experiences in the society, allowing them to communicate more effectively and to feel more comfortable with one another. Previous research has suggested that socioeconomic differences, rather than racial or ethnic differences, might serve as more important communication barriers between physicians and patients.^{31,36} Our study does not support this finding, since African American and other minority patients had less participatory visits with white physicians, regardless of educational level. It is possible that shared cultural experiences and values between pa-

tients and physicians offset the effects of differences in socioeconomic status on communication. The physicians in race-concordant visits may have actually used more partnership-building communication in their encounters with patients, or the patients may have simply perceived the communication that way. Regardless of the objective findings, patient perceptions are still important and do influence patient behavior. Since communication is both verbal and nonverbal, analyzing audiotapes and videotapes of racially concordant and discordant visits might help to further clarify this issue.

In our study, patients of female physicians had more participatory visits than patients of male physicians; however, gender concordance between physicians and patients was not significantly related to PDM style. It is unclear whether these findings are the results of patient selection or socialization of women physicians. Previous work has shown that both physician and patient gender may be important determinants of PDM style, other aspects of interpersonal care, and medical decision making.^{30-32,34,35,46-48}

Small numeric differences in adjusted style scores of the magnitude presented in this study are likely to be meaningful with respect to patient care. Previous studies have shown that small differences in patient ratings of care can have an important impact on patient behavior. In the Medical Outcomes Study, differences of 2 points in the PDM style score were related to a 10-percentage point difference in the likelihood that patients would leave a physician's practice in the next 12 months.³⁰ Our study showed differences in PDM score between minority and white patients, patients of female and male physicians, and race-concordant and race-discordant relationships, of between 2 and 4 points. Based on results from previous studies, it is likely that these differences would be related to important differences in patient behavior.

This study has several strengths. First, the percentage of middle-class African American patients and physi-

cians is larger than in previous studies. Second, the same managed care insurance coverage of all the study subjects minimizes the possibility of confounding due to racial and ethnic differences in socioeconomic status. Third, we had good measures of potential confounders between PDM style and patient race, such as patient age, gender, education, health status, and length of the patient-physician relationship.

There are also limitations. First, this was an observational study, and patients are not assigned to physicians in a randomized fashion. For example, patients who favor a more participatory decision-making style might be more likely to choose female physicians or physicians of their own ethnicity. Second, PDM style relies on patient self-report, and a high percentage of patients do not respond to all 3 questions. However, in a recent study, physician conversation styles measured by audiotape corresponded with patient measures of PDM style.⁴⁹ In separate analyses that included individuals who answered at least 2 questions (giving them a PDM score based on 8 points), our results were not changed. Third, it would have been useful to have other physician or practice measures known to affect physician communication, such as the practice volume. Unfortunately, this information was not available for most of the physicians in our sample.

What are the implications of this study for clinical practice, medical education, and health policy? One strategy to improve access to care for ethnic minority patients is to increase their participation in care. A multifaceted approach should include patient and physician interventions to improve cross-cultural communication in primary care settings. Interventions that empower ethnic minority patients to become more informed and active consumers of health care should be developed and evaluated. Additionally, since minority physicians are more likely to practice in areas with a high concentration of poor and minority patients, this study supports the argument for increasing the numbers of minority physi-

cians in the workforce.⁵⁰⁻⁵² Furthermore, communication training programs for medical students, residents, practicing physicians, and health professionals of all ethnic backgrounds should include an emphasis on understanding and addressing the needs of a patient population that is becoming more culturally diverse. Cultural competence is described as the demonstrated awareness, inclusion, and integration of 3 population-specific issues in the deliv-

ery of health care: (1) health-related beliefs and cultural values, (2) disease incidence and prevalence, and (3) treatment efficacy.⁵³ Health care organizations interested in fostering cultural competence should incorporate evidence-based medicine as well as the viewpoints of ethnic minority patients, patients with low levels of education and literacy, poor health status, and other vulnerable populations. Improving cross-cultural communication in health

care settings may lead to more patient involvement in care, adherence to recommended treatment, higher quality of care, and better health outcomes.

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REFERENCES

- Wenneker JB, Epstein AM. Racial inequalities in the use of procedures for patients with ischemic heart disease in Massachusetts. *JAMA*. 1989;261:253-257.
- Carlisle DM, Leake BD, Shapiro MF. Racial and ethnic differences in the use of invasive cardiac procedures among cardiac patients in Los Angeles County, 1986 through 1988. *Am J Public Health*. 1995;85:352-356.
- Kjellstrand CM. Age, sex, and race inequality in renal transplantation. *Arch Intern Med*. 1988;148:1305-1309.
- Yergan J, Flood AB, LoGerfo JP, Diehr P. Relationship between patient race and intensity of hospital services. *Med Care*. 1987;25:592-603.
- Blendon RJ, Aiken LH, Freeman HE, Corey CR. Access to medical care for black and white Americans: a matter of continuing concern. *JAMA*. 1989;261:278-281.
- Schwartz E, Kofie VY, Rivo M, Tuckson RV. Black/white comparisons of deaths preventable by medical intervention: United States and the District of Columbia 1980-1986. *Int J Epidemiol*. 1990;19:591-598.
- Weissman JS, Stern R, Fielding SL, Epstein AM. Delayed access to health care: risk factors, reasons, and consequences. *Ann Intern Med*. 1991;114:325-331.
- Pappas G, Queen S, Hadden W, Fisher G. The increasing disparity in mortality between socioeconomic groups in the United States, 1960 and 1986. *N Engl J Med*. 1993;329:103-109.
- Scheffler RM, Miller AB. Demand analysis of mental health service use among ethnic subpopulations. *Inquiry*. 1989;26:202-215.
- Hu TW, Snowden LR, Jerrell JM, Nguyen TD. Ethnic populations in public mental health: services choice and level of use. *Am J Public Health*. 1991;81:1429-1434.
- Williams SJ, Diehr P, Ducker WL. Mental health services: utilization by low-income enrollees in a prepaid group practice plan and in an independent practice plan. *Med Care*. 1979;17:139-151.
- Sussman LK, Robins LN, Earl F. Treatment-seeking for depression by black and white Americans. *Soc Sci Med*. 1987;24:187-196.
- Vernon SW, Roberts RE. Prevalence of treated and untreated psychiatric disorders in three ethnic groups. *Soc Sci Med*. 1982;16:1575-1582.
- Whittle J, Conigliaro J, Good CB, Lofgren RP. Racial differences in the use of invasive cardiovascular procedures in the Department of Veterans Affairs medical system. *N Engl J Med*. 1993;329:621-627.
- Kahn KL, Pearson ML, Harrison ER, et al. Health care for black and poor hospitalized Medicare patients. *JAMA*. 1994;271:1169-1174.
- Lee JA, Gehlbach S, Hosmer D, Reti M, Baker CS. Medicare treatment differences for blacks and whites. *Med Care*. 1997;35:1173-1189.
- Rask KJ, Williams MV, Parker RM, McNagney SE. Obstacles predicting lack of a regular provider and delays in seeking care for patients at an urban public hospital. *JAMA*. 1994;271:1931-1933.
- Hayward RA, Bernard AM, Freeman HE, Corey CR. Regular source of ambulatory care and access to health services. *Am J Public Health*. 1990;81:434-438.
- Kleinman A, Eisenberg L, Good B. Culture, illness, and care: clinical lessons from anthropologic and cross-cultural research. *Ann Intern Med*. 1978;88:251-258.
- Lurie N, Yergan J. Teaching residents to care for vulnerable populations in the outpatient setting. *J Gen Intern Med*. 1990;5:S27-S34.
- Mull JD. Cross-cultural communication in the physician's office. *West J Med*. 1993;159:609-613.
- Quill TE. Recognizing and adjusting to barriers in doctor-patient communication. *Ann Intern Med*. 1989;111:51-57.
- Roter DL, Hall J. *Doctors Talking With Patients, Patients Talking With Doctors: Improving Communication in Medical Visits*. Westport, Conn: Auburn House; 1992.
- Mathews JJ. The communication process in clinical settings. *Soc Sci Med*. 1983;17:1371-1378.
- Lin EH. Intraethnic characteristics and the patient-physician interaction: "Cultural Blind Spot Syndrome." *J Fam Pract*. 1983;16:91-98.
- Levy DR. White doctors and black patients: influence of race on the doctor-patient relationship. *Pediatrics*. 1985;75:639-643.
- Eisenberg JM. Sociologic influences on decision-making by clinicians. *Ann Intern Med*. 1979;90:957-964.
- Hooper EM, Comstock LM, Goodwin JM, Goodwin JS. Patient characteristics that influence physician behavior. *Med Care*. 1982;20:630-638.
- McKinlay JB, Potter DA, Feldman HA. Non-medical influences on medical decision-making. *Soc Sci Med*. 1996;42:769-776.
- Kaplan SH, Gandek B, Greenfield S, et al. Patient and visit characteristics related to physicians' participatory decision-making style: results from the Medical Outcomes Study. *Med Care*. 1995;33:1176-1187.
- Pendleton DA. The communication of medical information in general practice consultations as a function of patients' social class. *Soc Sci Med*. 1980;14A:669-673.
- Hall JA, Roter DL, Katz NR. Meta-analysis of correlates of provider behavior in medical encounters. *Med Care*. 1988;26:657-675.
- Verbrugge LM, Steiner RP. Physician treatment of men and women patients: sex bias or appropriate care? *Med Care*. 1981;19:609-632.
- Roter D, Lipkin M, Korsgaard A. Sex differences in patients' and physicians' communication during primary care medical visits. *Med Care*. 1991;29:1083-1093.
- van den Brink-Muinen A, Bensing JM, Kerssens JJ. Gender and communication style in general practice: differences between women's health care and regular health care. *Med Care*. 1998;36:100-106.
- Wasserman RC, Inui TS, Barriata RD, Carter WB, Lippincott P. Pediatric clinicians' support for parents makes a difference: an outcome-based analysis of clinician-parent interaction. *Pediatrics*. 1984;74:1047-1053.
- Barsky AJ, Kazis LE, Freiden RB, et al. Evaluating the interview in primary care medicine. *Soc Sci Med*. 1980;14A:653-658.
- Greenfield S, Kaplan S, Ware JE. Expanding patient involvement in care. *Ann Intern Med*. 1985;102:520-528.
- Kaplan SH, Greenfield S, Ware JE. Assessing the effects of physician-patient interactions on the outcomes of chronic disease. *Med Care*. 1989;27:S110-S127.
- Kaplan SH, Greenfield S, Gandek B, et al. Characteristics of physicians with participatory decision-making styles. *Ann Intern Med*. 1996;124:497-504.
- Bertakis KD, Roter D, Putnam SM. The relationship of physician medical interview style to patient satisfaction. *J Fam Pract*. 1991;32:175-181.
- Roter DL, Stewart M, Putnam SM, Lipkin M, Stiles W, Inui TS. Communication patterns of primary care physicians. *JAMA*. 1997;277:350-356.
- Levinson W, Roter DL, Mullooly JP, Dull VT, Frankel RM. Physician-patient communication: the relationship with malpractice claims among primary care physicians and surgeons. *JAMA*. 1997;277:553-559.
- Zeger SL, Liang K. Longitudinal data analysis for discrete and continuous outcomes. *Biometrics*. 1986;42:121-130.
- Liang K, Zeger SL. Longitudinal data analysis using generalized linear models. *Biometrika*. 1986;73:13-22.
- Schulman KA, Berlin JA, Harless W, et al. The effect of race and sex on physicians' recommendations for cardiac catheterization. *N Engl J Med*. 1999;340:618-626.
- Roter DL, Hall JA, Katz NR. Patient-physician communication: a descriptive summary of the literature. *Patient Educ Counseling*. 1988;12:99-119.
- Elderkin-Thompson V, Waitzkin H. Differences in clinical communication by gender. *J Gen Intern Med*. 1999;14:112-121.
- Kaplan SH, Greenfield S, Montminy J. Training private practice physicians to negotiate treatment decisions: results of a randomized controlled trial [abstract]. *Clin Res*. 1992;40:614A.
- Komaromy M, Grumbach K, Frake M, et al. The role of black and Hispanic physicians in providing health care for underserved populations. *N Engl J Med*. 1996;334:1305-1310.
- Moy E, Bartman BA. Physician race and care of minority and medically indigent patients. *JAMA*. 1995;273:1515-1520.
- Carlisle DM, Gardner JE. The entry of African-American students into U.S. medical schools: an evaluation of recent trends. *J Natl Med Assoc*. 1998;90:466-473.
- Lavizzo-Mourey R, Mackenzie ER. Cultural competence: essential measurements of quality for managed care organizations. *Ann Intern Med*. 1996;124:919-921.