Patient-Physician Communication in the Primary Care Visits of African Americans and Whites with Depression

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BACKGROUND: Little research investigates the role of patient-physician communication in understanding racial disparities in depression treatment.

OBJECTIVE: The objective of this study was to compare patient-physician communication patterns for African-American and white patients who have high levels of depressive symptoms.

DESIGN, SETTING, AND PARTICIPANTS: This is a cross-sectional study of primary care visits of 108 adult patients (46 white, 62 African American) who had depressive symptoms measured by the Medical Outcomes Study-Short Form (SF-12) Mental Component Summary Score and were receiving care from one of 54 physicians in urban community-based practices.

MAIN OUTCOMES: Communication behaviors, obtained from coding of audiotapes, and physician perceptions of patients' physical and emotional health status and stress levels were measured by post-visit surveys.

RESULTS: African-American patients had fewer years of education and reported poorer physical health than whites. There were no racial differences in the level of depressive symptoms. Depression communication occurred in only 34% of visits. The average number of depression-related statements was much lower in the visits of African-American than white patients (10.8 vs. 38.4 statements, $p=.02$). African-American patients also experienced visits with less rapport building (20.7 vs. 29.7 statements, $p=.009$). Physicians rated a higher percentage of African-American than white patients as being in poor or fair physical health (69% vs. 40%, $p=.006$), and even in visits where depression communication occurred, a lower percentage of African-American than white patients were considered by their physicians to have significant emotional distress (67% vs. 93%, $p=.07$).

CONCLUSIONS: This study reveals racial disparities in communication among primary care patients with high

levels of depressive symptoms. Physician communication skills training programs that emphasize recognition and rapport building may help reduce racial disparities in depression care.

KEY WORDS: depression; African Americans; healthcare disparities; patient-physician communication.

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The majority of individuals with depression in the United States who seek care receive their mental health care in primary care settings.¹⁻⁴ However, treatment of depression in primary care remains suboptimal. Physician under-recognition of mental illness is common,^{5,6} and primary care physicians use lower doses of antidepressants and for shorter periods of time than guidelines recommend.^{7,8}

The quality of depression care in primary care also varies by patient race and ethnicity. Even when African Americans discuss emotional concerns, they are often not recognized as being depressed⁹⁻¹² and are less likely than whites to be referred to mental health specialists by their primary care physicians.¹³ Attrition from psychotherapy and pharmacotherapy is also higher and rates of guideline-concordant care are lower for African Americans compared to whites.^{9,14-16}

Physicians' interview styles may contribute to racial disparities in depression care. White physicians are more likely to miss depression symptoms among minority patients,⁶ and African-American primary care patients experience visits that are more biomedical, more verbally dominated by physicians, and characterized by less positive emotional tone among physicians and patients.^{17,18} Recent studies of this topic focus on elderly patients, and most show that depression is less likely to be discussed with minority patients.^{12,19-21}

The objectives of this study were to: (1) measure the frequency of overall and depression-specific patient-physician instrumental (informational) and affective communication behaviors in the visits of primary care patients with depressive symptoms; (2) compare these behaviors in the visits of African-American and white patients with depressive symptoms; and (3) examine whether physician perceptions of depressed patients' physical and emotional health status and stress levels differ by patient race.

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METHODS

Study Design and Population

We used data from two cross-sectional studies conducted July 1998–June 1999 and January–November 2002.^{18,22} The study procedures were approved by the Johns Hopkins Medical Institutions Institutional Review Board. In both studies, physicians were recruited from group practices and federally qualified community health centers in the Baltimore/Washington, DC/northern Virginia metropolitan area. Both studies targeted practices with a high percentage of African-American physicians and patients. Patient recruitment took place over an average of 1–2 days for each physician. Research assistants (RAs) attempted to approach all patients during each recruitment day, with a target of 10 patient participants per physician. When patients appeared or reported themselves too acutely ill or cognitively impaired to participate in the interview, RAs did not recruit them. For this analysis, patients were eligible if they were 18 years of age or older and had high levels of depressive symptoms, defined as a Medical Outcomes Study (MOS) Short Form (SF-12) mental component summary score of 42 or less.²³

Data Collection

Participating patients and physicians signed informed consent forms and were told the goal of the study was to learn about how physicians and patients communicate with each other. At the start of each visit, RAs set up a tape recorder in the physician's exam room and left the office. Before their medical visit, patients completed a 5-minute survey which included questions regarding their demographics and health status. Physicians completed a background questionnaire about their demographics and a post-visit survey to rate individual patients' physical and emotional health status, stress levels, and how well they knew the patient.

Study Measures

Patients were eligible for this analysis if they had high levels of depressive symptoms by the Medical Outcomes Study SF-12. The SF-12 is a multipurpose short-form (SF) generic measure of health status that is a shorter, yet valid, alternative to the SF-36.²⁴ The standard 4-week recall version was used. The SF-12 is scored according to 2 summary measures that separately summarize health-related quality of life (HRQOL) due to physical and mental symptoms, the Physical and Mental Component Summary Scores (PCS, MCS).²⁵ Components are scored 0–100 (higher scores represent better HRQOL) and normalized so that 50±10 represents the mean ±SD for the general population.

Prior studies indicate that the performance characteristics of the MCS for identifying depression are excellent when compared to the Composite International Diagnostic Interview²⁴ and other commonly used screening instruments for depression.^{24–30} Additionally, these studies have shown the SF-12 to be a valid measure for assessing health status among persons of different ethnic groups.³¹ In this study, a high level of depressive symptoms was classified as a score of 42 or lower on the MCS-12 (sensitivity of 74% and specificity of 81% in detecting patients diagnosed with depressive disorder).²³

Our main independent variable for this study was patient race/ethnicity. Patients could self-identify as a member of 1 of 6 racial/ethnic groups (Asian, Hispanic, American Indian, Pacific Islander, Black/African American, and white) on the pre-visit survey. The main dependent variables are derived from audiotape recordings of medical visits and physician post-visit surveys.

Measurement of Communication Behaviors. Each patient encounter was audio-taped and coded for content using the Roter Interaction Analysis System (RIAS), a widely used coding system for patient–physician communication that has demonstrated reliability and validity and is one of several measures of communication quality.^{17,32–35} The system assigns each thought expressed by the patient and physician to 1 of 37 mutually exclusive categories. Composites of the individually coded categories that relate broadly to the instrumental and affective dimensions of the visit are then created.³⁴ Two experienced RIAS coders were responsible for all coding.

Instrumental behaviors include technically based skills used to exchange information about patients' biomedical and psychosocial problems and concerns, while affective behaviors include elements of rapport and interpersonal relationship. Our main study outcomes included three summary instrumental composites: (1) biomedical exchange (RIAS codes of biomedical questions, biomedical information giving and counseling in regard to medical history, symptoms, and therapeutic regimen); (2) psychosocial exchange (RIAS codes of psychosocial questions, information giving and counseling in regard to social and family relations at work and home, performance of activities and functions related to daily living and exchanges related to non-depression feelings and emotions); and (3) depression-specific exchange (codes occurring within the exchanges specific to depression).

We also examined one affective composite: rapport building (RIAS codes of empathy, legitimization, partnership statements, concern or worry and reassurance/optimism statements) and three global affect measures: (1) physician positive affect (sum of coder ratings of physicians' interest, friendliness, engagement, and sympathy minus hurried behaviors); (2) patient positive affect (sum of coder ratings of patients' interest, friendliness, engagement, sympathy, and assertiveness behaviors); and (3) patient negative affect (sum of coder ratings of patients' anxiety, irritation, depression, and emotional distress behaviors). All global affect dimensions are coded on a numeric scale of 1–6 (1=low/none, 6=high).^{18,22} Finally, we examined the duration of the visit.

For this study, we took advantage of a RIAS software function that provides detailed sub-analysis of communication dedicated to a particular topic of conversation, in this instance, patient–physician communication about depression. For each audiotape in which the topic of depression was raised, the coders marked this discussion as a depression block. Within depression blocks, coders categorized content using the general RIAS coding rules, but separate variables were created reflecting the occurrence of the codes within the context of the depression block. Depression-related feelings and emotions were differentiated from non-depression feelings and emotions when the exchange occurred within a marked depression block, by definition an exchange recognized by the coder to

be depression-specific. The primary code categories within the block were depression-specific medical, psychosocial, and therapeutic regimen talk (Table 1). These three categories were combined in our analyses because each occurred infrequently.

Inter-coder reliability was assessed by a 10% random sample of double coded tapes drawn throughout the coding period and averaged 0.88 over the physician categories and 0.79 over the patient categories. Inter-coder reliability within depression blocks was 0.77–0.99 for the physician depression talk categories and 0.82–0.99 for the patient depression talk categories. Coder agreement within 1 point on the global affect scales ranged from 88% to 100%.

Physician Ratings of Patients' Health Status and Stress Levels. We measured physicians' perceptions of patients' depression status, physical health, and stressors with the following questions: (1) Please rate the presence and/or severity of emotional distress in this patient (no emotional distress, some symptoms but no illness, mild case, moderate case, severe case); (2) Excluding emotional conditions, how would you rate this patient's physical health (poor, fair, good, very good, excellent); and (3) To what extent do you think recent stressful events in this patient's life (other than personal health conditions) are contributing to his/her current complaints? (not at all, a little, somewhat, significantly, a great deal). Based on the distribution of responses, perceived emotional distress was dichotomized as no distress or some symptoms vs. mild, moderate, or severe case; perceived physical health was dichotomized as fair or poor vs. good, very good, or excellent; and perceived stressful events were

categorized as not at all vs. a little, somewhat, significantly, or a great deal.

Analyses

Data were analyzed using STATA statistical software version 9.³⁶ We used bivariate and multivariate linear regression to determine the presence, strength, and statistical significance of the associations between patient race/ethnicity and our main outcome variables. To identify potential confounders, we performed descriptive analyses with analysis of variance or χ^2 tests for continuous or categorical data as appropriate to associate patient and physician characteristics with patient race and our outcome measures. Patient and physician characteristics were included in multivariate models if they were statistically significantly associated with patient race and at least one of the communication outcome measures, or if there was evidence from the existing literature that these factors were potential confounders of the relationships under investigation.

All bivariate and multivariate estimates for our analyses of race with communication outcomes used the generalized estimating equation³⁷ to account for clustering of patients within physicians. An exchangeable correlation structure was assumed with strongly consistent estimation, which was likely to yield more accurate or valid coefficient estimates, even if the correct correlation structure was specified incorrectly.³⁸

Because previous studies have shown differences in participatory decision making and communication by race and gender concordance with physicians,^{19,22,39} we explored the

Table 1. Measures of Depression Communication

Measures of depression communication	Description	Physician examples	Patient examples
Depression-Medical	Questions or statements of fact or opinion relating to depression symptoms, diagnosis, prognosis, past tests and test results, history of depression and related treatments in the past, and personal and family medical history relevant to depression.	"Sometimes abnormalities in the thyroid can make people feel the way you do [depressed]." "Have you been feeling tired or having little energy?"	"I'm feeling tired all the time." "I have a history of depression and saw a psychiatrist for three years."
Depression-Psychosocial	Statements relating to lifestyle, family, and activities of daily living, work and employment as it relates to depression. Counseling statements in this area include encouragement of positive thinking or involvement in pleasurable activities; approaches to improving social skills and self-care, and general suggestions to consider things like support groups or counseling by non-mental health professionals.	"I want you to promise me that if you ever reach a point where you're feeling unsafe that you'll call me." "If you had problems, could you go talk with a minister or something?" "Don't let that be inside you, because that's an unsafe situation."	"I like to look on the bright side. But it just seems like lately it's harder to do." "I guess I could try to get back into my routine of going to bible study once a week. Bible study used to lift my spirits."
Depression-Therapeutic Regimen	Questions or statements of fact or opinion regarding the ongoing or future treatment plan for depression, risks and benefits of treatment, including prescribed medication, tests to be performed, imminent hospitalizations, future medical appointments or referrals, information about drugs or medications taken or prescribed for depression in the past.	"Maybe somewhere down the line we should have you see a professional counselor to help you sort through some of these issues."	"I don't think I need that [mental health] clinic. I just need to be stabilized somehow." "Do you really think that the therapist can help me?"

associations of concordance with communication behaviors in our sample.

To examine differences in physician post-visit ratings (available on a subset of patients) by patient race, we conducted bivariate analyses. We stratified patients according to whether or not depression communication took place in their visit to examine if the relationship of patient race with physician ratings of patients' health status and stress levels differed when there was depression-specific communication.

RESULTS

Recruitment of Physicians and Patients

The response rate for physicians who were invited to participate was 48%, and the response rate of eligible patients approached in waiting rooms was 74%. After exclusion of patients with missing data (16%) and those who were neither white nor African American (4%), a total of 458 patients seen

by one of 61 physicians were considered for inclusion. One hundred eight patients (24%) who were seeing 54 of the physicians and met criteria for depressive symptoms by the MCS-12 (46 white and 62 African American) were included in the current study.

Characteristics of Study Sample

Patient characteristics are reported in Table 2. African Americans had fewer years of education than whites (53% vs. 18% with less than a high school diploma, $p=.002$). The mean MCS-12 score of 33.4 did not differ significantly across racial groups. African Americans rated themselves as being in poorer physical health than did white patients (mean PCS-12 score 36.3 vs. 42.3, $p=.013$). A higher proportion of African-American than white patients received care from African-American physicians ($p<.001$) and physicians with fewer years of practice experience (5 vs. 8 years, $p=.006$).

Communication Behaviors in the Visits of Depressed Patients and by Race

Depression communication occurred in 34% of the visits overall (43% of white patient visits vs. 27% of African American patient visits, $p=.08$). Table 3 shows the association of patient race with communication behaviors. In unadjusted analyses, there were no racial differences in the number of biomedical or psychosocial statements; however, overall depression talk by patients and physicians was lower in the visits of African American patients (10.8 vs. 38.4 statements, $p=.02$). In particular, the average number of depression-related statements made by physicians was substantially lower in the visits of African-American than white patients (4.3 vs. 13.4 statements, $p=.003$). With regard to affective communication, African-American patients with depressive symptoms experienced less rapport-building exchange (20.7 vs. 29.7 statements, $p=.009$) with their physicians. Coder ratings of physician and patient positive affect and patient negative affect were lower in the visits of black than white patients, but these differences were not statistically significant. There were also no significant differences in duration of the visit according to patient race.

After adjustment for patient age, educational attainment, MCS score, and PCS score, racial differences in the number of overall and physician statements related to depression remained significantly lower for African-American than white patients (10.0 vs. 38.4, $p=.04$ and 2.5 vs. 12.9, $p=.0005$, respectively). Additionally, racial differences in rapport-building exchange remained significant (20.1 vs. 30.0 statements, $p=.01$), and racial differences in coder ratings of patient negative affect score emerged (5.0 vs. 5.3, $p=.007$). After further adjustment for physician race and years in practice, racial differences in the number of overall and physician depression statements (15.8 vs. 33.2 statements, $p=.04$ and 3.6 vs. 12.0 statements, $p=.002$, respectively) remained, as did racial differences in patient negative affect (5.0 vs. 5.2, $p=.04$). Differences in rapport building remained, but were no longer statistically significant.

In this sample with depressive symptoms, there were no differences in depression communication by race or gender concordance. Rapport-building exchange was higher in race-

Table 2. Characteristics of the Study Sample

Characteristic	Total (N=108)	White patients (N=46)	Black patients (N=62)	p value*
Age (y)	49.4 (14.6)	50.9 (16.9)	48.3 (12.6)	0.38
Female (%)	74	76	73	0.68
Education (%)	11.7 (2.54)	12.5 (2.36)	11.0 (2.50)	0.003
Educational level (%)				
Less than high school	38	18	53	0.002
High school graduate	36	42	31	
Some college	17	27	10	
College graduate	9	13	7	
Self rated health status (%)				
Poor/fair	56	39	69	0.002
Good	27	43	15	
Very good/excellent	17	17	16	
MCS-12 score	33.4 (6.4)	34.4 (5.8)	32.6 (6.7)	0.13
PCS-12 score	38.9 (12.4)	42.3(13.4)	36.3 (11.1)	0.013
Length of time physician has been in practice (y)	6.3(6.1)	8.1 (7.2)	4.8 (4.7)	0.006
How well physician knows patient (%)				
Very well	47	45	48	0.42
Somewhat	38	34	41	
Not at all	15	21	11	
(new patient)				
Seen by female MD (%)	44	42	45	0.79
Seen by black MD (%)	21	16	26	<0.001

Unless otherwise indicated, data are expressed as mean (SD).

*Differences across patient groups were analyzed with χ^2 statistics for categorical variables and with analysis of variance for continuous variables.

MCS Mental Component Summary Score, PCS Physical Component Summary Score, MD Medical Doctor

Table 3. Association of Patient Race with Communication Behaviors among Primary Care Patients with Depressive Symptoms

	Unadjusted			Model 1*			Model 2†		
	Whites	Blacks	p value‡	Whites	Blacks	p value‡	Whites	Blacks	p value‡
Verbal communication measures	Mean number of statements								
Biomedical exchange	120.7	124.2	0.84	123.6	120.7	0.07	123.4	124.3	0.33
Psychosocial exchange	31.6	26.3	0.30	32.4	26.0	0.30	31.3	27.5	0.32
Depression exchange	38.4	10.8	0.02	38.4	10.0	0.04	33.2	15.8	0.04
Physician depression talk	13.4	4.3	0.003	12.9	2.5	0.0005	12.0	3.6	0.002
Patient depression talk	25.5	7.6	0.07	25.1	7.7	0.24	20.8	12.3	0.21
Rapport building exchange	29.7	20.7	0.009	30.0	20.1	0.01	29.8	21.5	0.06
Global affect measures	Mean score								
Physician positive affect	13.0	12.0	0.16	13.1	12.1	0.47	13.1	12.1	0.47
Patient positive affect	17.3	16.7	0.26	17.2	16.9	0.13	17.1	16.9	0.06
Patient negative affect	5.3	5.0	0.20	5.3	5.0	0.007	5.2	5.0	0.04
Duration of visit	Mean number of minutes								
	17.2	15.1	0.22	17.8	14.8	0.22	17.6	15.2	0.12

*The multivariate model included patient age, education, MCS-12 and PCS-12 score.

†The multivariate model included patient age, education, MCS-12 and PCS-12 score, and physician race, and length of time in practice.

‡Derived from generalized estimating equations

concordant visits, and biomedical exchange was higher in gender-concordant visits (data not shown).

Physician Perceptions of Patients' Health Status and Stress Levels

Overall, physicians rated a higher percentage of African-American patients in poor/fair physical health (69% vs. 40%, $p=.006$). This pattern was more evident when no depression exchanged occurred (Table 4). Overall, though not statistically significant, a slightly lower percentage of African-American patients were perceived by their physicians as having significant emotional distress (56% vs. 66%, $p=.32$). When there was no depression exchange, physicians recognized emotional distress in about 50% of the visits of African-American and white patients; however, in visits where depression exchange occurred, physicians perceived a somewhat lower percentage of African Americans than whites as emotionally distressed (67% vs. 93%, $p=.07$). Overall, there were no significant

differences in physicians' perceptions of the contribution of stress to the complaints of African-American and white patients. However, engaging in depression communication (versus not doing so) increased the percentage of white patients whose symptoms were attributed to stress (from 65% to 93%), whereas the same phenomenon was not observed among African-American patients. (Table 4)

DISCUSSION

This study is one of the first to examine racial disparities in depression communication in a non-elderly primary care patient sample with depressive symptoms. We found that depression communication occurred in only one third of all visits, and African-American patients experienced less depression and rapport-building communication with their physicians than white patients. Racial differences in rapport-building and patient, but not physician, depression talk were

Table 4. Physician Ratings of the Health Status and Stress Levels of Primary Care Patients with Depressive Symptoms

	Overall			No depression exchange present			Depression exchange present		
	Whites (n=38)	Blacks (n=54)	p value*	Whites (n=23)	Blacks (n=39)	p value*	Whites (n=15)	Blacks (n=15)	p value*
Patient's physical health status is poor/fair† (%)	40	69	0.006	26	62	0.007	60	87	0.10
Patient's depressive symptoms reflect illness (mild, moderate, or severe case)‡ (%)	66	56	0.32	48	51	0.79	93	67	0.07
Recent stressful events (other than health conditions) contribute to patient's complaints (a little, somewhat, significantly or a great deal)§ (%)	76	83	0.43	65	84	0.09	93	80	0.28

The actual sample size is lower than the total number of patient participants because of physician non-response to post-visit surveys.

*Derived from χ^2 tests

†Other responses were grouped as good, very good, or excellent.

‡Other responses were grouped as no emotional distress or some symptoms but no illness.

§Other response was not at all.

attenuated after adjusting for patient and physician confounders. The amount of physician depression talk for African-American patients was one third of that for white patients.

Affect, which is conveyed primarily by voice tone, can be considered the unspoken subtext of the medical dialogue.⁴⁰ With regard to global measures of affective tone, we found, similar to previous work, that physician and patient positive affect were lower in the visits of ethnic minority patients^{18,41}; however, in this smaller sample of patients with depressive symptoms, these findings were not statistically significant. Interestingly, coders also rated patient negative affect lower in the visits of African-American patients, lending credence to the hypothesis that African Americans provide fewer cues about their emotional status to physicians. As a result, their physicians may be less likely to engage in depression communication or to recognize emotional distress even when depression communication occurs.

Physician perceptions of patients' physical health status may help to explain racial differences in their communication with patients and recognition of depressive symptoms. In this study, physicians rated a much higher percentage of African-American than white patients as having poor physical health. Physicians may fail to discuss depression with African-American patients because they are sicker when seeking care and present with more somatic attributions. Another potential explanation is that physicians have a higher threshold with regard to illness burden among African-American patients before depression is discussed. In the visits where depression communication did occur, 13 of the 15 African-American patients were considered to be in poor/fair health, while health status was less strongly related to depression discussion for white patients.

Overall, physicians rated only a slightly lower percentage of African-American than white patients as having enough emotional distress to be considered an illness. In visits where there was no depression communication, physicians identified about half of African-American and white patients as having significant emotional distress. However, even when depression communication did occur, physicians recognized only two thirds of African-Americans, but more than 90% of white patients, as having emotional distress. Intriguingly, engaging in depression communication (versus not doing so) increased the percentage of white patients whose symptoms were attributed to stress, but did not change physicians' symptom attribution among African-American patients. When considered with the finding that recognition of emotional distress is not increased by having depression communication with African-American patients, this suggests that in addition to the quantity of depression communication, the nature of that communication may be different for African-American and white patients; our study did not address this possibility.

Other limitations of this study should be discussed. First, the study had a small sample size, and we may have failed to detect important differences in communication or physician perceptions by patient race because of limited statistical power. Second, generalizability of the physician and patient populations may be limited to similar practices and settings. Third, because this is a cross-sectional study of a single encounter for each patient, inferences regarding causal relationships between depression communication and physician perceptions cannot be made. Fourth, although we adjusted for mental and physical health status and found no racial

difference in the severity of current depressive symptoms, unmeasured differences in presenting complaints or past treatment for depression may partially explain the observed racial differences in depression communication. Finally, we did not examine speaker initiation of depression communication. In previous studies where this issue was examined,²⁰ investigators found that patients initiated depression communication just over half the time with no ethnic differences in initiation. Our finding of less depression talk by both patients and physicians in the visits of African-American patients suggests disparities in patient-physician depression communication are the result of mutual influence.

Our study has implications for future research and training of primary care physicians. More research is needed to improve understanding of how physician perceptions and patient attitudes influence depression communication, and how the nature of such communication impacts depression treatment and outcomes for patients. Additionally, communication skills training programs emphasizing patient-centered approaches have beneficial effects on clinician counseling behaviors and patient outcomes⁴²⁻⁴⁵ and should be tested as a mechanism to improve quality and reduce racial disparities in depression care. These programs should incorporate disease-specific content as well as strategies to improve clinicians' rapport-building skills. Because untreated depression has a negative impact on self-management behaviors, morbidity, and mortality of patients with medical illnesses, this work is critically important to optimizing the quality and equity of both mental and physical health care in primary care settings.

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