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Patient–Provider Communication Differs for Black Compared to White HIV-Infected Patients

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Abstract

Poor patient–provider interactions may play a role in explaining racial disparities in the quality and outcomes of HIV care in the United States. We analyzed 354 patient–provider encounters coded with the Roter Interaction Analysis System across four HIV care sites in the United States to explore possible racial differences in patient–provider communication. Providers were more verbally dominant in conversations with black as compared to white patients. This was largely due to black patients’ talking less than white patients. There was no association between race and other measures of communication. Black and white patients rated their providers’ communication similarly. Efforts to more effectively engage patients in the medical dialogue may lead to improved patient–provider relationships, self-management, and outcomes among black people living with HIV/AIDS.

Keywords

HIV/AIDS; Patient–physician relations; Patient–physician communication; Health disparities

Background

Significant racial disparities exist in HIV care in the United States. In 1994, Moore et al. found that black, HIV-infected patients were 15–20% less likely to receive prophylaxis for *Pneumocystis pneumonia* than whites with the same clinical indications [1]. Subsequent studies demonstrated similar findings [2–4], as well as disparities in the receipt of antiretroviral (ARV) therapy [5–9]. An evidence-based review found that the use of ARV therapy and prophylaxis for opportunistic conditions in HIV-infected patients is systematically lower among racial/ethnic minorities compared to whites [10]. In addition, clinical outcomes such as HIV disease progression and survival are worse among racial/ethnic minority patients [11–14].

Although the underlying sources of these disparities are not fully understood, several studies point to interpersonal barriers between racial/ethnic minority patients and their predominantly non-minority providers as a potential contributor. These studies have shown that: (a) racial/ethnic minority patients tend to have stronger relationships with providers from their own race or ethnicity; [15,16] (b) most racial/ethnic minorities in the US do not see providers from their own race or ethnicity [17]; and (c) the strength of patient–provider relationships is associated with greater likelihood of patients’ receiving ARV therapy, adhering to ARV regimens, and achieving favorable virologic outcomes [18,19]. Contributing evidence to the theory that racial barriers between patients and providers might affect the quality of HIV care, King et al. [20] studied a national cohort and found that after protease inhibitors (PIs) were introduced in 1995, the rate at which they were used was substantially higher among black patients with black providers than among black patients with white providers.

Though race may affect patient–provider relationships in various ways, one of the most important manifestations has been differences in the quality of communication. Several studies in varied healthcare settings have found that patient–provider communication varies by patient race [21–24]. In their interactions with black patients, physicians exhibit less nonverbal attention, empathy, and courtesy [21]; give less information [21]; adopt a more “narrowly biomedical” communication style [22]; spend less time providing health education, chatting and answering questions [24]; are more verbally dominant [23]; and exhibit more negative emotional tone [23] than with white patients. Racial/ethnic minority patients perceive lower-quality interactions as well. Large studies in primary care have found that racial/ethnic minority patients rate their physicians as less participatory than do white patients [16,25,26]. A nationwide survey in 2001 found similarly that blacks and Hispanics were more likely than whites and Asians to feel they had been treated with disrespect [26]; all racial/ethnic minority groups were more likely than whites to believe that they would have gotten better care if they belonged to a different race/ethnic group, and that medical staff judged them or treated them unfairly based on their race [27]. These differences in patient perceptions, and particularly perceptions of racism, are important irrespective of provider communication and intentions since patient perceptions will affect their interactions within the system.

These findings of lower-quality interactions between racial/ethnic minority patients and their providers in predominantly primary care settings raise the question of whether racial/ethnic differences in communication affect patients in HIV care settings and potentially contribute

to disparities in the quality and outcomes of HIV care. However, to our knowledge no studies to date have addressed the potential impact of race on patient–provider communication in HIV care settings. We therefore sought to explore possible racial differences in patient–provider communication in the context of HIV care.

Methods

Study Design, Subjects, and Setting

We designed and conducted the Enhancing Communication and HIV Outcomes (ECHO) Study to assess the role of the patient–provider relationship in explaining racial/ethnic disparities in HIV care. Study subjects were HIV care providers and their patients at four HIV outpatient care sites in the United States (Baltimore, Detroit, New York, and Portland, OR). The study received IRB approval from each of the four sites. Eligible providers were physicians, nurse practitioners, or physician assistants who provided primary care to HIV-infected patients at one of the study sites. Eligible patients were HIV-infected; 19 years or older; English-speaking; identified in the medical record as non-Hispanic black, Hispanic, or non-Hispanic white; and had had at least one prior visit with their provider.

There were 55 providers eligible for the study across all sites. Overall, 45 (82%) agreed to participate. Only two providers actively refused (one due to discomfort with audiorecording and the other due to time constraints). The other eight were not approached because we reached our enrollment target. Across all sites, we identified 617 eligible patients. Providers refused to allow 18 patients to be approached for the study. Reasons for provider refusal of these patients were that the provider felt too rushed ($n = 12$), that the patient was too sick ($n = 5$), and that the patient was only returning for lab results and not a complete visit ($n = 1$). Of the remaining 599 patients approached, 435 (73%) agreed to participate and completed all study procedures. Of the 164 patients who declined to enroll in the study, the most common reasons were that they did not have time to complete the interview ($n = 106$), that they were not feeling well ($n = 22$), and that they were not interested ($n = 13$). Of the 435 patients who participated in our study, 73 self-identified as being of a race/ethnicity other than non-Hispanic white or black; these patients were excluded from this analysis. Finally, there were 16 audiotapes that were not available for analysis due to recorder malfunction or poor recording quality. Our final study sample for this analysis included 100 white and 246 black HIV-infected patients.

Data Collection Methods

HIV providers who agreed to participate gave informed consent and completed a baseline questionnaire. Research assistants approached patients of participating providers in clinic waiting rooms, with the goal of enrolling equal numbers of black and white patients for each provider (6–10 patients/provider). Eligible patients gave informed consent, and then research assistants placed a digital audio-recording device in the examination room to record the patient–provider encounter. Following the medical encounter, research assistants administered a 1-h interview with patients, assessing demographic, social, and behavioral characteristics, as well as their experience of care and ratings of provider communication. Finally, research assistants abstracted clinical data including most recent CD4 counts and HIV viral loads from patients' medical records.

Main Measures

In keeping with racial/ethnic identification methods used by the US Census Bureau, we asked patients to identify: (1) whether they were Hispanic/Latino, or not; and (2) to which racial group(s) they belonged. We then asked them to identify, from a list of options, a single, main racial/ethnic group with which they identified themselves. Our main

independent variable was derived from this question and for this study included patients identifying as non-Hispanic white or non-Hispanic black. Our dependent variables were measures of patient–provider communication derived from two sources: (1) audio-recorded communication and (2) patients’ post-visit ratings of provider communication.

Audiotapes were analyzed using the Roter Interaction Analysis System (RIAS), a widely used coding system to assess patient and provider communication behaviors during medical encounters with well-documented reliability and predictive validity [28–32]. RIAS analysts assign one of 37 mutually exclusive and exhaustive categories to each complete thought expressed by either the patient or provider (referred to as an utterance). These categories can be combined to reflect four broad types of exchange: socio-emotional communication (including emotional talk, positive talk, negative talk, and social chit-chat), information-giving (including biomedical and psychosocial/lifestyle information and counseling), question-asking (including biomedical and psychosocial/lifestyle questions), and patient activation (such as asking for the others’ opinions, confirming the others’ understanding, or clarifying one’s own understanding). All RIAS coding was done by two white women, and the overall intercoder reliability, calculated on a random sample of 41 audiotapes, across categories for patient and provider behaviors, was 0.71–0.95.

In addition, the RIAS provides several summary measures such as verbal dominance (ratio of provider to patient utterances), patient-centeredness (ratio of psychosocial and emotional to biomedical utterances), visit length in minutes, and global ratings of the patient and provider emotional tones (affect scores). Affect scores are calculated by summing coders’ subjective ratings for patients and physicians (separately) on several dimensions. The *patient positive affect score* is the sum of coders’ ratings of patient dominance/assertiveness, friendliness/warmth, responsiveness/engagement, and sympathy/empathy exhibited by the patient during the encounter. The *provider positive affect score* is the sum of coders’ ratings of provider interest/attentiveness, friendliness/warmth, responsiveness/engagement, and sympathy/empathy, subtracting the degree to which the provider was hurried/rushed. Intercoder agreement, calculated on a random sample of 41 audiofiles, was greater than 90% in each of the affect domains.

In post-visit interviews, patients were asked to report on the quality of their provider’s communication using the Interpersonal Processes of Care (IPC) Survey, which includes scales evaluating providers on overall communication (21 items, Cronbach’s alpha 0.88), interpersonal style (14 items, Cronbach’s alpha 0.71), and support of shared decision-making (6 items, Cronbach’s alpha 0.65) [33]. The IPC was designed to evaluate the quality of interpersonal care across diverse patient populations and was validated in a multiethnic sample [33]. Patients also self-reported additional socio-demographic information (age, sex, employment, education, active drug use). On provider baseline questionnaires, providers self-reported basic demographic information such as age, sex, and main race/ethnicity. There were insufficient numbers of black providers to assess the effects of racial/ethnic concordance between patient and provider.

Analysis

Analyses were conducted in three stages. First, we used descriptive statistics to explore and describe the characteristics of our study sample. Based on the positive skew in the patient-reported outcome variables, we dichotomized at the median score patients’ reports about interpersonal care in the realms of general communication, interpersonal style, and shared decision-making.

We then performed *t*-tests for continuous variables and chi-squared tests for categorical variables to assess patient and provider characteristics potentially associated with patient

race/ethnicity. We used negative binomial regression to compare observed measures of communication by patient race/ethnicity because outcomes were counts of utterances with skewed distributions. We used logistic regression to examine racial/ethnic differences in dichotomized patient-ratings of communication. We adjusted for study site, accounted for nesting of patients within providers using generalized estimating equations, and calculated marginal means in all bivariate and multivariate analyses. In multivariate analyses, we further adjusted for patient and provider characteristics found to be associated with patient race in bivariate analyses at $P < 0.20$ in multivariate analyses. All analyses were conducted using Stata Version 8.0.

Finally, we conducted secondary, exploratory analyses. When we found an association between race/ethnicity and a communication outcome, we further explored potential racial/ethnic differences in the specific components of communication (i.e., individual RIAS codes) from which the broader outcome variable was comprised, to assess which specific communication behaviors might have accounted for the difference.

Results

Study Sample

Study sample characteristics and differences based on patient race/ethnicity are shown in Table 1. Compared to white patients, black patients were more likely to be female (41 vs. 24%, $\chi^2 = 9.076$, $P = 0.002$), and less likely to have a high school degree (67 vs. 91%, $\chi^2 = 20.388$, $P < 0.001$) and to have a white provider (65 vs. 83%, $\chi^2 = 10.537$, $P = 0.001$).

Differences in Communication for Black Compared to White Patients

Bivariate and multivariate differences in observed measures of patient-provider communication by patient race (black vs. white) are presented in Table 2. In multivariate analyses, compared to visits with white patients, physicians were more verbally dominant with black patients (1.40 vs. 1.30, $P = 0.029$), and black patients provided less information (177.2 vs. 148.4, $P = 0.001$). There was no association between patient race and visit length or affect score; in the total number of provider statements categorized as socio-emotional, question-asking or information-giving; or in the total number of patient statements categorized as socio-emotional or question-asking. There were also no significant racial differences in patient ratings of provider communication.

When we further analyzed the verbal dominance ratio (data not shown in table), we found that the total number of utterances made by physicians did not differ significantly by patient race (adjusted mean 352 vs. 371 physician utterances in encounters with black vs. white patients, $P = 0.214$), but there were fewer total utterances made by black versus white patients (adjusted mean 273 vs. 306, $P = 0.017$). When we further analyzed the patient information-giving category, we found that black patients provided less information in both the psychosocial (adjusted means 59 vs. 73, $P = 0.033$) and biomedical domains (adjusted means 88 vs. 104, $P = 0.004$).

Discussion

Most HIV-infected patients are satisfied with their care and, in contrast to studies in other settings, we found that most communication behaviors in visits of HIV-infected patients and their providers did not differ by race/ethnicity. However, there were a few important differences that may have consequences for patient outcomes. While the amount and quality of patient and provider socio-emotional communication was similar for black and white patients, encounters with black compared to white patients had more provider verbal dominance and less patient provision of information. These findings suggest some concrete

ways to improve the quality of communication between HIV providers and their black patients.

Our finding that there is more physician verbal dominance with black compared to white patients is similar to results of studies in primary care settings [23]. In our study, however, racial differences in verbal dominance were due to an absolute difference in the amount of patient rather than provider dialogue. Providers did not speak more in visits with black patients compared to whites; black patients spoke less. Yet, the reasons for this are unclear and may reflect less active engagement among black versus white patients, or alternatively less opportunity given by providers for black patients to engage in the visit. It is not possible to say from our study whether this difference has clinical consequences. However, given the preponderance of evidence that patient involvement in care is important to patient health outcomes in chronic disease [34,35], our findings suggest that efforts to more effectively engage black patients in their interactions with providers may be a promising avenue to reducing disparities in HIV care. This can be done by explicitly asking patients' opinions or perspectives, through more subtle non-verbal cues that indicate receptiveness to hearing more information, and through a more balanced sharing of control over the agenda of the visit. Furthermore, patient activation or coaching interventions to empower black patients may be important strategies for improving the quality of communication and enhancing patient participation. These efforts will only be effective to the extent that patients are otherwise treated respectfully and do not perceive racism in the system.

In contrast to studies in the primary care setting, which have shown differences in the emotional tone and patient-centeredness of visits with black and white patients, particularly those in race-discordant relationships [23,36], we did not find any significant differences in the emotional tone or patient-centeredness of visits with black versus white patients, or in patient ratings of their experience of care. Perhaps there is something unique about the relationships between HIV-infected patients and their providers, given the serious nature of this chronic illness. Alternatively, HIV providers may be different from other primary care providers in terms of communication style or comfort interacting with patients of different race/ethnicities.

Our study has several limitations. Because of limited variation in provider race/ethnicity, we were unable to assess the effects of racial or ethnic concordance between patient and provider on communication. Also, patients and providers in our study knew that they were being recorded and may have attempted to communicate differently, which may have biased our study toward more favorable observed communication behaviors. Two prior studies, however, have directly addressed this issue, and neither found that recorded visits were substantively different from non-recorded ones [37,38]. Moreover, although both provider and patient response rates were relatively high, the sample cannot be considered nationally representative, limiting the generalizability of the results. Finally, we did not video-record interactions and therefore did not assess non-verbal communication other than emotional tone, and we may not have had a large enough sample size to detect racial differences in some communication measures.

In contrast to studies done in other settings, communication in the psychosocial and emotional realms was found to be similar in visits with black compared white HIV-infected patients, perhaps indicating that there is something about HIV patients and/or providers that allows for closer personal patient-provider relationships despite racial differences. Overall, the majority of both black and white patients reported that their overall care was 'excellent'. However, similar to studies done in other settings, our study found more provider verbal dominance with black compared to white patients in HIV care. Although it is unclear from our study whether this difference is clinically significant, HIV providers should consider

making conscious efforts to engage black patients to become more involved in the process of the medical encounter. Further research is needed, however, to understand whether these efforts will improve patient experiences and outcomes.

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Table 1

Characteristics of study sample

	Non-hispanic black <i>n</i> = 246	Non-hispanic white <i>n</i> = 100	Test statistic	<i>P</i> -value
Patient characteristics				
Age, mean (SD)	46 (9)	45 (10)	<i>t</i> = -0.705	0.482
Female, <i>N</i> (%)	104 (41)	25 (24)	$\chi^2 = 9.076$	0.003
High school degree, <i>N</i> (%)	170 (67)	96 (91)	$\chi^2 = 20.388$	<0.000
Other language home, <i>N</i> (%)	21 (8)	6 (6)	$\chi^2 = 1.076$	0.382
Active drug use, <i>N</i> (%)	70 (28)	35 (33)	$\chi^2 = 0.936$	0.300
CD4 count, mean (SD)	488 (373)	468 (260)	<i>t</i> = -0.483	0.630
Known provider >5 years, <i>N</i> (%)	85 (34)	35 (33)	$\chi^2 = 0.003$	0.960
Rated overall care as 'excellent'	151 (59)	71 (67)	$\chi^2 = 2.465$	0.116
Provider characteristics				
Age, mean (SD)	44 (9)	45 (8)	<i>t</i> = 0.606	0.545
Female, <i>N</i> (%)	137 (54)	67 (63)	$\chi^2 = 1.554$	0.213
White, <i>N</i> (%)	166 (65)	88 (83)	$\chi^2 = 10.537$	0.001
Provider training, <i>N</i> (%) MDs	198 (78)	79 (75)	$\chi^2 = 0.611$	0.805

Unadjusted and adjusted differences in observed measures of patient-provider communication among non-Hispanic black and white HIV-infected patients

Table 2

	Bivariate ^a				Multivariate ^b			
	Non-hispanic black n = 246		Non-hispanic white n = 100		Non-hispanic black n = 246		Non-hispanic white n = 100	
	Mean	95% CI	Mean	95% CI	Mean	95% CI	Mean	95% CI
<i>Audio tape analysis</i>								
Verbal dominance ratio	1.39	1.31–1.48	1.30	1.22–1.39	1.40	1.32–1.49	1.30	1.22–1.38
Patient-centeredness score	2.5	2.0–3.1	2.34	2.10–2.65	0.88	0.77–1.02	0.88	0.76–1.03
Visit length (min)	22.4	20.6–24.2	23.9	21.8–26.3	22.2	20.6–24.0	24.0	21.7–26.4
Provider behaviors								
Positive affect score	11.9	11.6–12.2	11.9	11.4–12.4	11.9	11.6–12.2	11.9	11.4–12.4
Socio-emotional talk	85.4	77.9–93.6	95.2	84.9–106.9	85.4	78.0–93.4	94.5	85.0–105.0
Question-asking	47.2	42.4–52.5	48.9	41.8–57.3	46.5	41.7–51.8	49.8	42.6–58.2
Information-giving/counseling	145.5	131.2–161.4	147.8	130.5–167.3	145.6	132.1–160.5	146.1	128.4–166.4
Patient activation	44.1	39.2–49.7	48.3	41.3–56.6	44.2	39.3–49.8	47.9	41.5–55.3
Patient behaviors								
Positive affect score	21.1	20.9–21.3	21.2	20.8–21.6	21.1	20.9–21.4	21.2	20.8–21.6
Socio-emotional talk	100.7	91.4–111.0	101.7	91.1–113.5	100.1	90.8–110.3	102.3	91.7–114.2
Question-asking	9.1	8.0–10.4	10.3	8.4–12.5	9.2	8.0–10.4	10.0	8.2–12.2
Information-giving	149.2	136.5–163.2	176.1	158.0–196.3	148.4	135.7–162.1	177.2	158.9–197.7
Patient activation	7.3	6.5–8.3	7.3	6.0–9.0	7.4	6.5–8.3	7.2	6.0–8.7
Patient ratings								
Overall communication	1.30	0.82–2.07	1.0	–	1.30	0.80–2.07	1.0	–
Decision-making	1.08	0.63–1.85	1.0	–	1.19	0.63–2.00	1.0	–
Interpersonal style	1.37	0.88–2.13	1.0	–	1.33	0.81–2.20	1.0	–

^a P-values and adjusted means obtained using negative binomial regression with GEE to account for clustering of patients within providers, adjusted for site

^b P -values and adjusted means obtained using negative binomial regression and GEE to account for clustering of patients within providers, adjusted for site and patient characteristics (sex, education) and provider race/ethnicity