

## Racial Differences in Trust and Lung Cancer Patients' Perceptions of Physician Communication

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### ABSTRACT

#### Purpose

Black patients report lower trust in physicians than white patients, but this difference is poorly studied. We examined whether racial differences in patient trust are associated with physician-patient communication about lung cancer treatment.

#### Patients and Methods

Data were obtained for 103 patients (22% black and 78% white) visiting thoracic surgery or oncology clinics in a large Southern Veterans Affairs hospital for initial treatment recommendation for suspicious pulmonary nodules or lung cancer. Questionnaires were used to determine patients' perceptions of the quality of the physicians' communication and were used to assess patients' previsit and postvisit trust in physician and trust in health care system. Patients responded on a 10-point scale.

#### Results

Previsit trust in physician was statistically similar in black and white patients (mean score, 8.2 v 8.3, respectively;  $P = .80$ ), but black patients had lower postvisit trust in physician than white patients (8.0 v 9.3, respectively;  $P = .02$ ). Black patients, compared with white patients, judged the physicians' communication as less informative (7.3 v 8.5, respectively;  $P = .03$ ), less supportive (8.1 v 9.3, respectively;  $P = .03$ ), and less partnering (6.4 v 8.2, respectively;  $P = .001$ ). In mixed linear regression analysis, controlling for clustering of patients by physician, patients' perceptions of physicians' communication were statistically significant ( $P < .005$ ) predictors of postvisit trust, although patient race, previsit trust, and patient and visit characteristics were not significant ( $P > .05$ ) predictors.

#### Conclusion

Perceptions that physician communication was less supportive, less partnering, and less informative accounted for black patients' lower trust in physicians. Our findings raise concern that black patients may have lower trust in their physicians in part because of poorer physician-patient communication.

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### INTRODUCTION

Racial variation in the use of health services for lung cancer is well documented but poorly understood.<sup>1-4</sup> One possible contributing factor to these racial disparities is that black patients report less trust in physicians when compared with white patients.<sup>5-7</sup> However, the causes of racial differences in trust are poorly studied, especially among cancer patients. Lower trust in physicians by black patients may be associated with poorer health outcomes because higher trust is associated, in general, with greater likelihood to use health services, higher patient satisfaction with care, and stronger adherence to physicians' recommendations.<sup>8,9</sup> Racial disparities in physician-patient communication are likely to have a significant

impact on patients' trust in health care providers. For example, some studies suggest that black patients have medical consultations with less positive and less patient-centered communication than white patients.<sup>10,11</sup> Less patient-centered communication, in turn, can lower trust in physicians.<sup>12-14</sup>

Of particular interest in this study was whether patients' perceptions of physician communication led to postvisit changes in trust contrasted with some baseline or previsit level of trust in the physician and the health system when patients enter their consultations. Black patients may have lower baseline levels of trust in both the physician and system because of fears of exploitation by the medical profession (eg, Tuskegee Syphilis Study) and a legacy of discrimination in health care,<sup>15</sup> prior negative experiences with health care, and difficulty with accessing the health

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system. A patient's previsit trust in an individual physician may be higher or lower based on personal experience from previous visits with that physician, or previsit trust may be high when a patient consults a new physician because of high trust in physicians generally (ie, blind trust).<sup>16</sup> Additionally, previsit trust in physician may be correlated with trust in the health system, affiliated hospital, or health plan (ie, a halo effect).<sup>16</sup> Although trust seems to be stronger in longer relationships,<sup>8,17,18</sup> the events of a single consultation can also have an effect on patient trust after the encounter.<sup>7</sup>

We hypothesized that racial differences in postvisit trust in physician would be associated with differences by race in previsit trust and with differences in perceptions of patient-centered communication. We also hypothesized that trust in health system would be associated with patient race. Therefore, we measured previsit and postvisit trust and examined whether patient race and patients' perceptions of physician communication were associated with the development of (postvisit) trust in physician and health system.

## PATIENTS AND METHODS

### Patients

We prospectively screened patients with biopsy-confirmed lung cancer or a pulmonary nodule requiring surgical evaluation between April 2001 and March 2004 at a large Southern Veterans Affairs (VA) hospital. Patients were identified at diagnosis from pathology reports or when patient cases were presented at a weekly multidisciplinary case conference. At the conference, consultants in pulmonary medicine, thoracic surgery, oncology, radiation oncology, pathology, and radiology reviewed the clinical data for all patients with lung cancer or radiologic findings suspicious for lung cancer (eg, pulmonary nodules), made recommendations for further evaluation, and determined whether initial referral would be to oncology or thoracic surgery. The institutional review board approved this study, and all participating patients provided informed consent.

Patients were approached and enrolled on presentation to the oncology or thoracic surgery clinic for evaluation and treatment recommendations. We identified 252 patients who met our eligibility criteria, and 181 agreed to participate. Of these, we excluded 76 patients who did not answer at least half the items in each of the trust and communication scales (see Data and Measures) and two patients who indicated their race as being other than black or white. The remaining 103 patient participants were included in this analysis.

Participants were statistically similar by race and age when compared with all eligible nonparticipants ( $P = .17$  and  $P = .38$ , respectively). These participants consulted with one of 16 physicians or two physician assistants (two were white Hispanic, 11 were white non-Hispanic, and five were Asian; and four were in oncology and 12 were in surgery).

### Data and Measures

Participants' age and sex were determined from computerized patient medical records. We used patient self-report to classify racial identity (white or black/African American) and ethnic identity (Hispanic or non-Hispanic). Using surveys, we collected patients' educational level (no college education or at least some college education), mental and physical health status (Short Form-12),<sup>19</sup> and medical visit characteristics including first visit with the physician (yes or no), length of visit (< 20 minutes or  $\geq$  20 minutes), and location (oncology or surgery). In addition, we classified visits as concordant when the physician and patient were the same race.

Patients' perceptions of their physicians' communication were assessed with three previously published scales. We assessed the patient's perception that the physician provided and explained information (informativeness, five items),<sup>20</sup> the patient's perception that the physician values and respects them (supportive talk, five items),<sup>20</sup> and the patient's perception that the physician involved the patient in treatment decisions (partnership building, three items).<sup>21</sup> We assessed trust in physician and trust in the VA health system before and after the visit with a physician or physician assistant in the oncology or thoracic surgery clinic. To perform this assessment, we used nine scale items adopted verbatim or modified from previously published trust scales<sup>22-24</sup>; these are listed in Table 1. Five of these items measure patient trust in physician, and four measure trust in the VA health system. All communication and trust items were formatted to a 10-point, Likert-type scale using the descriptors of strongly disagree and strongly agree at the opposite ends. Scale scores were computed as the sum of item scores; negatively phrased items were reverse scored. To reduce missing data entries, a missing score for a given item was replaced with the mean of that patient's responses to the other items for that scale (scores were replaced for 27 patients who missed one question, nine patients who missed two questions, and four patients who missed three questions). The mean score for each trust item is listed in Table 1. Patients' trust in physician exhibited high internal reliability (Cronbach's  $\alpha = .92$ ), and patients' trust in the VA showed moderate internal reliability ( $\alpha = .70$ ; Table 1).

### Analysis

Bivariate associations of patient race with demographic and visit characteristics, functional status, and perceptual scores were examined, and statistical significance was determined using the  $t$  test or  $\chi^2$  test. To identify factors associated with postvisit trust in the physician and postvisit trust in the VA, we used multivariable linear regression. Regression models examining predictors

**Table 1.** Psychometric Properties of Trust Scale

Item	Score		Item-Scale Correlation (standardized)
	Mean	SD	
Trust in physician			
I completely trust this doctor's decisions about which treatments are best for me	8.8	2.2	0.78
This doctor is extremely thorough and careful	8.9	1.9	0.84
Sometimes this doctor cares more about what is convenient for (him/her) than about my medical needs	8.7	2.3	0.65
This doctor is totally honest with me	9.2	1.8	0.87
All in all, I have complete trust in this doctor	9.1	1.7	0.86
Trust in the VA			
I trust the VA to put my medical needs above all other things	8.0	2.8	0.46
The medical skills of the VA doctors and nurses are NOT as good as they should be	8.0*	2.8	0.54
I trust that the VA will give me all the information I need about my treatment	8.3	2.5	0.34
The VA system will not give me the best care possible	8.2*	2.7	0.63

NOTE. Items were scored on a 10-point (strongly disagree to strongly agree) scale. Cronbach  $\alpha$  for trust in physician = .92 and trust in VA = .70. Abbreviations: SD, standard deviation; VA, Veterans Affairs.

\*Reversed scores shown.

of postvisit trust in physician and postvisit trust in VA were developed separately, and independent variables were entered in three groups. The first group of independent variables included previsit (baseline) trust and race (model 1). For model 2, additional demographic and visit characteristics and functional status measures were added to model 1. In the final model, the scores from the three scales of patients' perception of the physicians' communication variables were added to model 2. We analyzed each model with mixed-effects linear regression, treating physician as a random effect to adjust for clustering of patients by physician. We conducted secondary analyses, using generalized linear regression, to examine associations among groups of patient-physician racial concordance and racial discordance with trust and communication variables. Analyses were conducted using SAS statistical software, version 9.0 (SAS Institute, Inc, Cary, NC).

## RESULTS

Black and white patients were similar according to mean age, sex, health status, having an initial consultation, and consulting with oncology versus surgery (Table 2). The proportion of patients who came to the consultations with a suspicion of cancer but no confirmed cancer diagnosis was small and did not differ between black and white patients (15% v 13%, respectively;  $P = .81$ ). Black patients in our sample were less likely than whites to have received a college education (22% v 55%, respectively;  $P = .01$ ). Black patients perceived that their physicians shared less information, engaged in less partnership building, and were less supportive compared with white patients' perceptions (Table 3).

Patients' reported trust in physician and trust in VA are listed in Table 4. Mean scores of previsit trust in physician, previsit trust in VA, and postvisit trust in VA were statistically similar for black and white patients. However, postvisit trust in VA increased for both black and white patients, but black patients' trust in physician did not increase after the visit and was significantly lower when compared with white patients' postvisit trust in physician (8.0 v 9.3, respectively;  $P = .02$ ). Postvisit trust in physician and postvisit trust in VA were moderately correlated ( $r = 0.57$ ;  $P < .001$ ).

**Table 2.** Demographic Characteristics and Functional Status of Black and White Patients

Characteristic	Black (n = 23)	White (n = 80)	P
Age, years			
Mean	65	66	.77
SD	11	10	
Male, %	96	96	.90
College, %	22	55	.01
First visit, %	70	76	.52
Visit > 20 minutes, %	39	61	.06
Oncologist, %	48	41	.57
SF-12 mental summary score			
Mean	63	64	.59
SD	7	7	
SF-12 physical summary score			
Mean	38	41	.25
SD	12	12	

Abbreviations: SD, standard deviation; SF-12, Short Form-12.

**Table 3.** Scores for Patients' Perceptions of Communication With Their Physician

Patient Perceptions	Black		White		P
	Mean Score	SD	Mean Score	SD	
Patients' perceptions of doctors' informativeness	7.3	2.8	8.5	2.2	.03
Patients' perceptions of doctors' partnership	6.4	2.7	8.2	2.2	.001
Patients' perceptions of doctors' supportiveness	8.1	2.4	9.3	1.1	.03

Abbreviation: SD, standard deviation.

### Trust in Physician

We used multivariable regression to determine the independent relationships among potential predictors of postvisit trust in physician, controlling for previsit (baseline) trust and adjusting for clustering of patients by physician. Variables were added to the regression models in three groups to examine predictors of postvisit trust in physician (see Patients and Methods). In model 1, postvisit trust in physician was higher among patients with higher previsit trust ( $\beta = .29$  on a 10-point scale;  $P < .001$ ) and was lower among black patients ( $\beta = -1.16$ ;  $P = .001$ ). In model 2, we included other patient and visit characteristics. Of these, age and perceived visit length were significant predictors of postvisit trust in physician ( $P < .05$ ), and these variables also attenuated somewhat the relationship of race and previsit trust in physician with postvisit trust in physician (Table 5). The addition of patient and visit characteristics explained an additional 10% of the variance (adjusted  $r^2 = 0.29$ ) in postvisit trust in physician.

In model 3, we added the following three measures of patient-centered communication: patients' perceptions of physicians' informativeness, partnership building, and supportiveness (Table 5). These three communication variables were significant predictors of postvisit trust in physician ( $\beta = .17, .15, \text{ and } .46$ , respectively;  $P < .01$ ). After inclusion of these communication variables, none of the previously entered variables were significant predictors of postvisit trust in physician ( $P > .10$ ). The variables in model 3 explained 62% of the variance in postvisit trust in physician.

### Trust in the VA

We also used multivariable linear regression to examine predictors of postvisit trust in the VA health system. In each of the three

**Table 4.** Scores for Previsit and Postvisit Trust in Physician and the VA by Race

Measure	Black		White		P
	Mean Score	SD	Mean Score	SD	
Previsit					
Trust in physician	8.2	1.9	8.3	2.0	.80
Trust in VA	7.6	2.1	8.2	2.0	.22
Postvisit					
Trust in physician	8.0	2.3	9.3	1.3	.02
Trust in VA	8.2	2.2	8.8	1.7	.16

Abbreviations: SD, standard deviation; VA, Veterans Affairs.

**Table 5.** Three Regression Models With Predictors of Postvisit Trust in Physician

Predictor	Model 1		Model 2		Model 3	
	$\beta$	<i>P</i>	$\beta$	<i>P</i>	$\beta$	<i>P</i>
Previsit trust in physician	.29	< .001	.23	.002	.08	.17
Black race	-1.16	.001	-1.04	.003	-.22	.42
Age	—	—	.04	.01	.01	.21
College	—	—	.01	.99	.09	.66
First visit	—	—	-.38	.22	-.22	.37
Visit > 20 minutes	—	—	.63	.04	.04	.86
Oncologist	—	—	-.16	.60	.05	.83
Mental health	—	—	.03	.11	.02	.17
Physical health	—	—	.01	.52	-.01	.54
Informativeness	—	—	—	—	.17	.003
Partnership	—	—	—	—	.15	.002
Supportiveness	—	—	—	—	.46	< .001

NOTE.  $r^2$  values for models 1, 2, and 3 were 0.19, 0.29, and 0.62, respectively.

models (Table 6), previsit trust in VA was a significant predictor of postvisit trust ( $P < .001$ ), but race was not a significant predictor of postvisit trust in VA in any of these models. Patients' perceptions of physicians' informativeness and partnership building were not significant predictors of postvisit trust in VA; however, the patients' perception that the physician was supportive was a significant predictor of postvisit trust in VA (Table 6).

### Racially Concordant and Discordant Visits

In light of recent research suggesting that trust and physician-patient communication might be influenced by concordance or discordance between physician and patient race and ethnicity, we conducted secondary analyses of the trust and communication measures using the following three levels of racial concordance: white concordant (doctor and patient were white,  $n = 51$ ), white discordant (white patient and nonwhite, Asian, or Hispanic doctor,  $n = 29$ ), and black discordant visits (black patient and nonblack doctor,  $n = 23$ ).

**Table 6.** Three Regression Models With Predictors of PostVisit Trust in VA

Predictor	Model 1		Model 2		Model 3	
	$\beta$	<i>P</i>	$\beta$	<i>P</i>	$\beta$	<i>P</i>
Previsit trust in VA	.50	< .001	.46	< .001	.34	< .001
Black race	-.19	.60	-.19	.60	.23	.52
Age	—	—	.05	.002	.04	.02
College	—	—	.12	.70	.12	.66
First visit	—	—	-.22	.51	-.15	.64
Visit > 20 minutes	—	—	-.11	.74	-.23	.49
Oncologist	—	—	-.49	.22	-.47	.16
Mental health	—	—	.04	.04	.04	.03
Physical health	—	—	-.01	.37	-.02	.22
Informativeness	—	—	—	—	.01	.96
Partnership	—	—	—	—	.07	.26
Supportiveness	—	—	—	—	.39	< .001

NOTE.  $r^2$  values for models 1, 2, and 3 were 0.30, 0.37, and 0.48. Abbreviation: VA, Veterans Affairs.

Our sample did not include any black concordant (doctor and patient were black) interactions. Patients in black discordant and white discordant visits perceived that their physicians shared less information, engaged in less partnership building, and were less supportive ( $P < .05$ ) compared with patients in white concordant visits. Previsit trust in physician and VA were not statistically different ( $P > .05$ ) in concordant and discordant visits ( $P > .05$ ). Postvisit trust in physician was lower in black discordant compared with white discordant visits (8.0 v 9.0, respectively;  $P = .03$ ) and in black discordant compared with white concordant visits (8.0 v 9.5, respectively;  $P < .001$ ). Finally, postvisit trust in VA was similar in black discordant and white discordant visits (8.2 v 8.2, respectively;  $P = .97$ ) and was lower in black discordant compared with white concordant visits (8.2 v 9.2, respectively;  $P = .04$ ).

## DISCUSSION

In this study, we examined the degree to which patients' perceptions of physicians' communication mediated patient trust in physician and trust in health care. Contrary to expectations, when compared with white patients, black patients did not have lower previsit trust in either the physician or the VA. However, black patients did have significantly lower postvisit trust in physician than white patients, which is a finding that is attributable to the fact that white patients' trust increased significantly after their visits, whereas black patients' trust remained unchanged. With respect to racial concordance, white concordant visits (where the patient and physician were both white) and white discordant visits had higher postvisit trust in physician than visits with black patients, all of which were discordant.

Racial differences in trust in physician were primarily explained by perceived differences in physician communication. Specifically, black patients perceived their physician as less supportive, less partnering, and less informative than white patients. These findings are consistent with studies reporting that medical encounters with black patients had less positive communication,<sup>10</sup> that physicians engaged in less participatory decision making with black patients,<sup>25</sup> and that trust was higher in racially concordant encounters.<sup>26</sup> It is also consistent with studies reporting that lower trust in physician is associated with communication problems during the visit.<sup>13,14,27,28</sup> Because trust and communication are associated with adherence, use of health services, self-reported improvements in health, and improved health outcomes,<sup>8,9,29</sup> our findings support the claim of Ashton et al<sup>30</sup> that racial disparities in health care may stem, in part, from problems in physician-patient communication.

In addition to trust in physician, we also examined trust in the VA health system. We did not find differences in trust in the VA by race, except that, with respect to racial concordance, white concordant visits had higher trust in the VA when compared with white and black discordant visits. Boulware et al<sup>31</sup> also report no association of race with trust in hospital. Nevertheless, our study indicates that, in addition to baseline trust, postvisit trust in the VA was predicted by the degree to which the physician was perceived as caring, concerned, and interested in the patient's well-being.

Our finding that black and white patients' perceptions of communication in medical consultations was associated with trust in physician and system could imply that, with more extensive interactional skills training for physicians, improved communication during the

clinical visit might be a means to promote greater trust in both physician and system. However, our findings also raise the question about whether there was variation in actual physician communication behaviors by race of patient, whether patients interpreted the communication behavior differently by race, or both.

Potential racial variation in physician-patient communication becomes an issue of concern especially when considering a growing body of research that links patterns of communication to outcomes of care. For example, when physicians are less informative and more controlling, patients are less likely to gain adequate understanding of their health condition and treatment options,<sup>32</sup> are often less satisfied with care,<sup>33</sup> are less likely to adhere to the physician's recommendations<sup>34</sup> and may experience poorer health following the consultation.<sup>29</sup> Moreover, when patients assume a passive role in the interaction, physicians may not get sufficient information for making appropriate treatment decisions<sup>35</sup> and patients may be less committed and less satisfied with those recommendations.<sup>36,37</sup>

Whether black and white patients interpret physicians' communication differently is an important question for future research. In a small but growing body of research, studies have attempted to measure both perceptions of communication and actual communication behaviors and have reported poor correlations between patients' perceptions of physicians' communication and behavioral measures of communication.<sup>38-40</sup>

The findings that perceptual measures and behavioral measures differ may explain the results of one study that did not find any significant improvement in trust in physician when physicians were given a 1-day communication training workshop.<sup>41</sup> Nevertheless, more intensive training may be required. For example, practicing physicians participating in a 2.5-day program used more patient-centered behaviors than physicians participating in a short half-day program.<sup>42,43</sup> Intensive training can also improve resident physicians' and medical students' communication with patients from different cultural backgrounds.<sup>44,45</sup>

Our results should be considered in the context of several limitations. First, our study was small and is based on data from two clinics in one hospital with 18 providers and 103 patients, 23 of whom were black; and 149 patients refused or did not complete the study. Thus,

our results may have limited generalizability to other practice settings and geographic locations. Second, several studies suggest that black patients are less willing to participate in research, in part, because of distrust.<sup>46</sup> In our study, we did not find statistical differences in rates of participation by race; however, our results could be biased if patients who did not participate were systematically more or less trusting than participating patients. Third, we did not evaluate the development and stability of trust over time and whether trust develops at different rates over time among different ethnic and racial groups. Patterns of trust may differ by race as a result of different societal or cultural experiences and different expectations about care<sup>31</sup> and may differ according to the object of trust (eg, physician or VA). Trust may include factors that need time for evaluation (eg, judgments about the effectiveness of treatment), and the evaluation of these factors may differ among racial and ethnic groups. Finally, the racial diversity of physicians in our sample may not be representative of other groups. For example, our sample did not include black physicians, so all visits with black patients were classified as discordant. Thus, our analyses could not separate effects resulting from racial discordance versus race per se. Future studies should enroll racially diverse samples of physicians and patients and attempt to overcome these limitations.

Our study supports prior findings that trust is associated with communication and suggests that racial disparities in physician-patient communication could promote a cycle of less trust, even mistrust, that may have profound implications for adherence to physicians' recommendations, use of health services, and even health outcomes. In addition to contributing to lower trust, racial disparities in physician-patient communication could also contribute to inequities in information exchange, poorer medical decisions, and less satisfaction and commitment by the patient, all of which are factors that may result in inadequate use of medical services and poorer health outcomes. Future studies should assess the associations of patient trust with actual physician-patient communication behaviors and test whether interventions to improve communication in medical encounters can reduce and even eliminate racial disparities in patient trust, physician-patient communication, and health outcomes.

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The authors indicated no potential conflicts of interest.

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