Associations Between Patient-Provider Communication And Socio-Cultural Factors In Prostate Cancer Patients: A Cross-Sectional Evaluation Of Racial Differences

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Abstract

Objective—To examine the association between socio-cultural factors and patient-provider communication and related racial differences

Methods—Data analysis included 1854 men with prostate cancer from a population-based study. Participants completed an assessment of communication variables, physician trust, perceived racism, religious beliefs, traditional health beliefs, and health literacy. A multi-group structural equation modeling approach was used to address the research aims.

Results—Compared with African Americans, Caucasian Americans had significantly greater mean scores of interpersonal treatment (p <.01), prostate cancer communication (p < .001), and physician trust (p < .001), but lower mean scores of religious beliefs, traditional health beliefs, and perceived racism (all p values < .001). For both African and Caucasian Americans, better patient-

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provider communication was associated with more physician trust, less perceived racism, greater religious beliefs (all p-values<.01), and at least high school education (p<.05).

Conclusion(s)—Socio-cultural factors are associated with patient-provider communication among men with cancer. No evidence supported associations differed by race.

Practice implication—To facilitate patient-provider communication during prostate cancer care, providers need to be aware of patient education levels, engage in behaviors that enhance trust, treat patients equally, respect religious beliefs, and reduce the difficulty level of the information.

Keywords

communication; race; physician trust; literacy; racism; beliefs; prostate cancer; PCaP

INTRODUCTION

Prostate cancer is the most common malignancy and the second leading cause of cancer deaths among men in the United States.[1] Compared to Caucasian Americans, African Americans have higher incidence and mortality rates from prostate cancer, are diagnosed with more advanced disease, undergo less aggressive initial treatment, and have poorer prognosis.[2–6]

Multiple treatment options are available for prostate cancer, and patient treatment decision-making process is complex.[7] Patients rely on physicians as the primary source of information when discussing treatment options for prostate cancer.[8,9] Patients often need to quickly build new relationships with oncologic care providers while managing the overwhelming demands of information, treatment decision-making,[10] psychological distress, and financial stress.[11,12] A pattern of ineffective patient-provider communication can lead to lack of understanding of prostate cancer and treatment options,[13] which may prevent men from making informed decisions, from receiving optimal treatments, and from achieving positive health outcomes,[14] and may lead to more decisional regrets.[9]

The American Society of Clinical Oncology has identified culturally appropriate patient-centered care as a way to foster patients' involvement in their care.[15] Good communication is essential for patient-centered cancer care,[16] yet racial and social class differences between physicians and patients have been cited as barriers to patient-provider communication.[17,18] African Americans often reported suboptimal communication with providers and higher levels of unmet information needs.[19] They were more likely to consider their providers' communication as less participatory, less informative, and less supportive than Caucasian Americans.[17,20,21] Patients in racially discordant patient-provider interactions received significantly less information and were less active participants when compared with patients in racially concordant interactions.[22] Patients who were the same race as their providers rated their visits as more participatory[17,23] and reported less discrimination in treatment.[24] Providers perceived African Americans as less effective communicators, treated them more contentiously, were more verbally dominant, and engaged in less patient-centered communication with African Americans than with Caucasian Americans.[25,26] African

Americans perceived unsatisfactory patient-provider communication as a form of unfair treatment and disrespect by the medical staff,[27] which has been associated with decreased utilization of health services, delays in seeking treatment, and less satisfaction with care among African American patients.[9,24,28]

Communication, the process by which individuals interact and influence each other, depends heavily on preexisting, shared cultural patterns and social structures.[29] The individual and the external social and cultural environment in which the patient has lived must be studied to understand patient-provider communication. The Institute of Medicine (IOM) suggested race is a social and cultural construct,[30] yet the socially and culturally constructed life experiences of an individual can be difficult to align along a simple dimension captured by the variable "race".[31] Some reports, using "race" as one of the predictors or a covariate, failed to examine the relevance of social and cultural context influencing patient-provider communication.[17,26,32,33] Other studies examined the racial differences and the impact of certain socio-cultural factors, such as trust/mistrust or perceived racism/discrimination. These studies have found, compared with Caucasian American patients, African Americans were more likely (1) to report their visits with providers as less participatory and supportive, (2) to receive significantly less information,[17,2221] (3) to be treated with disrespect,[18] (4) to report more perceived racism[27,34] and (5) to report less trust in health care providers.[24,32,34] Less trust in health care providers[32] and more perceived racism[34] have been associated with fewer quality interactions with health care providers. These studies, however, have been conducted among patients in primary care settings who usually have long-term relationships with their providers.[17,18,24,25,27,34] The relationships between patient-provider communication and the social-cultural factors may differ for men with prostate cancer when the information needs and stress levels are high and the patient-provider relationships are new. The effects of religious and health beliefs on patient-provider communication also are understudied.[35] Little research has examined the collective effects of different social and cultural factors on patient-provider communication.

To fill the gaps, this population-based cohort study examined how a set of socio-cultural factors (i.e., physician trust, perceived racism, religious beliefs, traditional health beliefs, and health literacy) influenced patient-provider communication after a recent diagnosis of prostate cancer (Figure 1). Potential racial differences in these relationships were also explored using a multi-group structural equation modeling (SEM) approach.

METHODS

The North Carolina-Louisiana Prostate Cancer Project (PCaP) was a population-based cohort study of 1011 African American and 1034 Caucasian American research subjects with prostate cancer. Details of PCaP design and methods are published elsewhere.[36] Briefly, PCaP was conducted from October 2004 to August 2009 to explore racial differences in prostate cancer aggressiveness through a comprehensive evaluation of individual, social, and tumor-level factors; eligible North Carolina patients were identified by the Rapid Case Ascertainment Core Facility, a collaborative effort of the UNC-Lineberger Comprehensive Cancer Center and the North Carolina Central Cancer Registry. In Louisiana, eligible patients were identified by the Louisiana Tumor Registry in the

School of Public Health at Louisiana State University Health Sciences Center. The overall participation rate of PCaP participants was 62.6%.[36] Trained study nurses conducted in-home interviews using a series of structured questionnaires, collected biologic samples, and completed anthropometric measurements. In this study, participants were excluded from the analysis if they had missing data on most of the variables, which would make missing data techniques inapplicable; thus, the analytic cohort of this cross-sectional study included 923 Caucasians and 931 African Americans.

The outcome variable was patient-provider communication, a latent construct comprised of three indicators to examine participants' perceptions of the health care providers (including physicians and nurses) who treated the prostate cancer after diagnosis regarding (1) the content of dialogue (prostate cancer communication); (2) the affective component (contextual knowledge); and (3) nonverbal behaviors (interpersonal treatment).[37] Prostate cancer communication refers to the instructions and advice about prostate cancer symptoms, treatment, decision-making about care, and treatment-related side-effects.[38] Contextual knowledge of the patient refers to the patient's evaluation of the degree to which health care providers have knowledge of the participant's general life.[39] Interpersonal treatment refers to the participant's perception of the level of friendliness, supportiveness, and respect received from providers during the initial treatment of prostate cancer.[25] These indicators were measured using adapted subscales from the Primary Care Assessment Survey© 1995 Safran/The Health Institute,[38] which included a 4-item scale of contextual knowledge of the patient (4-items), a 5-item scale of interpersonal treatment, and a 5-item prostate cancer communication measure. Item mean scores were used in this analysis; higher scores indicated more positive communication.

The predictor variables included socio-cultural factors and covariates, prostate cancer aggressiveness and treatment modality. The socio-cultural factors included physician trust, perceived racism, religious beliefs, traditional health beliefs, health literacy, and socio-demographic factors (race, age, marital status, and education). Physician trust was measured using a 12-item Likert scale, adapted from a 7-item scale from the Primary Care Assessment Survey© 1995 Safran/The Health Institute[38] and a 5-item scale of the Medical Mistrust Index.[24] Perceived racism in this study refers to participants' perceptions of unfair treatment due to one's racial background by health care providers in healthcare settings in general (rather than their personal experiences of unfair treatment). It was measured using the Racism Index,[24] a 4-item Likert scale. Religious beliefs were measured using the 8-item Multidimensional Health Locus of Control Scale.[40] This Likert-type scale indexed belief in God's role in one's health. Traditional health beliefs, participants' general perception about cancer, were measured using a 17-item dichotomous response scale developed through clinical interviews. The value of traditional health beliefs scale was calculated by taking the average of the 17 items and multiplying by 100 to get a value between 0 and 100. Examples of the scale include "Cancer can be caused by dirty blood" and "Nothing works to cure cancer or stops it from coming back." Health literacy was measured using the short form of the Rapid Estimate of Adult Literacy in Medicine (REALM).[41] The REALM total score was skewed, and thus, was dichotomized as <high school (REALM 60) or high school (REALM>60).

Covariates in this study included (1) prostate cancer aggressiveness, derived from clinical Gleason Score, stage, and PSA at diagnosis, was categorized in three levels: low aggressiveness (Gleason score < 7 and stage cT1–cT2, and PSA <10 ng/ml); high aggressiveness (Gleason score ≥ 8, PSA >20 ng/ml, or Gleason score = 7 and stage cT3–cT4); or intermediate aggressiveness (7<Gleason score<8, 10 ≤ PSA ≤ 20 ng/ml, and stage cT1-cT2 or cT3–cT4).[36] (2) Treatment modality included surgery, radiation therapy, and other (such as watchful waiting and hormonal therapy).

Multi-group SEM was conducted using MPlus 7.0[42] and maximum likelihood estimation.[43] SEM was selected as a statistical method because of its advantages over classic regression techniques for modeling latent variables through the use of multiple indicators per complex construct (e.g., patient-provide communication), to control for measurement error in the endogenous variables, and to estimate all associations simultaneously.[44] The goodness-of-fit of each model was evaluated using the recommendations from Hu and Bentler, e.g., Comparative Fit Index (CFI) ≥ .95, and Root Mean Square Error of Approximation (RMSEA) <.06.[45]

Multi-group SEM analyses were conducted in 2 steps to model the data from African Americans and Caucasian Americans simultaneously. First, confirmatory factor analysis was conducted to verify that the restricted multi-group patient-provider communication measurement model (previously established using the entire PCaP dataset) still provided adequate fit for the reduced sample. The model restricted paths for interpersonal treatment and contextual knowledge to be the same for Caucasian Americans and African Americans, but did not restrict paths for prostate cancer communication.[37] The structural model was then fit in four different ways; 1) completely unrestricted, allowing the measurement model to vary by race, as a baseline, 2) partially unrestricted, except for the restrictions on the measurement model noted above, 3) restricting the measurement model and the coefficients of all structural paths from the socio-cultural factors to patient-provider communication to be equal across races, and 4) restricting all structural paths and all covariances between the exogenous variables (all socio-cultural factors plus the covariate) to be equal across races. Nested models were compared using chi-squared difference tests conducted at the 5% significance level.

RESULTS

African American men were younger, on average, than Caucasian Americans (p < .001). Compared with African Americans, a higher percentage of Caucasian Americans had a college or above education, was married, had annual income greater than $30K, and had low cancer aggressiveness (p values< .001) (Table 1). Caucasian Americans had greater mean scores for interpersonal treatment (p =0.005), prostate cancer communication (p < .001), and physician trust (p < .001), but lower mean scores for religious belief, traditional health beliefs, and perceived racism (p values < .001) (Table 2). Respondents completed these measurements between 1 to 27 months since diagnosis; about 96% completed within 12 months since diagnosis.

The measurement model presented in the previously published paper[37] fit the reduced dataset for this analysis (Chi-square = 4.294, df = 2, p = 0.1169; RMSEA = 0.035, 90%CI = (0.000, 0.082); CFI / TLI = 0.999 / 0.997). No modification indices indicated that the model could be improved by relaxing restrictions (data not shown). Factor loadings for patient-provider communication ranged from 0.445 to 0.539 for both African Americans and Caucasian Americans, which indicated positive association between the indicators and patient-provider communication.

Our comparisons across models (Table 3) suggest that a model which allowed all structural paths to vary by race (Model 2) did not fit the data significantly better (p = 0.575) than a model that restricted all paths to be the same between races (Model 3). We interpret this result to indicate that our data do not provide sufficient evidence that the relationships between patient-provider communication and the socio-cultural factors differ between races, controlling for prostate cancer aggressiveness. The fit indices for Model 3 indicate satisfactory fit, so we will interpret the relationships in the context of this model. The overall variance in the latent communications variable explained by the socio-cultural factors, demographics, prostate cancer aggressiveness and treatment modality was 14% and 19% for Caucasian Americans and African Americans, respectively. Table 4 and Figure 2 summarize the estimated path coefficients to patient-provider communication. Better patient-provider communication under the final model was associated with more physician trust, less perceived racism, greater religious beliefs (p values<.01), at least high school education (p<.05), and receiving surgery or radiation (vs those without) (p<.001) for both Caucasian American and African American men with prostate cancer.

DISCUSSION AND CONCLUSION

1. Discussion

To investigate the racial disparities in cancer and to develop strategies of prevention and intervention, the Institute of Medicine advocated for the use of ethnic group as a population taxonomy and stressed "an appreciation of the range of cultural and behavioral attitudes, beliefs, lifestyle patterns, diet, environmental living conditions, and other factors that may affect cancer risk."[30] In a large population-based cohort of Caucasian Americans and African Americans with prostate cancer, we found that socio-cultural factors were associated with patient-provider communication, but failed to find evidence that these relationships varied by race. Specifically, more physician trust, less perceived racism, greater religious beliefs, and at least high school education were associated with better communication between patients and their providers. These results suggest that socio-cultural factors, rather than patient selfidentified "race", influence the communication between patients with prostate cancer and their cancer care providers. To our knowledge, this is the first study that simultaneously examined the collective impacts of race and a set of socio-cultural factors on patient-provider communication among patients with prostate cancer.

The lack of evidence supporting racial differences in the associations between patientprovider communication and the socio-cultural factors seemed surprising. A possible explanation could be that prior research examining the effects of socio-cultural factors, such

as perceived racism, treated patient-provider communication as a simple construct,[25,34] whereas this study assessed patient-provider communication using 3 different indicators that included the delivery of health/disease information and how the information was presented. It is also possible that the inclusion of a set of socio-cultural factors, in addition to race, partitioned the effects of race or the racial differences in the effects of individual socio-cultural factors on patient-provider communication.

Despite a lack of evidence to support racial differences in the relationships between patient-provider communication and socio-cultural factors, several factors associated with communication were significantly different between Caucasian Americans and African Americans. For example, we found that African Americans had lower scores for physician trust. Lack of physician trust erodes the patient-provider relationship and undermines treatment,[46] which in turn contribute to racial differences in outcomes after prostate cancer diagnosis.[33] The results from this study suggest that a higher level of physician trust among patients with prostate cancer positively related to better patient communication with their oncology care providers. Although patients of different races may have different levels of physician trust coming into oncology care, the immediate demands of prostate cancer may push them to interact with providers to form a sense of security as well as strong, healing relationships, regardless of trust level.

In addition, we found that greater perceived racism was associated with worse patient-provider communication, and, consistent with previous research,[47,48] African Americans reported greater perceived racism than Caucasian Americans. Our results demonstrated that a lower level of perceived racism among patients with prostate cancer corresponded with better patient communication with their oncology care providers. Meanwhile it is possible that most patients with prostate cancer focus primarily on working with their care providers on the diagnosis and treatment decision-making, which may lead to the downplaying of issues like racism in their communication with oncology care providers.

On the other hand, we found a positive relationship between religious beliefs and patient-provider communication in both African Americans and Caucasian Americans. Religious beliefs and practices have guided many patients as they cope with sickness, make treatment-related choices, and restore health, especially among African-Americans.[35] Previous research has found that religiously active individuals have higher levels of trust in physicians.[49] It is possible that participants in this study who had stronger religious beliefs had more positive perceptions regarding their patient-provider communication because they had more trust in their health care providers. Our results add to the literature about the positive impact of religious beliefs on cancer patients' experiences in seeking health care services. Future research is needed, however, to explore (1) whether and how men with newly diagnosed with prostate cancer and of different racial backgrounds seek religious support in the face of overwhelming amounts of information, controversial treatment options, and potentially distressing treatment side effects; and (2) the mechanism that helps explain why there is a positive association between religious beliefs and patient-provider communication.

Finally, high school or higher education level (not health literacy level) was positively associated with patient-provider communication among Caucasian Americans and African Americans. Previous research found that educational attainment, rather than health literacy, was a significant predictor of information needs among patients with cancer.[50] Our findings suggested that education level was also an indicator of patients' perception of the quality of patient-provider communication, specifically, compared with those who have at least high school or higher education, patients with localized prostate cancer who have less than high school education reported less positive patient-provider communication (i.e., instructions and advice of prostate cancer information, providers' knowledge about patients' general lives, and the friendly, supportive, and respectful treatment from the providers). During clinical encounters, providers, therefore, should pay special attention to patients with lower education level and make patient-provider communication 'fit' patients' needs by using simple language, slowing down and including important family member(s) in discussions. In addition, our results were consistent with previous findings, that is, completed education is not always a predictor of either literacy or health literacy.[50,51] Health literacy in this study was measured using REALM, a word pronunciation test; other domains of health literacy such as numeracy were not assessed. Future research needs to include more comprehensive assessment of health literacy and examine how different domains of health literacy are related to patient-provider communication during cancer survivorship.

The following considerations warrant further examination. First, Caucasian Americans and African Americans in this study were diagnosed most commonly with clinically localized prostate cancer and were older men, and thus the findings may be different from cancer survivors who are female, from other racial/ethnic groups, at different ages, or at different phases of survivorship. Secondly, this study probably examined communication between African American/Caucasian American patients and Caucasian physicians and nurses because only 1–2% of oncologists[52] and 5% registered nurses[53] in the U.S. are African Americans. The results, thus, may not be generalizable to the communication between patients and African American providers. Thirdly, the measures of patient-provider communication at the time of treatment may have introduced recall bias given that the longest recall time was 27 months since diagnosis. Nonetheless, our findings about racial differences in the communication variables and the social-cultural factors are consistent with previous research. In addition, we also generated new evidence to help understand the relationships between social-cultural factors and patient-HCP communication in African and Caucasian American patients with localized prostate cancer. Fourth, this study didn't examine the impact of socio-cultural factors in the providers and/or characteristics of the providers or their practice on patient-provider communication. Future research is needed to discern the full impact of race and socio-cultural factors on patient-provider communication. Further, because the study participants were recruited from North Carolina and Louisianna, U.S.A., it is unclear whether populations that are geographically different have the same perceptions regarding the socio-cultural factors and/or whether the socio-cultural factors affect patient-provider communication in the same way as we discovered in the PCaP population. Additionally, generalizability would be further limited if participants with missing data were systematically different from those with complete data.

Next, the Traditional Health Beliefs scale was developed based on clinical interviews with rural African American men. The construct of this scale, thus, may better suit African Americans. To date, health beliefs scales often focus on a specific population. Future research is needed to develop and test a health beliefs scale that could appropriately assess traditional health beliefs held by all men. Finally, this study provided important information regarding patients' experiences during prostate cancer diagnosis and treatment about 10 years ago. Given that the passage of time may have affected the relevance of the findings, it is worth examining the same issue in current socio-cultural context.

2. Conclusion

The results of this population-based study provide important new information to inform our understanding of how social-cultural factors (in addition to simply race) are associated with patient-provider communication among men with prostate cancer. Specifically, socio-cultural factors, such as physician trust, perceived racism, religious beliefs, and education attainment are associated with patient-provider communication among men with prostate cancer, but we found no evidence that these associations differ by race. As abovementioned, research is still needed to provide further evidence on the impacts of social-cultural factors on patient-provider communication. This study also provided a basis for future research that can examine whether interventions targeting the identified factors might improve patients-provider communication, and ultimately, improve patient care and outcomes.

3. Practice Implications

The findings suggest that, to help facilitate patient-provider communication during prostate cancer care, providers need to be aware of patient education levels in both Caucasian Americans and African Americans, engage in behaviors that enhance trust, treat patients equally, respect religious beliefs, and reduce the difficulty level of the information they provide. During cancer care, providers need to show their respect of a patient's values, beliefs, and practices, as well as be open and flexible with patients during their communication with patients with diverse social-cultural backgrounds.

Acknowledgments

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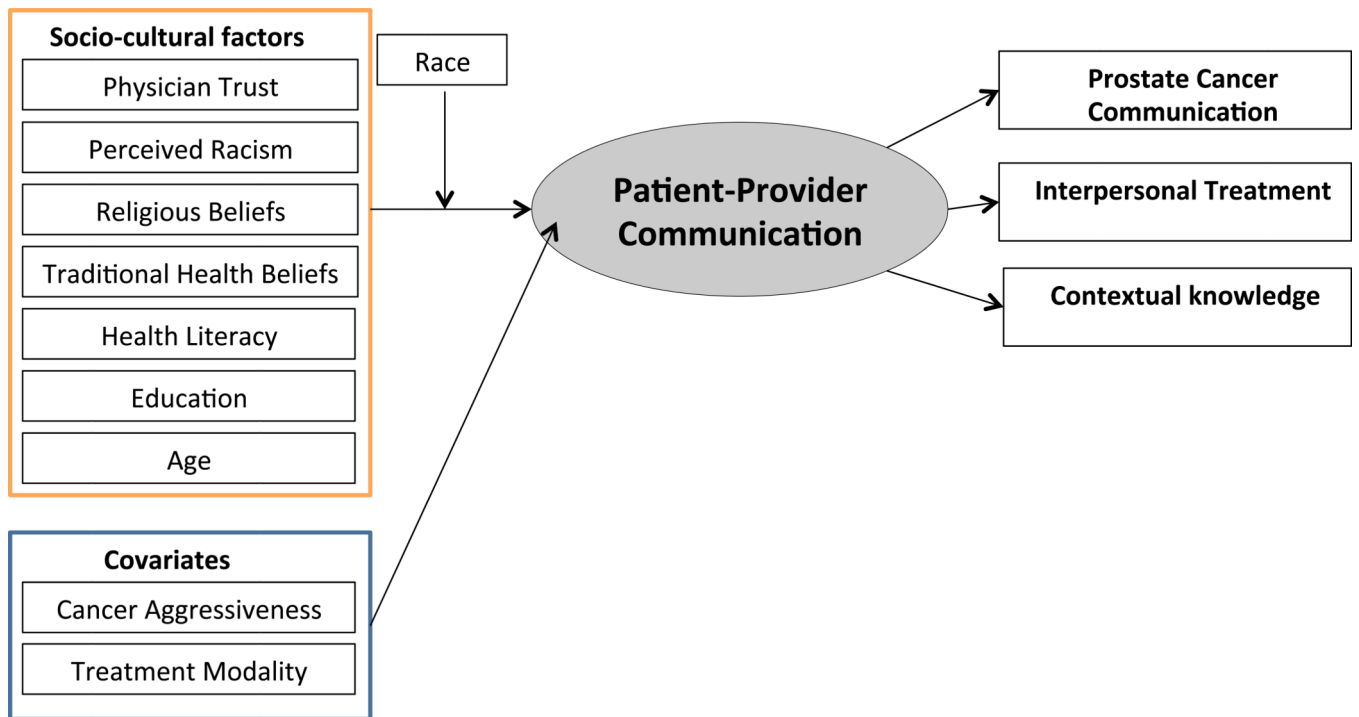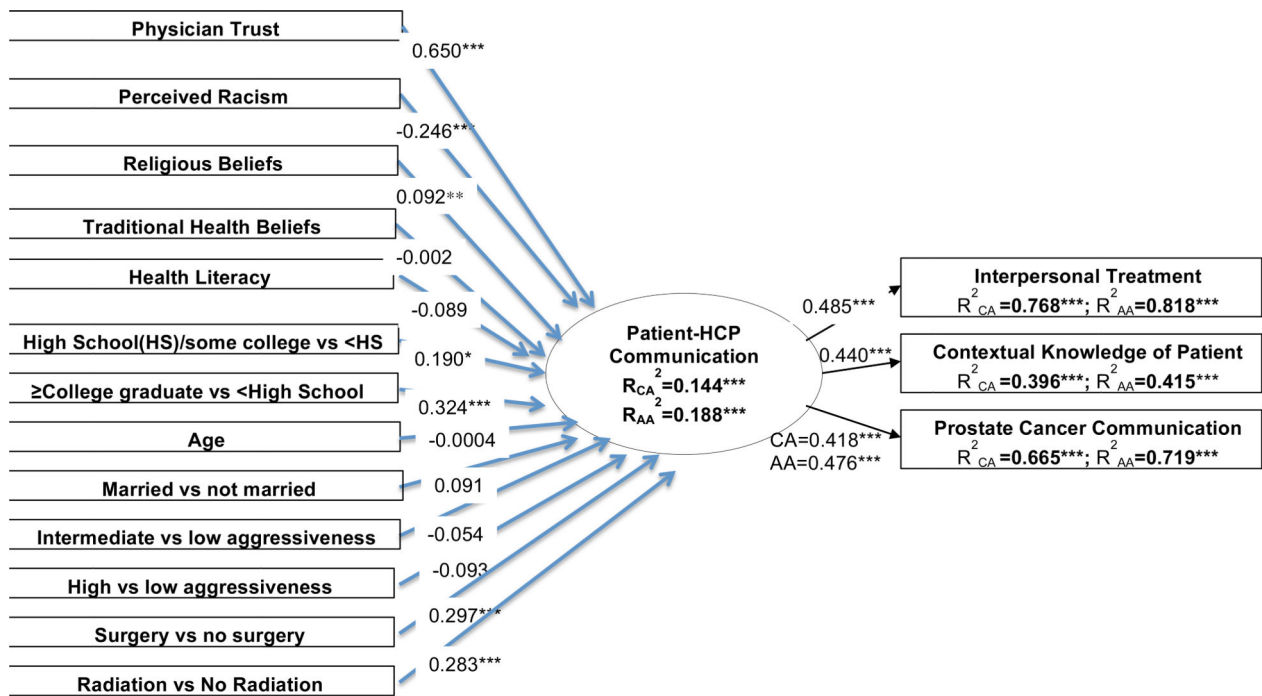**Figure 1. Socio-cultural Factors Influencing Patient-Healthcare Provider Communication**

Figure 2. Confirmatory Factor Analysis of Patient-Provider Communication
Note:

1. CA: Caucasian American; AA: African American

2. *: <.05; **: <.01; ***: <.001

Table 1

Characteristics of research subjects.

Variable	Overall (N=1854) N	(%)	Caucasian-Americans (N=923) N	(%)	African-Americans (N=931) N	(%)	P
Marital Status							
Married (vs. not married)	1411	(76.1)	781	(84.6)	630	(67.6)	<.001
Family Income							
$30K	570	(30.7)	170	(18.4)	400	(42.9)	<.001
$30,001-$70K	624	(33.6)	317	(34.3)	307	(32.9)	
$70,001	403	(21.7)	297	(32.1)	106	(11.3)	
Missing	257	(13.8)	139	(15.0)	118	(12.6)	
Education							
<High School	371	(20.0)	91	(9.8)	280	(30.0)	<.001
HS & Some college	955	(51.5)	450	(48.7)	505	(54.2)	
College and above	528	(28.4)	382	(41.3)	146	(15.6)	
CaP Aggressiveness							
Low	944	(50.9)	522	(56.5)	422	(45.3)	<.001
Intermediate	577	(31.1)	264	(28.6)	313	(33.6)	
High	333	(17.9)	137	(14.8)	196	(21.0)	
Health literacy							
High School (vs < High School)	1141	(61.5)	758	(82.1)	383	(41.1)	<.001
Treatment[*]							
Surgery	1032	(55.7)	544	(58.9)	488	(52.4)	0.005
Radiotherapy (external beam +brachytherapy)	500	(27.0)	223	(24.2)	277	(29.8)	0.007
Other	430	(23.2)	233	(25.2)	197	(21.2)	0.037
Age	62.88 (41.0–79.0)	7.93	64.08 (41.0–79.0)	7.88	61.70 (41.0–79.0)	7.81	<.001
Time since diagnosis (months)	5.0 (1.2–27.4)	3.1	4.9 (1.4–22.2)	2.8	5.1 (1.2–27.4)	3.4	0.075

[*] Patients may have received more than one type of treatment.

[**]Other treatment included watchful waiting, hormonal therapy, and the type of treatment that patients didn't know.

Table 2

Descriptive results of communication variables and sociocultural factors (continuous variables)

Variable	Cronbach's Alpha		Overall (N=1854)		Caucasian-Americans (N=923)		African-Americans (N=931)		p
	Caucasian	Black	Mean	SD	Mean	SD	Mean	SD	
Communication variables									
Contextual knowledge[1]	0.84	0.86	3.84	0.76	3.81	0.74	3.87	0.77	0.120
Interpersonal treatment[1]	0.91	0.93	4.40	0.60	4.44	0.59	4.36	0.61	0.005
Prostate cancer communication[1]	0.91	0.93	4.51	0.59	4.57	0.55	4.45	0.63	<.001
Sociocultural factors									
Physician trust[1]	0.75	0.77	3.43	0.46	3.52	0.44	3.34	0.47	<.001
Religious beliefs[1]	0.91	0.90	3.84	0.86	3.49	0.86	4.18	0.70	<.001
Traditional health beliefs[1]	0.56	0.70	24.89	15.30	20.38	12.03	29.36	16.82	<.001
Perceived racism[2]	0.77	0.79	2.44	0.63	2.30	0.52	2.57	0.70	<.001

Note:

[1] higher scores indicate more positive communication, greater physician trust, and stronger religious beliefs or traditional health beliefs;

[2] higher scores indicate greater perceived racism;

[3] Score of scales range from 1 to 5 for all instruments except for Traditional Health Beliefs which range from 0 to 100.

Table 3

Model fit statistics for full structural equation model

Model	Model $\chi^{2[1]}$	Model df	P-value[1]	RMSEA (90% CI)[2]	CFI / TLI[2]
1. Completely unrestricted	153.1	56	-	0.043 (0.035, 0.052)	0.963 / 0.945
2. Unrestricted, except for the measurement model	155.0	58	0.387	0.042 (0.034, 0.051)	0.963 / 0.947
3. Model 2 + restricted all paths from socio-cultural factors to patient-provider communication (Final model)	162.6	67	0.575	0.039 (0.032, 0.047)	0.964 / 0.955
4. Model 3 + restricted all covariances between exogenous variables	387.5	132	<0.001	0.046 (0.040, 0.051)	0.903 /0.939

Note:

[1]The p-value is for a chi-squared difference test comparing each model to the less restricted model immediately preceding it; a p-value<0.05 indicates that the less restricted model provides better fit.

[2]RMSEA (Root Mean Square Error of Approximation); CFI (Comparative Fit Index); TLI (Tucker-Lewis index). A model with RMSEA <.06 and CFI/TLI   .95 is considered to provide satisfactory fit.

Table 4

Final model: estimated path coefficients to patient-health care provider communication

Socio-cultural factor	Estimated Path[1]	SE	P-value
Age	0.000	0.004	0.944
Education levels			
High school graduate/some college vs. <High school	0.190	0.075	0.011
College graduate vs. <High school	0.324	0.094	<0.001
Marital status: Married vs. not married	0.091	0.062	0.141
Physician Trust	0.650	0.066	<0.001
Perceived racism	−0.246	0.047	<0.001
Religious beliefs	0.092	0.034	0.007
Traditional health beliefs	−0.002	0.002	0.211
Health literacy	−0.089	0.066	0.178
Cancer aggressiveness			
Intermediate vs. low	−0.054	0.058	0.353
High vs low	−0.093	0.071	0.191
Treatment modality received			
Surgery vs. no surgery	0.297	0.069	< 0.001
Radiation vs. no radiation	0.283	0.072	< 0.001

Note:

[1]The estimated path parameters are the same for African Americans and Caucasian Americans because of non-significant race effect.