

Differences in Cultural Beliefs and Values Among African American and European American Men With Prostate Cancer



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Background: Although cultural values are increasingly being recognized as important determinants of psychological and behavioral outcomes following cancer diagnosis and treatment, empirical data are not available on cultural values among men. This study evaluated differences in cultural values related to religiosity, temporal orientation, and collectivism among African American and European American men.

Methods: Participants were 119 African American and European American men who were newly diagnosed with early-stage and locally advanced prostate cancer. Cultural values were evaluated by self-report using standardized instruments during a structured telephone interview.

Results: After controlling for sociodemographic characteristics, African American men reported significantly greater levels of religiosity (Beta = 24.44, $P < .001$) compared with European American men. African American men (Beta = 6.30, $P < .01$) also reported significantly greater levels of future temporal orientation. In addition, men with more aggressive disease (eg, higher Gleason scores) (Beta = 5.11, $P < .01$) and those who were pending treatment (Beta = -6.42, $P < .01$) reported significantly greater levels of future temporal orientation.

Conclusions: These findings demonstrate that while ethnicity is associated with some cultural values, clinical experiences with prostate cancer may also be important. This underscores the importance of evaluating the effects of both ethnicity and clinical factors in research on the influence of cultural values on cancer prevention and control.

Introduction

Cultural factors are recognized as important determinants of not only cancer prevention and control behaviors but also psychological and behavioral outcomes following cancer diagnosis and treatment.^{1,2} Culture is

defined as a set of shared and socially transmitted ideas about the world that are passed down from generation to generation.^{3,4} Culture as a socially transmitted phenomenon carries with it the idea that people who interact on a regular basis know the same unwritten rules and criteria for social life that confer status as a member of the group.³ Within this overarching framework, the construct of world view is used by psychologists to describe beliefs and values regarding the nature of time (eg, present, future), social relationships (eg, individualism, collectivism), and the presence or absence of natural and supernatural entities (eg, materialism, spiritualism) that are shared among members of ethnic and racial groups.⁴ While anthropologists use the construct of cultural models to describe the shared attitudes, beliefs, and values that are nested within a group's more general world view, these beliefs and values create motivational force.⁵ That is, they provide the underlying rationale or impetus for individuals to behave and think in a certain way, and they influence an individual's perceptions, cognitions, affect, and behaviors.³ When applied to illness, the beliefs and values from a group's world view or cultural model of disease influence perceptions about the meaning of an illness, the types of treatment or remedies that are useful, and the likely out-

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Abbreviations used in this paper: PSA = prostate-specific antigen, UPHS = University of Pennsylvania Health System.

come of health behaviors related to the prevention and control of disease.^{6,7}

Previous research has demonstrated that world views, as well as their subsequent attitudes, beliefs, and values related to health, differ among ethnically diverse groups.⁸⁻¹⁰ For example, world views for European Americans have been characterized by values such as individualism, materialism, and future temporal orientation, whereas world views for African Americans have been characterized by values such as interdependence and collective responsibility, spirituality, and present temporal orientation.^{8,10,11} Other research has shown that cultural models — and specific folk health beliefs generated from these models — are important to help-seeking behavior for depression,¹² diabetes,¹³⁻¹⁵ AIDS,¹⁶ and breast⁷ and cervical cancer.¹⁷ Recent research has shown that cultural beliefs and values may be important to cancer prevention and control. Future temporal orientation was positively associated with participation in genetic counseling and acceptance of BRCA1 and BRCA2 genetic test results in African American women at increased risk for hereditary disease,² whereas present temporal orientation was negatively associated with mammography utilization in a sample of African American women from the general population.¹⁸ Cultural beliefs and values may also influence coping efforts following cancer diagnosis. For example, religious values such as faith in God and concerns about family members are important among women following breast cancer diagnosis.^{19,20} Similarly, greater spirituality was positively associated with quality of life following a prostate cancer diagnosis among low-income men,²¹ and discussion of religious and spiritual beliefs with health care providers was important to African American men affected with disease.²²

These studies have identified some of the ways in which cultural beliefs and values might influence cancer control and coping behaviors within ethnic groups; however, beliefs and values derived from one's world view or cultural model of illness may be more or less salient depending on clinical experiences with disease, since experiences influence culture and culture influences experiences. Limited empirical data are available on whether there are differences in cultural values among ethnically diverse men who are diagnosed with prostate cancer.

The purpose of this study was to describe cultural values related to religiosity, collectivism, and temporal orientation among African American and European American men. Since prostate cancer is the most common form of cancer among men and is the leading cause of cancer death among men in the United States,²³ our study evaluated cultural values among African American men and European American men newly diagnosed with this disease. Based on reports showing ethnic differences in cultural world

views,^{8,10,11,24} we were particularly interested in determining the extent to which African American and European American men were different in terms of values related to religiosity, temporal orientation, and collectivism. We focused on these cultural factors because they have been shown to be important to cancer control and coping efforts following a cancer diagnosis.^{2,19,22,23} We also evaluated the relationship between ethnicity and cultural values while controlling for sociodemographic and clinical variables to determine the extent to which any observed ethnic differences were independent of the effects of these factors.

Materials and Methods

Study Population

The study was conducted at the University of Pennsylvania following approval from the Institutional Review Board. Participants were African American and European American men who were newly diagnosed with prostate cancer. To be eligible for study participation, men had to have been diagnosed with a biopsy-confirmed case of stage T1 through T3 prostate cancer during the past 3 months. To be included in the analysis, men had to have complete clinical data. Consistent with prior reports with individuals newly diagnosed with cancer,²⁵ the study enrollment rate was 58% among men with complete clinical data on diagnosis and treatment (N = 223). There were no differences in study enrollment based on Gleason score ($\chi^2 = 0.13, P = .72$) or prostate-specific antigen (PSA) level ($\chi^2 = 1.85, P = .17$). However, European American men ($\chi^2 = 4.65, P = .03$), men with stage T2 or T3 disease ($\chi^2 = 11.86, P = .001$), and those who were recruited from the University of Pennsylvania Health System (UPHS) ($\chi^2 = 11.36, P = .001$) were most likely to enroll in the study.

Procedures

Eligible subjects were recruited from urology practices at the UPHS and community-based urology practices located in Philadelphia, Pennsylvania. The UPHS is an academic medical facility, whereas community-based urology practices were not affiliated with an academic medical center. Specifically, men were recruited to participate in the study by urologists or research staff during a follow-up appointment after they had been informed about their prostate cancer diagnosis. It should be noted that men recruited from the UPHS were recruited from the presurgery class for radical prostatectomy. At each site, eligible men received a verbal and written description of the study and the procedures involved in participation. Written informed consent and permission to abstract clinical information from medical records was obtained from men who agreed to participate in the study. Following provision

of informed consent, men were contacted for a baseline telephone interview about 1 to 4 weeks after study enrollment. The baseline was a structured survey that took about 30 minutes to complete. The baseline obtained sociodemographic characteristics and ethnic background, and it also assessed cultural values. All surveys were completed by trained research assistants at the University of Pennsylvania. Among the 129 men who enrolled in the study, 92% completed the baseline telephone interview and had complete data on cultural values. While European American men were most likely to complete the baseline telephone interview ($\chi^2 = 8.94, P=.003$), baseline completion did not differ based on stage of disease ($\chi^2 = 1.33, P=.51$), Gleason score ($\chi^2 = .008, P=.93$), PSA ($\chi^2 = 1.26, P=.26$), or recruitment site ($1.51, P=.22$).

Measures

Sociodemographics: During the baseline telephone interview we obtained the participant's ethnicity (African American or European American), age, marital status, education level, employment, annual household income level, and health insurance status. With the exception of age and income, these variables were recoded into dichotomous variables based on the distribution of responses. Age was evaluated as a continuous variable, and income was dichotomized based on the median income for Philadelphia residents²⁶ (greater than \$35,000 vs less than \$35,000).

Clinical Factors: PSA level, Gleason score, and TNM stage at diagnosis were abstracted from medical records. These items were recoded into dichotomous variables (eg, stage T1 vs T2/T3) based on the distribution of responses for each variable. PSA level was dichotomized based on the median value. Men were also asked if they had received surgical, radiation, or expectant (ie, watchful waiting) treatment during the baseline telephone interview. Men who had initiated radiation therapy or completed surgical treatment were categorized as not pending treatment, and men who had not initiated any treatment were categorized as pending treatment.

Cultural Values: Scales developed by Lukwago and colleagues²⁷ were used to assess cultural values for religiosity (9 items), collectivism (6 items), and temporal orientation (present temporal orientation 5 items, and future temporal orientation 4 items [1 item was omitted from the future temporal orientation scale]). Specifically, these Likert-style scales evaluated the extent to which men endorsed values related to religious faith (eg, "I openly talk about my faith with others") and collectivism or group interdependence (eg, "It is important for families to do everything they can to help others move ahead in life"). For temporal orientation, items measured the extent to which men's cognitions and behaviors reflected a preference for future or

immediate outcomes. For example, men were asked questions such as "My day-to-day life is too busy to think about the future" to evaluate present temporal orientation, while questions such as "The choices I have made in life clearly show that I think about the future" were used to evaluate future temporal orientation. Separate scales were used to evaluate each cultural value. These scales had good internal consistency in this sample (Cronbach's alpha ranged from 0.60 to 0.95).

Data Analysis

First, descriptive statistics were generated to characterize the study sample in terms of sociodemographics, clinical factors, and cultural values. Bivariate analyses using χ^2 tests of association were then conducted to evaluate differences between African American and European American men in terms of sociodemographics and clinical factors. Next, t tests and nonparametric analysis of variance were used to evaluate the relationship between cultural values and sociodemographics and clinical factors. Since the scales for cultural values had a different number of items and possible ranges for scores, these scores were transformed to a scale of 0 to 100 for the analyses. Multivariate regression analysis was conducted using the transformed scores to identify variables having significant independent associations with each cultural value. Since empirical data are not available on cultural values among African American and European American men, variables that had a bivariate association of $P<.10$ with each cultural value were included in the regression model for that outcome. Sociodemographic variables that were significantly different between African American and European American men were controlled for in the multivariate regression analysis. A Bonferroni adjustment was used and $P<.01$ was set as the significance level in the regression models to account for multiple comparisons.

Results

As shown in Table 1, the sample consisted of 50 African American and 69 European American men. Most participants were married (75%), had some college education or were college graduates (63%), and were not employed (54%). Of the men who were not employed, 45% were retired. Most of the men had health insurance (96%) and most were recruited from community urology sites (62%). In terms of clinical characteristics, the majority of men had been diagnosed with stage T2 or T3 disease (59%), had a Gleason score of 6 (55%), and had initiated or completed treatment for prostate cancer (60%). The mean age of participants was 63.7 years (SD 8.6, range = 34 to 84) and the mean age at diagnosis was 63.4 (SD 8.6). Compared with European American men, African American men had higher PSA levels ($\chi^2 = 11.70$,

Table 1. — Sample Characteristics (N = 119)

Variable	Level	N (%)
Ethnic background	African American	50 (42)
	European American	69 (58)
Marital status	Married	89 (75)
	Not married	30 (25)
Education level	≥ Some college	75 (63)
	≤ High school	44 (37)
Employment status	Employed	55 (46)
	Not employed	64 (54)
Income level ^a	> \$35,000	86 (73)
	≤ \$35,000	32 (27)
Health insurance ^b	Yes	113 (96)
	No	4 (04)
Recruitment site	University of Pennsylvania Health System	45 (38)
	Community sites	74 (62)
PSA level	> 5	60 (50)
	≤ 5	59 (50)
Gleason score	> 6	53 (45)
	≤ 6	66 (55)
TNM stage	T2/T3	70 (59)
	T1	49 (41)
Treatment status	Not pending	72 (60)
	Pending	47 (40)

^aOne participant was missing data for income.
^bTwo participants were missing data for health insurance.

$P=.001$), had been diagnosed with stage T1 disease ($\chi^2 = 12.61, P=.004$), and had not yet had treatment ($\chi^2 = 3.98, P=.05$). In addition, African American men were most likely to have been recruited from community urology sites ($\chi^2 = 37.12, P=.001$), had less education ($\chi^2 = 16.36, P=.0001$), were less likely to be married ($\chi^2 = 12.89, P=.0003$), and were less likely to have a household income greater than \$35,000 ($\chi^2 = 5.20, P=.02$). There were no differences between African American and European American men in terms of employment status ($\chi^2 = 3.62, P=.06$), Gleason scores ($\chi^2 = 1.94, P=.16$), age ($t = 1.21, P=.23$), or age at diagnosis ($t = 1.19, P=.24$).

The results of the bivariate analysis of cultural values are provided in Table 2. Greater levels of religiosity were associated with African American ethnicity, having a high school or less education, and being diagnosed with early-stage disease. Men with a higher PSA score also reported greater levels of religiosity; however, this relationship was only marginally significant. Ethnicity had a similar association with future temporal orientation. Variables also associated with greater future temporal orientation included higher Gleason scores and pending prostate cancer treatment. African American men, unemployed

Table 2. — Bivariate Analysis of Cultural Values (N = 119)

Variable	Level	Mean (SD)							
		Religiosity	<i>t</i>	Present Temporal Orientation	<i>t</i>	Future Temporal Orientation	<i>t</i>	Collectivism	Kruskal-Wallis χ^2
Ethnicity	African American	87.7 (14.0)	7.79 ^a	53.9 (11.9)	2.00 ^c	62.1 (9.6)	2.62 ^b	63.4 (5.5)	1.31
	European American	63.7 (19.5)		47.5 (20.3)		57.0 (10.9)		62.3 (5.8)	
Marital status	Married	72.3 (22.1)	1.29	47.3 (16.2)	3.39 ^a	59.4 (11.1)	0.40	63.0 (5.4)	0.81
	Not married	78.0 (17.1)		58.5 (13.2)		58.5 (9.3)		61.9 (6.4)	
Education level	≥ Some college	70.9 (21.9)	1.99 ^c	47.0 (13.9)	2.72 ^b	58.5 (11.2)	0.83	62.9 (5.3)	0.05
	≤ High school	78.7 (18.7)		55.7 (18.4)		60.2 (9.6)		62.5 (6.4)	
Employment status	Employed	71.2 (21.7)	1.22	47.4 (16.9)	1.75 ^d	59.2 (9.9)	.01	62.6 (4.6)	0.99
	Not employed	76.0 (20.3)		52.6 (15.3)		59.2 (11.6)		62.8 (6.5)	
Income level	> \$35,000	72.2 (22.0)	1.26	48.1 (16.1)	2.54 ^b	59.1 (11.2)	.04	62.9 (4.8)	0.36
	≤ \$35,000	77.7 (18.1)		56.4 (15.0)		59.2 (9.2)		62.5 (7.5)	
PSA level	> 5	77.4 (20.5)	1.86 ^d	52.5 (18.4)	1.52	59.2 (10.9)	.07	62.9 (6.0)	0.86
	≤ 5	70.3 (21.1)		47.9 (13.6)		59.1 (10.4)		62.7 (5.3)	
Gleason score	> 6	76.4 (21.9)	1.23	52.0 (18.2)	1.09	61.7 (10.9) ^c	2.39	62.2 (5.4)	0.13
	≤ 6	71.7 (20.2)		48.7 (14.4)		57.1 (9.8)		63.2 (6.0)	
TNM stage	T2/T3	70.9 (23.1)	2.48 ^b	48.5 (20.6)	1.36	59.6 (11.2)	0.60	63.0 (5.0)	0.16
	T1	79.1 (16.4)		52.6 (15.8)		58.5 (9.8)		62.4 (6.5)	
Treatment status	Not pending	71.4 (22.4)	1.56	49.0 (15.8)	1.00	57.4 (10.8)	2.32 ^c	62.1 (5.2)	4.68 ^c
	Pending	77.5 (18.4)		52.0 (16.8)		61.9 (10.0)		63.9 (5.8)	

^a $P<.001$. ^b $P<.01$. ^c $P<.05$. ^d $P<.10$.

men, and unmarried men reported higher levels of present temporal orientation. In addition, age ($r = .18, P=.05$) and lower income were positively associated with present temporal orientation. Only treatment status was associated with collectivism; men who were pending treatment reported higher levels of collectivism (mean = 63.9 [SD 5.2]) compared with those who were not pending treatment (mean = 62.1 [SD 5.8]) (Kruskal-Wallis $\chi^2 = 4.68, P=.03$).

Table 3 shows the results of the multivariate regression analysis of cultural values that controlled for variables that were associated significantly with study enrollment. We also controlled for sociodemographic characteristics that were significantly different between African American and European American men. Since treatment status was the only variable that was associated with collectivism, we did not generate a multivariate regression model for this variable. Thirty-four percent of the variance in religiosity was accounted for by the model ($F = 6.94, P=.001$); only the effect for ethnic background was significant. African American men reported significantly greater levels of religiosity compared with European American men. Seventeen percent of the variance in present temporal orientation was accounted for by the model ($F = 2.22, P=.02$); however, the effects for ethnicity, sociodemographics, and clinical factors were

not significant. In contrast, ethnicity, Gleason score, and treatment status had significant effects on future temporal orientation. This model accounted for 19% of the variance in future temporal orientation ($F = 2.48, P=.01$). African American men and those with a higher Gleason score reported significantly greater levels of future temporal orientation compared with European American men and those with lower Gleason scores. In addition, men who were pending treatment for prostate cancer reported significantly greater levels of future temporal orientation compared with those who were not pending treatment.

Discussion

Despite increasing recognition of the importance of cultural values on cancer outcomes, empirical data are not available on ethnic differences in cultural values among men newly confronted with a cancer diagnosis. To our knowledge, this is the first empirical study to evaluate differences between African American and European American men newly diagnosed with prostate cancer in terms of cultural values related to religiosity, temporal orientation, and collectivism. Similar to other populations,¹ men in the present study

Table 3.— Multivariate Regression Analysis of Cultural Values (N = 118)^a

Variable	Level	Beta		
		Religiosity	Present Temporal Orientation	Future Temporal Orientation
Ethnic background	African American European American	24.44 ^b	-1.53	6.30 ^c
Income	>\$35,000 <\$35,000	-2.47	0.04	-0.82
Education level	≥Some college ≤High school	2.32	-3.18	-0.59
TNM stage	T2/T3 T1	-0.002	3.39	2.80
PSA level	≥5 <5	-0.22	0.39	-1.44
Recruitment site	UPHS Community	-2.81	-10.23 ^d	2.18
Treatment status	Not pending Pending	-0.97	1 .08	-6.42 ^c
Marital status	Married Not married		-7.34 ^e	2.40
Employment status	Employed Not employed		0.70	0.40
Age ^f			0.12	
Gleason score	>6 ≤6			5.11 ^c

^a Sample size is 118 because of missing data. ^b $P<.001$. ^c $P<.01$. ^d $P<.05$. ^e $P<.10$. ^f Age was entered as a continuous variable.

reported fairly high levels of these values. In contrast with prior reports,^{11,28} we did not find ethnic differences in collectivism. However, collectivism was higher among men who were pending treatment. This could be due to increased needs for family support in preparation for treatment or concerns about the impact of diagnosis and treatment on family relationships and functioning.

Although prior reports have shown that present temporal orientation may be dominant within African American culture overall,^{11,29} we found that African American men reported significantly greater levels of future temporal orientation after controlling for socio-demographic factors. Temporal orientation is defined as one's cognitive focus in terms of past, present, and future domains and is one of the primary contexts through which individuals understand and give meaning to their life experiences²⁹⁻³¹; future temporal orientation has been positively associated with greater concerns about future consequences.²⁹ For African American men, experiences with prostate cancer have been characterized by high rates of morbidity and mortality.^{23,32-34} Consistent with this, African American men in the present study had higher PSA levels than European American men had. Recent work has shown that African American men report greater levels of anxiety about prostate cancer recurrence compared with European American men³⁵; thus, although we cannot assure causality, it is possible that future temporal orientation was highest among African American men because of greater concerns about the long-term impact and outcomes of prostate cancer.³⁶ Recent work has emphasized that while individuals and groups may have a dominant temporal orientation,^{29,37} temporal perspective may change depending on the situation. Thus, another possible explanation for our findings is that different temporal perspectives become more relevant depending on the situation.^{29,37} A recent qualitative study found that even though men were aware of risk factors for prostate cancer, information about disease was not viewed as being personally relevant until after they had been diagnosed.³⁶ Just as information about disease becomes more personally relevant following prostate cancer diagnosis, concerns about future health outcomes may become particularly salient to African American men following prostate cancer diagnosis because of the high rates of morbidity and mortality from this disease.

We also found that higher Gleason scores were positively associated with future temporal orientation. Gleason score is an indicator of the aggressiveness of prostate cancer. It is possible that men with higher Gleason scores reported greater levels of future temporal orientation because of concerns about the future and the risk of death from disease. Similarly, future temporal orientation may have been greater among men who had not yet initiated or completed treatment

for prostate cancer because of concerns about the long-term impact of treatment (eg, side effects, potential for recurrence).

Similar to previous research,^{22,38} we found that African American men reported significantly higher levels of religiosity compared to European American men. Spirituality and religion are related but distinct factors. Spirituality is defined as having a personal relationship with a higher power and faith and it may be a process used to find meaning in one's life, while religion is defined as a set of practices and beliefs (eg, dogma, doctrines) that are shared by a community or group.³⁹⁻⁴¹ Religion can be thought of as behavioral manifestations of one's spirituality. Religion and spirituality are important components of African American culture that translate into high rates of church attendance,⁴² frequent use of prayer to cope with cancer diagnosis,⁴³ and reliance on faith to cope with stress and health issues.^{44,45} Participation in religious activities (eg, church attendance, prayer) has been positively related to health practices and outcomes in African Americans.^{46,47} Prior reports have also shown that discussion of religious and spiritual beliefs with health care providers is important to African American men diagnosed with prostate cancer.²² Moreover, greater spirituality is positively associated with quality of life among low-income men with prostate cancer.²¹ Our findings suggest that ethnic differences in religiosity may lead to greater rates of religious coping in African American men following prostate cancer diagnosis. Additional research is needed to evaluate how ethnic differences in religiosity may translate into differences in coping efforts and quality of life in African American and European American men following prostate cancer diagnosis and treatment.

In considering the results of this study, some limitations should be noted. First, only about 60% of eligible men enrolled in the study, and there were ethnic differences in study enrollment. However, our enrollment rates were similar to those reported for other studies with newly diagnosed cancer patients,²⁵ and among men who enrolled in study, 92% completed the baseline telephone interview. Further, even though the challenges associated with recruiting African Americans to participate in cancer research have been well documented,^{48,49} African American men comprised close to half of study participants. Nonetheless, additional research is needed to identify factors that may enhance participation or might be barriers to study enrollment among men newly diagnosed with prostate cancer. Since this was a cross-sectional study, we were not able to evaluate cultural values before men were diagnosed with prostate cancer. Thus, we were not able to determine if values change as a result of being diagnosed with this disease. This underscores the importance of prospective studies that evaluate potential changes in values and the impact of these factors on coping efforts

and quality of life following diagnosis and treatment. While the instruments we used to evaluate cultural values have been evaluated extensively among African American women,^{1,18,27} to our knowledge, the psychometric properties of these instruments have not been evaluated among African American or European American men. However, we evaluated some psychometric characteristics of these instruments in the present study (eg, Cronbach's alpha), and the means for cultural values obtained in our sample were similar to those in other samples that included individuals who did not have a personal history of cancer.¹ Moreover, by evaluating ethnic differences in cultural values, the results of present study help to establish the discriminate validity of the instruments among African American and European American men. However, additional research is needed to evaluate the psychometric properties of the scales further.

Conclusions

Despite potential limitations, the results of the present study have several important implications. First, our findings demonstrate that while ethnicity is important to some cultural values such as religiosity, clinical experiences with disease may also be important to values related to temporal orientation. This underscores the importance of evaluating the context within which cultural values are expressed in addition to characterizing ethnic group differences. Future studies are needed to evaluate the effects of cultural values on decision making, coping, and quality of life among African American and European American men within the context of prostate cancer diagnosis and treatment.

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References

1. Kreuter MW, Haughton LT. Integrating culture into health information for African American women. *Am Behav Sci.* 2006;49:794-811.
2. Hughes C, Fasaye GA, LaSalle VH, et al. Sociocultural influences on participation in genetic risk assessment and testing among African American women. *Patient Educ Couns.* 2003;51:107-114.
3. D'Andrade R. Schemas and motivation. In: D'Andrade RG, Strauss C, eds. *Human Motives and Cultural Models.* Cambridge, UK: Cambridge University Press; 1992.
4. Koltko-Rivera ME. The psychology of worldviews. *Rev Gen Psychol.* 2004;8:3-58.
5. Strauss C. Models and motivation. In: D'Andrade RG, Strauss C, eds. *Human Motives and Cultural Models.* Cambridge, UK: University Press; 1992.
6. Barg FK. *Understanding the Unequal Burden of Breast Cancer Mortality on African American Women: A Cultural Models Approach.* University of Pennsylvania; Philadelphia, Penn: 2000. Doctoral dissertation.
7. Coreil J, Wilke J, Pintado I. Cultural models of illness and recovery in breast cancer support groups. *Qual Health Res.* 2004;14:905-923.
8. Kambon KK. *The African Personality in America: An African-Centered Framework.* Tallahassee, FL: Nubian Nation Publications; 1992.
9. Resnicow K, Baranowski T, Ahluwalia JS, et al. Cultural sensitivity in public health: defined and demystified. *Ethn Dis.* 1999;9:10-21.
10. Morris EF. Clinical practices with African Americans: juxtaposition of

standard clinical practices and Africentricism. *Prof Psychol Res Pract.* 2001; 32:563-572.

11. Randall-David E. *Strategies for Working With Culturally Diverse Communities and Clients.* Washington, DC: Association for the Care of Children's Health; 1989.
12. Switzer JF, Wittink MN, Karsch BB, et al. "Pull yourself up by your bootstraps": a response to depression in older adults. *Qual Health Res.* 2006;16: 1207-1216.
13. Chowdhury AM, Helman C, Greenhalgh T. Food beliefs and practices among British Bangladeshis with diabetes: implications for health education. *Anthropol Med.* 2000;7:209-226.
14. Garro L. Remembering what one knows and the construction of the past: a comparison of cultural consensus theory and cultural schema theory. *Ethos.* 2000;28:275-319.
15. Loewe R, Freeman J. Interpreting diabetes mellitus: differences between patient and provider models of disease and their implications for clinical practice. *Cult Med Psychiatry.* 2000;24:379-401.
16. Baer RD, Weller SC, Pachter L, et al. Beliefs about AIDS in five Latin and Anglo-American populations: the role of the biomedical model. *Anthropol Med.* 1999;6:13-29.
17. Chavez LR, Hubbell FA, McMullin JM, et al. Structure and meaning in models of breast and cervical cancer risk factors: a comparison of perceptions among Latinas, Anglo women, and physicians. *Med Anthropol Q.* 1995;9:40-74.
18. Lukwago SN, Kreuter MW, Holt CL, et al. Sociocultural correlates of breast cancer knowledge and screening in urban African American women. *Am J Public Health.* 2003;93:1271-1274.
19. Ashing-Giwa KT, Padilla G, Tejero J, et al. Understanding the breast cancer experience of women: a qualitative study of African American, Asian American, Latina and Caucasian cancer survivors. *Psychooncology.* 2004; 13:408-428.
20. Bourjolly JN. Differences in religiousness among black and white women with breast cancer. *Soc Work Health Care.* 1998;28:21-39.
21. Krupski TL, Kwan L, Fink A, et al. Spirituality influences health related quality of life in men with prostate cancer. *Psychooncology.* 2006;15: 121-131.
22. Bowie J, Sydnor KD, Granot M. Spirituality and care of prostate cancer patients: a pilot study. *J Natl Med Assoc.* 2003;95:951-954.
23. American Cancer Society. *Cancer Facts and Figures 2006.* Atlanta, Ga: American Cancer Society; 2006.
24. Kelsey RC, Ransom RM. A comparison of African and European groups utilizing a worldview opinion questionnaire. In: Jones RL, ed. *Handbook of Tests and Measurements for the Black Population.* Hampton, Va: Cobb & Henry Publishers; 1996.
25. Sears SR, Stanton AL, Kwan L, et al. Recruitment and retention challenges in breast cancer survivorship research: results from a multisite, randomized intervention trial in women with early stage breast cancer. *Cancer Epidemiol Biomarkers Prev.* 2003;12:1087-1090.
26. US Census Bureau. Available at <http://factfinder.census.gov>. Accessed on March 19, 2007.
27. Lukwago SN, Kreuter MW, Bucholtz DC, et al. Development and validation of brief scales to measure collectivism, religiosity, racial pride, and time orientation in urban African American women. *Fam Community Health.* 2001;24:63-71.
28. Gaines SO Jr, Marelich WD, Bledsoe KL, et al. Links between race/ethnicity and cultural values as mediated by racial/ethnic identity and moderated by gender. *J Pers Soc Psychol.* 1997;72:1460-1476.
29. Jones JM, Brown WT. Any time is Trinidad time! Cultural variations in the value and function of time. In: Strathman A, Joireman J, eds. *Understanding Behavior in the Context of Time: Theory, Research, and Application.* Mahwah, NJ: Lawrence Erlbaum Associates; 2005.
30. Holman EA, Silver RC. Getting "stuck" in the past: temporal orientation and coping with trauma. *J Pers Soc Psychol.* 1998;74:1146-1163.
31. Lasane TP, O'Donnell DA. Time orientation measurement: a conceptual approach. In: Strathman A, Joireman J, eds. *Understanding Behavior in the Context of Time: Theory, Research, and Application.* Mahwah, NJ: Lawrence Erlbaum Associates; 2005.
32. Powell IJ, Schwartz K, Hussain M. Removal of the financial barrier to health care: does it impact on prostate cancer at presentation and survival? A comparative study between black and white men in a Veterans Affairs system. *Urology.* 1995;46:825-830.
33. Grossfeld GD, Latini DM, Downs T, et al. Is ethnicity an independent predictor of prostate cancer recurrence after radical prostatectomy? *J Urol.* 2002;168:2510-2515.
34. Oakley-Girvan I, Kolonel LN, Gallagher RP, et al. Stage at diagnosis and survival in a multiethnic cohort of prostate cancer patients. *Am J Public Health.* 2003;93:1753-1759.
35. Krupski TL, Sonn G, Kwan L, et al. Ethnic variation in health-related quality of life among low-income men with prostate cancer. *Ethn Dis.* 2005;15:461-468.
36. Maliski SL, Connor S, Fink A, et al. Information desired and acquired by men with prostate cancer: data from ethnic focus groups. *Health Educ Behav.* 2006;33:393-409.

37. Boyd JN, Zimbardo PG. Time perspective, health, and risk taking. In: Strathman A, Joireman J, eds. *Understanding Behavior in the Context of Time: Theory, Research, and Application*. Mahwah, NJ: Lawrence Erlbaum Associates; 2005.
38. Lambert S, Fearing A, Bell D, et al. A comparative study of prostate screening health beliefs and practices between African American and Caucasian men. *ABNF J*. 2002;13:61-63.
39. Taylor EJ. Spirituality, culture, and cancer care. *Semin Oncol Nurs*. 2001;17:197-205.
40. Bessinger D, Kuhne T. Medical spirituality: defining domains and boundaries. *South Med J*. 2002;95:1385-1388.
41. Herbert RS, Jenckes MW, Ford DE, et al. Patient perspectives on spirituality and the patient-physician relationship. *J Gen Intern Med*. 2001;16:685-692.
42. Felix Aaron K, Levine D, Burstin HR. African American church participation and health care practices. *J Gen Intern Med*. 2003;18:908-913.
43. Taylor KL, Lamdan RM, Siegel JE, et al. The role of coping in the psychological adjustment of African American women with early-stage breast cancer. *Cancer Res Ther Control*. 1999;8:139-154.
44. Banks-Wallace J, Parks L. It's all sacred: African American women's perspectives on spirituality. *Issues Ment Health Nurs*. 2004;25:25-45.
45. Dessio W, Wade C, Chao M, et al. Religion, spirituality, and healthcare choices of African-American women: results of a national survey. *Ethn Dis*. 2004;14:189-197.
46. van Olphen J, Schulz A, Israel B, et al. Religious involvement, social support, and health among African-American women on the east side of Detroit. *J Gen Intern Med*. 2003;18:549-557.
47. Levin J, Chatters LM, Taylor RJ. Religion, health and medicine in African Americans: implications for physicians. *J Natl Med Assoc*. 2005;97:237-249.
48. Taylor KL, Lamdan RM, Siegel JE, et al. Psychological adjustment among African American breast cancer patients: one-year follow-up results of a randomized psychoeducational group intervention. *Health Psychol*. 2003;22:316-323.
49. Ashing-Giwa KT, Padilla GV, Tejero JS, et al. Breast cancer survivorship in a multiethnic sample: challenges in recruitment and measurement. *Cancer*. 2004;101:450-465.