

Religious Coping and Types and Sources of Information Used in Making Prostate Cancer Treatment Decisions

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Janice V. Bowie, PhD, MPH¹, Caryn N. Bell, BS¹, Altovise Ewing, PhD¹,
Ballington Kinlock, PhD¹, Ashley Ezema¹, Roland J. Thorpe Jr., PhD¹,
and Thomas A. LaVeist, PhD^{1,2}

Abstract

Treatment experiences for prostate cancer survivors can be challenging and dependent on many clinical and psychosocial factors. One area that is less understood is the information needs and sources men utilize. Among these is the influence of religion as a valid typology and the value it may have on treatment decisions. The objective of this study was to assess the relationship between race, religion, and cancer treatment decisions in African American men compared with White men. Data were from the Diagnosis and Decisions in Prostate Cancer Treatment Outcomes Study that consisted of 877 African American and White men. The main dependent variables sought respondents' use of resources or advisors when making treatment decisions. Questions also assessed men perceptions of prostate cancer from the perspective of religious coping. After adjusting for age, marital status, education, and insurance status, race differences in the number of sources utilized were partially mediated by cancer was a punishment from God ($\beta = -0.46$, $SE = 0.012$, $p < .001$), cancer was a test of faith ($\beta = -0.49$, $SE = 0.013$, $p < .001$), and cancer can be cured with enough prayer ($\beta = -0.47$, $SE = 0.013$, $p < .001$). Similarly, race differences in the number of advisors utilized in making the treatment decision were partially mediated by cancer was a punishment from God ($\beta = -0.39$, $SE = 0.014$, $p = .006$), and cancer was a test of faith ($\beta = -0.39$, $SE = 0.014$, $p = .006$). Religious views on prostate cancer may play an important role in explaining race differences in information used and the number of advisors utilized for treatment decision making for prostate cancer.

Keywords

prostate cancer, African American men, decision making, treatment decisions, religion

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The burden of prostate cancer is widespread, with approximately 220,800 new cases expected to be diagnosed in 2015 in the United States and 27,540 deaths for the same year (American Cancer Society, 2015). African American men are 1.6 times more likely to be diagnosed with and 2.4 times more likely to die from the disease than their non-Hispanic White counterparts (American Cancer Society, 2015). African Americans are diagnosed at more advanced stages, have lower 5-year survival rates and a lower quality of life resulting from prostate cancer compared with Whites (American Cancer Society, 2015). African American men's prostate cancer prognosis is worse relative to other racial and ethnic groups.

A range of treatment options such as surgery, radiation, hormonal, and active surveillance are presented to men diagnosed with prostate cancer and each man's

treatment decision experience may be different (American Cancer Society, 2015). Additionally, racial and ethnic variations exist in prostate cancer treatment decisions (Hoffman, Hunt, Gilliland, Stephenson, & Potosky, 2003; Ross et al., 2016; Shavers, Lynch, & Burmeister, 2002; Underwood et al., 2004; Zeliadt, Potosky, Etzioni, Ramsey, & Penson, 2004) and is dependent on a host of factors that typically inform options for therapy such as

¹Johns Hopkins University, Baltimore, MD, USA

²George Washington University, Washington, DC, USA

Corresponding Author:

Janice V. Bowie, Department of Health, Behavior and Society, Johns Hopkins University Bloomberg School of Public Health, 624 N. Broadway, Baltimore, MD 21205, USA.
Email: jbowie2@jhu.edu



stage of diagnosis, age, education, health literacy, overall health, and life expectancy. Personal and cultural factors, such as social networks, and family dynamics also affect men's decisions to manage their prostate cancer care and treatment (Friedman et al., 2012; Maliski, Connor, Williams, & Litwin, 2010; Shaw, Scott, & Ferrante, 2013). The link between culture and health over the past several years has also led to an increased recognition of the interconnectedness of religious and spiritual practices with one's cultural heritage, and may factor into an individual's conceptualizations of health and illness. Within the context of prostate cancer, less is understood about the information needs and sources men recognize as important and how religion, as a sociocultural resource, may be related to the treatment decisions that they make.

While prostate cancer disparities are salient for both African American and White men, the influence of religion and spirituality following a cancer diagnosis may be different (Bowie, Sydnor, & Granot, 2003; Hughes et al., 2007). Religion is commonly defined by participation in an organized body with shared beliefs, rituals, and practices (Koenig, McCullough, & Larson, 2001; Pargament, 1997). Spirituality, on the other hand, is referred to one's search for the sacred or meaning for one's life and purpose (Koenig, McCullough, & Larson, 2001; Pargament, 1997). These distinctions are generally not differentiated in common usage and often used both simultaneously and interchangeably.

Previous studies in African American men have identified an important placement of religion in determining knowledge, beliefs and barriers to prostate cancer prevention, screening, and diagnosis (Blocker et al., 2006; Holt, Wynn, & Darrington, 2009; Wenzel et al., 2012). Consistent with these findings is the estimate that nearly 80% of cancer survivors, which includes survivors of prostate cancer, report that religion/spirituality is important in coping with their disease (Canada, Murphy, Fitchett, & Stein, 2016; Krupski et al., 2006). Research has also reported that strength in coping with cancer often comes through prayers, scriptural readings, and other forms of expression (Albaugh, 2003; Zaza, Sellick, & Hillier, 2005). Thus, some cancer interventions that have been effectively implemented in diverse populations are also associated with religion (Holt et al., 2009; Husaini et al., 2008; Saunders et al., 2013). Studies involving religion have yielded improved and increased knowledge of cancer and related screening prevention and behaviors and religious-coping mechanisms for cancer among various populations (Allen, Mohllajee, Shelton, Drake, & Mars, 2009; Blocker et al., 2006; Holt et al., 2009; Wenzel et al., 2012).

In 2009, a Pew Research Center study established religion as a central tenet in the lives of African Americans. This study revealed that more than 87% of African

Americans cited a religious affiliation; almost 80% indicated that religion was important in their lives and 72% of those who did not indicate a religious affiliation cited the value of religion of their lives. These findings may have implications in terms of the networks that individuals use when making their health decisions. Religious networks may be more influential in treatment decisions in certain racial and ethnic populations compared with others. Despite the pervasive use of religion in health disparities research, it is not clear if some populations rely on their religious beliefs or community to guide their treatment decisions more than other racial and ethnic groups.

Research has identified the value of information about cancer treatments to positive coping (Pargament, Smith, Koenig, & Perez, 1998; Pargament, 2007; Sajid, Kotwal, & Dale, 2012), reducing distress (Echlin & Rees, 2012; Sajid et al., 2012), and increasing patient satisfaction as well as being vital in decision making (Derdiarian, 1989). While sources of information and seeking strategies vary, men's needs throughout their cancer experience will most likely persist. The disparity in prostate cancer outcomes may be partially attributed to the treatment decisions that men make. However, these decisions are not made in a vacuum and are often a function of several factors (Gillespie et al., 2013; Sajid et al., 2012). Understanding the potential contribution of religion to prostate cancer treatment decisions can inform the development of effective interventions to address prostate cancer health disparities in diverse populations. The objective of this study was to assess the relationship between race, religion, and cancer treatment decisions in African American men compared with White men.

Method

Data

The Diagnosis and Decisions in Prostate Cancer Treatment Outcomes (DAD) Study is a cross-sectional study designed to examine factors that influence the selection of prostate cancer treatment modality, and explore race differences in disease burden, and quality of life. The study team prospectively recruited 877 men (462 White and 415 African American men) aged 40 to 81 years who entered the North Carolina Central Cancer Registry (NCCCR) during the years 2007 to 2008 using a rapid case ascertainment (RCA) procedure. Eligibility criteria included being 35 years of age and older, diagnosed with prostate cancer, and self-identify as White or Black/African American. Recruitment from the NCCCR began in October 2009 and ended in December 2011. On a monthly basis, RCA staff contacted the primary research network hospitals to request reports identifying their patients meeting the eligibility criteria. The RCA core

mailed these prospective study participants a pamphlet describing the NCCCR and informing them that they may be contacted in the future to participate in a study. After the study team confirmed the eligibility of the patients, they mailed the physician of record of each eligible study participant a notification of intent to contact the prospective participant about enrolling in the study. Per the NCCCR protocol, physicians were given 3 weeks to reply with a request that the patient not be contacted. If the physician did not refuse patient contact within 3 weeks, the study team sent the eligible study participant a packet containing a recruitment letter describing the study, NCCCR brochure, and a copy of the consent and Health Insurance Portability and Accountability Act forms. In the letter, the study team provided a phone number that he could call for questions or to decline. Interviewers contacted the eligible study participant by telephone, screened him for study eligibility, explained the study, answered questions, and sought his participation. If the eligible study participant expressed interest, the interviewer reviewed the consent form and obtained verbal consent and proceeded with the survey questionnaire. This study was approved by the institutional review board of Johns Hopkins Bloomberg School of Public Health.

Variables

The main dependent variables assessed respondent's use of resources when making treatment decisions. Men were asked "Did you get information about prostate cancer treatment from any of the following sources?" Responses included "yes" or "no" for the following sources: library or bookstore, support group, Internet, books or pamphlets, video, friend or relative, National Cancer Institute, and American Cancer Society. A variable was created to demonstrate the total number of information sources utilized by summing the number of sources for which the response was "yes." Men were asked "Did you seek advice about which treatment you should get for your prostate cancer from any of the following people?" Advice could have been sought from the following people: wife or partner, children, parents, brother, sister, other male relative, other female relative, friends or neighbors, religious counselor, someone treated for prostate cancer, second doctor, counselor, and other. A variable indicating the total number of persons from which advice was sought was created by summing the total number of "yes" responses. Men were asked "Was the final decision about your treatment your decision or one made with someone else?" Responses included 100% my decision, 75% my decision, 50% my decision, 25% my decision, 100% someone else, don't know or refused, and a variable with five categories was created for those who did not respond "don't know" or "refused." Men were

asked "Who helped you to make your treatment decision?" Responses included "yes" or "no" for the following options: wife or partner, children, parents, brother, sister, other male relative, other female relative, friends or neighbors, religious counselor, someone treated for prostate cancer, second doctor, counselor, and other. A variable was created to indicate the total number of persons who helped the men make their treatment decision by summing the number of "yes" responses.

The main independent variable was self-reported race. A dichotomous variable where "0" represented "White" and "1" represented "Black/African American." It was thought that religion specific to prostate cancer diagnoses may have a more salient association with treatment decision making. As such, items were created that asked men to rate their agreement with the following statements: "getting prostate cancer was punishment from God," "getting prostate cancer was a way to test my faith in God," "since being diagnosed with prostate cancer," "my faith in God has gotten stronger," "my faith in God has helped me cope with my disease," "whether I am cured will be decided by God only," "if I pray enough I will be cured," and "since being diagnosed with prostate cancer my faith in God has weakened." Agreement was measured on a Likert-type scale with the following responses: *strongly agree*, *agree*, *neither agree nor disagree*, *disagree*, or *strongly disagree*. Religious coping was assessed via the 10-item Brief RCOPE (Fetzer, 2003; Pargament et al., 1998). Men were asked whether they agreed a great deal, quite a bit, somewhat, or not at all with the following statements: "I think about how my life is part of a larger spiritual force," "I work together with God as partners to get through the hard times," "I look to God for strength, support, and guidance in crises," "I try to find the lesson from God in crises," "I confess my sins and ask for God's forgiveness," "I feel that stressful situations are God's way of punishing me for my sins or lack of spirituality," "I wonder whether God has abandoned me," "I try to make sense of the situation and decide what to do without relying on God," "I question whether God really exists," and "I express anger at God for letting terrible things happen." For the first five items, a response of *a great deal* was given a value of 3, *quite a bit* a value of 2, *somewhat* a value of 1, and *not at all* a value of 0. The Brief RCOPE has factor loadings of $>.60$ for the positive religious coping subscale and $>.53$ for the negative religious coping subscale (Fetzer, 2003). The last five items were reverse coded. All 10 items were summed and a Brief RCOPE score was calculated such that a higher score indicated more religious coping (Pargament et al., 1998).

Covariates included age, marital status, education, and insurance status. Age, measured in years, was treated as a continuous variable. A dichotomous variable was created for marital status where "0" included those who are not

married (never married, divorced/separated, or widowed) and "1" included those who are currently married (married or living together but not married). Education was categorized as "less than high school graduate," "high school graduate," "associate's degree/some college," or "college graduate." Men were asked whether they had private health insurance, Medicare, Medicaid, CHAMPUS, or CHAMPVA, and if there was a time in the past 2 years when they were completely without any health plan or insurance coverage. Those who responded "yes" to having any of the health insurances were considered insured, and those who did not have any health insurance were considered uninsured.

Statistical Analyses

The mean and proportional differences between race groups for demographics, treatment decision-making sources, and religious view of prostate cancer and coping were assessed using Student's *t* for continuous variables and chi-square tests for categorical variables. The association between race and the dependent variables (number of information sources utilized, number of advisors sought, and number of people who helped make treatment decision) was evaluated through linear regressions in Models 1 (univariate) and 2 (adjusting for age, marital status, education, and insurance status). The association between race and the amount of the decision that was the patient's was assessed using ordinal logistic regression adjusting for covariates. The potential for the mediating effects of religious views of prostate cancer and religious coping on the association between race and treatment decision making was assessed using standard methods (Baron & Kenny, 1986; MacKinnon, Krull, & Lockwood, 2000). The associations between race and religion variables were assessed using ordinal and linear regressions. The associations between race and treatment decision making were assessed accounting for religion. Mediation will be determined based on whether the statistically significant relationship between race and the outcome is reduced or eliminated in the presence of the different religious factors (MacKinnon et al., 2000). Partial mediation occurred if the race coefficient was reduced by at least 10%, but not 100% after adjusting for religious views and coping (Baron & Kenny, 1986; MacKinnon et al., 2000). *p* Values less than .05 were considered statistically significant and all *t* tests were two-sided. All statistical procedures were performed using STATA statistical software, Version 11 (StataCorp LP, College Station, TX).

Results

Race differences in demographics and prostate cancer treatment decision making are displayed in Table 1. Of the

877 men included in the analyses, 47% ($n = 415$) were African American. African American men were younger, 62.4 versus 64.2 years old, $p < .001$; less likely to be married, 65.5% ($n = 272$) versus 85.3% ($n = 394$), $p < .001$; less likely to be college graduates, 25.5% ($n = 106$) versus 55.0% ($n = 252$), $p < .001$; and less likely to be insured, 88.8% ($n = 366$) versus 97.2% ($n = 447$), $p < .001$. Men in the study used about three information sources and two advisors to make treatment decisions. African American men used fewer information sources ($p < .001$) and fewer advisors, $p < .001$) compared with White men. About 75% of men felt that the treatment decision was entirely their own, and men reported between one and two people helped them make their final decision. There was no race difference in the amount of the decision that was the patient's and the number of people who helped the patient make the final treatment decision.

Race differences in religious views and coping are displayed in Table 2. Less than 3% ($n = 19$) of men felt that cancer was a punishment from God. Approximately 20% (19.9%; $n = 160$) of men agreed that cancer was a test of faith, but the majority of men either agreed or strongly agreed that their faith had increased after their cancer diagnosis (58.4%; $n = 480$) and that faith helped them cope (88.3%; $n = 723$). More than half of men agreed or strongly agreed that it was God's decision if their cancer was cured (58.3%; $n = 459$) and about 40% (41.7%; $n = 327$) of men agreed that their cancer would be cured with enough prayer. Few men agreed or strongly agreed that their faith had weakened since their diagnosis (1.4%; $n = 12$), and religious coping was fairly high with an average score of 32.5. African American men were more likely to agree that cancer was punishment from God, a test of their faith, that their faith has gotten stronger since being diagnosed, faith helped with coping, that a cure is God's decision, that their cancer will be cured with enough prayer, and that their faith has weakened after being diagnosed. In spite of acknowledging that their faith was useful in coping, African American men scored lower on the Brief RCOPE scale.

The association between race and prostate cancer treatment decision making are observed in Table 3. In univariate analyses (Model 1), African American men utilized fewer information sources ($\beta = -0.92$, $SE = 0.12$), fewer advisors ($\beta = -0.64$, $SE = 0.12$), and were less likely to feel the treatment decision was 100% their own (odds ratio [OR] = 0.72, 95% confidence interval [CI: 0.53, 0.98]). However, after adjusting for covariates, race differences in treatment decision making were observed for the number of information sources ($\beta = -0.55$, $SE = 0.12$) and advisors ($\beta = -0.48$, $SE = 0.14$).

The association between race and the potential mediating factor, religion, is displayed in Table 4. In unadjusted analyses (Model 1), African American men are

Table 1. Select Characteristics of African American and White Men in the Diagnosis and Decisions in Prostate Cancer Treatment Outcomes Study.

	Total, <i>n</i> = 877	White, <i>n</i> = 462	African American, <i>n</i> = 415	<i>p</i>
<i>Demographics</i>				
Age (years), <i>M</i> ± <i>SE</i>	63.3 ± 0.3	64.2 ± 0.4	62.4 ± 0.4	<.001
Married, <i>n</i> (%)	666 (75.9)	394 (85.3)	272 (65.5)	<.001
Education, <i>n</i> (%)				
Less than high school graduate	103 (11.8)	27 (5.9)	76 (18.3)	<.001
High school graduate	214 (24.5)	72 (15.7)	142 (34.2)	<.001
Associate's degree/some college	198 (22.7)	107 (23.4)	91 (21.9)	.613
College graduate	358 (41.0)	252 (55.0)	106 (25.5)	<.001
Insured, <i>n</i> (%)	813 (93.2)	447 (97.2)	366 (88.8)	<.001
<i>Treatment decisions</i>				
Number of information sources, <i>M</i> ± <i>SE</i>	3.0 ± 0.1	3.5 ± 0.1	2.5 ± 0.1	<.001
Number of advisors sought, <i>M</i> ± <i>SE</i>	2.2 ± 0.1	2.6 ± 0.1	1.9 ± 0.1	<.001
Amount of decision made by self, <i>n</i> (%)				
100% Patient's decision	648 (74.8)	325 (71.6)	323 (78.4)	.127
75% Patient's decision/25% someone else	85 (9.8)	30 (12.1)	55 (7.3)	
50% Patient's decision/50% someone else	123 (14.2)	69 (15.2)	54 (13.1)	
25% Patient's decision/75% someone else	2 (0.2)	1 (0.2)	1 (0.2)	
100% Someone else's decision	8 (0.9)	4 (0.9)	4 (1.0)	
Number of persons helped in decision, <i>M</i> ± <i>SE</i>	1.4 ± 0.0	1.4 ± 0.1	1.3 ± 0.1	.316

Note. *SE* = standard error.

more likely to agree that cancer is a punishment from God ($OR = 2.40$, 95% CI [1.81, 3.19]), cancer is a test of faith ($OR = 2.51$, 95% CI: [1.92, 3.27]), that their faith increased since diagnosis ($OR = 2.38$, 95% CI [1.84, 3.09]), a cure is God's decision ($OR = 2.96$, 95% CI [2.27, 3.86]), cancer will be cured with enough prayer ($OR = 5.21$, 95% CI [3.95, 6.88]), and that their faith has weakened after diagnosis ($OR = 1.44$, 95% CI [1.09, 1.92]). African American men had lower RCOPE scores ($\beta = -1.19$, $SE = 0.39$). These associations remained significant after adjusting for covariates (Model 2) with the exception of race differences in agreement that their faith was weakened after diagnosis. There was no race difference in agreement with the statement that "faith helped with coping."

The associations between race, treatment decision making, and religious views/coping with prostate cancer were displayed in Table 5. In Model 1, race is regressed on the number of information sources and the number of advisors utilized, controlling for age, marital status, education, and insurance status. African American men utilized fewer information sources ($\beta = -0.55$, $SE = 0.12$) and included fewer advisors ($\beta = -0.48$, $SE = 0.14$). In Model 2, the variables indicating religious views and coping with prostate cancer were included in the regressions to examine the mediating effects. The race difference in the number of sources utilized was mediated by the following variables: Cancer was a punishment from God ($\beta = -0.46$, $SE = 0.12$), cancer was a test of faith ($\beta = -0.49$, $SE = 0.13$), cancer can be cured with enough

prayer ($\beta = -0.47$, $SE = 0.13$), and RCOPE score ($\beta = -0.52$, $SE = 0.12$). The race difference in the number of advisors utilized in making the treatment decision was mediated by the following variables: Cancer was a punishment from God ($\beta = -0.39$, $SE = 0.14$) and cancer was a test of faith ($\beta = -0.39$, $SE = 0.14$).

Discussion

Currently, there are more than 2 million survivors of prostate cancer in the United States (American Cancer Society, 2013). With the increasing longevity of men diagnosed with prostate cancer, the need to integrate spirituality with patient care and well-being may become more salient for these patients and their families. Two key findings were observed. Agreement that cancer was a punishment from God, cancer was a test of faith, cancer can be cured with enough prayer, and RCOPE score partially mediated the relationship between race and the types and sources of information used in treatment decision making. Agreement that cancer was a punishment from God and cancer was a test of faith partially mediated the relationship between race and number of advisors used in making the treatment decision. Findings suggest that religious views on prostate cancer may play an important role in explaining race differences in information used and the number of advisors utilized for treatment decision making.

Table 2. Distribution of Religious Coping Among African American and White Men in the Diagnosis and Decisions in Prostate Cancer Treatment Outcomes Study.

	Total, <i>n</i> = 877	White, <i>n</i> = 462	African American, <i>n</i> = 415	<i>p</i>
Cancer punishment from God, <i>n</i> (%)				
Strongly disagree	317 (39.0)	207 (49.4)	110 (27.9)	<.001
Disagree	459 (56.5)	197 (47.0)	262 (66.5)	
Neither	18 (2.2)	8 (1.9)	10 (2.5)	
Agree	17 (2.1)	7 (1.7)	10 (2.5)	
Strongly agree	2 (0.3)	0 (0.0)	2 (0.5)	
Cancer a test of faith, <i>n</i> (%)				
Strongly disagree	184 (22.9)	134 (32.6)	50 (12.8)	<.001
Disagree	389 (48.4)	185 (45.0)	204 (52.0)	
Neither	53 (6.6)	34 (8.3)	19 (4.9)	
Agree	160 (19.9)	52 (12.7)	108 (27.6)	
Strongly agree	17 (2.1)	6 (1.5)	11 (2.8)	
Faith increased since diagnosis, <i>n</i> (%)				
Strongly disagree	38 (4.6)	30 (7.1)	8 (2.0)	<.001
Disagree	155 (18.9)	101 (24.1)	54 (13.5)	
Neither	148 (18.0)	92 (21.9)	56 (14.0)	
Agree	382 (46.5)	156 (37.1)	226 (56.4)	
Strongly agree	98 (11.9)	41 (9.8)	57 (14.2)	
Faith helped with coping, <i>n</i> (%)				
Strongly disagree	12 (1.5)	11 (2.6)	1 (0.3)	.001
Disagree	48 (5.9)	31 (7.5)	17 (4.2)	
Neither	36 (4.4)	23 (5.5)	13 (3.2)	
Agree	519 (63.4)	240 (57.7)	279 (69.2)	
Strongly agree	204 (24.9)	111 (26.7)	93 (23.1)	
Cure is God's decision, <i>n</i> (%)				
Strongly disagree	47 (5.9)	40 (9.8)	7 (1.8)	<.001
Disagree	214 (26.7)	143 (35.1)	71 (18.0)	
Neither	81 (10.1)	55 (13.5)	26 (6.6)	
Agree	343 (42.8)	118 (29.0)	225 (57.1)	
Strongly agree	116 (15.5)	51 (12.5)	65 (16.5)	
Cancer cured with enough prayer, <i>n</i> (%)				
Strongly disagree	55 (7.0)	51 (12.8)	4 (1.0)	<.001
Disagree	282 (35.9)	191 (47.9)	91 (23.6)	
Neither	121 (15.4)	71 (17.8)	50 (13.0)	
Agree	265 (33.8)	67 (16.8)	198 (51.3)	
Strongly agree	62 (7.9)	19 (4.8)	43 (11.1)	
Faith weakened after diagnosis, <i>n</i> (%)				
Strongly disagree	274 (33.5)	158 (37.8)	116 (28.9)	.024
Disagree	522 (63.7)	248 (59.3)	274 (68.3)	
Neither	11 (1.3)	8 (1.9)	3 (0.8)	
Agree	10 (1.2)	3 (0.7)	7 (1.8)	
Strongly agree	2 (0.2)	1 (0.2)	1 (0.3)	
Brief RCOPE score, <i>M</i> ± <i>SE</i>	13.5 ± 0.2	14.0 ± 0.3	12.8 ± 0.2	<.001

Note. *SE* = standard error.

As previously noted, many cancer patients turn to religion to cope with and make meaning of their illness (Pargament, 1997). Some individuals also utilize their religious beliefs in making medical decisions, others gather information from a variety of sources, and some

may be less inclined to seek information from any source. Different kinds and sources of information vary just as individuals in what they want and need (Koenig, 2008). In the present study, why African American males compared with their White counterparts used fewer

Table 3. Association Between Race and Treatment Decision Making in the Diagnosis and Decisions in Prostate Cancer Treatment Outcomes Study.

	Number of information sources, β (SE)	Number of advisees sought, β (SE)	Final decision patient's, OR [95% CI]	Number who helped make decision, β (SE)
Model 1	-0.92 (0.12)*	-0.64 (0.12)*	0.72 [0.53, 0.98]*	-0.09 (0.09)
Model 2	-0.55 (0.12)*	-0.48 (0.14)*	0.80 [0.57, 1.13]	-0.02 (0.10)

Note. OR = odds ratio; SE = standard error; CI = confidence interval. Model 1 displays univariate regression of race on treatment decision making. Model 2 adjusts for age, marital status, education, and insurance.

* $p \leq .05$.

Table 4. Association Between Race and Religious Coping in the Diagnosis and Decisions in Prostate Cancer Treatment Outcomes Study.

	Model 1, OR [95% CI]	Model 2, OR [95% CI]
Cancer punishment from God	2.40 [1.81, 3.19]*	1.82 [1.34, 2.47]*
Cancer a test of faith	2.51 [1.92, 3.27]*	1.99 [1.49, 2.65]*
Faith increased since diagnosis	2.38 [1.84, 3.09]*	1.81 [1.36, 2.40]*
Faith helped with coping	1.13 [0.85, 1.49]	1.08 [0.80, 1.46]
Cure is God's decision	2.96 [2.27, 3.86]*	2.20 [1.65, 2.92]*
Cancer cured with enough prayer	5.21 [3.95, 6.88]*	3.58 [2.66, 4.82]*
Faith weakened after diagnosis	1.44 [1.09, 1.92]*	1.36 [1.00, 1.85]
Brief RCOPE score, β (SE)	-1.19 (0.39)*	-1.28 (0.43)*

Note. OR = odds ratio; SE = standard error; CI = confidence interval. Model 1 displays univariate regression of race on religion. Model 2 adjusts for age, marital status, education, and insurance.

* $p \leq .05$.

information sources and sought fewer advisors requires further examination. Investigators have reported that information processing is generally low right after diagnosis (Echlin & Rees, 2002) and this study did not capture timing of the diagnosis in relation to their use of resources.

The second finding is belief that cancer was a punishment from God, cancer was a test of faith, cancer can be cured with enough prayer, and RCOPE score partially mediated the types and sources of information used in treatment decision making. This was likely due to greater percentages of African American men believing that cancer was a punishment from God, a test of faith, and that cancer can be cured with enough prayer, as well as having lower RCOPE scores compared with their White counterparts. Though African Americans tend to be more religious in terms of affiliation and church attendance (Pew Research Center, 2009), these prostate cancer-specific measures of religion identify that African American men in this study had more negative views of prostate cancer with reference to God and lower religious coping scores. The reasons for their lower scores are unclear and worth additional insight. The third finding observed was that cancer was a punishment from God and cancer was a test of faith also partially mediated the relationship between race and number of advisors used in making a treatment

decision. Though a small percentage of men agreed with the statements, the difference may be important in distilling how, when and to whom African American men, in particular, may or may not turn to for advice about prostate cancer treatment decisions. The belief by African American men that a cure was God's decision can also be linked to coping. Pargament (1997) notes that coping takes many forms—some active and some passive, and that there is not only one destination that is better or worse for all people. In other words, there are many ways of coping. Turning to faith may not necessarily connote ineffective coping, passivity, fatalism, or an absence of health-seeking behavior. This explanation may hold true for African American men, who also had a lower than average Brief RCOPE score than White men. The finding that African Americans were more likely to agree that their faith had weakened after diagnosis may not be surprising. While the news of prostate cancer is almost immediately followed by shock and numbness for many men, and can produce a loss of one's faith, this is, in most cases temporary (Echlin & Rees, 2002). Why this experience of weakened faith following diagnosis of prostate cancer only applied to African American men merits further understanding.

There are some limitations that should be addressed. Because the study only included African American and

Table 5. Association Between Race, Treatment Decision Making, and Religious Coping in the Diagnosis and Decisions in Prostate Cancer Treatment Outcomes Study.

	Number of information sources utilized, β (SE)		Number of advisees sought, β (SE)	
	Model 1	Model 2	Model 1	Model 2
African American race	-0.55 (0.12)*	-0.46 (0.12)*	-0.48 (0.14)*	-0.39 (0.14)*
Cancer punishment from God				
Strongly disagree		—		—
Disagree		-0.63 (0.12)*		-0.46 (0.14)*
Neither		0.12 (0.39)		-0.14 (0.44)
Agree		-0.23 (0.40)		0.06 (0.46)
Strongly agree		0.95 (1.14)		0.14 (1.31)
African American race	-0.55 (0.12)*	-0.49 (0.13)*	-0.48 (0.14)*	-0.39 (0.14)*
Cancer a test of faith				
Strongly disagree		—		—
Disagree		-0.65 (0.15)*		-0.27 (0.17)
Neither		-0.13 (0.25)		-0.08 (0.29)
Agree		-0.49 (0.18)*		-0.38 (0.21)
Strongly agree		-0.04 (0.41)		0.22 (0.47)
African American race	-0.55 (0.12)*	-0.59 (0.12)*	-0.48 (0.14)*	-0.51 (0.14)*
Faith increased since diagnosis				
Strongly disagree		—		—
Disagree		-0.67 (0.29)*		0.09 (0.33)
Neither		-0.54 (0.30)		0.11 (0.34)
Agree		-0.39 (0.28)		0.33 (0.32)
Strongly agree		-0.28 (0.31)		0.67 (0.36)
African American race	-0.55 (0.12)*	-0.55 (0.13)*	-0.48 (0.14)*	-0.48 (0.15)*
Cure is God's decision				
Strongly disagree		—		—
Disagree		-0.37 (0.26)		-0.20 (0.30)
Neither		-0.38 (0.30)		-0.22 (0.34)
Agree		-0.51 (0.26)		-0.19 (0.30)
Strongly agree		-0.15 (0.28)		0.33 (0.33)
African American race	-0.55 (0.12)*	-0.47 (0.13)*	-0.48 (0.14)*	-0.45 (0.15)*
Cancer cured with enough prayer				
Strongly disagree		—		—
Disagree		-0.61 (0.24)*		-0.10 (0.27)
Neither		-0.51 (0.27)		-0.29 (0.31)
Agree		-0.73 (0.26)*		-0.16 (0.30)
Strongly agree		-0.52 (0.31)		-0.02 (0.01)
African American race	-0.55 (0.12)*	-0.52 (0.12)*	-0.48 (0.14)*	-0.49 (0.14)*
Brief RCOPE score		0.02 (0.01)		-0.01 (0.01)

White men, these findings may not hold true for other race/ethnic groups of prostate cancer survivors and younger aged men. Although information on the types of resources was collected, there was no information obtained on the frequency in which the resources were used to aid in treatment decision making nor the quality of these resources. Another limitation of the study was the absence of stage of prostate cancer that could affect the treatment choices men made and also, their coping styles. Despite these limits, the DAD study contains a

wide variety of psychosocial and health-related variables to gain additional insight on treatment decision making between African American and White prostate cancer survivors. DAD also contains a sufficient number of African American prostate cancer survivors, thus providing an opportunity to examine between- and/or within-group relationships on use of resources and treatment decision making. DAD included questions regarding prostate cancer from a religious perspective as well as the brief RCOPE. This allowed the prospect to understand

how these survivors coped with prostate cancer, which is an addition to the burgeoning literature on treatment decision making in prostate cancer survivors.

The conclusions drawn in this study contribute to a growing portfolio on the information-seeking behaviors of men with prostate cancer. These results are consistent with prior studies that have also demonstrated a relationship between religiousness and health, and that religion/spirituality is also associated with coping, both negatively and positively for prostate cancer patients. With the knowledge that spirituality influences health, it may be of value to health professionals and patients to consider spiritual resources to the treatment decisions for prostate cancer; notwithstanding that being religious or spiritual is a concept that all prostate cancer patients will ascribe to, may vary over the life course, and be affected by early stage versus advanced disease. The implications of a small, but significant number of African American men reporting lower coping scores and less advice seeking, is concerning because of the possibility that it could lead to delays in detection, treatment decisions, follow-up care, and survival. A Cochrane Review (Stacey et al., 2014) reported that decision aids can assist individuals, such as men facing prostate cancer treatment, in weighing their choices and feeling more informed and satisfied with their decisions. It will be important to determine the type of aids (e.g., web-based, pamphlets, cancer-specific, religious, or spiritual content) and to tailor them to fit the specific needs and personal characteristic of prostate cancer patients. Given the important and growing focus on men's health, it is critical to continue to understand and value the health decision-making process and related characteristics that inform patient-provider interactions, treatment outcomes, and health-promoting interventions of this unique population.

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