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Fatalistic Beliefs about Cancer Prevention among Older African American Men

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Abstract

Objectives—Evidence suggests that minority groups are more likely to exhibit fatalistic beliefs about cancer prevention (FBCP); defined as confusion, pessimism, and helplessness about one's ability to prevent cancer. This study examines socioeconomic and psychosocial predictors of FBCP among older African American men.

Methods—African American men (N=1,666) enrolled in Medicare and participating in a longitudinal study on patient navigation were surveyed. Measures included three FBCP constructs, demographic items, and physical and mental health variables. Binary logistic regression was performed.

Results—The average participant was 73.6 years old; 76.5% felt helpless, 44.2% were confused, and 40.7% were pessimistic about the ability to prevent cancer. As education increased, so did all three FBCP. Being downhearted was predictive of confused and helpless beliefs.

Discussion—It is critical for health practitioners to understand how psychosocial and economic challenges influence beliefs that may impede cancer prevention efforts for older African American men.

Keywords

Health; Prevention; Men; Cancer; Mental Health

Cancer is a pervasive public health problem in the United States and the second leading cause of death for African Americans (DeSantis, Naishadham, & Jemal, 2013). Disparities in cancer diagnosis, treatment, and survival are particularly pronounced for African American men, who experience a 15% higher incidence rate for all cancers (combined) and remain at greatest risk for dying from prostate, colorectal, and lung cancers compared to men of other races (DeSantis, Naishadham, & Jemal, 2013). African American men (AAM) also encounter a number of intersecting socioeconomic, psychosocial, cultural, and health system-related barriers to completing timely cancer screening and engaging in other cancer-related preventive health behaviors (DeSantis, Naishadham & Jemal, 2013). Previous studies have focused more exclusively on African American men who face health care access-related barriers (i.e. health insurance) to cancer prevention while giving less attention to barriers related to beliefs about and attitudes toward cancer prevention (Fedewa et al, 2010; Laiyemo et al, 2010).

A growing body of evidence documents the significant role that beliefs play in shaping AAM's behavioral intentions toward cancer prevention, namely cancer screening tests (Cobran et al, 2013; Davis et al, 2010; Gash & McIntosh, 2013). Fatalistic beliefs may be one such factor that influences attitudes toward cancer prevention and screening. Generally, fatalistic beliefs have been defined as the view that certain events are inevitable despite an individual's will or efforts to change the outcome (Keely, Wright, & Condit, 2009). Other researchers have clarified that fatalistic beliefs about health sometimes function as a source of mental protection for individuals who may be subject to self-blame, stress, or difficulty with making sense of the seemingly random and catastrophic nature of adverse health events (Keely, Wright, & Condit, 2009). Specifically, this study focuses on fatalistic beliefs about cancer prevention (FBCP), a concept comprised of three dimensions: confusion, pessimism, and a sense of helplessness about one's ability to prevent cancer (Niederdeppe & Levy, 2007; Powe, 2003). While several studies have confirmed that racial minorities and groups with fewer socioeconomic resources are most likely to exhibit higher levels of 'cancer fatalism' (Beeken et al., 2011; Lee, Niederdeppe, & Freres, 2012; Niederdeppe & Levy, 2007; Orom, Kiviniemi, Underwood, Ross & Shavers, 2010; Powe, 1996; Powe, 2003), the concept of cancer fatalism differs markedly from FBCP. Cancer fatalism has been well defined as the belief that cancer will inevitably lead to death (Powe, 1994; Powe, 1995; Powe, 2001; Powe, & Finnie, 2003), and has been consistently measured using the Powe Fatalism Inventory which poses a series of yes or no questions such as "I believe if someone has cancer, it is already too late to do something about it" (Powe, 2001, p. 89). In contrast, FBCP consists of three items that index the constructs of pessimism, confusion, and helplessness about the ability to prevent a cancer diagnosis; these specific three constructs have been reliably used in nationally representative survey research (Niederdeppe & Levy, 2007).

Further, variations in FBCP have been shown to influence the utilization or avoidance of certain cancer-preventive health behaviors. In one study, older adults with fewer FBCP were 56% more likely to complete colorectal cancer screening than older adults with the strongest FBCP, even after accounting for socioeconomic differences (Miles, Rainbow & Von Wagner, 2011). In a similar study, African Americans who exhibited a decrease in FBCP three months after an educational intervention were most likely to complete colorectal cancer screening (Phillip, DuHamel, & Jandorf, 2010). Beeken, Simon, von Wagner, Whitaker, & Wardle (2011) reported that FBCP was associated with fearfulness about seeking medical care for potentially cancer-related symptoms, particularly among groups of lower socioeconomic status. Furthermore, Miles, Voorwinden, and Chapman (2008) established that people with strong FBCP were more likely to avoid cancer information and less likely to be aware of or seek out recent developments in cancer control. Others found that FBCP was negatively associated with cancer-related preventive health behaviors such as exercising weekly, not smoking, and eating five or more servings of fruits and vegetables daily (Niederdeppe & Levy, 2007). It is clear that FBCP poses a potential barrier to cancer prevention behaviors for populations who already face alarmingly high rates of cancer risk (ACS, 2011; Beeken et al., 2011).

Among African Americans, recent studies have confirmed the strong relationship between low educational attainment and stronger fatalistic beliefs about cancer prevention (Niederdeppe & Levy, 2007). For example, Odedina et al. (2011) reported that African American men with lower education, lower income, part-time employment, and no health insurance were more likely to be fatalistic regarding prostate cancer screening compared to African American men of higher socioeconomic status. Other studies have linked self-rated health (Miles, Rainbow, & von Wagner, 2011), illness experiences (von Wagner, Good, Whitaker, & Wardle, 2011), emotions about cancer screening (Flynn, Betancourt, and & Ormseth, 2011), and depression and anxiety (Chojnacka-Szawłowska et al, 2013) with measures of cancer fatalism among African Americans and other racial/ethnic minority groups. Literature strongly suggests that socioeconomic characteristics and conditions influence FBCP, specifically for African Americans (Von Wagner, Good, Whitaker & Wardle, 2011); the purpose of this study is to evaluate the prevalence of fatalistic beliefs about cancer prevention in a sample of older African American men, and to identify - socio-demographic, mental and physical health factors associated with FBCP.

Methods

Sample

Between 2006 and 2010, a large Midwestern health system conducted a randomized study to assess the effectiveness of patient navigation as an intervention to increase cancer screening completion among older African American adults enrolled in Medicare. Funded by the Centers for Medicare and Medicaid Services (CMS), this study recruited approximately 5,800 African American elders over 60 years of age from senior residences, activity centers, and church groups within the catchment area of the health system, and randomized them into one of two study arms. Participants either received patient navigation services provided by a nurse by phone or standard cancer screening recommendations by mail. Each participant

completed a baseline assessment which was conducted in person or by phone by a trained research assistant, documenting cancer screening behaviors, health and cancer-specific knowledge and beliefs, and socio-demographic characteristics. The study described here is a secondary analysis of de-identified baseline assessments for all African American male participants prior to the patient navigation intervention (N=1,600). Using the self-reported responses of older African American men, we sought to identify salient socioeconomic factors and other relevant contextual influences on FBCP for this population.

Measures

Fatalistic beliefs about cancer prevention—This study focuses on three distinct but related dimensions of fatalistic beliefs about cancer prevention—pessimism, helplessness, and confusion. Each dimension of FBCP—pessimism, helplessness, and confusion – was measured by one question. Asking participants to indicate their level of agreement with the statement “It seems like almost everything causes cancer” assessed pessimism. Similarly, helplessness was evaluated by the statement “There is not much a person can do to lower their chances of getting cancer,” and confusion was assessed by the statement “There are so many different recommendations about preventing cancer; it’s hard to know which ones to follow.” Each question was measured on a five-point Likert scale, with responses ranging from strongly disagree to strongly agree. Each item was also examined individually and further categorized to reflect those who strongly or somewhat agreed (1) and those who strongly or somewhat disagreed, or had no opinion (0). These three items have been previously utilized and validated in unrelated studies; namely, the first wave of the Health Information National Trends Survey (HINTS), a cross-sectional nationally representative telephone-based survey of American adults which oversampled African Americans and was conducted by the National Cancer Institute (Hesse, Bradford & Moser, 2003). Further information about the HINTS study design and measurements has been published elsewhere (Nelson et al, 2004). Each of these items has been employed separately and together in a number of studies on cancer beliefs specifically relevant to prevention behaviors (Arora et al, 2008; Niederdeppe & Levy, 2007; Han, Moser, & Klein, 2006; Vanderpool & Huang, 2010). Correlations between FBCP items were relatively inconsequential, ranging from ($r=0.13$ to $r=0.34$). This is consistent with other studies that used the same three items (Lee, Niederdeppe, & Freres, 2012; Niederdeppe & Levy, 2007) and reflects some shared variance across items but highlights the separate constructs of FBCP represented by each item.

Demographic characteristics—Demographic questions included an assessment of education, partner status, and age. Education was divided into groups of participants with a high school diploma or less (0) and those with at least some college or other postsecondary education (1). Men who were married were coded as (1) and those single, divorced, widowed, or reporting a different partner status were coded as (0). Age was measured using a single continuous item and transformed into a binary variable for use in bivariate and multivariate analyses (men over 75 years old = 1 and men under 75 years old = 0)

Physical and mental health covariates—We examined five indices of physical and mental health status for their association with FBCP—self-rated health, diagnosis any co-morbid conditions, pain interference, self-reported anxiety or depression, and feeling

downhearted most or all of the time. Self-rated health was assessed with a single item that has been widely used to reliably measure subjective physical health status (Eriksson, Unden, & Elofsson, 2001; Lundberg & Manderback, 1996). Participants responded to the question “In general, would you say your health is...” on a scale from 1 (“Poor”) to 5 (“Excellent”). Participants reported whether they had ever been diagnosed with one of nine common health conditions (i.e. cancer, heart disease, diabetes, hypertension etc.); those diagnosed with one or more morbidities were separately coded (1) from those who did not (0). The extent to which physical pain interfered with participants’ lives was assessed by asking “during the past few weeks, how much did pain interfere with your normal work?” Responses on a five-item scale ranged from “not at all” to “extremely”. Participants who indicated that pain interfered with their normal activities “quite a bit” or “extremely” were coded as (1) and all others were coded as (0).

Mental health status was measured using two separate questions. Self-reported anxiety or depression was assessed by a single item asking participants to report whether they were “not anxious or depressed”, “moderately anxious or depressed”, or “extremely anxious or depressed”. The variable was further dichotomized into those who were extremely anxious or depressed (1) and all others (0). Additionally, a previously validated item from the Short Form Health Survey (SF-36) was included (Ware and Kosinski, 2001) to assess mental health: “During the past 4 weeks, have you felt downhearted and blue”? Five responses ranged from “not at all” to “extremely” and the variable was further categorized into those who were downhearted “quite a bit” or “extremely” (1) and all others (0).

Analysis

Data were analyzed using SPSS version 19 (SPSS Inc., IBM). SPSS missing values analysis (MVA) module was utilized to confirm that missing values were randomly distributed. No variables were identified as having significant missing values and listwise deletion was employed for item non-response. Univariate analyses were performed on each relevant variable (frequency distributions and means). The association between demographic, physical, and mental health variables and each measure of FBCP was assessed using cross-tabulations and chi-squared tests of significance.

We performed a separate binary logistic regression analysis for each measure of FBCP to determine the contribution of each statistically significant variable to the likelihood that older African American men in this study reported FBCP (i.e. pessimism, confusion, and helplessness). Each of the three outcome variables was coded 1 or 0 with 1 indicating participants’ agreement (strongly or somewhat) with the aforementioned statement that characterized each measure of FBCP. During the model building process, independent predictor variables were selected based on significant associations in the bivariate analysis with the goal of building the strongest and most informative model for each measure of FBCP. Independent predictor variables were entered simultaneously.

Results

Data from 1,666 African American male elders were examined. Participant characteristics can be found in Table 1. The mean age of participants was 73.6 years old. Most participants

reported an annual income of less than \$50,000. Nearly half of participants were married (45.4%) and 38.2% reported an education level of some college or more. In addition, 40.7% of African American men in this study reported feeling pessimistic, 44.2% reported feeling confused, and 76.5% reported feeling helpless about their ability to prevent cancer. Bivariate analyses indicate that an education level of some college or more, having ever been diagnosed with one or more morbidities or illnesses, and having reported either anxiety/depression or downheartedness was significantly associated with all three measures of FBCP (Table 2).

Predictors of Helplessness

For the binary logistic regression analysis predicting beliefs of helplessness about the ability to prevent cancer, five independent variables were examined including: having some college education or more, being married, moderate to high pain interference, one or more of nine common morbidities, and being downhearted or blue (most or all of the time). A test of the full model compared to the null model was statistically significant, $\chi^2 = 66.94$, $p < .001$. Table 3 reports the significant contributions of each predictor variable to helplessness. The strength of association between the five predictor variables and agreement with the statement on helplessness was fairly weak (Cox and Snell's $R^2 = .039$ and Nagelkerke's $R^2 = .059$).

Predictors of Pessimism

To examine participants' adherence to pessimistic beliefs about cancer prevention, four predictor variables were entered simultaneously into the model; being age 75 or older, having some college education or more, poor self-rated health, and high self-reported anxiety or depression. A test of the full model compared to the null model was statistically significant, $\chi^2 = 54.25$, $p < .001$. Table 4 summarizes the raw score binary logistic regression coefficients and the estimated change in odds on the basis of three significant predictors, for agreement with the statement "it seems like almost anything causes cancer". The strength of this model was also weak with Cox and Snell's $R^2 = .032$ and Nagelkerke's $R^2 = .043$.

Predictors of Confusion

Lastly, the model predicting confusion around the ability to prevent cancer included three predictor variables; some college or more education, one or more health conditions (morbidities), and being reportedly downhearted and blue. The full model was statistically significant, $\chi^2 = 88.12$, $p < .001$ but accounted for only a small proportion of the variance in the dependent variable (Cox and Snell's $R^2 = .052$ and Nagelkerke's $R^2 = .069$). Table 5 provides additional detail on the model predicting confusion about cancer prevention. Despite the low predictive efficiency of each of the three FBCP models, Hosmer-Lemeshow tests to evaluate model fit was insignificant for each model, indicating an appropriate model fit across each of the three FBCP models.

Discussion

The purpose of this study was to examine the relationship between socioeconomic status, physical and mental health status, and three fatalistic beliefs about cancer prevention among

older African American men. We found that such beliefs are very common among this population; over 40% of participants expressed pessimism and confusion related to cancer prevention. In addition, the overwhelming majority of older African American men reported helplessness related to cancer prevention (76.5%), compared to only 27% of a national U.S. sample (Niederdeppe & Levy, 2007).

Socioeconomic status

Based on prior studies, we might expect that increased educational attainment would be negatively associated with fatalistic beliefs about cancer prevention. However, our results suggest that in this sample of older African American men, as education increased, so did pessimism, helplessness, and confusion about the ability to prevent cancer. This finding is contrary to existing literature on the influence of educational attainment on cancer fatalism among African Americans (Niederdeppe & Levy, 2007; Powe, 1995; Powe, 2004). Because education increases one's sense of personal control and affords increased exposure to both common and scientific health knowledge, it is usually associated with fewer FBCP (Beier & Ackerman, 2003; Kickbusch, 2001). In fact, higher educational attainment has been associated with more accurate cancer-related beliefs and engagement in preventive behaviors in recent literature pertaining to minority populations (Brown, Wilson, Boothe, & Harris, 2011; Winterich et al., 2011; Zollinger et al., 2010).

The reasons that these findings diverge from the literature are not fully understood. However, there is evidence that factors not examined in this study may have a significant effect attitudes and beliefs about cancer prevention among African Americans. For example, Nicholson et al (2008) conducted a double-blind randomized study that presented three versions of the same mock news article on colorectal cancer to 300 African American adults. Risk of colorectal cancer among African Americans was presented as significant (of impact), improving, or racially disparate. The authors found that negative messages emphasizing racial disparities in colorectal cancer were correlated with the most negative affective responses and the lowest intentions to complete future colorectal cancer screening. They concluded that exposing this sample of African American adults to racially comparative cancer risk information surprisingly lead to the "avoidance, devaluing, or rejection of the information" (Nicholson et al, 2008, p. 2). Broader studies on the content of cancer-related news coverage also support the claim that how cancer information is communicated through media can foster fatalistic beliefs about cancer prevention (Niederdeppe, Fowler, Goldstein & Pribble, 2010). These studies illustrates one plausible pathway by which older African American men yield to fatalistic beliefs about cancer prevention despite any knowledge afforded to them to the contrary via formalized education.

Mental health

African American men's experiences of mental and emotional health have been previously under-examined in relation to FBCP. In the current study, being downhearted most or all of the time in the previous four weeks was associated with an increased likelihood of agreeing with both confused and helpless aspects of cancer fatalism. In contrast, self-reported depression or anxiety did not significantly predict any of the fatalism measures when other factors were controlled. Older African Americans with depressive symptoms may not

identify with or characterize their mental state using the terms “depression” or “depressed” due to cultural stigma associated with mental health diagnoses and treatment (Connor et al, 2010). However, our results indicate an important link between mental health and FBCP. Clinicians who are attuned to an older patient’s depressive symptoms may be able to intervene to counteract the potential influence of fatalism on participation in preventive behaviors such as cancer screening. Further research should examine in greater depth the mechanisms by which depressive symptoms and other aspects of mental and emotional well-being interact with fatalistic beliefs about cancer prevention to influence cancer-protective behaviors in this vulnerable population.

Physical health

We found that the odds of adhering to pessimistic beliefs about cancer prevention were increased among men with poor self-rated health when compared to men with good, very good, or excellent self-rated health. It is reasonable to expect that older men whose perceived health status is poor would also be discouraged about their ability to prevent future disease. While no prior studies have examined this relationship among older African American men, health-related pessimism in general has been associated with several indicators of physical health status among older adults such as: functional limitations (Brenes, Rapp, Rejeski & Miller, 2002); increased likelihood of mortality (Borawski, Kinney & Kahana, 1996); low functional status and frequent hospitalizations (Halm, Zarit & Malmberg, 2004); and poorer perceived healthcare management (Ruthig et al, 2011). In the current study, men with one or more common health conditions (e.g. heart disease, diabetes, and hypertension) were 1.61 times more likely to be confused about their ability to prevent cancer than men with no self-reported health conditions. Having one or more complex health conditions to manage could conceivably make the process of locating, interpreting, and complying with additional guidelines for cancer prevention seem overwhelming. However, over 80% of older adults have been diagnosed with at least one chronic condition and 60% of cancers are currently diagnosed in older adults (CDC, 2011). Therefore, older African American men would greatly benefit from more concerted efforts to provide them with clear tailored information on how to integrate cancer-protective behaviors into their current disease management routines.

Limitations and future research

This study was a secondary analysis and we were confined to the available information that was previously collected; thus, we were unable to further analyze why some findings were discordant with existing literature. Because random sampling was not employed, selection bias is a potential threat to external validity. In addition, the cross-sectional analysis and the fact that a majority of participants were patients of one health system may limit the generalizability of our findings. These limitations notwithstanding, we believe that understanding the variation in fatalistic beliefs about cancer prevention among older African American men has important implications for stemming the tide of disparities in cancer detection, treatment, and survival among this population. Our findings strongly suggest that an array of factors may contribute to FBCP, but particular attention needs to be given to the role of mental and emotional health in confusion and helplessness about the ability to prevent cancer among older African American men. Future studies should examine whether

attending to mental health concerns in this population can mitigate confusion and helplessness regarding cancer prevention and examine whether FBCP vary by cancer site or type.

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Table 1

Participant Demographics

	Frequency	Percent	Mean (SD)
Age			73.6 (10.9)
Income			
\$0–\$19,999	555	33.6	
\$20k–\$49,999	622	37.3	
\$50k or more	150	9	
Unreported	327	19.6	
Education			
No Diploma	650	39.3	
Diploma/GED	367	22	
Some college	420	25.2	
College degree	216	13	
Married	756	45.4	
Measures of FBCP			
Helplessness	1275	76.5	
Confusion	737	44.2	
Pessimism	678	40.7	

Table 2

Association between measures of FBCP and participant characteristics

	Helplessness	Pessimism	Confusion
Some College	15.67 ^{***}	22.38 ^{***}	8.08 ^{**}
Married	24.27 ^{***}		4.15 [*]
Age 75+		7.1 ^{**}	
Comorbidities	4.85 [*]	4.05 [*]	13.74 ^{***}
Pain interference	8.67 ^{**}		8.06 ^{**}
Self-rated health		15.9 ^{***}	
Anxiety/Depression		4.99 [*]	6.9 ^{**}
Downhearted	25.18 ^{***}		65.81 ^{***}

*
p<.05,**
p<.01,***
p<.001

Table 3

Participant characteristics predicting strong agreement with the helplessness measure of fatalistic beliefs about cancer prevention

Predictor Variable	B	S.E. (B)	Wald	Odds Ratio	Lower	Upper
Some college	.547***	0.137	16.01	1.73	1.32	2.25
Married	.509***	0.123	17.17	1.664	1.3	2.12
High pain interference	−0.299	0.165	3.25	0.742	0.536	1.02
Any comorbidities	0.337	0.181	3.47	1.4	0.983	1.99
Downhearted	.524***	0.13	16.34	1.68	1.31	2.17
Constant	0.44	0.126	12.16	1.55		

$\chi^2 = 66.94$ *** $df=5$

* $p<.05$,

** $p<.01$,

*** $p<.001$

Table 4

Participant characteristics predicting strong agreement with the pessimism measure of fatalistic beliefs about cancer prevention

Predictor Variable	B	S.E. (B)	Wald	Odds Ratio	95% CI for EXP (B)	
					Lower	Upper
Over age 75	.356***	0.104	11.79	1.42	1.16	1.75
Some college	.527***	0.11	22.79	1.69	1.36	2.1
Poor self-rated health	.423***	0.112	14.36	1.52	1.23	1.9
High depression/anxiety	0.39	0.131	8.81	1.47	1.14	1.91
Constant	−0.913	0.094	94.02	0.401		

$\chi^2 = 54.25$ *** $df=4$

*

p<.05,

p<.01,

p<.001

Table 5

Participant characteristics predicting strong agreement with the confusion measure of fatalistic beliefs about cancer prevention

Predictor Variable	B	S.E. (B)	Wald	Odds Ratio	95% CI for EXP (B)	
					Lower	Upper
Some college	.317**	0.109	8.43	1.37	1.11	1.7
Any comorbidities	.473***	0.142	11.1	1.61	1.2	2.1
Downhearted	0.979***	0.124	62.02	2.66	2.08	3.39
Constant	-1.15	0.118	94.72	0.317		

$\chi^2 = 88.12$ *** $df=3$

* $p < .05$,

** $p < .01$,

*** $p < .001$