J Relig Health (2018) 57:1918–1930
https://doi.org/10.1007/s10943-018-0611-5

ORIGINAL PAPER

Spirituality in African-American Breast Cancer Patients: Implications for Clinical and Psychosocial Care

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Published online: 7 April 2018

Abstract Spirituality has been shown to be important to many individuals dealing with a cancer diagnosis. While African-American breast cancer survivors have been reported to have higher levels of spirituality compared to White women, little is known about how levels of spirituality may vary among African-American breast cancer survivors. The aims of this study were to examine factors associated with spirituality among African-American survivors and test whether spirituality levels were associated with women's attitudes about treatment or health care. The primary outcome, spirituality, was nine-item scale (Cronbach's $\alpha = .99$). Participants completed standardized telephone interviews that captured sociocultural, healthcare process, and treatment attitudes. Medical records were abstracted post-adjuvant therapy for treatment and clinical information. In bivariate analysis, age was not correlated with spirituality ($p = .40$). Married/living as married women had higher levels of spirituality ($m = 32.1$) than single women ($m = 30.1$). Contextual factors that were associated with higher levels spirituality were: collectivism ($r = .44$; $p < 0.0001$, Afrocentric worldview ($r = .185$; $p = .01$), and self-efficacy scale ($r = .17$; $p = .02$). In multivariable analysis, sociodemographic factors were not significant. Collectivism remained a robust predictor ($p < 0.0001$). Attitudes about the efficacy of cancer treatment were not associated with spirituality. The high levels of spirituality in African-American survivors suggest consideration of integrating spiritual care within the delivery of cancer

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treatment. Future studies should consider how spirituality may contribute to positive coping and/or behaviors in African-American women with high levels of spirituality.

Keywords Spirituality · African-American · Breast cancer · Psychosocial care · Religiosity

Background

A majority of Americans report that "religious beliefs" and "to believe that God exists" are important in their everyday lives (Pew Forum on Religion and Public Life, 2007). The terms spirituality and religiosity are used interchangeably (Koenig 2012). Religion generally refers to one's core set of beliefs and formal practices expressed primarily through faith-based establishments. On the other hand, spirituality, which may be regarded as more abstract, often refers to a connectedness to God or another entity recognized as sacred (Koenig 2012). The definition of spirituality as a personal relationship with God is common among African-American populations (True et al. 2005; Douglas et al. 2008) and particularly among African-American cancer survivors (Hamilton et al. 2010). Among African-Americans, this relationship with God has been characterized as consisting of reciprocal communications and a faith that the actions of this sacred being will result in positive outcomes (Mofidi 2014).

African-Americans are more religious than other ethnic groups in America as 85% of African-Americans (vs. 78% of the larger population) most likely identified with a religious group and 79% believe religion is very important in their everyday life (Pew Forum on Religion and Public Life 2007). These facts are particularly important when evaluating African-Americans enduring cancer. Being diagnosed with cancer can be a daunting and intimidating process that can cause anxiety, nervousness, and concern (Stark and House 2000). During this process, African-Americans may pray to reduce their worries and provide guidance with treatment-related decisions (National Cancer Institute 2015). Post-treatment, African-American cancer survivors believe that positive outcomes such as healing from cancer, taking away worries, and sending others to help when needed were possible through God (Hamilton et al. 2010; Holt et al. 2012).

Spirituality is especially important to the psychological well-being and resilience of African-American women diagnosed with breast cancer (Holt et al. 2009). Breast cancer is the second leading cancer diagnosis among this group, and they have the highest cancer mortality rate of any other racial or ethnic group (American Cancer Society 2015). African-American women report a reliance on their spirituality and faith in God during times of ill health (Lynn et al. 2014) and that pattern still holds among African-Americans with breast cancer (Sheppard et al. 2011). Spirituality, religion, and prayer are important for the quality of life of breast cancer patients by reducing stress and anxiety, demonstrating a more positive outlook, strengthening the will to live, and forging a stronger faith and belief in God. During the diagnosis and treatment for breast cancer, African-American women pray to God and rely on that support, which likely has dual influences on their seeking and initiating treatment for breast cancer (Lynn et al. 2014). Further understanding of the relationship between one's spiritual beliefs and whether those beliefs or practices are translational to the care environment (e.g., patient–provider communication, treatment) may aid in the reduction in disparities among African-American women.

A published review on the impact of spiritual beliefs on treatment decisions of African-Americans suggests inconsistent findings (Johnson et al. 2005). For example, one positive

influence that promotes seeking and initiating treatment among this population is the belief that God uses physicians and health providers as instruments to facilitate physical health (Johnson et al. 2005; Hamilton et al. 2015). On the other hand, an influence that restricts treatment options is the belief that God is the only being with the power to decide or influence life and death (Johnson et al. 2005). The influences of culture and spirituality on treatment decisions are complex, and the studies examined in this review did not consider individual differences such as age, gender, and type of illness. Moreover, while it is commonly recognized that spirituality is important to African-American women with breast cancer, most studies have relied solely on qualitative data, and few empirical studies have been conducted on recently diagnosed breast cancer patients to examine the relationship between spirituality and treatment attitudes and preferences. Our prior work found higher ratings of spirituality in African-American breast cancer survivors compared to their White counterparts (Sheppard et al. 2013). Information about how spirituality may vary within African-American survivors is limited; this information may be useful for developing supportive interventions to a group known to have poorer breast outcomes.

To fill gaps in knowledge about variation spirituality levels in African-American breast cancer survivors, the aims of this study were to: (1) describe levels of spirituality; (2) identify patient-level sociocultural correlates of spirituality; and (3) test for associations between spirituality and women's treatment attitudes and healthcare ratings or health care. We hypothesized that sociodemographic factors would correlate with spirituality. Additionally, we expected that spirituality would be associated with treatment attitudes and healthcare ratings. This paper will contribute to the limited empirical data regarding correlates of spirituality and the relationship between spirituality and treatment-related factors (attitudes, provider relationships) in African-American breast cancer patients.

Methods

Sample and Setting

Following approval from Georgetown University's Institutional Review Board (IRB), women were recruited via pathology records at participating institutions. Eligibility required that women were within 6 weeks of their definitive surgery, diagnosed with non-metastatic breast cancer, eligible for systemic adjuvant treatment, and ale to read and write in English. The analytic sample has been described in detail elsewhere (Sheppard et al. 2013, 2014). Briefly, the present analysis was limited to Black breast cancer survivors.

Data Collection

Trained and experienced interviewers conducted telephone interviews using a computerized adaptive telephone interviewing to administer measures. Final measures were selected based on cognitive interviews, theoretical framework, prior use in breast cancer patients, and psychometric properties. Medical records were abstracted after the completion of adjuvant therapy for clinical and treatment-related information.

Outcomes

Primary Outcome

The primary variable of interest was spirituality which was measured using nine Likert-scale items from the Lukwago Religiosity scale (e.g., "My spiritual beliefs are the foundation of my whole approach to life") ($\alpha = 0.99$); higher scores indicate greater religiosity (Anandarajah and Hight 2001).

Secondary Outcome(s): Treatment Attitudes

Measures to assess women's perceptions of the benefits and/or harms of cancer treatments were adapted items from prior reports. Measures were specific to radiation therapy, chemotherapy, and hormonal therapy using a 7-item Likert scale (Mandelblatt et al. 2005, 2010; Sheppard et al. 2013) specific to each therapy (e.g., "The side effects of radiation/chemo/hormonal therapy are worse than the disease").

Predictor Variables

Demographic Factors

Race was based on self-identification. Other sociodemographic factors included years of education (no college, some college, Bachelor's and above), marital status (married/living as married vs. currently single), and employment status (full time vs. part time/unemployed/other).

Clinical Factors

Clinical information included nodal status (positive or negative), HER2 status (positive or negative), tumor size (classified as < 2 cm or ≥ 2 cm), type of surgery (lumpectomy vs. mastectomy), chemotherapy/radiation/hormonal therapy initiated (yes vs. no), and number of comorbid diseases (e.g., diabetes, hypertension) (grouped as none or ≥ 1).

Sociocultural Contextual Factors

The suspicion subscale ($\alpha = 0.84$) of the Group-Based Medical Mistrust Scale (Thompson et al. 2004) was used to measure mistrust of medical institutions; higher scores indicate perceived discrimination (Wolf et al. 2005). Self-efficacy in maintaining a positive attitude ($\alpha = 0.77$) and participating in health care with providers ($\alpha = 0.76$) were measured by the Communication Attitudinal Self-Efficacy Scale (CASE) (Jagers and Mock 1995). We used two items from the Familial Communalism Scale (Lukwago et al. 2001) to assess familial worldview (i.e., "I would prefer to live in an area where I know I have family members" and "I take care of my own needs before I consider the needs of others"). We used six items from the Collectivism Scale (Hamilton et al. 2007) (e.g., "Your family would turn to each other in times of trouble") ($\alpha = 0.93$) and four items from McCombs Afrocentric worldview (Afrocentric vs. Eurocentric; e.g., "When I need help, I rely on: (1) My friends, family and others, or (2) Myself as an independently resourceful person"). Central to the

Afrocentric, or African-centered, worldview is centered that: The highest value of life lies in the interpersonal relationships between humans.

Statistical Methods

Descriptive analysis was conducted to assess demographic, clinical, and psychosocial characteristics for African Black patients. Wald Chi-square test was used to examine the association between each variable and the outcome variable, religiosity score. Stepwise selection method was applied in the general linear regression model to choose variables. SAS version 9.4 was used to perform the above data analysis.

Results

Sample Characteristics

The average age of participants was 53.8 years (SD = 12.0) and ranged from 25 to 86. About one third of participants had at least some college and most were currently living as single (64.5%). A notable number of women were not working full time at the time of their diagnosis. Most women were ER positive (71.2%) and had HER2-negative (85.3%) tumors. Most participants had lumpectomies, and a slight majority had tumors $\geq$ 2 cm. Refer to Table 1.

Characterization of Spirituality Levels

Overall levels of spirituality were high and ranged from 11 to 36 (mean = 31.1; SD = 4.8; Cronbach's α = .99). Figure 1 displays women's responses to individual items. Most frequently, participants endorsed that they were aware of the presence of God in their life (98.5% agreed/strongly agreed) and that they had a personal relationship with God (97.5% agree/strongly agree). While still relatively high, only 84.3% of women agreed or strongly agreed that they often read religious materials and 80.7% agreed or strongly agreed that they watch or listen to religious programs.).

Patient-Related Factors and Spirituality Levels

In bivariate analysis, several sociodemographic factors were associated with spirituality. While there was no significant relationship between age and spirituality (p = .40), there were significant differences observed regarding women of different marital status. Further, married women or those living with their partner as married had slightly higher levels of spirituality (mean score = 32.1) compared to single women (mean score = 30.1). Contextual factors that were associated with spirituality were: having more a more collectivist perspective (r = .44; $p < .0001$), Afrocentric worldview (r = .185; p = .01), and overall self-efficacy (r = .17; p = .02) (Table 2).

Table 1 Demographic and clinical characteristics table ($N = 197$). African-American breast cancer survivors

Variables	%	p value
Demographic characteristics		
Age (mean ± SD)	53.8 ± 12.0	0.39
Education		
No college education	34.0	0.96
Some college	34.0	0.12
Bachelors and above	32.0	
Marital status		
Married/living as married	35.5	0.04†
Currently single	64.5	
Employment		
Full time employed	33.7	0.11
Not full time employed	66.3	
Clinical characteristics		
Estrogen receptor status		
ER positive	71.2	0.33
ER negative	28.8	
Surgery		
Mastectomy	33.3	0.45
Lumpectomy	66.7	
Nodal status		
Positive	40.7	0.77
Negative	59.3	
Tumor size		
< 2 cm	48.0	0.46
≥ 2 cm	52.0	
HER-2		
Positive	14.7	0.48
Negative	85.3	
Comorbidities		
No comorbid disease	32.0	0.3
≥ 1 comorbid diseases	68.0	
Hormonal therapy		
Yes	55.3	0.54
No	44.7	
Chemotherapy		
Yes	47.2	0.15
No	52.8	
Radiation		
Yes	63.5	0.42
No	36.5	

The p value is obtained from Wald Chi-square test

SD standard deviation

†$p < 0.05$

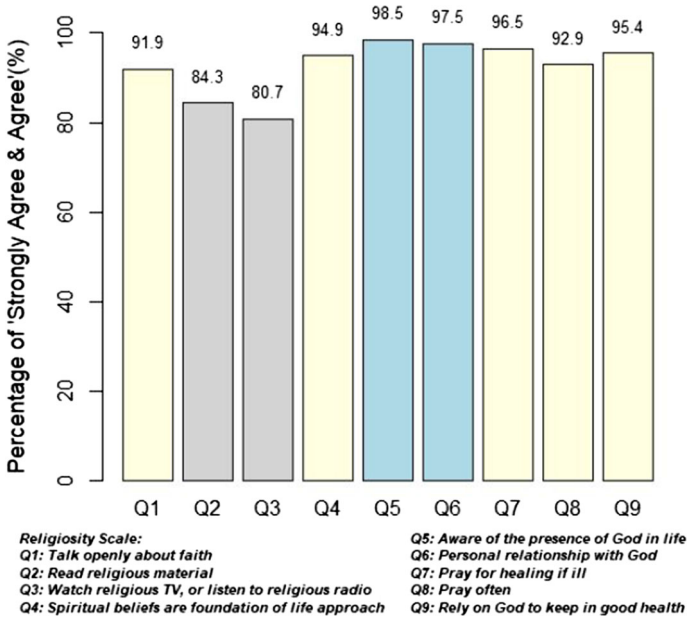

Fig. 1 Distribution of selected (agree/strongly agree) responses to spirituality items

Table 2 Contextual factors and spirituality ($N = 197$)

Contextual factors	N (Mean ± SD)	p value
Perceived discrimination	197 (1.4 ± 2.2)	0.41
Subscale of self-efficacy (seek and obtain information	195 (15.7 ± 1.0)	0.15
Subscale of self-efficacy (understand/participate in care)	194 (15.2 ± 1.2)	0.0498†
Subscale of self-efficacy (maintaining a positive attitude)	193 (15.0 ± 1.6)	0.32
Self-efficacy	187 (72.3 ± 4.8)	0.02†
Worldview	196 (7.4 ± 1.7)	0.01†
Collectivism	190 (21.2 ± 3.0)	< 0.0001†
Communalism	58 (5.5 ± 1.1)	0.49
Attitude for hormonal therapy	174 (14.4 ± 4.2)	0.42
Attitude for chemotherapy	196 (20.1 ± 3.8)	0.62
Attitude for radiation therapy	190 (15.7 ± 3.6)	0.99

The p value is obtained from Wald Chi-square test

N number of subjects, SD standard deviation

†$p < 0.05$

Spirituality and Process of Care Factors and Treatment Attitudes and Spirituality

The second aim examined whether spirituality was related to women's attitudes about treatment or decision-making and healthcare factors. Attitudes were assessed across three treatment types—hormonal therapy, radiation therapy, and chemotherapy. Women's

attitudes were moderate for each treatment type. More positive attitudes were reported for hormonal therapy (mean score = 20.08), while radiation therapy was least favored (mean score = 15.73) There were no significant relationships between women's level of spirituality and their attitudes about chemotherapy, hormonal therapy, or radiation (Table 2).

Multivariable Analysis (Correlates of Spirituality)

After controlling for clinical factors, demographic factors were not included in the model. Decision to initiate chemotherapy was a significant factor. Women who decided to initiate chemotherapy had 1.33 units higher spirituality than women who did not (Table 3). Higher levels of spirituality were associated with higher worldview ratings ($p = 0.033$). Additionally, women with stronger communalistic beliefs had higher levels of spirituality than women with more individualistic beliefs ($p < 0.0001$).

Discussion

The majority of women in this sample reported high levels of spirituality. Studies using other tools to assess spirituality in African-American women reported similar findings (Charlson et al. 2014; Gullatte et al. 2010).Contrary to assertions that women with high levels of spirituality may have negative attitudes about cancer therapy, we did not find such associations in this study. Contextual factors regarding self-efficacy related to the healthcare experience and preferences regarding social norms and worldview were more robust correlates of spirituality than demographic factors. Women who reported a more collectivist (vs individual) perspective had higher ratings of spirituality. To our knowledge, this is the first empirical examination of these factors among African-American women in active treatment. Taken together, these findings underscore the importance of consideration of contextual factors in caring for African-American women with breast cancer and have implications for clinical practice and research.

The high ratings of spirituality in our study support reports from the non-cancer population of African-Americans and several qualitative reports on African-American breast cancer survivors (Sheppard et al. 2011; Lynn et al. 2014) (Banks-Wallace and Parks 2004). Several studies (Gullatte et al. 2010; Hamilton et al. 2012; Kinney et al. 2002; Levine et al. 2009; Von Ah et al. 2012) have identified that strong religious and spiritual practices are an essential coping mechanism for African-Americans. This may be one explanation for the higher ratings of mental well-being found in some reports of African-American breast cancer survivors in comparison with other racial and ethnic groups *despite* African-American women experiencing poorer prognoses or lower physical functioning (Bowen-

Table 3 Multivariable analysis (correlates of spirituality)

Variables	Estimates (95% CI)	*p* value
Chemotherapy initiation (yes vs. no)	1.33 (0.13, 2.5)	0.033†
Worldview	0.39 (0.038, 0.75)	0.033†
Communalism	0.70 (0.50, 0.90)	< 0.0001†

†$p < 0.05$

Reid and Harrell 2002). Furthermore, religious practices of prayer and testimony have been exercised by African-Americans as methods of resiliency to help them in coping with the psychological pain of racism, discrimination, and oppression (Boyd-Franklin 2010). In times of trauma and loss, it has also been a major vehicle for healing and recovery (Dass-Brailsford and Myrick 2010; Moore et al. 2013a, b). Despite the evidence of this importance of spirituality in African-American survivors undergoing treatment, spirituality is not often well integrated into clinical encounters or behavioral interventions with patients in active treatment (Sheppard et al. 2010).

In our sample, while self-efficacy did not emerge as a significant predictor in the multivariable model, bivariate analysis indicated an association with women's levels of self-efficacy regarding their participation and understanding of their care. To date, there have been relatively limited data about such interventions that integrate spirituality to impact aspects of clinical care with patients. One study integrated faith-based messages to support decision-making about systemic therapy (Winett et al. 1999). In screening the literature for programs that measure the efficacy of decision-making support interventions, one has partnered with faith-based institutions (Allen et al. 2014) and another used faith-based messages to promote early detection behaviors in African-Americans (Holt et al. 2009). These faith-based interventions both enhanced self-efficacy for pursuing cancer screening. Results of screening interventions that have integrated aspects of spirituality suggest positive impacts on screening behaviors (Dana Faber Cancer Institute 2015). Complementary approaches may be useful within the cancer treatment setting both for promoting health behavior and psychosocial outcomes. For example, integrative approaches often include Reiki and meditation, while other complementary approaches integrate Judeo-Christian paradigms (Miles 2007; Weiss and Groda 2011) but have not been widely studied in African-American patients. Thus, there are numerous opportunities to examine how to best build upon the cultural strength of spirituality in African-American women diagnosed with breast cancer.

Study Limitations

This study has several strengths including its focus on recently diagnosed women, inclusion of contextual factors, and a proportional representation of Black and White women. A few weaknesses should be noted. First, this was a largely insured urban sample of patients and thus women that lacked insurance and who were from more rural areas may experience and express their spirituality differently from those in our study. Next, we recognize that there are several dimensions of spiritual well-being that have not been examined in this study and that other measures may capture important dimensions not examined in our study. On balance, the scale employed appeared reliable and to capture constructs relevant to the population.[13] Our data support that religiosity is indeed important to many breast cancer survivors and therefore should be considered when providing patient-centered care.

Clinical Implications: Integration of Spirituality into Patient-Centered Care

Many cancer patients hold their spiritual beliefs and feelings private because they view them as sacred. However, this sacred information may offer insight into the way caregivers should attend to a patient. Anandarajah and Hight (2001) suggest that a spiritual assessment as part of a medical encounter is a practical first step in incorporating consideration of

a patient's spirituality into medical practice. In order to harness this potential, health professionals and physicians can become aware of the role spirituality plays in helping African-American women cope with illness. Although not religious leaders, providers can practice a compassionate presence to support their patients in their physical, emotional, and spiritual suffering by listening to their fears, hopes, pains, and dreams and by being attentive to all dimensions of body, mind, and spirit.

One way of enhancing patient-centered care may be to engage Chaplains as a member of the interdisciplinary healthcare team. For example, at one DC-based hospital, the patient admission process includes a, spiritual screening during which individuals may request spiritual care and persons are identified who may require a more in-depth spiritual assessment should be completed. These patients are then referred to the Pastoral Care Department, in which they undergo a spiritual assessment that involves a careful review of the spiritual needs and resources of the patient and sometimes family member (personal communication; Walker 2015). A spiritual assessment is the ongoing process by which a Chaplain forms and revises his/her spiritual care plan. According to the Royal College of Nursing (2011), a spiritual care plan recognizes and includes goals that respond to the needs of the human spirit when faced with trauma, ill health, or sadness and can include the need for meaning, for self-worth, to express one's self, for faith support, perhaps for rites of prayer or sacrament, or simply for a sensitive listener. Providers may not always have the expertise and/or training to conduct spiritual assessments; therefore, including Chaplains to be part of the healthcare team can help create a space for a conversation about one's spiritual beliefs and feelings in a more appropriate setting. The spiritual dimension of life often impacts other areas of human existence. From this perspective, a spiritual assessment by a Chaplain can be useful as part of the approach to a multi-disciplinary, holistic healthcare team. Chaplain goals are formulated to include an expected outcome—a measurable result of the implementation of the plan of care, which is also scripted into the spiritual care plan (Weiss and Groda 2011). Unfortunately, Chaplains are often not well integrated within psychosocial research, outpatients care, and too often aspects of spirituality are not well captured in research—these may be missed opportunities for cancer patients in general and particularly for African-American women for whom spirituality appears to play an important role during illnesses.

Conclusion

Faith—the substance of things hoped for and the evidence of things not seen—is a common construct among African-American (Gullatte et al. 2010). Perhaps it is this connection of faith that allows women to have higher self-efficacy and perceptions of their outcomes. Spirituality may promote better quality of life for cancer patients through enhanced coping and supportive networks. Given the disparate outcomes for many African-American, it is encouraging that a substantial proportion of women face their diagnosis were armed with practices, behaviors, and outlooks that may support their journey. Integration and recognition of spiritual beliefs is vital to breast cancer treatment especially that of African-Americans moving forward with the disease. Organizations such as the John Templeton Foundation and the Association of American Medical Colleges have developed curricula that integrate spirituality for medical professionals. Better clinical tools and research measures are needed to capture the positive impact of spirituality in breast cancer patients and to leverage it for positive healthcare experiences.

Funding This study was funded by ACS MRSGT 0613201 CPPB; R01-CA154848; and NIH-NCI Cancer Center Support Grant P30 CA016059.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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