EFFECT OF A SPIRITUALITY-BASED EDUCATIONAL INTERVENTION ON KNOWLEDGE, ATTITUDES, AND PERCEIVE BARRIERS FOR AFRICAN AMERICAN WOMEN REGARDING BREAST HEALTH

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By

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ABSTRACT

The purpose of this study, which used a quasi-experimental pre/post design, was to examine how spirituality of African-American women (AAW) affected their self-reported breast health practices and attitudes, and perceived barriers regarding adherence to the American Cancer Society’s (ACS) guidelines for breast cancer screening. Breast cancer is the second leading cause of death and the most commonly diagnosed disease in AAW. Although Caucasian women have a higher incidence of breast cancer, AAW’s mortality rates are higher. The breast cancer 5-year survival rate is 91% for Caucasian women compared with 80% for AAW. Breast cancer risk factors for AAW women include: obesity; tumor biology and genetics when compared to other races; not completing treatment; and late diagnosis. The literature presented six barriers that impacted breast cancer stage at presentation and diagnosis for breast cancer in AAW: 1) inadequate risk factor knowledge; 2) fear of finding breast abnormality; 3) fear of treatment plan; 4) fear of partner abandonment; 5) embarrassment disclosing concerns and symptoms to a physician, and; 6) stigma of cancer diagnosis. The Joint Commission (2010) has noted that cultural and spiritual beliefs can affect the perception of illness and how medical treatments are approached by patients and their support system. Thus, acknowledging and addressing unique needs associated with the beliefs should be acknowledge by clinicians. Understanding how spirituality affected AAW decision-making regarding breast cancer
screening is necessary to design interventions to impact the high breast cancer mortality rate in this population.

A paucity of research was found regarding how spirituality impacted health care promotion. A convenience sample of 21 AAW participants were used. The principal investigator administered the pre-intervention questionnaire and Spiritual Perspective Scale, followed by the educational intervention, and post-intervention questionnaire. The questionnaire captured participant knowledge regarding breast health risk factors, ACS guidelines, how spirituality affects seeking care, and barriers to overcome when seeking treatment. Statistical analyses included descriptive statistics, paired \( t \)-tests, and Wilcoxon signed ranks tests. Identified barriers to adherence to ACS guidelines were knowledge, insurance status and preventative coverage, and decreased access to health care facilities. Knowledge scores on the pre- and post-questionnaire tools showed a significant improvement from 61.7\% pre-educational intervention to 76.2\% post intervention, \( t(20) = 3.22, p = .004 \). No significant findings were noted for attitudes or spirituality.
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Chapter I Introduction

Chronic health issues are major problems impacting minority communities in the United States (U.S.). Breast cancer is the most commonly diagnosed cancer in African-American women (AAW) in 2019, and the second leading cause of death in AAW after lung cancer (American Cancer Society, 2019a). The five-year survival rate for AAW diagnosed with breast cancer from 2008 - 2014 was 81% compared to Caucasian women at 91% (American Cancer Society, 2019). This decreased survival rate for AAW is attributed to late stage diagnosis due to unequal access to quality health care and more aggressive types of cancer presenting in the AAW population (American Cancer Society, 2019a). Determining culturally appropriate methods to promote the American Cancer Society’s (ACS) breast screening guidelines is imperative to decrease the current high breast cancer mortality rate in AAW.

The Joint Commission (TJC), an independent not-for-profit organization that accredits health care organizations for quality performance standards, has recognized spiritual care as an important component of patient-centered health (TJC, 2019). The Joint Commission stated in their report, *Advancing Effective Communication, Cultural Competence, and Patient- and Family-Centered Care: A Roadmap for Hospitals* (2010), that “Cultural, religious, or spiritual beliefs can affect a patient’s or family’s perception of illness and how they approach treatment” (TJC, 2010, p. 15). A significant component in African-American (AA) culture is religion (Thompson, 2012). When faced with difficult decisions, many in the AA community are told to “pray about it”. Thus, understanding the effect that spirituality has on health care decision-making in the AA community is an important research focus.
Background of the Problem and Significance of the Problem

Breast cancer incidence in the US is reported to be highest in the Caucasian and AAW racial categories. Although Caucasian women have a slightly higher incidence rate of breast cancer diagnosis compared to AAW, breast cancer mortality rates are higher in AAW than Caucasian women in the U.S. (Susan G. Komen, 2019). The following risk factors and health behaviors have been reported to be related to increased mortality rates in AAW: a) difference in tumor biology and tumor genetics than other racial demographics; b) prevalence of risk factors such as overweight and obesity; c) barriers to quality health care access (e.g. lack of health insurance); d) health behaviors (e.g., not completing treatment); and e) later state breast cancer at diagnosis than other racial categories (Susan G. Komen, 2019).

Diverse socio-economic factors are related to the limited access to the U.S. health care system seen for AAW. First, race is correlated with socioeconomic status (SES) within the U.S.; SES is the most significant factor affecting health status and longevity within the U.S. (ACS, 2019a). Barriers to accessing necessary primary care exist for AAW in the U.S. The passage of the Affordable Care Act and the expansion of Medicaid led to a 9% reduction in the uninsured rate of AA adults. This is important because access to care and having health care insurance are positively related (ACS, 2019a). Currently, the uninsured rate for AAs and Caucasians is 11% and 6%, respectively. Although having health care insurance is important, it is also critical that the health care services needed are located in an accessible geographical location. Lack of local mammography centers or lack of transportation to these centers are additional reported barriers for AAW’s access to healthcare resources needed to adhere to the ACS breast cancer screening guidelines (Susan G. Komen, 2019). African-American women are required to motivate
themselves to overcome the perceived and actual barriers to accessing quality breast health services.

Organizational Needs Assessment

The principal investigator (PI) conducted this study in two AA churches located in two unique geographical settings: Mississippi (MS) and Washington, District of Columbia (DC).

State of Mississippi

In 2019, it is estimated that there will be 2,370 new cases of breast cancer in MS (ACS, 2019b). The state of MS has one of the lowest breast screening rates in the U.S.; more than one-quarter of the women do not receive regular screenings (MS State Department of Health, 2018). The goal of the MS State Department of Health is to promote early breast cancer detection in women who are in the following categories: uninsured, underserved, minority, and elderly.

Accessing breast screening and care was challenging for women living in MS. Mississippi opted not to expand Medicaid (Kaiser Family Foundation, 2019). To offset the cost of breast screenings, special funding is available for women who meet certain criteria (MS State Department of Health, 2018).

Washington, District of Columbia

In 2014, the cancer incidence in AA women living in DC was 59% higher than that reported in Caucasians (DC Department of Health, 2014). In addition, AAW were more likely to be diagnosed at later stages of cancer, corresponding to clinical presentation of non-localized regional and distant metastatic disease, when compared to the localized disease clinical presentation of Caucasian women (DC Department of Health, 2014). Specifically, access to primary care was challenging for residents of Southeast DC.
The expansion of Medicaid in Southeast DC to date has allowed access to health care through insurance coverage; AA adults were insured at 93%, and AA children are insured at 98% (Georgetown University, 2016). Although, insurance coverage is required to increase access to health care, it still does not help when health care services are not located in an accessible geographic location. Although more than 200 health care facilities are present in DC, unfortunately, for the residents of Wards 7 and 8, many of these facilities are clustered in Wards 1, 2, and 5 (DC Department of Health, 2014). Regarding breast cancer prevention services, two mammogram screening facilities are located in Ward 8, and no mammogram screening services are available in Ward 7. Diverse socio-economic factors have deterred residents of these wards from accessing the health care system in other parts of DC.

Theoretical Framework and Evidence-Based Model of Implementation

The Health Belief Model

The Health Belief Model (HBM) has been used by numerous investigators to examine relationships between community-based health beliefs and health care decisions (Carpenter, 2010). These relationships may then be used to inform the components of interventions with community-based beliefs to promote positive health behaviors (Carpenter, 2010). The HBM posits that there are four variables that indicate whether a change in health behaviors will occur: a) people will not act to prevent a negative health outcome that is perceived as unlikely to affect them; b) the stronger people’s perception of the severity of the outcome, the more likely they are motivated to act to avoid the outcome; c) the individual must believe that the change of behavior will have a positive benefit; and, d) individuals will not change health behaviors if there are strong barriers preventing them from adopting them (Carpenter, 2010).
The Theory of Perceived Access to Breast Care in AAW

The Theory of Perceived Access to Breast Care in AAW focuses on utilizing culture as a tool to break down the barriers to breast care that are prevalent among AAW (Garmon, 2012). This theory demonstrates the importance of testing the relationships among culture, definitions of health, health behaviors and practices, and their influence on the perception of access to breast health care in AAW (Garmon, 2012). This theory supplemented the HBM through its inclusion of perception regarding how health can positively or negatively affect a person’s willingness to change.

Theories Relationship to Project

Common themes seen in the literature show that AA communities face a myriad of concerns related to breast care and health: 1) lack of access to resources to improve health; 2) lack of knowledge of how to improve health; and, 3) unwarranted barriers when discussing breast care and health combined with spirituality in the AA community. Research has shown that medical and faith communities should partner together to reduce health disparities. The literature reported that people surveyed were interested in learning about healthy choices through health programs sponsored by the church (Stephens, 2013). Understanding the impact of faith on health practices is vital to facilitate cultural changes within the theoretical frameworks of the HBM and the Theory of Perceived Access to Breast Care in AAW to promote appropriate health outcomes.

Outcomes

The planned measurable outcome was the effect of the spirituality-based educational intervention experienced by AAW on their self-reported breast health practices, their attitudes regarding adherence to the ACS breast screening guidelines, and barriers to the adherence to the
ACS’s recommendation for the early detection of breast cancer, and barriers to their adherence to these ACS guidelines.

**Definition of Terms**

The following key terms are defined.

**Spirituality** - a basic or inherent quality in all humans that involves a belief in something greater than self and a faith that positively affirms life (Best, Spencer, Hall, Friedman, & Billings, 2014)

**African-American Women** - women having origins in any of the Black racial groups from Africa and who can bear offspring or produce eggs; distinguished biologically by the production of gametes (ova) (Rastogi, Johnson, Hoffel, & Drewery, 2011)

**Delay of Care** - greater than 3 months from the self- or clinician- discovery of a breast abnormality to seeking medical care (Gullatte, Brawley, Kinney, Powe, & Mooney, 2010)

**Breast Abnormality** - swelling of all or part of a breast (even if no distinct lump is felt); skin irritation or dimpling that is referred to as peau d’orange for its orange peel appearance; breast or nipple pain; nipple retraction; redness, scaliness, or thickening of the nipple or breast skin; and nipple discharge (ACS, 2019).
Chapter II Review of Literature

A literature review was conducted for research studies that examined spirituality and breast health care of AAW. The databases of choice during this literature review were Medline and Embase. Both produced substantial literature that was reviewed, interpreted, and scored for strength of evidence using the Let Evidence Guide Every New Decision (LEGEND) tool (Cincinnati Children's, 2012).

Search Criteria

Inclusion criteria for articles were focused on prevention/screenings and creation of educational material for AAW. Exclusion criteria for articles were focused on spirituality during the diagnosis and treatment phase of breast cancer diagnosis, as well as, articles that pertained to breast cancer in men.

Two search engines were used: Medline and Embase.

Medline

The exploration of articles started with an explosion search of breast neoplasm. The explosion created a result of 182,586 articles. The second search looked for articles that included studies with African Americans; this resulted in 33,393 articles. During a preliminary search, there were articles that addressed breast cancer in men. It was at this point that the exclusion criteria of “men” needed to be introduced. This decreased the search ‘breast neoplasms’ by 17,159 bringing the total number of articles to 165,697. Exploring search line two entitled – ‘African Americans’ and search line three entitled – ‘exclusion of male in breast neoplasms’ decreased the eligible articles to 1,493. These articles represent the target population of the study.
The next search round was conducted to find spirituality incorporated into health models. The first search explored articles that referred to spirituality. This resulted in 6,316 articles. Looking at the Medical Subject Heading (MeSH) terminology, there was also an opportunity to search for ‘spiritual therapies’. Combining ‘spirituality’ and ‘spiritual therapies’ using the BOOLEAN operator ‘OR’ promoted inclusion of all available articles. The combined usage of the two words generated 14,625 articles. Excluding males, doing a final search combination of ‘breast neoplasms’, ‘African Americans’, and ‘spirituality’ using the BOOLEAN operator ‘AND’ generated 34 articles.

**Embase**

The first search was an explosion of the term ‘breast cancer’ that generated 378,777 articles. The next search term was ‘African American’ that yielded 73,081 articles. The last search was an explosion of the term ‘religion’ that produced 56,877 articles. Doing a final search combination of ‘breast cancer’, ‘African American’, and ‘religion’ using the BOOLEAN operator ‘AND’ generated 80 articles.

**Criteria**

The focus of the study was preventative screenings or screenings to detect cancer in an earlier stage to increase the likelihood of survival. From the search, there was a total of 114 articles that addressed AAW with breast cancer using spirituality throughout the cancer diagnosis journey. Of these 114 articles, only 34 were retained for further manual review. Reviewing the remaining 34 articles through these criteria yielded a total number of eight articles: a) one meta-synthesis review; b) one randomized controlled trial; c) two qualitative studies d) one retrospective-descriptive correlation study; e) one descriptive cross-sectional study and f) two descriptive longitudinal studies.
Literature Review

The meta-synthesis reviewed 18 articles that presented common barriers to early presentation and diagnosis for breast cancer in AAW (Jones et al., 2014). Six themes were found: 1) poor symptom and risk factor knowledge; 2) fear of detecting breast abnormality; 3) fear of cancer treatment; 4) fear of partner abandonment; 5) embarrassment disclosing symptoms to health care providers; and 6) the taboo and stigma associated with the diagnosis. These findings are important because they present the concerns and fears of AAW regarding cancer diagnoses. These concerns and fears that represent the barriers to early prevention and diagnosis for breast cancer in AAW are examined in this study.

Previous research has demonstrated the meaning of spirituality for AAW and how this spirituality may promote breast health behaviors (Conway-Philips & Janusek, 2016). This study examined four foci related to spirituality in this population: 1) believing in a higher power; 2) describing what God is; 3) describing what believing in a higher power does or brings to their lives; and 4) describing how believing in a higher power affects who they are as people. This article focused on the definition and meaning of spirituality; however, the application of spirituality to the promotion of breast health practices need further research. One limitation of this article was the small focus group and thus, lack of generalizability to the larger population.

Gullatte, Brawley, Kinney, Powe, and Mooney (2010) examined how religiosity, spirituality, and cancer fatalism impact the delay of diagnosis of AAW. The study examined women outside of the recommended breast cancer screening age and divided the time frame into ≤ 3 months delay to seeking health care. Religiosity, spirituality, and cancer fatalism did not show any significant findings regarding delay in seeking health care. Income level and disclosure of breast symptoms were statistically significant in relationship to delay in seeking health care;
higher income level and the disclosure of breast symptoms both increased compliance of AAW with seeking the appropriate breast health screenings.

Conway & Janusek (2014) reviewed how sense of coherence (i.e. social support, spirituality, and health perception) influenced breast cancer screenings and breast health behaviors in AAW. Women were stratified into two sample groups: those who were and were not enrolled in the Illinois Breast & Cervical Cancer Program. Validated questionnaires were used to collect data from the women. Sense of coherence was positively correlated with social support, spirituality, and health perception on initial analysis. A multiple regression model was run with all variables; spirituality was the only significant predictor of increased compliance in breast health screenings.

Best et al. (2014) collected data from two focus groups regarding appropriate components of spirituality-based educational programs to promote appropriate use of breast health screenings. The first focus group revealed three spirituality elements that should be addressed in the education: 1) the body is a temple; 2) God did not give us the spirit of fear; and 3) going to the doctor does not make you faithless. The second focus group spoke to the formatting of the education: 1) start with the health message; 2) personalize the message; 3) more spiritual and less religious; 4) critique of message appearance; 5) critique of image and message - more melanin; and 6) centrality of religion and spirituality. This article is important as it guides how the messaging should look and the flow of spirituality-based breast cancer education for AAW.

Holt et al. (2008) conducted their study at an AA church to examine the effectiveness of spirituality-based education and secular based education. The AA churches were randomly chosen to receive the education. The study examined how precisely the spiritual-based and secular-based messages aligned with the person by using Petty and Cacioppo’s Elaboration
Likelihood Model (Holt et al. 2008) to address the following: 1) personal connection; 2) self-assessment; 3) spiritually-based; 4) behavioral intention; and 5) health locus of control. The results suggested that spirituality-based breast cancer education may be more effective than secular-based breast cancer education even though it was not statistically significant.

Breast screening behaviors of AAW and the timing of the first mammogram, especially younger than the recommended screening age, were also studied (Bowie, Wells, Juon, Sydnor, and Rodriguez, 2008). This study occurred at a church in Baltimore, Maryland. Results were a positive correlation between women’s strong spiritual beliefs and delayed timing in having their first mammogram at or after the age of 40; this research also suggested that women’s who have weaker spiritual beliefs had their first mammogram at less than 40 years of age.

Russell, Monahan, Wagle & Champion (2007) examined the breast cancer screening behaviors of AAW of low-socioeconomic status regarding their stage of readiness to receive a mammogram. The women were separated into three groups: 1) precontemplators - not planning to have a mammogram; 2) contemplators - planning to have a mammogram; and 3) actors - have received a mammogram. The study was important as it helps to understand where women are in their health journey. For example, precontemplators were perceived to have more barriers and less comfort with the idea of mammograms when compared to those who were more oriented toward preventative health measures. This allows for tailoring of conversations with women to match their stage of readiness.

Critique and Synthesis of Previous Evidence

The limited body of evidence showed how the health care system’s use of culturally sensitive tools, such as spirituality, has been underutilized and under-studied. The articles generate insight into the lack of understanding of spirituality and the negative stigma associated
with the breast cancer among AAW (Jones et al., 2014). Common themes in the literature were noted: 1) AAW having poor symptom and risk factor knowledge; 2) lack of health care professionals understanding AAW’s views of spirituality and the impact this has on daily decisions; and 3) which enhanced communication techniques should be used with AAW to promote breast cancer screenings (BCS). Other commonalities noted throughout the literature were: 1) socio-economic status is always a major barrier to BCS; 2) potential of the studies not being generalizable due to small sample sizes and AAW not being a monolithic demographic; and, 3) spirituality in the use of AAW and BCS is an underutilized tool that has the potential to have an impact upon preventative breast health.

The validated LEGEND tool was utilized in grading the body of evidence. This tool graded the body of evidence with the range of “high” to “grade not assignable”. Using the LEGEND grading tool, the body of evidence was rated moderate. The definition of a moderate level body of evidence is “a single well-done trial, multiple lesser quality trials, or multiple large, high quality observational studies” (Cincinnati Children's, 2017).

Most of the literature pertaining to AAW and spirituality used a qualitative research design. Sample sizes tended to be very small and used a convenience sample. Data collection was conducted through individual interviews or focus groups. Few studies have explored the topic of spirituality as it related to health care promotion. The available literature is foundational to our understanding of AAW’s perception of health and spirituality. Limitations included as convenience sampling, self-reporting, and/or recollections from participants.

**Summary of Evidence**

Spirituality is a prominent component of AAW’s culture and “influences virtually every domain of their life” (Conway-Phillips & Janusek, 2016, p. 322). Literature suggested that there
is a “significant delay in seeking medical care and treatment of obvious signs, such as a palpable breast lump, when AAW prefer the superiority of spiritual or religious interventions, such as prayer and/or laying on of hands, compared to medical treatments” (Gullatte, Brawley, Kinney, Powe, & Mooney, 2010, p. 64). Thus, this belief in spirituality was an important factor in the high incidence of late stage breast cancer diagnoses. Spiritually may also be a motivating factor for AAW to access the health care system (Best, Spencer, Hall, Friedman, & Billings, 2014). Spirituality as a strong cultural element within the AA community is important to examine to address the diverse challenges leading to health disparities. It is critical to understand the relationship between the importance of spirituality to AAW and their health care decisions related to adherence to the ACS’s recommendations for early breast cancer detection.

**Rationale for Project**

The literature search yielded sufficient evidence showing a positive association between AAW and the importance of spirituality that influences health care decisions. Even though the literature presented did not produce statistically significant research findings, the results were clinically significant. African-American women continue to have high mortality rates associated with breast cancer due to a delay in diagnosis (Susan G. Komen, 2019). Having AAWs decrease the time from detection of breast abnormality to seeking medical care is essential to saving lives. This study is designed to incorporate cultural sensitivity through all procedures. This research is designed to examine the influence of spirituality on health decision-making regarding breast health in general, and specifically on adherence to the ACS guidelines for breast cancer screenings in a sample of AAW.
Chapter III Methods

Design

The study used a quasi-experimental pre/post design. Inclusion criteria were the following: a) AAW ≥ 18 years of age; b) English speaking; c) U.S. born or women who have lived in the U.S. for at least 10 years. Exclusion criteria were the following: a) male gender; b) women who have immigrated to the country less than 10 years ago; and c) women ≤ 18 years of age. Approval was obtained from a university Institutional Review Board (IRB) before any participant data were collected. A cover letter was attached to the study’s pre- and post-intervention questionnaire that explained the study’s rationale, the procedures, and approximately how long it would take to complete. The cover letter informed participants that taking part in the study denoted implied informed consent.

The spirituality-based education intervention was comprised of the following components: Facts/myths about breast cancer; recommended breast health practices; perceived barriers; spirituality and health; and community resources. Participants completed a hard copy pre-questionnaire and Spiritual Perspective Scale tool before the administration of the spirituality-based educational intervention. Once the hard-copy paper pre-questionnaire was completed, the educational intervention was delivered by the investigator. After the delivery of the spirituality based educational intervention, the post-test questionnaire was completed by participants. A unique ID number was placed on both questionnaires so responses could be matched and remain anonymous. Study procedures took two hours to complete.

Objective

The objective of this study was to examine the effect of a spirituality-based educational intervention on knowledge, attitudes, and perceived barriers for AAW regarding breast health
and adherence to the ACS’s guidelines for breast cancer screening. Outcome measures included participant’s self-reported breast health practices, attitudes, and barriers regarding adherence to the ACS’s guidelines for breast cancer screening. Also measured was the association between strength of spirituality and readiness to act as prescribed by the ACS.

**Setting**

The research study was conducted at two churches, both with primarily AA congregations: One church was located in a large urban setting in the DC, and one church was located in a large urban setting in MS.

**Sampling Plan**

Twenty-one participants were recruited through the study site churches’ membership registry via various health and/or women’s ministries. All women were encouraged to attend the study seminar through promotions via the church’s established communication channels: email; posting to church website; and announcement via services. This initiative was in partnership with the leaders of the health ministry. Food was provided as an incentive for individuals to participate.

**Instruments**

The following instruments were used to capture and/or measure the study research variables: An investigator-created pre-and post-questionnaire, and the Spirituality Perspective Scale. The instruments will now be described in detail.

The 40-item study questionnaire consisted of the following sections: 1) socio-demographics; 2) knowledge; 3) attitudes; 4) barriers; and 5) Spirituality Perspective Scale (Reed, 1987). Item contained within the investigator-created questionnaire were based on the literature to answer the study’s objectives.
Socio-demographics

This section examined participants’ socioeconomic status to infer relationships amongst the participants to the outcomes. Eight statements were utilized to obtain the following information: zip code; age; income; insurance status; education level; years living within the US; ethnicity; and religious affiliation.

Knowledge Section

This section examined participants’ knowledge level regarding breast health risk factors and ACS screening guidelines. Six true and false questions were utilized to assess participants knowledge.

Attitudes Section

This section examined participants’ attitudes regarding the importance of breast screening guidelines, the impact of women’s spirituality on seeking health care, and the fatalistic belief of a cancer diagnosis. Participants rated nine statements on a 6-point Likert scale with possible scores ranging from: 1 = “Strongly Disagree”, 2 = “Disagree”, 3 = “Disagree more than agree”, 4 = “Agree more than disagree”, 5 = “Agree”, to 6 = “Strongly Agree”.

Barriers

This section allowed participants to state which self-perceived barriers are the most difficult to overcome regarding seeking appropriate breast health care. Partipants ranked barriers from a scale of 1 = “most important” to 7 = “least important”.

Spirituality Perspective Scale

The Spiritual Perspective Scale was a validated tool used to analyze spirituality per instructions given by Dr. Pamela Reed in 1987 (Reed, 1987). The validated tool has been used in numerous research projects to correlate spirituality with a health-related issue. The tool has been
tested on over 400 adults ranging in health status from healthy to seriously ill. The Cronbach’s alpha has been consistently rated > 0.90 to test for reliability. Inter-item correlation ranges from .54 to .60 across all adult groups, and all item scale correlations are > .60. The tool is unpublished, and permission was granted to use this tool by the developer.

**Procedures**

The investigator established relationships with leaders of the health ministry of the churches in which the study was implemented. Permission was granted to allow for the research study to be conducted within their institution. Following the Institutional Review Board (IRB) approval, the DNP scholar contacted the organizations to establish date, times, and location in which the study was to be conducted. All women in the two study sites were invited to participate in the study. Screening for study eligibility questions were included in the study questionnaire.

The investigator introduced herself to participants before the study started and explained the rationale for and the study procedures of the study. The participants completed the hard copy pre-questionnaire and Spiritual Perspective Scale tool before the spirituality-based educational intervention was administered. Once the hard-copy paper pre-questionnaires were completed, the educational intervention was delivered by the investigator. The educational intervention was comprised of the following components: Facts/myths about breast cancer; recommended breast health practices; perceived barriers; spirituality and health; and community resources. After the intervention was delivered, the investigator administered the post-intervention questionnaire to participants; the post-questionnaire only addressed knowledge and attitudes. A participant identification number was placed on all seats for the participants to place on both questionnaires.
so pre- and post- educational intervention data could be matched. Study procedures was accomplished within 2 hours.

**Data Analysis Plan**

The data analysis plan was created in collaboration with the study’s statistician. Descriptive statistic techniques were used to characterize the sample and included: frequency; distributions for categorical variables; and measurements of central tendency (means and medians); and variability (standard deviations, ranges) for continuous variables. Paired sample *t*-tests were used to compare percent correct on knowledge questions pre- and post- intervention. Similarly, with attitudes, the average ratings on the attitude questions yielded a total attitude score, which could then be compared pre- and post- educational intervention with a paired samples *t*-test. For barriers, analysis will include a difference in the mean spirituality by the type of barrier selected. The Spirituality Perspective Scale total score was calculated per the scale creator’s instructions (Reed, 1987).

**Data Management**

The completed hard copy study questionnaires were kept in a locked storage container. Electronic data were stored on Drop Box and accessed on a password protected computer. Two-factor authentication was required for data access. The study computer had appropriate malware and virus protection software installed and all software was up to date with current patches installed.

**Ethical Consideration**

The study was conducted after approval from the Institutional Review Board (IRB). Collaborative Institutional Training Initiative (CITI) training was completed by the investigator for social and behavioral research prior to the implementation of the study. Participation was
voluntary throughout the duration of the study, and the participant could opt out of the study at any time.
Chapter IV Results

Primary Objective

The primary objective of this study was to examine how spirituality of AAW affects their self-reported breast health practices, attitudes, and barriers regarding adherence to the ACS’s guidelines for breast cancer screening. Outcome measures included their self-reported breast health practices, attitudes, and barriers regarding adherence to the ACS’s guidelines for breast cancer screening. Also measured was the association between strength of spirituality and readiness to act as prescribed by the ACS.

Characteristics of the Sample

A total of twenty-one women participated in this study. Characteristics of the participants are displayed in Table 1. Participants’ ages ranged primarily from 40 to 60 years of age (52.4%). All respondents who answered the race/ethnicity question identified as African-American. The sample was well educated with more than half (52.4%) educated at the graduate level. Greater than three-fifths (61.9%) of the participants were Catholic. Over two-fifths (42.9%) had incomes over $100,000 per year. The majority (52.4%) had employer-provided health insurance. It should be noted that one-third (33.3%) did not provide health insurance information.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Socio-demographic Characteristics of the Sample (N=21)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Under 40 years</td>
<td>1</td>
</tr>
<tr>
<td>40-49 years</td>
<td>6</td>
</tr>
<tr>
<td>50-59 years</td>
<td>5</td>
</tr>
<tr>
<td>60-69 years</td>
<td>3</td>
</tr>
<tr>
<td>70-79 years</td>
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</tr>
<tr>
<td>Missing</td>
<td>1</td>
</tr>
<tr>
<td>Highest Educational Level</td>
<td></td>
</tr>
<tr>
<td>High school graduate or General Educational Development</td>
<td>3</td>
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</tbody>
</table>
Knowledge Section

Respondents answered six true/false questions about risks factors for breast cancer before and after the educational intervention. Table 2 displays the percentage of respondents who answered correctly before and after the intervention. There were significantly more correct answers on two of the six questions post-intervention. Pre-intervention, only 57.1% of respondents said that “Being a woman is the main risk factor for getting breast cancer” was true; post-intervention 81.0% gave the correct answer of “true”. Pre-intervention, only 28.6% of participants knew that the statement “8 out of 10 women who get breast cancer have a family history of the disease” was false; post-intervention, 61.9% answered this correctly. Less than
half (45%) knew that early menstruation was a risk factor for breast cancer pre-intervention compared with 90.0% post-intervention. The overall percentage correct was calculated by taking an average of the percentage correct for all six questions. The overall mean percentage correct significantly increased from 61.7% pre-intervention to 76.2% post-intervention, $t(20) = 3.22, p = .004$.

Table 2

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>$t$</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being a woman is the main risk factor for getting breast cancer (true)</td>
<td>57.1</td>
<td>81.0</td>
<td>2.50</td>
<td>.021</td>
</tr>
<tr>
<td>The risk of getting breast cancer decreases as you get older (false)</td>
<td>95.0</td>
<td>80.0</td>
<td>1.37</td>
<td>.186</td>
</tr>
<tr>
<td>8 out of 10 women who get breast cancer have a family history of the disease (false)</td>
<td>28.6</td>
<td>61.9</td>
<td>2.32</td>
<td>.031</td>
</tr>
<tr>
<td>Women who start their menstruation early have a higher risk of breast cancer (true)</td>
<td>45.0</td>
<td>90.0</td>
<td>3.94</td>
<td>.001</td>
</tr>
<tr>
<td>Having an increased body weight can increase your chances of having breast cancer (true)</td>
<td>80.0</td>
<td>95.0</td>
<td>1.83</td>
<td>.083</td>
</tr>
<tr>
<td>Alcohol consumption is not a risk factor for breast cancer (false)</td>
<td>75.0</td>
<td>55.0</td>
<td>1.71</td>
<td>.104</td>
</tr>
</tbody>
</table>

Attitudes Section

Participants were asked a series of 9 questions on their attitudes towards breast cancer prevention and breast cancer treatment. Responses to these questions were on a 6-point Likert scale where 1 = “Strongly Disagree”, 2 = “Disagree”, 3 = “Disagree more than agree”, 4 = “Agree more than disagree”, 5 = “Agree”, and 6 = “Strongly Agree”. Table 3 displays the responses to the attitude questions pre- and post-intervention. For participants who answered both pre- and post-, the responses pre and post were compared using Wilcoxon signed-ranks test,
the appropriate nonparametric test to compare two ordinal variables with small sample sizes.

There were no statistically significant differences in answers to any of the questions from pre- to post-intervention as seen by the \( p \) values in Table 3.

<table>
<thead>
<tr>
<th>Table 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitudes toward Breast Cancer, Pre- (n=21) and Post-Educational Intervention (n=16)</strong></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Statement</th>
<th>Pre</th>
<th>Post</th>
<th>Pre</th>
<th>Post</th>
<th>Pre</th>
<th>Post</th>
<th>Pre</th>
<th>Post</th>
<th>Pre</th>
<th>Post</th>
<th>Pre</th>
<th>Post</th>
<th>( p )</th>
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<td>Monthly breast self-exams are an important part of a woman’s health routine</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>.317</td>
</tr>
<tr>
<td>Pre</td>
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<td>1 (4.8)</td>
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<tr>
<td>Post</td>
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<td>0</td>
<td>1 (6.3)</td>
<td>1 (6.3)</td>
<td>14 (87.5)</td>
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<td>Annual clinical breast exams are an important part of a woman’s health routine</td>
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<td>Annual clinical mammograms are an important part of a woman’s health routine</td>
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<td>Pre (n = 18)</td>
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</tr>
</tbody>
</table>

Note that on several questions, some participants chose not to answer; sample size is 21 for pre and 16 for post, unless otherwise noted for a specific question. Significance levels (p) are based on Wilcoxon signed ranks test comparing only those with responses at both pre- and post-training.
Barriers Section

Prior to the educational intervention, respondents were asked to rank seven different potential barriers from least to most important. The format of the response section led all but one of the participants to rate each barrier on a 1 to 7 scale, with 1 = “most important” and 7 = “least important”, rather than ranking them from 1 to 7. Therefore, the responses were treated as a Likert-type scale rating with the one person who ranked in order eliminated. Note that one person rated knowledge as the most important barrier followed by insurance and access. As can be seen in Table 4, more than half (63.2%) rated knowledge of screening guidelines and access to care/geographical location as very important barriers (rating of 1 or 2) and 57.9% rating insurance as a very important barrier (rating of 1 or 2). Only 15.8% saw religion as a very important barrier.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Barriers to Breast Cancer Care (n=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 Most important</td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
</tr>
<tr>
<td>Knowledge of screening guidelines</td>
<td>11 (57.9)</td>
</tr>
<tr>
<td>Time</td>
<td>5 (26.3)</td>
</tr>
<tr>
<td>Insurance</td>
<td>10 (52.6)</td>
</tr>
<tr>
<td>Transportation</td>
<td>5 (26.3)</td>
</tr>
<tr>
<td>Access</td>
<td>7 (36.8)</td>
</tr>
<tr>
<td>Religion</td>
<td>3 (15.8)</td>
</tr>
</tbody>
</table>

Spirituality Section

Prior to the educational intervention, participants completed the Spirituality Perspective Scale. Only 16 of the 21 participants completed the spirituality questions. Unfortunately, when the questionnaire was created in final form, all questions were listed as having the frequency
answers. Therefore, the answers to the last six questions should be interpreted with caution as they could not logically be answered with frequency answers because they were worded to be rated on level of agreement.
Chapter V Discussion of Findings

Evidence has shown that AAW have presented with late stage diagnoses, which has contributed to their high mortality rates when compared to other racial groups. Thus, it is critical to examine the reasons why AAW present with this later stage breast cancer. The overall purpose of this study was to examine the effect of a spirituality-based educational intervention on knowledge, attitudes, and perceived barriers for AAW regarding breast health, and also adherence to the ACS’ guidelines for breast cancer screening. It is important to examine the effect of spirituality experiences by AAW on their self-reported breast health practices, their attitudes regarding adherences to the ACS guidelines, and barriers to the ACS’s recommendation for the early detection of breast cancer, and barriers to their adherence to these ACS guidelines for breast cancer screening. These results increase our understanding of the effect that spirituality has on health care decision-making in AAW regarding breast health and breast cancer screening decisions. Also, examined were barriers to ACS recommended breast cancer screening and culturally appropriate ways to eliminate those barriers to decrease the breast cancer mortality rate in AAW.

Socio-demographics

There was a lack of diversity within the sample pertaining to education and socio-economic demographics. The homogenous data does not allow for generalizability of the results. It should be noted that even with the high education and income status that knowledge is still a barrier. This speaks to health literacy not being an issue just for those who may not have a college degree and a lower income.
Knowledge Results

Results showed an overall initial knowledge deficit pertaining to risk factors associated with breast cancer. The section was comprised of six true and false questions; there was a signification increase in knowledge from the pre-and post-intervention questionnaires, from 61.7% pre-training to 76.2%. The risk factors that had significant improvement were: “Being a woman is the main risk factor for getting breast cancer” was true; “8 out of 10 women who get breast cancer have a family history of the disease” was false; and that “early menstruation was a risk factor for breast cancer” was true. The knowledge results section aligns with established literature that suggests that poor knowledge of symptoms and risk factors are a barrier with seeking appropriate breast health (Jones et al., 2014).

As the demographics showed, all except three participants had a college degree. These women were educated and engaged in breast health awareness and included: a former employee of the ACS and/or breast cancer survivors. This study highlighted knowledge barriers which are concerning due to characteristics of the participants. Continued dialogue needs to continue within the AA community to replace myths with facts about the risk factors associated with breast cancer.

Attitudes Results

The Attitude Section included scaled statements designed to identify AAW barriers pertaining to their attitude towards breast cancer. The scaled statements aligned with previous studies and were derived from the literature. There were no significant findings to attribute attitude as a barrier. For items that spoke about various screening techniques, a majority of participants agreed that all breast health screening are important pre- and post-educational
intervention; for statements that talked about cancer being viewed as fatalistic and/or a punishment from God, a majority of participants disagreed pre-and post-educational intervention. It is important to note that most participants agreed that clinical- and self- breast exams are important even though the ACS does not recommend these practices for women at average risk of getting breast cancer. Even though the ACS no longer recommends clinical breast exams, this does not mean that one should never be done; it should be part of patient-centered assessment if warranted. Even though breast self-exams are no longer recommended, it is important for women to be familiar with how their breasts normally look and feel.

**Barriers Results**

Findings from the Barriers Section highlighted three key factors: knowledge; access; and insurance. The findings are consistent with the current literature associated with the barriers of AAW in the promotion of breast health. During the educational intervention, there was rich dialogue among women about the lack of knowledge being attributed to the health care system not informing them adequately of their potential risk or not knowing where to go for care. The majority of participants had employer-based insurance. Ensuring access to quality health care services is imperative and ongoing initiatives throughout the country. In this sample, data analysis found no significance for religion being a barrier to women seeking access to breast health care as religion was ranked as the least important item to be a barrier in seeking care.

**Spirituality Results**

Findings from the Spirituality section did not present any significant relationships as most participants responded as having high spirituality, but they did not rank spirituality high in considerations for seeking care. Even with the questionnaire error of having frequency answers instead of agreement, this is good to note as literature does suggest that spirituality can be a
barrier to seeking care. This lack of spirituality being a barrier suggests that if knowledge, access, and insurance issues are fixed, mortality rates among AAW should improve and close the disparities gap.

**Limitations**

This study had several limitations: small sample size; variances in the responses for each section; and the aforementioned instrument errors. The study results were derived from small sample population, and thus generalizability is not possible beyond this sample. In addition to the small sample size, the missing information from the variance in responses additionally made the data set for the specific sections smaller. Although the accidental errors in wording of some questionnaire items did not appear to bias how participants responded to those specific items; it was still an inaccuracy that needs to be noted.

**Strengths**

The study added to the paucity of evidence pertaining to breast cancer in AAW in a culturally sensitive manner. This study reinforced the established literature, created dialogue that is needed within the AA community, and built evidence for further partnership within the health care community and the church community. The educational intervention was culturally sensitive to the participants which created rich dialogue and a support system for those who participated. Women discussed the need for re-energizing ministries that were no longer available to the church in an effort to increase health awareness in AAW.

**Implications for Practice**

This study did identify knowledge deficits, lack of access to care, and insurance as barriers for these AAW in the promotion of breast health. There is a continued call for action for all health care systems, legislators, and community leaders to ensure that the populations service
areas have the necessary tools to make informed decisions about their health care, as well as, the means to be able to access the necessary resources. Further exploration regarding how to connect with AAW with strong community stakeholders, such as churches, to promote breast health is needed.

**Implications for Research**

Breast cancer mortality rates among AAW are significantly higher that other racial categories. AAW must be equipped with appropriate knowledge and support to ensure that they are able to make informed health decisions. Additional research is needed to examine the health and knowledge of health preventative measures of congregations with active and engaged health ministries and also those that do not have these ministries. This future research can explore partnerships between health systems and the churches within the community. Additionally, further research is warranted to examine congruence between national health guidelines and breast health care needs of AAW. Debates are occurring in 2019 regarding efficacy of moving the screening guidelines for annual mammograms back to 50 years of age. AAW < 40 years of age have the highest incidence of breast cancer diagnosis, and thus it is imperative that guidelines are inclusive and take into account racial differences to ensure that AAW are receiving education about screening guidelines that are racially appropriate.

**Conclusion**

This study was designed to examine the effect of a spirituality-based educational intervention on knowledge, attitudes, and perceived barriers for AAW regarding breast health and regarding adherence to the ACS’s guidelines for breast cancer screening. Examining these critical variables in a culturally sensitive manner to AAW is important to engage this community in a dialogue regarding the importance of early detection of this cancer. Results suggested that
knowledge of risk factors and symptoms, insurance, and access are the main factors and barriers to adhering to the appropriate ACS breast cancer screening guidelines. The educational intervention was useful in addressing the knowledge deficit of participants regarding breast cancer screening. The findings are in alignment with current literature that reiterates the need to address breast cancer screening topics through culturally sensitive and relevant education.

No significant relationship was found between spirituality and AAW using it as a barrier in making health decisions. Although study results suggested high rates of spirituality, further research is warranted in how AA churches and health ministries can play a substantial role in health awareness for their membership.

Study participants acknowledged the need for and importance of further education in their AAW communities, as well as, more support to be able to have safe dialogue with issues impacting their communities. Thus, outreach to AA communities and ensuring that screening guidelines take into account the racial variations into disease stage presentation is imperative to decreasing mortality rates in AAW.
References


