

Michael Aakhus. *Teotihuacan*. Oil on canvas, 60" × 48".  
Courtesy of Longstreth-Goldberg ART, Naples, Florida.

*Inner resources used as mechanisms to successfully cope with breast cancer are explored.*

# Inner Resources as Predictors of Psychological Well-Being in Middle-Income African American Breast Cancer Survivors

*Lynette M. Richardson Gibson, PhD, RN, and Veronica Parker, PhD*

*Although African American women are exposed to major life stressors such as breast cancer, many have high levels of psychological well-being (PWB). However, there are no current studies that describe the psychological effects of applying sense of coherence, hope, and spiritual perspective by African American breast cancer survivors. These three inner resources have each been positively associated with PWB or coping.*

*This correlational study tested the Gibson Model of Inner Resources in 162 African American breast cancer survivors who completed the Abbreviated Herth Hope Index, Spiritual Perspective Scale, Sense of Coherence Scale (13-item) and the Quality of Life/Breast Cancer (PWB Subscale). Statistical analyses included correlation, multiple regression, and path analysis. Study findings supported the model. Sense of coherence significantly accounted for 37.5% and hope for 5.3% of PWB. Spiritual perspective did not significantly account for any of the variance, but there was an indirect path from spiritual perspective through hope to PWB.*

*Sense of coherence and hope were direct predictors; however, spiritual perspective and hope together were predictors of PWB. Health professionals should consider strategies to enhance sense of coherence and hope when caring for African American breast cancer survivors. Qualitative research is indicated to further explore spirituality in this population.*

*From the Clemson University School of Nursing, Clemson, South Carolina.*

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*Address reprint requests to Lynette M. Richardson Gibson, PhD, RN, College of Health, Education, & Human Development, 514 RC Edwards Hall, Clemson University School of Nursing, Clemson, SC*

*29634-0743. E-mail: lynettg@clemson.edu*

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## Introduction

Breast cancer is the most common form of cancer in African American (AA) women, affecting 1 of 10 AA women,<sup>1</sup> and they also have the highest incidence of breast cancer among all ethnic groups in the United States between the ages of 25 to 44 years.<sup>2</sup> In AA women, breast cancer frequently presents as a physically devastating, aggressive disease that is frequently diagnosed at late stage and has a high morbidity and poor prognosis.<sup>3</sup> AA women from all age groups and at all stages of breast cancer have disproportionately higher mortality rates of breast cancer than all other ethnic groups.<sup>3</sup> Despite these health disparities, there are few studies of AA breast cancer survivors (AABCS).

Although AA women have poor prognostic factors, they are surviving breast cancer for longer periods of time. Five-year survival trends for AA women have increased from 63% (1974-1976) to 73% (1992-1998).<sup>2</sup> With the high rate of late-staged, aggressive breast cancer, the lack of breast cancer survivorship studies, and the increasing survival trends in AA women, studies are needed to identify how AA women cope psychologically with breast cancer. One of the ways that AA women are likely to psychologically cope with major stressors is through the use of inner resources.

Studies report on the use of external resources such as social support and on support groups such as breast cancer survivors. In AABCS, studies report a lack of support by spouses, friends, and employers due to stigmas and fears related to the diagnosis of breast cancer.<sup>4,6</sup> Despite being faced with a lack of social support as well as the stressors related to breast cancer, AABCS are "steadfast in demonstrating their courage and strength, diligent in combining forces with others with similar experiences, and motivational with their testimonies of courage, hope, and celebration."<sup>7</sup>

Because the literature supports the existence of external resources such as social support but does not report the use of internal resources by AA women, we sought to describe the inner resources relied on by AABCS that enable them to successfully cope.

Inner resources are the inner aspects of a person that are used to cope with a stressor. Examples include sense of coherence, hope, and spirituality. Sense of coherence is a disposition-type quality or state that serves to promote health and well-being.<sup>8</sup> Hope has been proposed as a prerequisite for effective coping.<sup>9</sup> Spiritual perspective is an individualized awareness of one's inner self and a sense of connection to a higher being.<sup>10</sup> The literature is filled with studies that support the proposition that these three inner resources predict psychological well-

being (PWB) or coping in European American breast cancer survivors. However, studies of AABCS have failed to adequately address these inner resources as predictors of PWB or coping. Hence, we are unsure whether similar results will occur in AABCS. If these three inner resources predict PWB or coping, nurses and other health professionals can create environments or interventions for AABCS that may positively affect their PWB, psychological adaptation, and possibly survival.

## Purpose

The purpose of this correlational study was to describe which variables in the Gibson Model of Inner Resources (sense of coherence, hope, and spiritual perspective) were significant predictors of PWB in AABCS. Sense of coherence, hope, and spiritual perspective were independent variables, and PWB was the dependent variable identified within this framework.

## Definitions of Terms

The following definitions were used in this study:

**African American Breast Cancer Survivors (AABCS):** Women who identified themselves as African American (AA) or black who had been diagnosed with breast cancer for at least 3 months. Survivorship was identified by phase, time since diagnosis, or active vs inactive treatment status.

**Breast Cancer:** A type of malignant growth that had been diagnosed in breast tissues according to stage (I, II, III, IV) or histological type, such as ductal carcinoma in situ, invasive/infiltrating ductal carcinoma, lobular carcinoma in situ, invasive/infiltrating lobular carcinoma, papillary carcinoma, or Paget's disease.

**Inner Resources:** Three inner aspects of the person that were used to cope, namely, sense of coherence, hope, and spiritual perspective.

**Sense of Coherence:** "A global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable, (2) the resources are available to one to meet the demands posed by these stimuli, and (3) these demands are challenges worthy of investment and engagement."<sup>8</sup>

**Hope:** "A multidimensional, dynamic life force characterized by a confident yet uncertain expectation of achieving good which, to the hoping person, is realistically possible and personally significant."<sup>11</sup>

**Spiritual Perspective:** “A highly individualized awareness of one’s inner self and a sense of connection to a higher being, nature, others, or to some purpose greater than oneself”<sup>10</sup> or the extent to which a person holds “certain spiritual views and engages in spiritually related interactions.”<sup>10</sup>

**Psychological Well-Being (PWB):** “Seeking a sense of control in the face of life-threatening illness characterized by emotional distress, altered life priorities, fears of the unknown as well as positive life changes.”<sup>12</sup>

## Background

Within the past 10 years, leading psychosocial researchers in adult oncology have called attention to the urgent need to examine the psychosocial functioning of AA cancer survivors.<sup>13,14</sup> The existing literature regarding the psychosocial status of adult cancer survivors is based almost exclusively on middle-class European Americans residing in large metropolitan areas; very few, if any, ethnic minorities were included.<sup>14</sup> According to Andersen,<sup>13</sup> health professionals may be indirectly increasing the risk for psychological difficulties in AAs by not being aware of their potentially unique psychosocial needs.

The studies of AABCS that have been reported in the published literature included women from the West Coast and the Midwest.<sup>4,6,15</sup> No studies were found of AABCS from the southeastern United States. Hence, the reported findings cannot be extended to AABCS or to breast cancer survivors from other ethnic groups who live in this geographic area.

Additionally, research studies addressing breast cancer in AA women have focused primarily on early detection and epidemiological variables.<sup>4,5</sup> According to Powell,<sup>16</sup> there is a notable absence of studies that have examined how AA women manage their breast cancer or its impact on their lives. Two studies were found that provided preliminary insights into understanding ways that AA women cope with breast cancer survivorship. Ashing-Giwa and Ganz<sup>5</sup> reported that the following themes were related to PWB: social support, lack of knowledge about breast cancer, and the patient-physician relationship. Northouse et al<sup>6</sup> reported that compared with women in earlier breast cancer survivor studies, AABCS had higher emotional well-being scores and lower stressful appraisals of illness. Ashing-Giwa and Ganz<sup>5</sup> and Northouse et al<sup>6</sup> reported few findings relative to spirituality. Ashing-Giwa and Ganz<sup>5</sup> suggested that the “role of spirituality in surviving breast cancer requires further study to understand its effects and benefits.”

It is suggested that AABCS rely on cultural beliefs in spirituality as important sources of support.<sup>5,17</sup>

Examples include a desire to feel closer to God,<sup>6</sup> faith, strengthened spirituality and religious behavior as the result of a breast cancer diagnosis, a will to live,<sup>4</sup> the belief that only God can heal,<sup>5</sup> and treatment is in the hands of God (the doctors cannot cure it).<sup>18</sup> Additionally, spiritual themes include concepts of caring — caregiving and carereceiving.<sup>15</sup> Caring from others or carereceiving involved support provided by church members, a Bible, and church buildings, while caring for others or caregiving especially involved “a missionary zeal to get other women to seek treatment early.”<sup>15</sup> Although studies of AABCS reported the importance of spirituality, none have reported its importance specifically as it relates to coping.

For AAs in general, Newlin et al<sup>17</sup> identified cultural influences (black ethnicity, church, and family), life adversities, faith in God, and belief in divine intervention as the predominant antecedents of AA spirituality. Illness was an example of a life adversity. Consequences of spirituality for AAs included emotional equilibrium and empowering change<sup>17</sup>; these two constructs appear to be related to psychological coping in AAs. However, specific studies need to be completed on the influence of spirituality on coping in AABCS.

Research studies have identified potentially significant predictors of PWB that represent inner resources (sense of coherence, hope, and spirituality) in persons with cancer.<sup>19,24</sup> However, these three concepts have been investigated in isolation; no studies have combined them into a theoretically meaningful model. Additionally, the samples from these studies included mostly European American cancer survivors; few, if any, AABCS were included. An understanding of internal resources that affect PWB is necessary to provide an environment or interventions that foster psychological coping by AABCS.

Additionally, there is a dearth of literature on culturally appropriate instruments used to measure constructs such as sense of coherence, hope, spiritual perspective, and PWB in AA women. Further, measuring the cultural appropriateness of psychosocial-spiritual instruments in AABCS is necessary to obtain reliable results.

## Conceptual Framework

In the Gibson Model of Inner Resources (Fig 1), concepts shared with various disciplines were combined to form a new model to predict PWB or coping that may affect survivorship and adaptation in AABCS. Ultimately, this research will improve culturally appropriate and culturally competent care.<sup>25</sup> Also, it will enhance the body of knowledge and develop theory regarding culturally diverse perspectives of breast cancer survivorship.

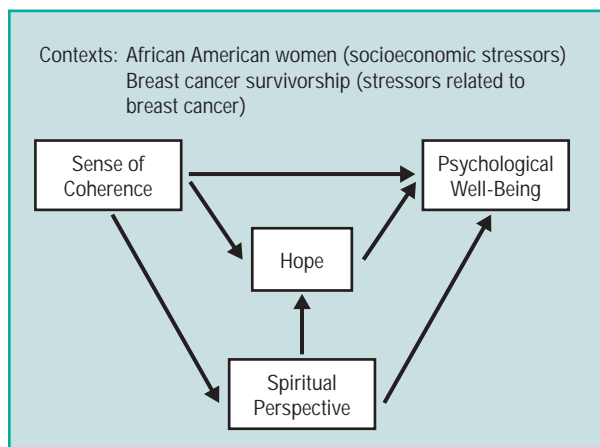


Fig 1. — Proposed Gibson Model of Inner Resources. Copyright by Lynette M. Richardson Gibson, 2000. All rights reserved.

The present study built on past research and clinical experiences. In a pilot study using the current model, Gibson<sup>26</sup> reported that AABCS had higher levels of hope and significantly higher levels of PWB than European American breast cancer survivors. The proposed Gibson Model of Inner Resources, which demonstrates linkages among sense of coherence, hope, spiritual perspective, and PWB, represented the conceptual framework for the current study.

**Sense of Coherence:** Findings from studies of cancer survivors have suggested positive relationships among sense of coherence, hope, and spiritual perspective. Studies found a positive relationship between sense of coherence and hope<sup>23,24</sup> and between sense of coherence and spirituality.<sup>22</sup> While only two of the three studies included breast cancer survivors in their samples,<sup>23,24</sup> only a small number were AA survivors. Given this, it is unclear whether a similar relationship involving sense of coherence would occur with AABCS.

**Hope:** Studies of cancer survivors have found that sense of coherence and hope were positively related to each other.<sup>23</sup> However, the survivors were composed primarily of European American individuals. Studies are needed to determine whether such relationships are also found in the AA population.

**Spiritual Perspective:** Two studies examining spiritual perspective in cancer survivors found no significant relationships between spiritual perspective and well-being. Since both studies included survivors who were terminally ill or had recurrent cancer, the phase of illness may have confounded the results.<sup>21,27</sup> The application of these findings to AABCS is questionable since only one study included limited numbers of breast cancer survivors (23%) and an even smaller number of AA survivors (3% to 4%) who were not representative.<sup>27</sup> The limited research about spiritual perspective in AABCS suggests a high level of spiritual perspective<sup>28</sup> and attests to the

importance of spirituality.<sup>15,29</sup> Hence, spiritual perspective may play an important role, especially for AABCS.

Three studies found positive relationships between hope and spirituality.<sup>21,30,31</sup> Kurtin<sup>21</sup> reported a significant positive relationship between hope and spiritual perspective in recurrent cancer survivors. No studies were located that measured hope and spiritual perspective or sense of coherence and spiritual perspective in breast cancer survivors or AABCS.

### Interrelationship of Variables

In Miller's book on chronic illness,<sup>9</sup> indicators of positive coping included having a sense of well-being, being spiritually well, and being hopeful. However, no studies were found that explored the relationships among these indicators.

Several studies have been carried out on the individual concepts of sense of coherence, hope, and spiritual perspective and their relationship to each other and to PWB in cancer survivors. Although studies addressed correlates of two or three variables, none concurrently examined all four correlates: sense of coherence, hope, spiritual perspective, and PWB. The proposed study will describe predicted effects of sense of coherence, hope, and spiritual perspective on PWB in AABCS. The researcher proposed the following hypotheses: (1) sense of coherence, hope, and spiritual perspective are positively related to each other, and (2) sense of coherence, hope, and spiritual perspective have a significant effect on PWB.

According to the model (Fig 1), within the contexts of AA culture and breast cancer survivorship, a high sense of coherence influences the inner resources, hope, and spiritual perspective. Spiritual perspective also influences hope. The three inner resources of sense of coherence, hope, and spiritual perspective predict levels of PWB. In essence, the Gibson Model of Inner Resources, as the framework for this study, is a salutogenic<sup>8</sup> or health-promoting model of coping designed for AABCS. Sense of coherence, hope, and spiritual perspective are considered to be health-promoting factors. Specifically, they are inner resources that predict PWB levels in AABCS.

### Methods

A correlational design was used to study which variables in the Gibson Model of Inner Resources (sense of coherence, hope, and spiritual perspective) predict PWB in AABCS. Correlational designs are commonly used to test the relationships in theoretical models.<sup>32</sup> Data were collected once from each participant.

Women were recruited in two ways: (1) from outpatient cancer facilities (n = 46) primarily found at Medical Teaching Hospitals, and (2) from cancer organizations, women's church groups, sororities, and other community or civic organizations (n = 116). Criteria for inclusion included AABCs who were 18 years of age and older, had a confirmed diagnosis of breast cancer for 3 months or more, had knowledge of their breast cancer diagnosis, had no previous diagnosis of cancer (other than breast cancer), and had the ability to participate in the interview.

Once Institutional Review Board approval was obtained, AABCs were selected according to the inclusion criteria. Questionnaires were both self-administered and administered by the researcher as requested at a mutually agreed upon location. Because of the possible impact of the demographic variables on sense of coherence, hope, spiritual perspective, and PWB, the demographic questionnaire was administered last. For those who preferred to self-administer, the researcher mailed questionnaire packets within 1 week of contacting participants by telephone.

Questionnaires were coded. The questionnaires were also coded with the source of data, i.e., whether the survivor was from a community or group setting. Each woman was given an incentive gift and certificate of appreciation for her participation.

## **Instruments**

The five instruments that were used in this study included the Sense of Coherence-13 Scale<sup>33</sup> to measure sense of coherence, the Abbreviated Herth Hope Index<sup>34</sup> to measure hope, the Spiritual Perspective Scale<sup>10</sup> to measure spiritual perspective, the Psychological Well-Being Subscale of the Quality of Life/Breast Cancer,<sup>35</sup> and a Demographic Questionnaire that was developed by the researcher.<sup>26</sup> All five instruments had previously been used in AA groups; however, the specific psychometrics of each instrument for AA groups had not been published.

**Sense of Coherence-13 Scale:** This scale is 7-point, summative Likert scale.<sup>33</sup> Higher scores represent higher levels of sense of coherence. An item example is "Do you have the feeling that you're being treated unfairly?" Various studies have demonstrated internal consistency scores from  $\alpha = .74$  to  $\alpha = .92$ .<sup>33</sup> Internal consistency for the current study was  $\alpha = .77$ . Construct and criterion validity have been demonstrated. This scale has consistently been found to measure a global construct.<sup>33</sup>

**Abbreviated Herth Hope Index:** The Herth Hope Index, developed for use in clinical settings, is a 12-item, summative 4-point Likert scale.<sup>34</sup> Higher scores represent higher levels of hope. An example is "I have a positive outlook on life." Cronbach alpha

scores range from .88 to .97. The internal consistency score in the current study was  $\alpha = .81$ . Content and construct validity were verified by research/measurement, client, and clinical expert panels. Criterion validity has been well established.<sup>34</sup>

**Spiritual Perspective Scale:** This is a 10-item Likert scale that is anchored with descriptive words corresponding to each number, 1 to 6.<sup>10</sup> The arithmetic mean is calculated for each person. The result is a range of scores from 1 to 6, with 6 representing greater spiritual perspective. An example is "I seek spiritual guidance in making decisions in my everyday life." Cronbach alpha reliability ranges from .93 to .95. For the current study, the internal consistency score was  $\alpha = .87$ . Construct validity has been demonstrated with samples of terminally ill, acutely ill, and healthy individuals.<sup>27</sup> Women and those reporting a religious background score higher on the Spiritual Perspective Scale.<sup>10,27,28</sup>

**Psychological Well-Being Subscale, Quality of Life/Breast Cancer Version:** The Psychological Well-Being Subscale is an ordinal scale that measures the PWB domain of quality of life in breast cancer survivors.<sup>35</sup> Quality of life, according to Ferrell,<sup>12</sup> includes four sub-constructs: psychological, physical, social, and spiritual well-being. We specifically sought to describe the effects of inner resources on PWB as one component of quality of life because of the lack of studies on coping by AABCs. Coping and PWB are used interchangeably in this study. The Psychological Well-Being Subscale consists of 22 items ranked on a range from 0 (worst outcome) to 10 (best outcome). Adding the number of items answered and dividing by the total of all items within the subscale obtain a mean score for this scale. High scores represent high levels of PWB; low scores represent low levels of PWB, or psychological distress. An item example is "How difficult is it for you to cope today as a result of your disease?"<sup>35</sup> Internal consistency, using Cronbach alpha, revealed a subscale  $\alpha$  of .89 for PWB; the internal consistency in the current study was  $\alpha = .91$ . Content and criterion validity have been established.<sup>35</sup>

**Demographic Questionnaire:** The demographic questionnaire was constructed by the researcher and consisted of 14 items to obtain the following: ethnicity, age, income status, educational level, religious group and denomination, type of breast cancer, length of time since diagnosis, body location, type of treatment, and discomfort symptoms (eg, nausea, vomiting, fatigue). The questionnaire was pilot tested in a study of AA and European American breast cancer survivors.<sup>26</sup>

## **Statistical Analysis**

Data analyses, using the Statistical Package of the

Table 1. — Sociodemographic Characteristics of the Sample (n = 162)

	Range	Mean	SD
Age	31 – 85 yrs	56.5 yrs	12.8
Education grade	1 – 17 yrs	13.3 yrs	
Income	<\$14,999 – >\$50,000	\$30,000 – \$34,999	

Social Sciences (SPSS),<sup>36</sup> included descriptive statistics, Spearman and Pearson-R correlations, multiple regression, ANOVA tests, and path analysis. There were no significant differences according to age, education, or income level for women who self-administered compared to those who received mailed instruments nor for those who were from outpatient settings compared to community settings and organizations. Consequently, findings were combined and analyzed as one group.

## Results

The convenience sample consisted of 162 AABCs. Sociodemographic characteristics varied among the participants (Table 1). The age range of the sample was 31 to 85 years, with a mean age of 56.5 (SD = 12.8). ANOVA tests were performed to analyze whether there was a significant difference among the constructs according to age; there was no significant difference. The mean income level was \$30,000 to \$34,999. The mean grade was 13 years, representing an educational level of some college. The geographic distribution varied from the southeastern United States (n = 117, 72.2%) to Bermuda (n = 15, 9.3%). One hundred and five survivors (65%) were from South Carolina. Thirty other participants (18.5%) were from other regions in the United States. The religious preference was protestant; Baptist was the most preferred denomination (n = 87, 53.7%).

The majority of survivors had stage I and stage II breast cancer (n = 90, 55.5%). Fifty-five (34%) did not know their stage. Seventy-two (44.4%) did not know the type of breast cancer. The majority had ductal carcinoma in situ (n = 36, 22.2%) or infiltrating ductal breast cancer (n = 28, 17.3%). The mean length of survivorship was greater than 2 to 5 years. Few survivors experienced nausea (n = 14, 8.6%) or vomiting (n = 11, 6.8%). Eighty-five (52.5%) experienced a little fatigue.

Spearman R statistical tests were used to measure relationships among the independent variables. Data from the study supported the hypotheses (Table 2). There was a significantly positive relationship between sense of coherence and hope ( $r_s = .535, P < .01$ ), a significantly positive relationship between hope and spiritual perspective ( $r_s = .414, P < .01$ ), and a significantly positive relationship

Table 2. — Correlation Matrix of Independent Variables (n = 162)

	Spiritual Perspective	Sense of Coherence	Hope
Sense of coherence	.16*		
Hope	.41**	.54**	
Psychological well-being	.10	.59**	.48**

\*  $P < .05$ .  
\*\*  $P < .01$ .

between sense of coherence and spiritual perspective ( $r_s = .159, P = .05$ ). Spearman R statistical tests were used to measure relationships between the independent variables and PWB, the dependent variable. Sense of coherence was significantly positively related to PWB ( $r_s = .594, P < .01$ ), and hope was significantly positively related to PWB ( $r_s = .484, P < .01$ ). There was a positive relationship between spiritual perspective and PWB that was not significant ( $r_s = .096, P = .224$ ).

Multiple regression analyses were used to measure the effect of the independent variables on the dependent variable. Sense of coherence significantly accounted for 37.5% and hope for 5.3% of the explained variance in PWB. Spiritual perspective did not significantly account for any of the explained variance. Pearson regression analyses were used to perform path analyses among the model's constructs. There were direct paths between sense of coherence and hope, sense of coherence and PWB, hope and PWB, and spiritual perspective and hope. Spiritual perspective and sense of coherence pre-

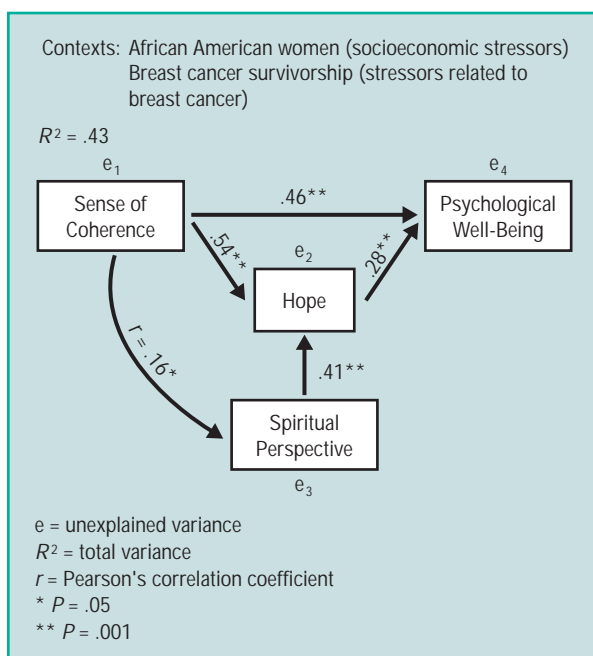


Fig 2. — Refined Gibson Model of Inner Resources: results of model testing. Copyright by Lynette M. Richardson Gibson, 2000. All rights reserved.

dicted PWB indirectly through hope. In other words, hope was utilized with sense of coherence and spiritual perspective to influence PWB.

In summary, results indicated that AABCS had the inner resources of sense of coherence and hope, which greatly contributed to PWB. Sense of coherence contributed most to PWB. Hope directly contributed to PWB in a small way. However, hope was used with both sense of coherence and spiritual perspective to influence PWB. The model results are depicted schematically in Fig 2.

## Implications

The present study has implications for clinical practice, knowledge, and research. The Gibson Model of Inner Resources is easily understood and can be applied to clinical practice. The current findings emphasize the need to carefully assess inner resources before embarking on individual or group treatments to treat psychosocial distress. Specific interventions suggested include positive affirmations, positive, hopeful messages, engaging in discussions related to spirituality, and incorporating bibles, other religious guides, prayer, spiritual music, and spiritual study (individual and/or group). Of particular importance is the need to develop strong, positive, trusting relationships with AABCS by providing strong messages of belief in their ability to successfully cope. Hence, findings from this study support the need for clinicians to consider the presence and use of inner resources in creating therapeutic environments and prior to choosing interventions for AABCS.

The finding that hope predicted 5.3% of PWB is interesting; it appears that the women used both hope and spiritual perspective to influence their PWB. When speaking to participants about this finding, several women commented that hope coupled with spirituality was necessary in order to cope. The path analysis demonstrates that hope appears to function as a fulcrum. Essentially, hope affects PWB in three ways: directly, coupled with sense of coherence, and coupled with spiritual perspective. Previous studies clearly demonstrate the significance of hope and coping with cancer.<sup>9,11,21,23,24,34</sup> The current study concurs with these previous findings. Further research is necessary to determine the specific impact hope has on coping by AABCS.

Spirituality has been shown to distinctly influence AA health beliefs, practices, and outcomes.<sup>17</sup> While a number of studies have reported results concerning AA women and spirituality,<sup>7,26</sup> few have studied AABCS. The studies that have been completed included survivors from the Midwest or West Coast. Consequently, there is a need to explore further the

meanings of spirituality/religion in AABCS.

This study's results can also enhance clinical knowledge. Clinical faculty members can incorporate into curricula knowledge of salutogenic (health-promoting) effects of inner resources in AABCS. New, culturally appropriate nursing diagnoses and interventions can evolve that foster client psychosocial coping. Theories of salutogenic coping in varied populations can be tested to evaluate the global nature of the model. Examples include lower-income AABCS, AA women with other types of cancer, AA women with other chronic illnesses, AA men with cancer, and healthy AA women, using a breast health promotion variable such as mammography practice as the dependent variable.

Additionally, there are implications for further research. Most breast cancer research has been conducted using lower-income AA women; the current group of survivors had moderate incomes and were college-educated. These women had high religiosity and spiritual perspective scores. In addition, several survivors wrote details on their questionnaires of their belief, faith, and relationship to God. Hence, it is questionable whether the Spiritual Perspective Scale was culturally appropriate to this group of AA middle-income breast cancer survivors.

Several studies should follow the current research study. Psychometric analyses are needed of the instruments to evaluate their cultural appropriateness and cultural appropriateness for this group of survivors. Qualitative analyses are necessary of the participants' spiritual descriptions (that are further compared to psychometric analyses), of spirituality in varied groups of AABCS, and of latent variables that may represent inner resources (such as religiosity and social support). Longitudinal studies (over phases of survivorship) are needed to determine if changes occur in inner resources or PWB that can be attributed to phases of survivorship. Lastly, testing of therapeutic environments and/or interventions needs to be investigated to determine whether they increase the level of PWB, psychological adaptation, and/or survival. Immediate plans are to perform psychometric testing and qualitative analyses of the spirituality results in order to determine the need for a culturally appropriate spirituality instrument for AABCS. Once this is complete, further model testing will be performed to focus on factors that may strengthen the coping abilities of AABCS.

## Limitations

There were a number of study limitations. One was limited generalizability of study findings due to participants' residence and socioeconomic level.

Including larger numbers of women from geographic areas outside the southeastern United States, where lower socioeconomic levels were characteristic, would have provided a more heterogeneous sample. Additionally, including more outpatients would have enhanced generalizability.

Measurement error may have affected the ability of the model to explain the variance.<sup>32</sup> The questionnaire was administered at varying times of day over a 7-month period. It is possible that time of day might have influenced responses. It is also possible that participants gave socially desirable responses to the researcher-administered instruments; however, when the socioeconomic characteristics (age, education, income level) were compared with those who self-administered and the researcher-administered participants, there were no significant differences.

Lastly, the proposed Model of Inner Resources explained 43% of the variance in PWB. It is possible that the selected instruments lacked the cultural appropriateness to test these constructs from the AABCS perspective. Further research is planned to test the cultural appropriateness of each instrument. This study should be replicated using culturally appropriate instruments.

## Conclusions

This was a significant study whose primary goals were successfully accomplished. The major findings supported the proposed hypotheses as well as the theoretical model. The Gibson Model of Inner Resources, a culturally appropriate model designed for AABCS, withstood many of the rigors of empirical testing. Future study may identify other inner resources that enhance PWB and perhaps survival in AABCS.

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