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## Development of the Ways of Helping Questionnaire: A Measure of Preferred Coping Strategies for Older African American Cancer Survivors

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### Abstract

Although researchers have identified beneficial coping strategies for cancer patients, existing coping measures do not capture the preferred coping strategies of older African American cancer survivors. A new measure, the Ways of Helping Questionnaire (WHQ), was evaluated with 385 African American cancer survivors. Validity evidence from factor analysis resulted in 10 WHQ subscales (Others There for Me, Physical and Treatment Care Needs, Help from God, Church Family Support, Helping Others, Being Strong for Others, Encouraging My Healthy Behaviors, Others Distract Me, Learning about Cancer, and Distracting Myself). Reliability evidence was generally strong. Evidence regarding hypothesized relationships with measures of well-being and another coping measure was mixed. The WHQ's content coverage makes it especially relevant for older African American cancer survivors.

### Keywords

coping; social support; African Americans; cancer; instrument development

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Cancer mortality rates for African American men and women are 35% and 18% higher than for Caucasian men and women, respectively, and higher than the rates for all other U. S. minority populations (American Cancer Society, 2008). The occurrence of cancer increases with age, with the majority of cancer cases occurring in persons 55 years and older; thus major burdens are experienced by individuals who are both older and African American (Deimling et al., 2006).

Coping is generally conceptualized as cognitive and behavioral strategies used to manage threatening situations or problems (Lazarus & Folkman, 1984). Researchers have conceptualized coping in cancer patients as the adoption of attitudes and behaviors that lead to psychological adjustment and emotional well-being (Carver et al., 2005; Kneier, 2003; Reynolds et al., 2000). However, these descriptions do not consider potential differences in coping strategies used among various racial/ethnic groups. African American cancer survivors cope primarily through seeking out the support that comes from a personal

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relationship with God (Hamilton, Powe, Pollard, Lee, & Felton, 2007; Henderson, Gore, Davis, & Condon, 2003; Polzer & Miles, 2007) and engaging in dynamic social relationships where support is given and received (Hamilton & Sandelowski, 2004; Henderson et al.; Schulz et al., 2008). In this report, we describe efforts to develop a new measure that could be useful in discerning these preferred coping strategies used by older African American cancer survivors. For clinicians, this instrument could be administered individually for diagnostic purposes, to guide interventions that optimize culturally relevant coping strategies, and to evaluate the effectiveness of interventions.

Seeking out the support that comes from a personal relationship with God is a frequently used coping strategy among African American cancer survivors and is a source of comfort and strength (Hamilton & Sandelowski, 2004; Henderson et al., 2003). Faith in a higher power or a personal relationship with God has been shown to be positively correlated with strengths of familial relationships (Morgan et al., 2005), the use of health care services (Dessio et al., 2004), and psychological well-being (Gibson & Parker, 2003). When faced with adversity, many African Americans turn to God, who is described as always present and able to help in situations where mortal beings cannot (Mbiti, 1999; Wilmore, 2000). This coping strategy is evident in research with African American cancer survivors who report trusting only God with information about cancer-related worries and consulting God first for help with treatment-related decisions (Hamilton et al., 2007; Henderson et al.). Post-treatment African American cancer survivors have reported that God provided help through healing, taking away worries, and sending others to help when needed (Hamilton, 2001).

Another frequently used coping strategy among African Americans is seeking out and giving support through complex and dynamic networks of family, friends, and neighbors (Hamilton & Sandelowski, 2003; Powdermaker, 1937/1993). Historically, extended families in African American communities have functioned collectively to pool their resources, a coping strategy that has helped them survive generations of racial oppression and economic hardship (Jones, 1995). African American cancer survivors benefit in several ways from this informal system of mutual aid, which helps older African Americans adjust during a cancer diagnosis, treatment, and post-treatment (Hamilton & Sandelowski, 2004; Henderson & Fogel, 2003).

There appear to be important racial/ethnic differences in strategies used to cope with the cancer experience. African American and Caucasian populations use similar coping strategies of acceptance, problem solving, cognitive reframing, and positive thinking (Carver et al., 1993; Deimling et al., 2006). However, problem solving strategies (e.g., making a plan of action and seeking treatment-related information) are used less frequently by African Americans (Steffen, Hinderliter, Blumenthal, & Sherwood, 2001; Thomas, Morris, & Harman, 2002). Among African Americans, the preference to use certain coping strategies over others may be shaped by the experience of racism and oppression, as well as by deeply rooted religious beliefs (Raboteau, 1978; Williams, 2003).

Several established measures evaluate the frequency and effectiveness of coping strategies used by cancer survivors. The measures most frequently used are the revised Ways of Coping Questionnaire (Dunkel-Schetter, Feinstein, Taylor, & Falke, 1992; List et al., 2002; Reynolds et al., 2000), the COPE Inventory (Carver, Scheier, & Weintraub, 1989; Green, Pakenham, Headley, & Gardiner, 2002), and the Jalowiec Coping Scale (Jalowiec & Powers, 1981; Kuo & Ma, 2002). These measures, however, were derived from research conducted with predominately Caucasian populations (Carver et al., 1989), and may not be valid for use with older African American cancer survivors.

There are four areas of concern. First, items in these scales are generally written in a language not used or familiar to older African Americans. For example, to capture coping via positive appraisal, items in existing measures are: “[I] rediscovered what is important in life” or “[I] changed or grew as a person in a good way” (Dunkel-Schetter et al., 1992, p. 83). For older African Americans, the language used to express this form of appraisal is more likely to be: “I believe that God is keeping me here for a reason” or “My illness has made me stronger” (Hamilton, 2001, p. 91).

Secondly, existing instruments place little or no emphasis on religious coping strategies. These strategies include not only engaging in religious practices (church attendance, church activities, and prayer) but also support seeking strategies used by persons who perceive God to be a higher power. Examples of ways African American cancer survivors might express their spirituality are: “I can talk to God about my problems and He hears me every time” and “God spoke to me and told me this was not it [referring to time to die]” (Hamilton, 2001, p. 89).

A third concern is that the current measures emphasize help received from others, but ignore the benefits derived from giving help to others. As a coping strategy, helping others during times of hardship such as occurs with cancer can be a form of distraction (Hamilton, 2001; Schwartz & Sendor, 1999), a method of achieving internal rewards (Archbold, Stewart, Greenlick, & Harvath, 1990; Picot, 1995), or a means of staying connected to religious communities (Wilmore, 2000). For older African Americans with strong religious values, acts of being in service to others are believed to be rewarded with an eternal life in heaven. Historically, religious doctrine encouraged African Americans to lift themselves out of earthly suffering and to be “soldiers of the Cross of Christ, working for a better world for themselves and their children” (Wilmore, p. 262).

Finally, the existing coping measures, which were developed for use with majority populations, may not be valid when used with minority populations. For example, factor analysis of the Ways of Coping Scale produced eight factors in research with Caucasian, middle-class participants (Dunkel-Schetter et al., 1992) but only three factors with low-income African American women (Smyth & Yarandi, 1996). Lack of evidence supporting validity has been reported in other measurement studies in which instruments developed for use among Caucasians were evaluated for use among African Americans (Dishman et al., 2006; Johnson et al., 2007).

Qualitative research with African American cancer survivors suggests that some of their unique coping strategies have been largely ignored in the conceptualizations and measurement of coping (Hamilton & Sandelowski, 2004; Henderson et al., 2003). Differences in coping strategies used by various racial/ethnic groups have not been examined, and existing coping measures do not capture cultural influences on coping strategies used in the context of cancer (Guidry, Torrence, & Herbelin, 2005). Thus, a necessary next step in determining the health benefits derived from these unique coping strategies is the development of a culturally relevant coping measure for older African American cancer survivors.

## Methods

This measurement study consisted of three phases: (a) a qualitative component examining how African Americans cope with cancer, (b) a content validity evaluation of the items generated from the qualitative data, and (c) psychometric evaluation of the Ways of Helping Questionnaire (WHQ) with African American cancer survivors to obtain preliminary estimates of reliability and construct validity.

## Phase 1: The Qualitative Component

In-depth interviews were conducted with 28 African American cancer survivors to explore their coping strategies. Cancer survivors were defined as those who had ever experienced cancer; they might be still in treatment or post-treatment. Participants were selected to represent a range of demographic variables that have been previously found to be related to choice of coping strategies. These variables were gender (women give more support than they receive; Chatters, Taylor, & Jayakody, 1994), education (those with higher levels of education are more involved in their communities and obtain more support; Matthews, Stansfeld, & Power, 1999; Roberts, Cox, Shannon, & Wells, 1994), marital status (single African Americans receive more support than those that are married; Jayakody, Chatters, & Taylor, 1993), geographic location (urban vs. rural; Chatters et al., 1994), and proximity to family--living alone or with someone (living in close proximity to family or loved ones is related to positive coping strategies and support; Chatters et al.)

The 28 African American cancer survivors in this phase of the study were selected from participants who had completed one of three National Institutes of Health-funded studies—Managing Uncertainty: Self-Help in Breast Cancer Study (M. Mishel, PI); Promoting Self-Help: Underserved Women with Breast Cancer Study (C. Braden, PI); and Managing Uncertainty In Stage B or Early Stage C Prostate Cancer (M. Mishel, PI). A total of 291 women and men participated in these three studies, in each of which a psychoeducational intervention was delivered to women being treated for breast cancer and men being treated for prostate cancer.

Approval for this phase of the study was obtained from the Institutional Review Board at the University of North Carolina at Chapel Hill, NC. Informed consent was obtained from participants prior to interviews. The first author conducted in-depth interviews with each participant to elicit descriptions of experiences with coping and social support during the diagnosis, treatment, and post-treatment periods of their cancer trajectory. Participants were interviewed once in their homes, and each interview lasted from 45 minutes to 2 hours. Each interview started with a general request: “Tell me about your experience with cancer.” Other general questions included “What helped you through that experience?” and “What has been helpful to you since your diagnosis, and why was that important to you?” As the interviews progressed, the questions became more directed so that researchers could pursue analytic lines that had emerged in previous interviews (Hamilton, 2001).

New participants were interviewed until informational redundancy in each gender group and theoretical saturation of the typology was achieved (Sandelowski, 1995). The average age of these 28 participants interviewed was 63 years ( $SD = 10.1$ , range 42 to 87), and their average educational level was 14 years ( $SD = 3.9$ , range 8 to 24). At the time of the interview, a majority were married ( $n=18$ , 64%) and retired or on medical leave from their jobs ( $n=21$ , 75%) (Hamilton & Sandelowski, 2003, 2004).

Coping strategies derived from the qualitative study were grouped into four plausible domains. The first domain, *Help Received*, consisted of emotional, instrumental, and informational support received from family and friends. Emotional support was the presence of others (i.e., the knowledge that someone would be there for them throughout the cancer experience). Instrumental support was categorized as the support that cancer survivors received that helped them to maintain religious practices and social roles in the home, church, or community. Informational support was categorized as the help survivors received when others advocated for them and helped them get their questions answered about their cancer and treatments.

*Help Given to Others*, the second domain, included activities that cancer survivors engaged in that resulted in feelings of being connected to and supported by their network of family and friends. For example, cancer survivors felt connected to others through sharing information related to their cancer with family members and friends, or giving emotional support to other cancer survivors. Acts of giving also provided survivors a sense of being needed, and a sense that their cancer experience was beneficial to others.

The third domain, *Help from God*, was coping through a personal relationship with God and perceiving that help and support comes from God. Many cancer survivors believed they received help and support through this personal relationship with God that was not available through other relationships. For example, the strength to endure pain during the cancer experience was perceived as a type of support from God.

*Self-Help Strategies* was the fourth domain. Through a history of learned self-reliance, many of these older African Americans used self-help strategies to cope with their cancer (Poussaint & Alexander, 2000), including behaviors or thoughts that distracted them from their cancer, such as staying busy, praying, meditating, and thinking positively.

Data from these four domains were used to write initial items for the Ways of Helping Questionnaire (WHQ). Since almost all of the participants in Phase 1 were over the age of 50 and the focus of the first authors' research shifted to older populations during postdoctoral training, the remaining 90 items from the four domains were written in a vernacular considered culturally relevant for older African Americans.

## Phase 2: Content Validity Evaluation

Content validity evaluations of the WHQ consisted of assessments of clarity of items and directions from gerontological peer reviewers, assessments of clarity, relevance, and completeness using cognitive interviewing with African American cancer survivors, and calculation of the content validity index with content experts.

Two groups (a group of 7 pre- and postdoctoral gerontological fellows and a group of 5 faculty with expertise in caregiving, coping, and social support for chronically ill elders) were asked to identify items that were confusing or not clear. Based on feedback from these groups, several items were revised for clarity, and 9 items were identified as redundant and deleted. No items were added.

To conduct a pilot test of the WHQ, the remaining 81 items were then assembled in a format amenable to self completion or administration by interview. Instructions were included in headers throughout the questionnaire that instructed survivors to tell us whether types of help were given or received and the extent to which they believed items were applicable to their situation since being diagnosed with cancer. A 5-point response format was chosen (0=*not at all/does not apply*, 1=*a little*, 2=*some*, 3=*a lot*, and 4=*all the time*). Readability of the instrument was estimated at 7<sup>th</sup> grade using the SMOG formula (McLaughlin, 1969).

To obtain feedback on the clarity of the directions, the items, and the layout of the questionnaire, the WHQ was administered to a small sample ( $n=32$ ) of community-dwelling African American cancer survivors. Approval for this phase of the study was obtained from the Institutional Review Board at the Oregon Health & Science University, and consent was obtained prior to each interview. The average participant was 65 years old (range 52 – 84), female, diagnosed with breast cancer, college educated, and privately insured, with an annual income of at least \$20,000. Participants were currently living in the Pacific Northwest but had been born in the Southern United States. All interviews were conducted by the first author in the participants' homes.



The cognitive interviewing technique of concurrent thinking out loud was used to determine how the question was understood, whether the question was relevant, and whether they used coping strategies that were missing (Knafl et al., 2007; Warnecke et al., 1996). Open-ended questions were placed at the end of the questionnaire to elicit feedback as to whether the questionnaire was boring, too time consuming, or emotionally upsetting. All participants reported understanding the directions and were able to complete the WHQ easily. Participants provided feedback on the clarity of directions, appropriate wording of items, and layout of the questionnaire. Based on feedback from these participants, 11 items were deleted for lack of clarity or potentially offensive wording. We examined the distribution of responses of the 32 participants to the items. No subscales were computed or analysis was conducted with this sample.

Content validity of the remaining 70 items was evaluated using the quantification stage and the Content Validity Index (CVI) described by Lynn (1986). A panel of four experts was chosen based on their expertise in research with coping, oncology, or African American elders. One panel member was an African American cancer survivor. Panel members were provided with general information about the scale and instructions for conducting the content validity evaluation. The rating form contained theoretical definitions, critical attributes, and the 70 items to rate on a 4-point scale for relevance and clarity. Panel members were asked to provide feedback on items needing revision or deletion and to identify any missing content. Based on the experts' evaluation, the CVI was determined to be .90. Four items were viewed as conceptually inconsistent with coping and deleted, 11 items on religious beliefs were deemed inappropriate content and deleted. Following the expert opinion of an anonymous NIH Reviewer, eight items were added to the WHQ to capture support received when the older African American survivor is in active treatment. The final WHQ scale consisted of 63 items, although one item was reworded for clarity during the study and therefore is excluded from analysis, yielding a total of 62 items.

### Phase 3: Preliminary Psychometric Evaluation of the WHQ

The preliminary psychometric evaluation of the WHQ involved identifying its underlying factors, computing subscale scores and examining score distributions, conducting item analysis and estimating reliability, and examining the evidence regarding the relationship between WHQ subscale scores and other theoretically-related variables. One validity focus was evidence based on internal structure, which refers to the dimensions that constitute the construct of preferred coping strategies of African American cancer survivors; factor analysis was used for this evidence. A second validity focus was on evidence based on relations with other variables and was provided by the extent to which WHQ subscale scores correlate with external criteria.

**Sample**—Preliminary psychometric evaluation of the WHQ was conducted with a convenience sample of 385 African American cancer survivors having a mean age of 64.1 years,  $SD = 8.0$ , range = 50 – 89 (see Table 1 for detailed demographics). Participants were recruited from outpatient oncology clinics located in a large metropolitan area in the Southeastern United States. Approval for this phase of the study was obtained from the Institutional Review Boards of Emory University and the University of North Carolina at Chapel Hill. Written informed consent was obtained after participants were screened for cognitive impairment with the Short-Form Mini Mental State Exam (MMSE; Paveza, Cohen, Blazer, & Hapogian, 1990; Schultz-Larsen, Lomholt, & Kreiner, 2007). More participants had breast cancer than any other form of cancer, and approximately 40% had been diagnosed within 1 year of their interview. Nearly all of the participants had lived most of their lives in southern states and were affiliated with Baptist churches. The participants were primarily unskilled laborers (37%), machine operators (21%), and skilled manual

laborers (15%). Most of these survivors were not working, many for reasons related to their health.

**Data collection procedures**—Questionnaires were administered in a face-to-face interview format either in a private consultation room while the patient was waiting for a health-related appointment or, if participants preferred, in their home. Participants responded positively to the interviews and were able to complete the questionnaires in 1 hour or less. At the time of the interviews, no participants had severe cognitive impairment.

**Instruments**—Selection of measures to be used in the assessment of construct validity was based on cancer research, which showed positive associations between coping strategies and close relationships with family and friends (Kayser & Sormanti, 2002; Murtonen et al., 1998). Based on qualitative studies (Hamilton & Sandelowski, 2003, 2004; Henderson & Fogel, 2003) and other empirical data (Downe-Wamboldt, Butler, & Coulter, 2006; Walker, Zona, & Fisher, 2006), we hypothesized that the domains of the WHQ (as a coping measure) would correlate with three aspects of well-being: relationship, physical, and mental. We also examined associations of WHQ subscales with subscales of an established coping measure to see if any subscales on the two measures were highly correlated, thus measuring similar factors.

The 10-item scale *You, Your Family and Friends* was used to measure mutuality, defined as relationship well-being between participants and their family and friends; the scale was adapted from a 15-item Mutuality scale designed for use with family caregivers and their frail or ill older relatives (Archbold et al., 1990). The magnitude of the score indicates the degree to which relationships are characterized by love, shared pleasurable activities, and reciprocity, using a 5-point response format, ranging from 0 = *not at all* to 4 = *a great deal*. There is evidence that worsening health in ill older adults over a period of 20 months was associated with declines in their mutuality with a family caregiver (Lyons, Sayer, Archbold, Hornbrook, & Stewart, 2007) highlighting the relevance of mutuality for this study of cancer survivors. In previous caregiving research with Caucasians and African Americans, Cronbach's alphas were .90 to .95. Cronbach's alpha in the current study was .84.

The *Short Form 36 Health Survey Questionnaire (SF-36)* (version 2) is commonly used as a measure of well-being with both African American and Caucasian populations (Ware & Kosinski, 2005). Constructed for self-administration by persons 14 years of age and older or administration by trained interviewers, the SF-36 includes a physical component summary (PCS) and a mental component summary (MCS). The PCS measures general physical health, capturing limitations in physical function, role limitations due to physical health problems, bodily pain, and general health. The MCS measures general mental health, limitations in usual role activities because of emotional problems, vitality (energy and fatigue), and social functioning. Reliability estimates for the two summary scores range from .71 to .89 among elderly populations (Ware & Kosinski). Cronbach's alphas in the current study were .83 (PCS) and .85 (MCS).

The revised *Ways of Coping-CA Questionnaire (WOC-CA)* was selected to assess the construct validity of the WHQ factors through correlation with a published measure of coping. The WOC-CA was adapted from an earlier version of the Ways of Coping (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986) for use with cancer populations (Dunkel-Schetter et al., 1992). It has been used among African American and Caucasian cancer populations (Gustafsson, Edvardsson, & Ahlstrom, 2006; Reynolds et al., 2000). The WOC-CA consists of 52 items in five subscales (Seeking or using social support, Cognitive-escape avoidance, Distancing, Focusing on the positive, and Behavioral-escape avoidance). Response options are (0) *does not apply/never*, (1) *rarely*, (2) *sometimes*, (3)

*often*, (4) *very often*. Previously reported Cronbach's alpha reliability estimates for these subscales ranged from .74 to .86 (Dunkel-Schetter et al.). Validity has been supported by correlations to emotional distress ( $r = .22$  to  $.25$ ; Dunkel-Schetter et al., 1992). Cronbach's alphas for subscales in the current study ranged from .61 to .83.

**Planned analyses**—All analyses were conducted using SPSS 16.0. To obtain evidence regarding the internal structure of the WHQ, we conducted exploratory factor analysis of the 62-item WHQ, following approaches recommended by Floyd and Widaman (1995) and Tabachnick and Fidell (2007). When items are not normally distributed, Fabrigar, Wegener, MacCallum and Strahan (1999) recommend using principal axis factoring (PAF) over maximum likelihood. Although factor analysis assumes variables are continuous, the 5-point rating scales approximate continuity (Armstrong, 1981) and warrant the use of this approach to examine structure.

WHQ subscales were computed by averaging responses on items with primary loadings on each factor. Descriptive statistics were used to describe subscale distributions. Cronbach's alpha was used for internal consistency reliability. Pearson correlations were used for inter-item and item-total correlations in item analysis and for test-retest reliability. Test-retest reliability of the WHQ was examined by administering the WHQ at least 2 weeks but not more than 3 weeks after the initial administration to a subsample of 61 cancer survivors.

To obtain evidence of relations of WHQ subscales with other variables, we computed Pearson correlation coefficients between WHQ subscales and other measures. Of the 385 African American cancer survivors who completed the WHQ, 281 also completed three measures of well-being (mutuality, SF-36 mental and physical health components) and an established measure of coping in cancer patients (WOC-CA). See Table 1 for a summary of the demographics of these participants. Because there were 50 possible correlations between the WHQ and WOC-CA and the analysis was exploratory, a Bonferroni adjustment was made to keep the Type I error rate at .05.

#### **Construct validity results for the WHQ: Evidence based on internal structure**

—We conducted principal components analysis as an initial step to identify the number of factors of the WHQ. The Kaiser-Meyer-Olkin (.85) and Bartlett's test of sphericity, approximate  $\chi^2(1,891, N = 385) = 8959.04, p < .001$ , supported the factorability of the correlation matrix. After examination of the "elbow" of the scree plot, it was determined that between 7 and 11 factors might best represent the underlying WHQ dimensions. PAF with direct oblimin rotation was then used to evaluate the WHQ's underlying dimensions with 7, 8, 9, 10, and 11 factors. Items were deleted from further analysis if factor loadings from the rotated pattern matrix were less than .35 or had cross loadings closer than .15 (Pett, Lackey, & Sullivan, 2003).

The amount of missing data was extremely small; 366 survivors (95.1%) had complete data on the 62 WHQ items, 8 (2.1%) did not answer one item, and 11 (2.9%) did not answer eight items because the items were not included in their questionnaire. Because these 11 had complete data on the other 54 WHQ items, they were included in the factor analysis, and mean substitution was used to account for missing data.

The 10-factor solution was the most parsimonious and included 38 items, explaining 53% of the variance (see Table 2 for factors and sample items). Initial eigenvalues from the 10-factor PAF were 6.87, 2.51, 2.40, 2.18, 1.61, 1.33, 1.10, 1.01, 0.65, and 0.52. Although factors with eigenvalues less than 1.0 are not commonly retained, Floyd and Widaman (1995) stated that "factors having eigenvalues considerably less than 1.00 may be retained" (p. 292) and Tabachnick and Fidell (2007) reminded researchers that, despite marginal



reliability, the last few factors can “represent the most interesting and unexpected findings in a research area” (p. 646). We chose to retain the last two factors because they improved the match between the internal factor structure and the domains identified in the Phase 1 qualitative study.

Because two-thirds (30/45) of the factor intercorrelations from the oblique rotation had absolute values less than .20 and only 7 of 45 were in the modest range (.32 –.38), a varimax rotation was also examined. The WHQ items that loaded on each factor were identical in the oblique and varimax rotations. Because the Sum of Squared Loadings (SSL) for rotated factors have ambiguous meanings after oblique rotation but not after orthogonal rotation, results from the varimax rotation are reported in Table 3 with factors listed in order of their SSL.

Each of the rotated factors accounted for between 3.0% and 7.3% of the total variance, and rotated factor loadings ranged from .39 to .92. Community estimates, indicating the proportion of variance in each item explained by the 10 factors, included 14 items with high communality estimates (.60 and above), 13 moderate (.40 –.59), and 11 low (.20–.39).

The first factor, Others There for Me, reflects support from the emotional presence of family members and friends that provides a sense of comfort in knowing that others will be there to share the burden of cancer, that the survivor will not be abandoned. The second factor, Physical Care and Treatment Needs, reflects the types of instrumental support received during times of decreased physical functioning or during active cancer treatment. These items include help with shopping, errands, cleaning house, driving, and banking. Help from God, the third factor, consists of items that reflect coping through spiritual beliefs that God is an all-powerful figure available to provide healing and support throughout the cancer experience. The fourth factor, Church Family Support, reflects support from the church family to maintain religious practices, stay connected to religious communities, and maintain valued social roles. The fifth factor, Helping Others, reflects the experience of coping through encouraging others to be screened or treated for illness. The sixth factor, Being Strong for Others, reflects the value of needing to be strong and self-reliant in the context of adversity, with an emphasis on concealing aspects of one’s illness to keep others from worrying. The seventh factor, Encouraging My Healthy Behaviors reflects support from others that encourages and monitors the survivor’s healthy behaviors. The eighth factor, Others Distract Me, reflects support from family and friends to distract the cancer survivor from negative, intrusive thoughts, and encouraging their participation in physical or social activities. The ninth factor, Learning about Cancer, reflects the support from family and friends to assist the cancer survivor to learn more about their cancer. The tenth and final factor, Distracting Myself, consists of items that reflect survivors’ efforts to distract themselves from the situation, for example, by keeping occupied and taking time to be alone.

**WHQ subscales and descriptive statistics**—Table 4 includes descriptive statistics for the 10 WHQ subscales as well as item analysis and reliability results. Subscale means varied widely. Being Strong for Others was the coping strategy least used by cancer survivors. Survivors reported highest coping use on Help from God, Others There for Me, and Helping Others. The remaining six subscales had mean values around the middle of the 0 to 4 response scale. For eight subscales, *SD* values were greater than 1.00, reflecting considerable variability in coping use across the possible 0 to 4 range of scores.

**Item analysis and reliability**—All subscales had a mean inter-item correlation above .30, with eight subscales above .40. Within a subscale, no inter-item correlation fell below .20. Most corrected item-total correlations fell within the recommended .30 to .70 range

(Ferketich, 1991; Nunnally & Bernstein, 1994), with four subscales having some item-total correlations greater than .75. Internal consistency was strong for 8 of the 10 subscales, with Cronbach's alpha values between .75 and .87; Cronbach's alpha was marginal for Learning about Cancer (.61) and Distracting Myself (.58). The test-retest estimates for the WHQ subscales ranged from  $r = .41$  to .78. One of the 10 subscales had test-retest reliability below .50 (Distracting Myself).

**Construct validity results for the WHQ: Evidence based on relations to other variables**—Validity evidence based on relations of WHQ subscales to relationship well-being was strong (see Table 5). Eight of the WHQ subscales correlated positively with mutuality, whereas a ninth, Being Strong, was negatively correlated with mutuality. Mutuality did not correlate with the WHQ subscale of Distracting Myself. The two WHQ subscales that correlated most highly with mutuality, Others There for Me and Church Family Support, both reflected coping by receiving support from others.

Validity evidence based on relations of WHQ subscales to physical and mental well-being was mixed. Survivors with better physical health, as reported on the SF-36, had higher scores on Help from God and Distracting Myself. Survivors with poorer physical health had higher scores on Physical Care and Treatment Needs, whereas inverse relationships among poorer physical health and Being Strong and Others Distract Me were not expected. Survivors with better mental health on the SF-36 scored higher on Others There for Me and Help from God whereas, survivors with poorer mental health scored higher on Being Strong. Four WHQ subscales had no significant correlation with either physical or mental well-being.

Validity evidence based on the correlations between WHQ subscales and WOC-CA subscales revealed that 9 of 50 correlations were statistically significant at  $p < .05$  and only 2 of these correlations exceeded .30. The WHQ subscale Learning about Cancer correlated .37 with the WOC-CA Social Support subscale. The WHQ subscale Being Strong correlated .31 with the WOC-CA Behavioral Escape subscale.

## Discussion

African American cancer survivors use coping strategies familiar to them. However, the practice of using instruments that emphasize the behaviors of the majority population as the gold standard disregards the coping strategies African Americans typically use in response to stressful situations. The WHQ was developed from qualitative research designed to capture those coping strategies that contributed to the social and psychological well-being of African American cancer survivors. The WHQ is designed for use in older African Americans with any type of cancer and the preferred strategies emphasized in this instrument are likely applicable for survivors at any phase in their trajectory. The survivors in this report come from the Pacific Northwest and the Southeastern United States and reflect variability in their demographic characteristics. Men and women are nearly equally represented and there is diversity in these older survivors' ages, education, history of employment, and marital status. Although the income level of these survivors are clustered on the lower end, the low incomes of the survivors in this report are consistent with that of the median income of older Americans (U. S. Department of Health and Human Services, 2005), but may also be attributed to their employment status of being retired or unemployed for health reasons.

Sample size requirements for factor analysis have changed in the past decade based on findings from Monte Carlo studies (MacCallum, Widaman, Preacher, & Hong, 2001). MacCallum et al. (p. 612) indicated that “rules of thumb are not valid and that the minimum

level of  $N$  is dependent on other aspects of design” including size of variable loadings, number of variables per factor, and communalities, and that if those aspects are strong, sample sizes of 150 or 200 may be ample. Because our average factor loading was  $\sim .60$ , and 70% of communalities were  $.40$  or greater, the sample size of 385 would be judged as somewhat better than adequate using current criteria.

The WHQ was found to have better than acceptable psychometric properties. Reliability for the WHQ, which included internal consistency and stability evaluations, generally exceeded those expected for a new instrument (Nunnally & Bernstein, 1994). Content validity of the WHQ was deemed acceptable by a panel of experts. With respect to construct validity, strong evidence supported both the 10-factor internal structure of the WHQ and the hypothesized association of WHQ subscales with relationship well-being. There was mixed evidence regarding the hypothesized associations of WHQ subscales with physical and mental well-being. Correlations of WHQ subscales with WOC-CA subscales were surprisingly modest.

Exploratory factor analysis supported a multidimensional WHQ with 10 subscales. The meaning of what is being measured by each subscale was informed by results regarding each subscale’s reliability, descriptive statistics, and correlation with measures of well-being and an existing measure of coping. The psychometric adequacy and conceptual meaning of each subscale is elaborated below.

On average, African American cancer survivors reported fairly high use of the coping factor measured by the 6-item subscale Others There for Me. Survivors scoring high on this factor also reported higher mutuality and mental health. The subscale, which exhibited good reliability, appears to measure a beneficial coping strategy.

Higher scores on the WHQ subscale Physical Care and Treatment Needs were associated with poorer physical health on the SF-36 but with higher levels of mutuality. Its inverse correlation with physical health, which was opposite our general hypothesis that coping would be positively associated with physical well-being, likely occurred because survivors with poorer physical health receive more instrumental support. The general hypothesis was not logical for this subscale. This inverse correlation also highlights the limitations of cross-sectional data and the inability to draw definitive cause-and-effect conclusions from such data. Survivors with high scores on Physical Care and Treatment Needs were more likely to report using cognitive escape avoidance on the WOC-CA. These findings are consistent with other studies that indicate that cancer survivors in poorer health and increased physical limitations are more likely to cognitively distance themselves from their disease (Dunkel-Schetter et al., 1992; Schroevers, Ranchor, & Sanderman, 2006). Overall, the Physical Care and Treatment Needs subscale appears sound.

Help from God was the only WHQ subscale positively related to all three well being measures—mutuality, physical health, and mental health. Further, those who reported receiving Help from God tended to use focus on the positive as a method of coping. It is not surprising that the older African American cancer survivors who were primarily Baptist and who turned to God for help would focus on the positive aspects of their situation, as this pattern of coping is the emphasis of their religious beliefs (Cone, 2002; Raboteau, 1978).

Scores on the Church Family Support subscale of the WHQ were positively correlated with mutuality and cognitive escape-avoidance and focus on the positive. These associations likely show that the cancer survivors are strongly connected to social networks within their churches that help them maintain an optimistic perspective about their cancer experience (Henderson et al., 2003; Mansfield, Mitchell, & King, 2002).

The fifth subscale, Helping Others, had the third highest mean value of the 10 subscales. It was positively associated with mutuality and the coping strategy of focusing on the positive. Perhaps involvement in activities whereby cancer survivors are giving help to others keeps them connected to reciprocal relationships and optimistic (Hamilton & Sandelowski, 2003).

The WHQ subscale Being Strong was negatively associated with mutuality, physical health, and mental health. Further, survivors who scored high on the Being Strong subscale tended to use distancing and behavioral escape-avoidance as coping mechanisms. We did not anticipate that the WHQ subscale Being Strong for Others would be negatively correlated with mutuality and physical and mental health. Being strong in the face of adversity has long been considered a positive attribute among African Americans (Poussaint & Alexander, 2000), however, the current analysis suggests that being strong may be a stress-inducing coping strategy when facing illness.

The WHQ subscale Encouraging My Healthy Behaviors was positively associated with mutuality. The positive correlation, however, was quite modest, suggesting that encouragement of health behaviors by others was not strongly related to either positive outcomes or other coping approaches. These weak construct validity findings, combined with a marginal test-retest reliability of .50, makes the interpretation and utility of this subscale unclear.

Others Distract Me was positively and strongly associated with mutuality and negatively associated with physical health. Among cancer survivors, more positive social interactions that provide support in the form of distraction are associated with less distress (Carmack Taylor et al., 2008; Christensen & Fatchett, 2002). Perhaps engaging the cancer survivor in physical and social activities provided the cancer survivor opportunities to engage in positive, supportive conversations with family and friends that were distracting. Although the association to physical health was modest, this inverse association suggests that survivors in poor health may have received more support from family and friends to distract them from stressful situations.

Learning about Cancer was positively associated with mutuality and coping through seeking social support, cognitive escape-avoidance, and focusing on the positive. Research suggests that African American cancer survivors seek out information less than other ethnic groups (Fogel, Ribisl, Morgan, Humphreys, & Lyons, 2008; Gordon, Street, Sharf, & Soucek, 2006). Consistent with this general finding, the mean of 1.83 for the Learning about Cancer subscale is not especially high. However, the subscale's correlation with the WOC-CA coping strategies suggests family and friends likely are important sources of information, and the receipt of such information probably encourages a positive attitude toward one's illness. Despite modest reliability, the subscale exhibits promise in measuring a beneficial coping approach.

Finally, the Distracting Myself subscale of the WHQ was positively correlated with better physical health. Cancer survivors with better physical health may have had the energy to engage in distracting behaviors. Moreover, the ability to engage in self-distracting behaviors such as staying busy with housework, yardwork, or community activities is likely to help cancer survivors avoid sources of fear and stigma that is pervasive within the African American community (Foster, 2007).

The WHQ has many potential uses in clinical practice and research. For example, it could be used in both settings to identify survivors in need of support to enhance their coping skills. As an assessment tool in the clinical setting, the measure could provide clinicians with areas where coping is inadequate and a target for a plan of care to meet the needs of the survivor. Information from this measure could also be used to foster more directed conversations with

family members who want to help the survivor move toward a positive survivorship experience. In research, the WHQ could be used in studies that seek to understand mediators or moderators of coping strategies among African American cancer survivors or to evaluate changes in these coping strategies over time. The WHQ could also be used in intervention studies as an outcome measure to assess the effectiveness of interventions designed to enhance the coping strategies of older African American cancer survivors.

In the current analysis, with the exception of the Help from God subscale of the WHQ, the variation in mean scores and large standard deviations suggests individual variability in patterns of how these survivors cope. Perhaps this variability reflects the diversity in survivor characteristics known to influence coping strategies. For example, our sample consisted of survivors of several types of cancers and at various phases in their cancer trajectory. Future analysis of this data will explore whether there are patterns of preferred coping strategies that cluster among these subgroups.

Despite the strengths of the WHQ, there are limitations. There is a distinct ceiling effect on the Help from God subscale. Its high mean is not surprising especially given the proportion of subjects in this study who were Baptist, a religion strongly rooted in the belief in God with established principles about God and how God works. Thus, the results from this study could possibly be different with older African Americans affiliated with different regional and religious groups. Despite its extremely skewed distribution, the subscale's correlations with physical and mental health suggest that help from God was useful in coping with cancer.

When test-retest reliability of the WHQ was examined, all but one of the correlations was at or above the recommended .50. The especially low test-retest reliability for Distracting Myself may reflect day-to-day fluctuations in survivors' coping strategies or the irrelevance of these items to the majority of this population.

The WHQ was modestly correlated with the WOC-CA, an established measure of coping. Although it could be disappointing not to find high or even moderate correlations between subscales of the WHQ and WOC-CA, it implies that the two coping instruments are tapping into different dimensions, highlighting the distinctiveness of coping strategies used by African American cancer survivors compared to the majority population.

Finally, because instrument development is an iterative process, further studies are needed to continue with conceptualization and refinement of items in the WHQ and to confirm the factor structure reported here. For example, based on data from our qualitative research, we hypothesized four domains of coping that included a subcategory of Being Strong for Others. However, the negative associations of Being Strong for Others with mutuality, physical health and mental health indicates that coping by hiding one's illness and hiding information about one's illness is unproductive. In future evaluations and refinement of the WHQ, additional items may be added or existing subscales expanded.

The WHQ is a new measure of coping that shows promise in addressing the need for coping instruments that are reliable and valid for use with older African American cancer survivors. It should prove useful in research and clinical settings to assess older African American cancer survivors' coping and support needs. The preliminary evidence about the reliability and validity of the WHQ suggests that this new measure of preferred coping strategies of older African American cancer survivors warrants continued investigation.



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Table 1

## Demographic Characteristics of Samples

Variable	Category	Factor analysis (n = 385)		Construct validity (n = 281)	
		n	%	n	(%)
Gender	Female	236	(61.3)	170	(60.5)
	Male	149	(38.7)	111	(39.5)
Marital Status	Married/partnered	105	(27.3)	80	(28.5)
	Widowed	98	(25.5)	71	(25.3)
	Divorced/separated	140	(36.4)	104	(37.0)
	Never married	41	(10.6)	25	(8.9)
Education	6 <sup>th</sup> grade or less	19	(4.9)	15	(5.3)
	Some high school (7 – 11)	134	(34.8)	93	(33.1)
	High school diploma/GED	119	(30.9)	89	(31.7)
	Some college	66	(17.1)	46	(16.4)
	Completed college	27	(7.0)	20	(7.1)
	Graduate/professional school	16	(4.2)	14	(5.0)
Employment	Full-time	23	(6.0)	15	(5.3)
	Part-time	16	(4.2)	11	(3.9)
	Retired	133	(34.5)	97	(34.5)
	Unemployed	213	(55.3)	158	(56.2)
Income	< \$10,000	183	(47.5)	128	(45.6)
	\$10,000 – \$19,999	92	(23.9)	66	(23.5)
	\$20,000 – \$29,999	32	(8.3)	25	(8.9)
	\$30,000 – \$39,999	14	(3.6)	9	(3.2)
	\$40,000 – \$49,999	15	(3.9)	11	(3.9)
	> \$50,000	31	(8.1)	25	(8.9)
		137	(35.6)	89	(31.0)
Type of cancer	Breast	43	(11.2)	31	(11.3)
	Colon	44	(11.4)	30	(10.6)
	Head and neck	64	(16.6)	48	(16.8)
	Lung	38	(9.9)	28	(10.2)
	Prostate				



Variable	Category	Factor analysis (n = 385)		Construct validity (n = 281)	
		n	%	n	(%)
Time since diagnosis	Other	57	(14.8)	54	(19.7)
	0 – 6 months	84	(21.8)	69	(24.6)
	6 – 12 months	47	(12.2)	36	(12.8)
	1 – 2 years	67	(17.4)	52	(18.5)
	2 – 3 years	32	(8.3)	28	(10.0)
	≥ 3 years	107	(27.8)	90	(32.0)

Note: Some percentages total less than 100% due to missing data.

**Table 2**

## WHQ Factors, Number of Items, and Highest Loading Items

<b>Factor</b>	<b>Number of items</b>	<b>Two highest loading items</b>
1. Others There for Me	6	Have family members or friends been there with you through thick and thin? Do family members or friends let you know they will be there for you?
2. Physical Care and Treatment Needs	5	How much of the following kinds of help do you receive from family or friends ... Help to do your shopping or other errands? Help to clean your house?
3. Help from God	4	God gives me strength. God makes a way for me.
4. Church Family Support	5	Does anyone in your church call or come to visit you? Do others tell you about what is going on in your church or community when you can't get out?
5. Helping Others	3	Do you encourage someone else to get checked for an illness or disease? Do you encourage someone to go to a doctor when they are sick?
6. Being Strong for Others	3	Do you hide information about your illness to keep others from worrying about you? Do you keep your illness hidden to keep others from worrying about you?
7. Encouraging My Healthy Behaviors	3	Do family or friends encourage you to eat the right foods? Do family or friends encourage you to exercise?
8. Others Distract Me	3	Do family or friends take you shopping or other places to get your mind off your illness? Do family or friends keep you busy to take your mind off your illness?
9. Learning about Cancer	3	Do family or friends tell you about someone else who has had cancer? Have you been told what to expect from someone else who has cancer?
10. Distracting Myself	3	To keep my mind off my illness ... I do housework or yardwork. I try to stay busy.

**Table 3**

Results from Principal Axis Factor Analysis with Varimax Rotation for the 38-item Ways of Helping Questionnaire (N = 385)

Factor	Number of items	Rotated factor loadings	Communality estimates	Sum of Square Loadings SSI (% variance)
1. Others There for Me	6	.40 – .80	.38 – .71	2.76 (7.3%)
2. Physical Care and Treatment Needs	5	.58 – .85	.35 – .79	2.73 (7.2%)
3. Help from God	4	.47 – .92	.32 – .80	2.49 (6.6%)
4. Church Family Support	5	.48 – .75	.32 – .64	2.33 (6.1%)
5. Helping Others	3	.78 – .86	.65 – .80	2.22 (5.8%)
6. Being Strong for Others	3	.78 – .89	.62 – .80	2.16 (5.7%)
7. Encouraging My Healthy Behaviors	3	.57 – .84	.38 – .74	1.78 (4.7%)
8. Others Distract Me	3	.47 – .65	.48 – .62	1.34 (3.5%)
9. Learning about Cancer	3	.44 – .59	.33 – .44	1.22 (3.2%)
10. Distracting Myself	3	.39 – .67	.25 – .48	1.14 (3.0%)

Table 4

Descriptive Statistics, Item Analysis, and Reliability for the 10 WHQ Subscales (N = 385; n = 61 for test-retest reliability)

WHQ Subscales	Number of items	Descriptive Statistics			Item Analysis			Reliability	
		M	SD	Skewness (SE)	Kurtosis (SE)	Inter-item correlations: mean (range)	Item-total correlations: median (range)	Cronbach's alpha	Test-retest reliability
1. Others There for Me	6	3.33	0.75	-1.50 (0.12)	2.94 (0.25)	.42 (.31 – .67)	.57 (.46 – .66)	.78	.68
2. Physical Care and Treatment Needs	5	1.76	1.23	0.21 (0.13)	-1.14(0.25)	.46 (.35 – .62)	.59 (.50 – .77)	.81	.76
3. Help from God	4	3.79	0.49	-4.54 (0.12)	27.89 (0.25)	.56 (.33 – .86)	.67 (.47 – .77)	.78	.78
4. Church Family Support	5	1.95	1.10	-0.04 (0.12)	-0.91 (0.25)	.42 (.31 – .53)	.54 (.50 – .66)	.78	.73
5. Helping Others	3	3.20	1.04	-1.31 (0.12)	1.02 (0.25)	.69 (.64 – .72)	.74 (.73 – .79)	.87	.48
6. Being Strong for Others	3	1.08	1.24	0.92 (0.12)	-0.29 (0.25)	.69 (.64 – .73)	.74 (.72 – .78)	.87	.67
7. Encouraging My Healthy Behaviors	3	2.18	1.46	-0.26 (0.12)	-1.34 (0.25)	.50 (.40 – .61)	.57 (.50 – .66)	.75	.50
8. Others Distract Me	3	2.07	1.27	-0.18(0.12)	-1.03 (0.25)	.54 (.48 – .60)	.62 (.57 – .67)	.78	.53
9. Learning about Cancer	3	1.83	1.13	0.10(0.12)	-0.85 (0.25)	.34 (.29 – .42)	.44 (.36 – .46)	.61	.64
10. Distracting Myself	3	2.41	1.02	-0.55 (0.12)	-0.15 (0.25)	.31 (.25 – .42)	.43 (.30 – .44)	.58	.41

**Table 5**  
Pearson Correlations Between Ways of Helping Questionnaire (WHQ) Subscales and Measures of Well-being and Coping (N = 281)

Measures of Well-being and Coping	WHQ Subscales									
	Others There for Me	Physical Care and Treatment Needs	Help From God	Church Family Support	Helping Others	Being Strong	Encouraging My Healthy Behaviors	Others Distract Me	Learning About Cancer	Distracting Myself
Mutuality	.51***	.29***	.26***	.47***	.27***	-.21***	.16***	.43***	.26***	.02
SF-36 PCS	.00	-.34***	.16**	-.05	-.05	-.14*	-.05	-.13*	-.03	.16**
SF-36 MCS	.23***	-.10	.25***	.09	-.04	-.26**	.06	.00	-.04	.01
WOC-CA										
Social Support	.17	.11	.11	.19	.16	-.18	.18	.17	.37†	.11
Cognitive Escape	.13	.20†	.08	.20†	.13	.08	.17	.16	.24†	.10
Distancing	.05	.06	.18	.05	.13	.20†	-.06	.04	.10	.08
Focus on Positive	.14	.08	.19	.26†	.21†	-.05	.10	.13	.23†	.19
Behavioral Escape	-.16	-.06	-.15	-.10	-.04	.31†	-.04	-.13	.03	.13

Note. For correlations of WHQ with WOC-CA, a Bonferroni adjustment was employed to control for multiple testing. For an overall significance level of .05, a p-value of .05/50 tests = .001 was the cutoff for significance for each test. The symbol † is used to designate  $p < .001$  for Bonferroni-adjusted items. For the Mutuality scale and SF-36,

\*  $p < .05$ .

\*\*  $p < .01$ ,

\*\*\*  $p < .001$ .