Psychometric Properties of the Image of God Scale in Breast Cancer Survivors

Judy A. Schreiber, RN, PhD

The Image of God Scale (IGS) is a measure of how individuals perceive God's level of interaction in their lives and His quickness to anger (Bader & Froese, 2005). Recent studies have identified associations between an individual's view of God and specific behaviors and beliefs, both religious and societal (Froese & Bader, 2007; Maynard, Gorsuch, & Bjorck, 2001; Wong-McDonald & Gorsuch, 2004). Life principles and core goals or strivings are outward manifestations of an individual's worldview (Koltko-Rivera, 2004; Vidal, 2008). An individual’s view of God is thought to influence core strivings and life principles (Emmons, Cheung, & Tehrani, 1998; Maynard et al., 2001; Pargament, Magyar-Russell, & Murray-Swank, 2005). For that reason, one's view of God may be a key component in understanding how an individual deals with a stressful situation such as a diagnosis of cancer.

Studies in religious, sociologic, and psychological literature have used various measures of how an individual views God (Hill, 1995; Hill & Hood, 1999; Holm, 1995). Most of those instruments have had limited use in healthcare research, possibly because of their complexity. The healthcare literature is replete with studies of spirituality and religion. As a result, many measures exist of these constructs and a lack of consensus exists in defining them (Puchalski et al., 2009). In addition, a clinically useful method of classifying an individual’s image of God, apart from specific religions, has not been identified. The continual development of new measures of religion and spirituality may indicate that current measures do not satisfactorily answer key questions: Is there a way to assess religion and spirituality that is common to multiple religions and sects? Regardless of the god or gods worshipped, is there a perspective that reflects common behaviors and responses to the individual’s god? A quantifiable measure addressing those questions would contribute to a greater understanding of the relationships between religion and spirituality and health. Denominational or sect affiliation has not served as a good proxy measure for identifying an individual’s religious or spiritual response to threat, loss, or challenge stressors. Every major religion or belief system has more than one main division and within each main division are often multiple subgroups. As an example, Christianity can be grouped in the following ways: main divisions (Protestant

Purpose/Objectives: To examine the psychometric properties of the Image of God Scale (IGS) in a clinical population.

Design: Descriptive, cross-sectional.

Setting: University and community oncology practices in the southeastern United States.

Sample: 123 breast cancer survivors no more than two years from completion of treatment.

Methods: Scale reliability was determined with the coefficient alpha. Instrument dimensionality was examined using principal component analysis. Construct validity was evaluated by examining correlations with other instruments used in the study.

Main Research Variables: An individual’s image of God.

Findings: Internal consistency was strong (anger subscale = 0.8; engagement subscale = 0.89). The principle component analysis resulted in a two-factor solution with items loading uniquely on Factor 1—Engagement (8) and Factor 2—Anger (6). Significant correlations between the IGS and religious coping support convergence on a God concept. Correlations with psychological well-being, psychological distress, and concern about recurrence were nonsignificant (engagement) or inverse (anger), supporting discrimination between concepts of God and psychological adjustment.

Conclusions: The IGS is a unique measure of how God is viewed by the depth and character of His involvement with the individual and the world.

Implications for Nursing: The IGS may be a measure that can transcend sects, denominations, and religions by identifying the image of God that underlies and defines an individuals’ worldview, which influences their attitudes and behaviors.
and Catholic), Protestant subgroups (e.g., Baptist, Methodist, Episcopal, Lutheran, Presbyterian) and Catholic subgroups (Roman, Eastern Orthodox, and Russian Orthodox); each of those subgroups can be divided again into one or more sub-subgroups. Subgroups also are identified for Islam, Judaism, Hinduism, and Buddhism. Meaningful evaluation of outcomes based simply on religious affiliation would require extremely large samples because of the vast number of combinations within each division. How an individual views the character and behavior of God and how that individual defines him or her is one approach to classifying religion and spirituality that could surmount these issues and provide a clinically useful measure.

Two concerns led to the development of the IGS: the need for a measure that would (a) identify how an individual conceptualizes God, and (b) transcend denominational affiliations (Bader & Froese, 2005). Bader and Froese (2005) stated, “God’s attention and personality are crucial to the individual’s worldview and how she or he responds to life’s choices” (p. 8). The measures of God’s form and function in the IGS (engagement and anger) were based on the philosophical underpinnings of Baruch Spinoza and Gottfried Leibniz. In the mid-17th century, they engaged in a debate regarding God’s nature where Spinoza posited a God who is nature and Leibniz described God as a being who exists independent of the laws of nature and thinks, feels, judges, and interacts with His creation (Burnham, 2005; Waller, 2009). Current views of God’s autonomy or engagement with the world are grounded in this debate.

The purpose of this study was to examine the psychometric properties of the IGS in early breast cancer survivors. The specific aims of the current study were to (a) assess the internal consistency reliability of the IGS subscales of engagement and anger, (b) investigate the dimensionality of IGS, and (c) evaluate the construct validity of IGS via hypothesis testing. Instruments used in the process of construct validation included the Religious Coping Inventory (RCOPE) and Brief RCOPE (Pargament, Koenig, & Perez, 2000), the Scales of Psychological Well-Being (SPWB) (Ryff, 1989), Concerns About Recurrence Scale (CARS) (John- son Vickberg et al., 2001), and the 21-item Depression Anxiety Stress Scale (DASS-21) (Lovibond & Lovibond, 1995). The following hypotheses were tested.

• **H1**: The engagement subscale will be positively correlated with positive religious coping strategies and inversely correlated with negative religious coping strategies, measured by the RCOPE and the Brief RCOPE.

• **H2**: The anger subscale will be inversely correlated with positive religious coping strategies and positively correlated with negative religious coping strategies, measured by the RCOPE and the Brief RCOPE.

• **H3**: The engagement subscale will be positively correlated with psychological well-being, measured by the SPWB.

• **H4**: The anger subscale will be inversely correlated with psychological well-being, measured by the SPWB.

• **H5**: The engagement subscale will be inversely correlated with concerns about recurrence, measured by the CARS.

• **H6**: The anger subscale will be positively correlated with concerns about recurrence, measured by the CARS.

• **H7**: The engagement subscale will be inversely correlated with depression, anxiety, and stress, measured by the DASS-21.

• **H8**: The anger subscale will be positively correlated with depression, anxiety, and stress, measured by the DASS-21.

### Image of God Scale: Description, Administration, and Scoring

The 14-item IGS was developed by Bader et al. (2006) using data from a general population survey of 1,721 adults on religion. This self-report measure was developed to identify how individuals view who God is and what God does in the world (Bader et al., 2006). Froese and Bader (2007) identified two distinct dimensions via factor analysis: God’s level of engagement (i.e., the extent to which individuals believe that God is directly involved in worldly and personal affairs) and God’s level of anger (i.e., the extent to which individuals believe that God is angered by human sins and tends toward punishing, severe, and wrathful characteristics). Those engaged and judgmental images of God were associated with increased religious involvement, conservative religious beliefs, and political differences (Froese & Bader, 2007). The Cronbach alpha was 0.91 for engagement items and 0.85 for anger (Bader et al., 2006). Using those two dimensions, four images of God can be generated: benevolent, authoritarian, critical, and distant.

The eight engagement items and the six anger items are rated on a five-point Likert-type scale ranging from 0 (engagement: strongly disagree; anger: very unwell) to 5 (engagement: strongly agree; anger: very well). Three items of the engagement subscale are reverse scored. The mean scores of the two scales are used to divide the sample into four groups: above the mean on both subscales (Type A—Authoritarian), below the mean on both subscales (Type D—Distant), above the mean on engagement but below the mean on anger subscales (Type B—Benevolent), and above the median on anger but below the mean on engagement subscales (Type C—Critical) (C. Bader, September 17, 2007, personal communication).
Methods

Design and Sample

Data for this cross-sectional study were collected via surveys mailed to 440 women in the first two years of breast cancer survivorship immediately on completion of initial treatment. Included in the sample were 130 women from a university breast cancer clinic and from a community practice in the southeastern United States. The parent study was designed to evaluate differences in psychological well-being, depression, anxiety, stress, and concern about recurrence in women based on their image of God. Inclusion criteria were being at least 18 years of age and able to read and understand English. For the purposes of this study, only those with fully completed surveys were included (n = 123).

Measures

Situational religious coping: The RCOPE Short Form is a theoretically based 63-item measure that assesses the array of religious coping methods, including those perceived as helpful or harmful (Pargament et al., 2000), in two samples: college students and hospitalized older adults. The 21 subscales are combined into two dimensions, negative religious coping and positive religious coping. All items are rated on a four-point Likert-type scale, ranging from 1 (not at all) to 4 (a great deal). Cronbach alphas of 0.8 or greater were reported for the past week and are reported on a four-point Likert-type scale ranging from 0 (not at all) to 4 (a great deal). The brief scale has adequate internal consistencies (α = 0.6–0.9) in people coping with a trauma (Oklahoma City bombing), college students with major life stressors, and hospitalized older adult patients with serious medical problems (Pargament, 1999; Pargament, Smith, Koenig, & Perez, 1998).

Depression, anxiety, and stress: The DASS-21 is a set of three self-report scales designed to measure depression, anxiety, and stress (Lovibond & Lovibond, 1995). Responses are for the past week and are reported on a four-point Likert-type scale ranging from 0 (did not apply) to 3 (applied to me very much). A total score for each scale can range from 0 (no symptoms) to 21 (severe symptoms). Cronbach alphas have been reported for the three subscales ranging from 0.94–0.97 for depression, 0.87–0.92 for anxiety, and 0.91–0.96 for stress in a general adult population (Antony, Bieling, Cox, Enns, & Swinson, 1998; Brown, Chorpita, Korotitsch, & Barlow, 1997; Crawford & Henry, 2003). Test-retest reliability was adequate with alphas of 0.71 for depression, 0.79 for anxiety, and 0.81 for stress in clinical anxiety and mood disorder samples (Brown et al., 1997).

Concerns about recurrence: CARS (Vickberg, 2003) is a 30-item instrument devised to assess women’s fears about breast cancer recurrence. The subscales are divided into two parts: overall fear (four items), and the nature of the woman’s fears (26 items). Only the overall fear index was used in this study. It had a strong internal consistency (α = 0.87) in a sample of breast cancer survivors and is significantly correlated with all four CARS subscales (Vickberg, 2003). Higher scores indicate greater fear of recurrence. Responses range from 1 (I don’t think about it at all) to 6 (I think about it all the time). Convergent validity was supported by its correlations with the intrusive thoughts (r = 0.64, p < 0.001) and avoidance (r = −0.5, p < 0.001) subscales of the Impact of Events Scale, and the distress (r = 0.54, p < 0.001) and well-being (r = −0.44, p < 0.001) subscales of the Mental Health Inventory (Vickberg, 2003).

Psychological well-being: The SPWB (Ryff, 1989) is an 84-item instrument that measures the causes and consequences of positive psychological functioning. Six 14-item subscales are imbedded in the instrument:

### Table 1. Demographic Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td><strong>Educational status</strong></td>
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<tr>
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<td>34</td>
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<tr>
<td>College or university</td>
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<td>39</td>
</tr>
<tr>
<td>Graduate school</td>
<td>32</td>
<td>27</td>
</tr>
<tr>
<td><strong>Household income ($)</strong></td>
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<td></td>
</tr>
<tr>
<td>Less than 20,000</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>20,001–40,000</td>
<td>19</td>
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</tr>
<tr>
<td>40,001–80,000</td>
<td>44</td>
<td>36</td>
</tr>
<tr>
<td>80,001 or more</td>
<td>46</td>
<td>38</td>
</tr>
<tr>
<td>Did not report</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>Physician practice</strong></td>
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<td></td>
</tr>
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<td>Community</td>
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<td>60</td>
</tr>
<tr>
<td>University</td>
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<td>40</td>
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<tr>
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<td>56</td>
</tr>
<tr>
<td>Appalachia</td>
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<td>44</td>
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<td><strong>Religious affiliation</strong></td>
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<tr>
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<td>87</td>
</tr>
<tr>
<td>Catholic</td>
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<td>7</td>
</tr>
<tr>
<td>Jewish</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Other or Atheist</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

N = 123
autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Higher scores indicate a higher level of psychological well-being. Responses range from 1 (strongly disagree) to 6 (strongly agree), and half of the items are reverse scored. Alpha coefficients range from 0.83–0.91 for each subscale in young, middle-aged, and older adults, and correlations among the subscales ranged from 0.97–0.99.

**Procedure**

Institutional review board approval was obtained from the University of Kentucky before data collection was initiated. Informed consent letters and letters of support from the physicians were sent along with the packet of questionnaires. Follow-up was done using a modified Dillman method with a reminder postcard (Dillman, 1978). Consent to participate was completion and return of the questionnaires. No identifying information is associated with the returned questionnaires. The study packet was arranged based on the length of the questionnaires to allow for natural breaks and included the following questionnaires: IGS, SPWB, DASS-21, Brief RCOPE, RCOPE, CARS, and demographic information.

Reliability coefficients were determined by calculating Cronbach alphas for the IGS subscales. The dimensionality of the instrument was examined using principal components analysis. Construct validity was evaluated by examining correlations of the IGS with RCOPE and Brief RCOPE (Pargament et al., 2004), SPWB (Ryff & Keyes, 1995), DASS-21 (Lovibond & Lovibond, 1995), and CARS (Vickberg, 2003).

**Results**

**Sample**

The mean age of the 123 study participants was 56 years (SD = 11.3) and 99% were White (see Table 1).

Eighty percent were married or partnered and 34% had an educational level of high school or less. Twenty-two percent had incomes of $40,000 or less. Most of the women were from the community practice and Protestant. The women viewed God as not highly engaged (55%) and not highly angry (51%) and the four views of God were evenly distributed. Psychological distress, as shown by the DASS-21 total score, was present in 20%–30% of the women.

**Internal Consistency Reliability**

Descriptive statistics and reliability statistics of the IGS and its subscales are presented in Table 2. Actual scores cover the major portion of the potential ranges. Cronbach alphas were 0.8 for the anger subscale and 0.89 for the engagement subscale. Corrected item-total correlations ranged from 0.36–0.67 for the anger subscale and 0.54–0.79 for the engagement subscale. The Cronbach alpha was not substantially improved by the deletion of any one item for either subscale.

**Exploratory Factor Analysis**

The 14 items of IGS were subjected to principal component analysis (PCA) using SPSS®, version 19.0. Prior to performing PCA, the data were assessed for suitability for factor analysis. A review of the correlation matrix showed many coefficients of 0.3 and higher. The Bartlett’s Test of Sphericity was significant (p = 0.0001) and the Kaiser-Meyer-Olkin value was 0.74.
considered fair, supporting the factorability of the variables (Polit, 2009).

PCA yielded four factors with eigenvalues greater than one; however, the scree plot indicated two factors should be retained and rotated. Orthogonal (varimax) and oblique (direct oblimin) rotations were run retaining two factors. The varimax rotation yielded the best solution (see Table 3) and accounted for about 56% of the variance in the scores. All items loaded on one of the two factors with correlations ranging from 0.56–0.83. No items double-loaded. Factor 1–Engagement accounted for about 34% of the variance and Factor 2–Anger accounted for about 23% of the variance.

Construct Validity

The construct validity of the anger and engagement subscales was examined via correlations with measures of religious and spiritual coping and psychological well-being and distress. Intercorrelations of the subscales with the RCOPE and the Brief RCOPE are shown in Table 4. Weak positive correlations existed between the anger subscale and the positive and negative situational (RCOPE) religious coping strategy subscales; however, no significant correlations existed with the dispositional (Brief RCOPE) positive and negative religious coping strategy subscales. The engagement subscale was strongly and positively correlated with the positive coping strategy subscale of the situational RCOPE and with the positive and overall religious and spiritual coping strategy subscales of the dispositional Brief RCOPE. The engagement subscale had strong negative correlations with the negative religious and spiritual coping strategy subscales of the dispositional Brief RCOPE.

Weak negative correlations existed between the anger subscale and the total SPWB score and four of its six subscales (autonomy, environmental mastery, purpose in life, and self-acceptance) (see Table 5). The anger subscale demonstrated weak positive correlations with the CARS and all three DASS-21 subscales (see Table 6). The engagement subscale was not correlated with the total SPWB total score or any of its subscales, the CARS, or the DASS-21 subscales.

Discussion

Internal consistency of the IGS was strong (greater than 0.8), with similar reliability estimates for these breast cancer survivors compared with those reported for the general population (Bader & Froese, 2005). The results suggest that the IGS demonstrates adequate internal consistency reliability. The anger subscale had somewhat of a left skew, but a flat curve, which suggests that although the overall scores trended toward the belief that God is not very angry, responses were heavily weighted at the extremes. The engagement subscale was significantly skewed to the right with a strong peak in the curve. More survivors viewed God as somewhat to very engaged, which is similar to the data reported in the general population (Froese & Bader, 2007).

In the current study, the mean score for the engagement subscale was higher (X = 35.6, SD = 5.93), and lower for the anger subscale (X = 15.3, SD = 5.9), compared to the general population (engagement = 30.6, SD = 7.9; anger = 17, SD = 6.4) (Froese & Bader, 2007). Two potential explanations exist for this difference: (a)
individuals that are transitioning to the survivorship stage of a life-threatening disease may choose to view God as more benevolent and less angry to cope with their new reality, and (b) the participants live in a state that ranks in the top 10 most religious states according to a 2008 aggregate report of the Gallup Poll’s daily tracking data (Newport, 2009).

Dimensionality analysis supported the original two-factor solution for the IGS, belief in God’s engagement and belief in God’s anger (Bader et al., 2006). The two-factor solution is supported by the current study and measures distinct attributes of God.

This study provides initial evidence of construct validity of the IGS in breast cancer survivors. Correlations between the IGS and the RCOPE, Brief RCOPE, SPWB, CARS, and DASS-21 were in the expected directions and modest in magnitude. The engagement subscale was significantly correlated with all Brief RCOPE subscales and the positive coping strategies subscale of the RCOPE, but was not correlated with the negative coping strategies subscale. The anger subscale was significantly correlated with both subscales of the RCOPE and had no significant correlations with the Brief RCOPE. Although the IGS measures the image of God and the RCOPE and Brief RCOPE measure styles of religious coping, the correlations between the two measures support a concept of God as the focus of each.

Validation that the IGS is not measuring psychological domains was evaluated against the SPWB, CARS, and the DASS-21. The engagement subscale was not significantly correlated with any of the psychological variables. The anger subscale was inversely correlated with the total score and four of six subscales of SPWB and positively correlated with CARS, depression, anxiety, and stress (DASS-21). The lack of correlations between the engagement subscales and any measure of psychological well-being or distress demonstrates discrimination between concepts of God and psychological adjustment. Inverse correlations between the anger subscale and measures of psychological well-being and distress were significant but small. When breast cancer survivors viewed God as angry, they had lower psychological well-being scores and higher distress scores. The lack of considerable associations between the IGS and measures of psychological adjustment supports discrimination between the concept of God and psychological concepts.

Implications for Nursing

The IGS was developed from a general population survey to measure variation within theistic worldviews. People who acknowledge that God exists vary greatly in how they perceive His interaction with the world and with themselves. Two primary beliefs underlie the concept of God’s interactions with the world and individuals: the belief that God is engaged and the belief that God is angry. Breast cancer survivors adjusting to life with a potentially debilitating or ultimately deadly disease view the rest of their life through the lens of survivorship within their overarching worldview.

This study provides evidence that the IGS is an appropriate instrument that exhibited reliability and convergent and discriminate validity when assessing the image of God held by breast cancer survivors. The two-factor structure originally reported (Bader et al., 2006) was supported in this analysis. Additional research is warranted to test the instrument in more diverse cancer populations, in multiple regions of the United States, internationally, and across monotheistic, polytheistic, and deistic groups. Although many measures of religion and spirituality exist, a measure that can be used to classify or group people in a meaningful and measureable way has been elusive. The IGS may be a measure that can transcend sects, denominations, and religions by identifying the image of God that underlies and defines an individual’s worldview, which influences their attitudes and behaviors.

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### Table 6. Intercorrelations of the IGS Subscales With the CARS and DASS Subscales

<table>
<thead>
<tr>
<th>IGS Subscale</th>
<th>CARS Total Depression</th>
<th>CARS Total Anxiety</th>
<th>CARS Total Stress</th>
<th>DASS-21 Subscale Depression</th>
<th>DASS-21 Subscale Anxiety</th>
<th>DASS-21 Subscale Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anger</td>
<td>0.24**</td>
<td>0.2*</td>
<td>0.22*</td>
<td>0.27**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engagement</td>
<td>−0.14</td>
<td>−0.09</td>
<td>−0.01</td>
<td>−0.14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = 123

* p < 0.05 (two-tailed); ** p < 0.01 (two-tailed)

CARS—Concerns About Recurrence Scale; DASS-21—21-item Depression Anxiety and Stress Scale; IGS—Image of God Scale
References


