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# Psychometric Evaluation of the Health Information Orientation Scale

## A Brief Measure for Assessing Health Information Engagement and Apprehension

LORI L. DUBENSKE  
*University of Wisconsin, USA*  
ELLEN BURKE BECKJORD  
*RAND Corporation, USA*  
ROBERT P. HAWKINS &  
DAVID H. GUSTAFSON  
*University of Wisconsin, USA*

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ADDRESS. Correspondence should be directed to:  
LORI L. DUBENSKE, PhD, University of Wisconsin-Madison Center for Health Enhancement Systems Studies, 1513 University Avenue, ME 4105, Madison, WI 53706, USA. [Tel. +1 608 265 4088; Fax +1 608 890 1438; email: [dubenske@wiswc.edu](mailto:dubenske@wiswc.edu)]



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### Abstract

The Health Information Orientation Scale (HIOS) was developed from a need to briefly assess information orientation in a health context and underlying reasons for information seeking or avoidance. Using data from a larger longitudinal study of informal cancer caregivers, this study examines psychometric properties of the HIOS, including confirmatory factor analysis (CFA), reliability and construct validity through associations with information competence, coping and distress. CFA supported two conceptually unique factors: Information Engagement and Information Apprehension. Each factor demonstrated adequate reliability and construct validity, providing promising findings regarding Information Engagement and Information Apprehension, specific to a health context.

### Keywords

- *cancer*
- *caregivers*
- *information*
- *information seeking*

## Introduction

THROUGHOUT the cancer illness trajectory, patients and their families have many cancer-related needs and face difficult choices that require some understanding of the complexity of the disease as well as the treatment. Family members are an integral and vital part of the care process, playing an important role in information gathering and sharing, decision making and providing emotional and instrumental support (James et al., 2007; Speice et al., 2000). Timely information can help facilitate the process of coping to best prepare families for this role (Viswanath, 2005). However, not all individuals desire information and the individual's information-seeking behaviors must be considered when assessing their information needs (Rees & Bath, 2000). Little is known about the factors that influence caregivers' individual differences in receptiveness to cancer-related information. The ability to examine these factors requires measures that address not only styles of information coping but also underlying motives for adopting such styles. This article introduces a new scale for assessing orientation toward health information, the Health Information Orientation Scale (HIOS). Psychometric properties of the HIOS are examined, including confirmatory factor analysis of the scale's underlying constructs of Information Engagement and Apprehension.

The cancer experience is fraught with dynamic needs, and information seeking is one of the general coping strategies applied to these changing needs (Weisman, 1979). However, patients and family members differ in their use of cancer-related information, where caregivers are often more likely than patients to seek information (James et al., 2007). Caregivers have considerable information needs (Hileman & Lackey, 1990), particularly regarding the patient's condition (Wright & Dyck, 1984). Information management can be a key factor in understanding the cancer diagnosis, making treatment decisions and predicting the prognosis to better plan for future events (Brashers, Goldsmith, & Hsieh, 2002). However, not all caregivers seek out health-related information. The extent to which one seeks information is dependent on many factors, including access to information sources, immediacy of information need and personal characteristics of the information-seeker, such as self-efficacy to use information (Johnson & Meischke, 1991; van Zuuren & Wolfs, 1991).

## Information-seeking framework

Miller, Brody and Summerton (1988) delineated two dimensions of information-processing behavior enacted when threatened by an aversive event. One dimension, referred to as 'monitoring' or 'approach' strategies, is the extent to which people seek out information about the threat. In gaining information, one can decrease distressing uncertainty. Information can also favorably increase uncertainty, as in cases where patients falsely perceive a certain negative outcome, only to learn treatment alternatives are available that might offer other outcomes. However, information can, in contrast, also increase stress-producing uncertainty or certainty (Brashers et al., 2002). In such cases, it may be more beneficial to avoid information to maintain current beliefs or understanding about a situation.

The second dimension, referred to as 'blunting' or 'avoidance' strategies, is the extent to which people cognitively distract from and psychologically blunt threat-related information. Whereas the field of health information management has traditionally focused on information acquisition, recent research highlights the important role information avoidance plays in health contexts (Brashers et al., 2002). For example, caregivers may avoid information when it is too distressing for them to confront and manage, such as facing that an illness is terminal. Brashers et al. suggest people who need to achieve multiple goals (i.e. reducing anxiety, maintaining optimism when facing life-threatening illness) may need to balance information seeking and avoiding.

## Need for information behavior measure

Few measures currently exist to address information-seeking behavior in general, with fewer addressing the specific health context. The Miller Behavioral Style Scale (MBSS; Miller, 1987) is the most researched coping style measure commonly used to determine information-seeking behaviors of individuals under threat (Ben-Zur, 2002) by assessing how one would act in a variety of anxiety-producing scenarios. However, the MBSS has limitations for use with cancer caregivers. The measure is lengthy and may be burdensome for caregivers, and it may have limited applicability to the caregiving context, as the threat to this population is not directly to themselves. Furthermore, the nature of some scenarios address threatening situations; however many are far removed from the everyday experience of most people

(i.e. hostage scenario; Muris, van Zuuren, de Jong, de Beurs, & Hanewald, 1994). The only scenario that addresses health issues (dentist scenario) may feel trivial compared to the physical and emotional difficulties cancer caregivers face. Additionally, the hypothetical nature of projecting what one might do in a given situation may not represent actual behaviors when facing life-threatening illness.

In addition, information-seeking strategies are dependent on situation or contextual factors (Ramirez, Walther, Burgoon, & Sunnafrank, 2002). Measures of information-seeking behavior may be more valid if they address the context in question—in this case, the health context. Patient, and likely caregiver, information-seeking behavior in the cancer context is influenced by several factors: patient's and/or caregiver's needs, values and beliefs; unexpected situations; skills; and specialists' and companions' behaviors (Borgers et al., 1993). The exact composition of the information-seeking construct within health practices needs further investigation (Rakowski, Rice, & McHorney, 1992) in which more refined constructs may allow associations with other health behaviors to emerge.

### *Health Information Orientation Scale (HIOS)*

Given the MBSS limitations for use with a cancer caregiver population, several of the authors developed a new measure, the Health Information Orientation Scale, to target health information-seeking style specifically, and the underlying motivations for health information-seeking behaviors (i.e. too overwhelming, it's the doctor's job). Item development aimed to include items that represent dimensions similar to Miller's monitoring and blunting while addressing underlying motivations for information behaviors in the health context, and to minimize survey length to reduce survey burden.

Initial factor analyses from the pilot study data supported a two-factor solution, Information Seeking and Information Avoidance (Bernard, 2004). These factors are similar to traditional information style constructs of approach and avoiding, which have been associated with a variety of cognitive and psychological factors. Active coping strategies and seeking instrumental support are related to approaching information (Bar-Tal & Spitzer, 1999; Carver, Scheier, & Weintraub, 1989) while denial and self-distraction are akin to avoiding (Case, Andrews, Johnson, & Allard, 2005). Lower self-efficacy and

greater distress are associated with information avoidance (Case et al., 2005). Accordingly, construct validity of the HIOS will be examined by looking at how these two factors relate to similar constructs: coping styles (active, planning, instrumental support, self-distraction and denial), information competence (addresses a particular domain of self-efficacy) and distress (depression, tension/anxiety and anger).

### *Study aims*

The aim of this study was to examine the psychometric properties of the HIOS, including confirmatory factor analysis of the two subscales and their reliability. Construct validity was examined through the analysis of the relationship between these subscales and information competence, coping and distress.

### **Methods**

The University of Wisconsin Health Science Institutional Review Board approved this study prior to study initiation. Informed consent was received prior to any participant's study involvement.

### *Participants*

This is a secondary analysis of data collected from patient-identified primary informal caregivers who were participating in either of two large-scale longitudinal studies examining the impact of an online cancer information and support service for caregivers of either advanced stage breast and prostate or advanced stage lung cancer patients. Patient-caregiver dyads were recruited from five major cancer centers in the Northeastern, Midwestern and Southwestern United States. A total of 38.5 percent of participants were caregivers for lung, 35.2 percent for breast and 26.3 percent for prostate cancer patients. Approximately 50 percent of those invited to participate in the larger studies declined participation. Twenty caregivers were missing data on one or more of the variables of interest; these caregivers did not differ ( $p > .05$ ) from those with complete data on any sociodemographic or other study variables. The final sample included 247 caregivers.

Participants had a mean age of 55.48 (SD = 12.94), 63.6 percent were female, and 72.5 percent had attained more than a high school education. Almost half (49.8%) had an annual income of \$60K or greater. Most caregivers (72.1%) were the patient's spouse or partner; other relationships included being

the patient's parent, adult child, friend or other family member. Representative of the clinic populations from which the sample was drawn, 92.7 percent of the sample was Caucasian.

**Procedure**

Patients with advanced stage cancer were approached to identify a primary informal caregiver who provided emotional, instrumental and/or financial support, for recruitment in either of the large-scale longitudinal studies for advanced breast or prostate cancer (one-year follow-up) or lung cancer (two-year follow-up) caregivers. Consenting patient and caregiver dyads were enrolled in these larger studies and completed pretests prior to study randomization. These pretest surveys provide the data for this article.

**Measures**

**Information orientation** The Health Information Orientation Scale consists of eight items addressing information beliefs (e.g. 'I fear I might find out something I don't want to know') and behaviors (e.g. 'I like to gather as much information as I can before making a decision'), within the health context. Table 1 lists the full items set. Participants are asked to 'Mark how true each statement is for you' along a five-point Likert-type scale, ranging from 'Not at all true' (0) to 'Very much true' (4). Items lead with the stem, 'When I'm dealing with health concerns ...' Details of the development and pilot testing of this instrument can be found in Bernard (2004).

Items formulate two subscales initially labeled 'Information Seeking' (Cronbach  $\alpha = .65$ ) and 'Information Avoidance' (Cronbach  $\alpha = .67$ ; Bernard, 2004), with four items in each (depicted in Table 1). However, further consideration of item content and relevant literature have guided new interpretations and labeling of these factors. Accordingly, Information Seeking was relabeled 'Information Engagement' to reflect an orientation toward not only information gathering, but also a continued interaction with information within the health context (i.e. reviewing, revisiting). Information Avoidance was relabeled 'Information Apprehension'. These items address underlying discomfort with health information (i.e. difficulty making sense of, fear, overwhelmed), that could, but does not necessarily, lead to avoiding information. Furthermore, the word 'avoidance' carries connotations of psychopathology (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). As this scale is intended to measure cognitions and behaviors, rather than psychopathology,

*Table 1.* Factor loadings and covariances for the two-factor model

<i>Unstandardized regression weights of scale items onto subscale factors and covariances (all coefficients are significant at <math>p &lt; .001</math> unless otherwise noted)</i>	
<i>Item</i>	<i>Information Engagement</i>
I like to gather as much information as I can before making a decision	0.71
I like to review information multiple times before making a decision	0.75
After I've made a decision, I continue to look for related information	0.59
I like to make decisions quickly (reverse scored)	0.32
<i>Information Apprehension</i>	
I have difficulty making sense of information from multiple sources	0.60
I fear that I might find out something I don't want to know	0.58
I feel overwhelmed by the amount of information available	0.83
I think it's the doctor's job to deal with information, not mine	0.35
<i>Covariance estimates</i>	
Information Approach—Information Apprehension	-0.11 ( $p = .22$ )
Error term for 'continue to look'—Error term for 'make decisions quickly'	-0.11 ( $p = .15$ )
Error term for 'review information'—Error term for 'make decisions quickly'	0.20 ( $p = .01$ )

the replacement of the label 'avoidance' was further supported.

Subscale scores are calculated as mean scores with higher scores indicating greater Information Engagement or Information Apprehension. Limited validity analyses from the pilot study (Bernard, 2004) suggested that the HIOS formulates two independent subscales similar to other measures of information behavior, and that education is negatively associated with Information Apprehension.

**Information competence** A five-item Cancer Information Competence Scale (Gustafson et al., 1999, 2001) measured perceived ability to obtain and use needed health care information (e.g. 'I can figure out how and where to get the information that I need'). The scale items had good internal consistency ( $\alpha = 0.77$ ). Higher scores indicate greater information competency.

**Coping** A subset of items from the Brief COPE (Carver, 1997) assessed coping on six dimensions (each two item subscales): Active Coping ( $\alpha = 0.56$ ), Planning ( $\alpha = 0.63$ ), Instrumental Support ( $\alpha = 0.81$ ), Self-distraction ( $\alpha = 0.65$ ), Denial ( $\alpha = 0.77$ ) and Behavioral Disengagement ( $\alpha = 0.31$ ). Higher scores indicate greater use of specific coping. The low alpha coefficient for Behavioral Disengagement (0.31) suggests that this scale does not measure a unitary coping style, and therefore this scale was not used in further analysis.

**Emotional distress** The Profile of Mood States (POMS; Dilorenzo, Bovbjerg, Montgomery, Valdimarsdottir, & Jacobsen, 1999) assessed emotional distress on three dimensions: Depression-Dejection (six items), Tension-Anxiety (five items) and Anger-Hostility (five items). These subscales had good internal consistency ( $\alpha$ 's = 0.89, 0.91 and 0.90, respectively). Higher scores indicate greater emotional distress.

### Data analyses

Data analyses were conducted using SPSS 15.0 (2006) and AMOS 16.0 (Arbuckle, 2007). Confirmatory factor analysis (CFA) was used to evaluate the proposed two-factor model of information orientation. Three criteria were used to assess the psychometric properties of the information subscales: CFA fit indices for the two-factor model of information orientation and a competing one-factor model in which all scale items loaded onto the latent variable 'Information Orientation', bivariate correlations with study variables and internal consistencies.

Goodness-of-fit indices were selected to evaluate the degree of congruence between the data and the proposed model (Cole, 1987; Marsh, Balla, & McDonald, 1988). Chi-square indices are reported though they have been criticized for having excess power to reject adequate models tested with larger samples (Hu & Bentler, 1999). Bentler's comparative fit index (CFI; Bentler, 1990) and Steiger's root mean square error of approximation (RMSEA; Steiger, 2000; Steiger & Lind, 1980) were also used to gauge goodness-of-fit. For Bentler's CFI, models with an adequate fit will yield values greater than 0.90; models with a good fit will yield values of 0.95 or greater. For RMSEA, values less than 0.10 indicate an adequate fit, and values of 0.06 or less indicate a good fit (Steiger, 2000; Steiger & Lind, 1980).

Model reliability was tested by examining the internal consistencies of the two information subscales

(Cronbach's  $\alpha$ ). Construct validity was tested using CFA and bivariate correlations between the two subscales and information competence, coping and emotional distress. Finally caregiver characteristics in relation to information orientation were examined using bivariate correlation, *t*-tests or analysis of variance (ANOVA).

## Results

### Confirmatory factor analysis

The hypothesized model that defined two dimensions of information orientation, Information Engagement and Information Apprehension, was first tested. Not all of the fit indices indicated that this model provided an acceptable fit to the data ( $X^2_{19\text{d.f.}} = 54.00, p < .001$ ; CFI = 0.89; RMSEA = 0.087, 90% CI = 0.060, 0.114). Modification indices suggested three correlations between item error terms to improve the model fit: two between items within the Information Engagement subscale and one between items on the Information Engagement and Apprehension subscales. In keeping with the hypothesized factor structure, only the two correlations between item error terms within the Information Engagement subscale were added and the model fit improved enough to provide an acceptable fit to the data ( $X^2_{16\text{d.f.}} = 42.26, p < .01$ ; CFI = 0.92; RMSEA = 0.078, 90% CI = 0.049, 0.108). The fit of this model was superior to a single-factor model in which all items loaded onto the latent variable 'Information Orientation' ( $X^2_{20\text{d.f.}} = 205.24, p < .001$ ; CFI = 0.44; RMSEA = 0.194, 90% CI = 0.170, 0.219), as well as to a single-factor model where the same two correlations between item error terms specified in the two-factor model were added ( $X^2_{18\text{d.f.}} = 168.26, p < .001$ ; CFI = 0.55; RMSEA = 0.184, 90% CI = 0.159, 0.210). Based on these results, the two-factor model of information orientation is an acceptable fit to the data and superior to the single-factor model. Factor loadings obtained through CFA for the two-factor model and the three covariances are displayed in Table 1. Finally, the information orientation subscales had adequate internal consistencies ( $\alpha = 0.66$  for Information Engagement;  $\alpha = 0.67$  for Information Apprehension), which were consistent with previous values in Bernard (2004).

### Descriptive and bivariate analyses

Descriptive statistics for and bivariate correlations between the two HIOS subscales and information competency, coping and emotional distress are

presented in Table 2. On average, caregivers rated Information Engagement items between *somewhat* and *quite a bit true*; in contrast, caregivers rated Information Apprehension items between *not at all* and *a little bit true*. This difference in mean scores on the Information Engagement and Information Apprehension subscales was significant (paired  $t = 25.46; p < .01$ ).

Correlations between Information Engagement, Information Apprehension and information competence, coping and distress supported the HIOS's construct validity (Table 2). Caregivers who endorsed greater Information Engagement reported greater information competence, active coping, planning and use of instrumental support (all  $p < .01$ ). Conversely, caregivers who endorsed greater Information Apprehension reported poorer information competence ( $p < .05$ ) and more denial, depression, tension/anxiety and anger (all  $p < .01$ ). Information Engagement and Information Apprehension were not significantly correlated, and therefore appear to represent two unique constructs regarding health information orientation.

Finally, caregiver characteristics in relation to information orientation were examined (Table 3). Caregivers with less formal education reported greater Information Apprehension ( $p < .01$ ). Caregiver age, gender, relationship to patient and patient's cancer type were not associated with information orientation.

### Discussion

This study examined the psychometric properties of a new scale developed specifically to measure health information orientation, in this case for advanced cancer caregivers. Overall, compared to social and physical factors, the ways in which individuals interact with health information has received relatively little attention in health psychology research (Viswanath & Kreuter, 2007), though the health information environment (i.e. available health information and the media through which that information is disseminated) plays a central role in cancer prevention and control (Hiatt & Rimer, 1999). A better understanding of how to promote positive experiences with health information among chronically ill individuals and their caregivers would help to support the development of an 'intelligent' health information environment that offers deep support to users (Hesse, 2005). The scale presented in this study fills a current gap in research by providing a method for measuring cancer caregivers' orientation to engaging with health information.

Table 2. Descriptive statistics and bivariate correlations between information orientation, information competence, coping and emotional distress

	1	2	3	4	5	6	7	8	9	10	11
1. Information Engagement											
2. Information Apprehension	-0.09										
3. Information competence	0.18**	-0.14*									
4. Active coping	0.26**	-0.02	0.06								
5. Planning	0.35**	0.02	0.00	0.58**							
6. Instrumental support	0.17**	0.03	0.05	0.48**	0.45**						
7. Self-distraction	-0.02	0.12	-0.13	0.23**	0.19**	0.14*					
8. Denial	0.02	0.37**	-0.11	0.06	0.14*	0.11	0.27**				
9. POMS Depression	0.01	0.20**	-0.15*	0.07	0.12	0.15*	0.43**	0.45**			
10. POMS Tension	0.02	0.22**	-0.22**	0.17**	0.29**	0.20**	0.42**	0.39**	0.77**		
11. POMS Anger	0.00	0.23**	-0.16*	0.02	0.12	0.13*	0.39**	0.45**	0.79**	0.72**	
Mean (SD)	2.65 (0.74)	0.91 (0.72)	2.17 (0.70)	1.68 (0.93)	1.84 (0.95)	1.15 (0.95)	1.42 (1.02)	0.51 (0.89)	0.94 (0.84)	1.22 (0.95)	0.74 (0.83)

\* Correlation is significant at the  $p < .05$  level; \*\* correlation is significant at the  $p < .01$  level

Table 3. Bivariate associations between Information Engagement, Information Apprehension and caregiver characteristics

		<i>Mean Information Engagement (SD) or bivariate correlation</i>	<i>p</i>	<i>Mean Information Apprehension (SD) or bivariate correlation</i>	<i>p</i>
Age	(Continuous)	-0.05	.42	0.06	.32
Gender	Male	2.55 (0.77)	.10	0.89 (0.68)	.77
	Female	2.71 (0.72)		0.92 (0.74)	
Patient type of cancer	Breast	2.63 (0.76)		0.98 (0.70)	
	Prostate	2.61 (0.69)	.54	0.86 (0.67)	.47
	Lung	2.74 (0.77)		0.88 (0.79)	
Relationship to patient	Spouse/partner	2.64 (0.76)	.59	0.93 (0.75)	.47
	Other	2.70 (0.71)		0.86 (0.63)	
Education	HS or less	2.73 (0.83)		0.17 (0.79)	
	Some college or technical/ associates degree	2.57 (0.71)	.41	0.82 (0.62)	<.01
	College or more	2.67 (0.71)		0.74 (0.65)	

Confirmatory factor analysis of the Health Information Orientation Scale supported two unique subscales: Information Engagement and Information Apprehension. Each subscale demonstrated adequate reliability. It is noteworthy that these subscales are not correlated, suggesting caregivers' engagement with health information is a distinct construct from their apprehension about utilizing health information. While some may be reluctant to use information for coping, they nevertheless may do so.

Construct validity was supported through associations with information competence, coping mechanisms and emotional distress, with all associations in the expected direction. Information engaging caregivers had greater information competence. A sense of competence in one's ability to understand and make use of health information likely promotes greater willingness and possibly greater desire for seeking and working with health information. Caregivers with higher Information Engagement were also more likely to engage in active coping, planning and use of instrumental support, complementing other studies demonstrating information seeking as related to seeking instrumental social support (Carver et al., 1989) and problem-focused coping (Bar-Tal & Spitzer, 1999).

Caregivers endorsing higher Information Apprehension had poorer information competence. This was anticipated as several items in the Information Apprehension subscale reflect a lack of competence in working with health information

(i.e. difficulty making sense, overwhelmed by amount). Apprehensive caregivers were also more likely to engage in coping through denial. This likely reflects the tendency for some to address anxiety through avoidant coping behaviors, including avoiding health information. Finally, information apprehensive caregivers experienced greater emotional distress manifesting as anxiety, depression and anger. Those with higher anxiety regarding their loved one's cancer may likely have heightened anxiety regarding information about cancer. Similarly, those with apprehension about handling health information when faced with a health crisis may have difficulty coping in this context where information is critical (Dew et al., 1996; Powers, Gallagher-Thompson, & Kraemer, 2002). Accordingly, feelings of anxiety, depression and anger may likely arise.

As in the initial pilot study (Bernard, 2004), formal education was the only demographic characteristic associated with information orientation, Apprehension specifically. This complements other findings that age, gender and cancer type are not associated with information orientation (monitoring or blunting; Rees & Bath, 2000). However, in this study, caregivers with less formal education reported greater apprehension related to health information, suggesting this group may need increased support when engaging with health information. As education level can be associated with literacy level, utilization of traditional resources for information, particularly books, brochures and websites, may be difficult for



less educated populations, and therefore approached with more apprehension.

### *Study limitations and future directions*

While correlations supporting validity of both Information Engagement and Apprehension were significant, the magnitudes of the coefficients were generally low. As the primary longitudinal study was not designed to develop and validate the HIOS, limited measures were available to examine construct validity. Accordingly, measures that seemingly addressed constructs reflected in other health information-seeking literature were chosen, however other measures and constructs may prove better tests for establishing the validity of these subscales. These lower correlations may also reflect limited variance in the Engagement and Apprehension factors where this sample tended to be highly engaged with little apprehension regarding information seeking. Accordingly, some study sample limitations are noteworthy. This sample consists of a well-educated, higher-income caregiver sample who agreed to participate in a study examining online information and support seeking. These caregivers may be biased toward information seeking, whereas those with lower education and socio-economic levels and/or who are apprehensive or avoid information may be under-represented. Future research on this measure needs to reflect more diverse socio-economic and ethnic/racial sampling to address generalizability across caregiver populations.

Consideration of these findings within the context of this advanced cancer caregiving population is also important. These caregivers, in comparison to those caring for someone with earlier stage disease, are more likely to be facing palliative rather than curative treatment options and end of life. Accordingly, the need or desire for seeking health information may be different in advanced disease. Future research could compare information orientation across disease stages and also examine whether it is a stable or state-dependent coping mechanism over the disease course. The literature is mixed in its presentation of information seeking as more trait-like (Miller, 1987) and generalizable across situations, or state-like and situation or context specific (Ramirez et al., 2002).

Additionally, the two factors may have alternative interpretations. For example, the factor interpreted as Information Engagement contains those items that specifically refer to decision making, whereas

items in the Apprehension subscale are more general in their context. Accordingly, the two factors may be interpreted as utilization of information in decision-making versus a general health information orientation. Though the statistical properties of the scale were all in the acceptable range, some of the CFA fit statistics (RMSEA), factor loadings and the subscale internal consistencies were sub-optimal; more research using this scale in larger samples will be needed to determine whether its psychometric properties warrant continued use. Future research using the HIOS in a variety of health contexts will further refine the nature of these constructs.

### **Conclusion**

The Health Information Orientation Scale is an experimental scale that requires further testing before its full validity and predictive potential can be assessed. However, it has demonstrated promise to be a useful tool in determining caregivers who prefer utilizing health information and those who have apprehension regarding health information through conceptually unique subscales of Information Engagement and Information Apprehension, which have acceptable reliability and validity. These subscales would serve to identify subtypes of caregivers who may best benefit from particular styles of health education, and may inform the design and delivery of health communication interventions to best meet the needs of this population. Although this study focused on cancer caregivers, this measure is likely applicable to both patient and caregiver populations and across a variety of health issues.

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## Author biographies

LORI DUBENSKE, PHD, is a Researcher at the University of Wisconsin-Madison Center for Health Enhancement Systems Studies. She holds a PhD in clinical psychology with research and clinical practice focus on patient and family adjustment to life threatening illness, particularly cancer.

ELLEN BURKE BECKJORD, PhD, MPH, is an Associate Behavioral Scientist at RAND Corporation. She holds a PhD in clinical psychology and an MPH in Epidemiology and Biostatistics with research interests in health communication and cancer survivorship.

ROBERT HAWKINS, PhD, is professor emeritus in the University of Wisconsin-Madison School of Journalism and Mass Communication. His research focuses on processes and effects of communication through both mass and interactive media.

DAVID GUSTAFSON, PhD, is professor emeritus in the University of Wisconsin-Madison Department of Industrial Engineering and Preventative Medicine. He is the founder of the Center for Health Enhancement Systems Studies, a multidisciplinary research center employing systems analysis, decision science and decision support technologies to address patient care and health policy problems.

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