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ADVICE GIVING AND THE MANAGEMENT OF UNCERTAINTY FOR CANCER SURVIVORS: AN EXPLORATORY STUDY

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Sharlene R. Thompson

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ADVICE GIVING AND THE MANAGEMENT OF UNCERTAINTY FOR CANCER SURVIVORS: AN EXPLORATORY STUDY

A Dissertation APPROVED FOR THE
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BY

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H. Dan O'Hair, Ph.D.

_____

Sandy Ragan, Ph.D.

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Amy Johnson, Ph.D.

_____

Kevin Wright, Ph.D.

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Trent Gabert, Ph.D.

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Abstract

Previous research on advice in supportive interactions has focused exclusively on facework, advice content, and receptivity to advice and has not systematically considered the effects of uncertainty management processes, information sensitivity and advice optimism. Further, this research examines advice and uncertainty management in the context of cancer survivorship. The current study examines the relative influence of target receptiveness, information sensitivity, advice content and advice optimism on uncertainty management processes, emotion coping processes, problem coping processes and advice evaluation. Participants (N=161) completed a questionnaire (online or paper) reporting on informal advice received after diagnosis. Results indicated that target receptiveness and advice optimism were positively related to problem coping processes. Target receptiveness, advice optimism and absence of limitations were positively related to emotion coping processes. Limitations of the study are offered and implications for future research are advanced in the area of cancer survivorship.

CHAPTER I

Introduction

This chapter overviews the central problem under investigation; the role uncertainty management plays in advice outcomes for cancer survivors. The advice giving literature has not investigated the impact of uncertainty management needs on the evaluation of advice or the impact of advice on survivor coping. Further, the uncertainty management literature has not considered the role of advice giving in the management of uncertainty. This chapter will first discuss the problem, relevant uncertainty and advice literature, and follow with a discussion of the study design and the importance of this study including the unique contribution this study makes to our understanding of these processes.

Problem Statement

Cancer is now the number one leading cause of death for Americans under 85 surpassing heart disease (Jemal, Murray, Ward, Samuels, Tiwari, Ghafoor, Feuer, Thun, 2005). It is estimated that there will be 1, 372,910 new cancer diagnoses in 2005 and 570,280 cancer deaths or about 1,500 deaths per day (Jemal et al., 2005). While this number seems high, due to a growing and aging population the risk of dying of cancer has actually decreased since the 1990s (American Cancer Society, 2005). New medical advancements in diagnosis and treatment of cancer have downgraded cancer into more of a chronic disease than a terminal illness (Hightower & Vaughn, 2003). In light of these recent developments, cancer survivor numbers are growing, necessitating an acute focus on the multiple needs of cancer survivors living past their diagnosis (Rowland, Ariorro, Aziz, Tesauro, Geuer, 2004). One is now

considered a cancer survivor from the time of diagnosis forward according to the National Cancer Institute Office of Cancer Survivorship web-site (survivorship.cancer.gov).

Cancer as a chronic illness increases uncertainty about illness and other areas of the survivor's life (Mishel, 1990). Previous research indicates that supportive communication influences the perception of uncertainty (Ford, Babrow, & Stohl, 1996) and that it influences information seeking and avoiding behaviors (Brashers, Neidig, & Goldsmith, 2004). Brashers, Neidig, and Goldsmith (2004) laid the groundwork for this study by investigating social support and uncertainty management in the HIV/AIDS context via focus groups. Their research showed that social support does influence uncertainty management and that support from others helps in the management of uncertainty.

Advice giving is a common form of social support that is frequently viewed negatively by the recipient (Dunkel-Schetter, Blasband, Feinstein, & Herbert, 1992). Previous research indicates that several factors may influence the way advice is received including facework, advice content, and target receptiveness (MacGeorge, Feng, Butler, Budarz, 2004). The current study extends our understanding of advice giving by examining the role of uncertainty management in advice giving. This study seeks to increase our understanding of the way uncertainty management processes influence advice evaluation and coping as well as how advice influences uncertainty management. This study investigates the relative influence of survivor target receptiveness, advice sensitivity to survivor uncertainty needs, and advice content on uncertainty management practices, facilitation of coping, and advice evaluation.

Uncertainty

Cancer diagnosis is accompanied by numerous thoughts and feelings including fear of death, remaining hopeful while being realistic, feeling guilty for surviving when others do not, trying to handle everyday life concerns, and uncertainty about the illness, symptoms, treatment, themselves, their relationships and the future (Ferrell, Grant, Funk, Otis-Green, & Garcia, 1998, Mishel, 1990; O'Hair, Villagran, Wittenberg, Brown, Ferguson, Hall, & Doty, 2003; O'Hair, Scannell, & Thompson, 2005). After treatment is ended, survivors must integrate their cancer experience into their life, returning back to their everyday life concerns (Anderson, & Geist-Martin, 2003). When treatment ends survivors report increased uncertainty; as one survivor reports, (McKinley, 2001), "I think we survivors are never truly done. We just move from the quantifiable, treatable disease to the immeasurable uncertainty of survivorship" (p. 479). Chief among the concerns faced by cancer survivors is uncertainty, which lasts well beyond treatment of the initial cancer (Gil, Mishel, Belyea, Germino, Porter, LaNey, & Stewart, 2004). A familiar or unfamiliar ache or pain, a new finding reported on the news, or an acquaintance's struggle with the illness can lead to renewed uncertainty (Gil, et al., 2004). Learning to live with chronic uncertainty is critical to improving a survivor's quality of life, and can act as a catalyst for positive change and increase hope for the future (Bailey, Mishel, Belyea, Steward, & Mohler, 2004). The difficulty comes in learning to manage chronic uncertainty whilst receiving a deluge of supportive messages during chronic illness.

According to uncertainty management theory (Brashers, Neidig, Haas, Dobbs, Cardillo, & Russell, 2000) we seek to maintain, increase or decrease uncertainty by information seeking and information avoiding. We react to uncertainty based on the meaning it has for us, appraising the situation as either danger or opportunity and then experiencing corresponding emotions. A danger appraisal is accompanied by feelings of anxiety and distress, while an opportunity appraisal is accompanied by hope or optimism. This process then leads us to make choices to manage our uncertainty, choosing to seek or avoid information. Brashers et al. (2000) found support for this theory in the context of HIV/AIDS patients. Social support assists with information seeking and avoiding and encourages reappraisal of uncertainty (Brashers, Neidig, & Goldsmith, 2004).

Social support plays an integral role in helping survivors navigate the cancer experience when diagnosed, during treatment, and after treatment. Recent research indicates, however, that the perceived supportiveness of social support may be moderated by survivor uncertainty management needs (Brashers, Neidig, & Goldsmith, 2004). Supportive communication can increase, decrease or maintain certainty and uncertainty for breast cancer patients (Ford, Babrow, & Stohl, 1996). There is a gap in our understanding of how supportive communication influences and is influenced by uncertainty management needs. Breast cancer survivors who perceive more support experience less uncertainty leading to even more social support and a higher quality of life (Sammarco, 2001). This study may have found unique findings as they recruited women participants through the American Cancer Society's Reach for Recovery program, which pairs a breast cancer survivor who has

been through treatment with a survivor undergoing treatment. Thus, the type of support the women in this study received from this program may have reduced their uncertainty about the illness. Breast cancer survivors who report a wide network of support also reported low levels of uncertainty (Wonghongkul, Moore, Musil, Schneider, & Deimling, 2000). Again, the sample of participants was drawn from an American Cancer Society support program the women were involved in. What we still do not know is how support influences uncertainty management as survivors manage the chronic uncertainty that accompanies cancer survivorship in an everyday context outside of these support programs.

Advice Giving

The American Cancer Society recommends that friends and family avoid giving advice to cancer survivors on their web-site (www.cancer.org). This recommendation is likely based on previous research which found advice giving to be a less effective form of social support (Dunkel-Schetter et al., 1992). Previous research which found advice giving to be less effective did not consider how various aspects of advice giving may influence its effectiveness. Advice giving may serve an important supportive function when adapted to the needs of the advice receiver and the situation. According to Goldsmith (2004) advice giving is a form of assisted coping that may or may be successful due to its adaptation to the problem, the way it is introduced and coordinated in the conversation, and whether the advice is sensitive to relational and identity concerns. Advice may be perceived as helpful or unhelpful based upon who provides the advice, type of stressful situation, characteristics of the relationship, and whether that advice was sought (Dunkel-Schetter et al., 1992).

Advice may be perceived as helpful when it is also emotionally supportive (Dunkel-Schetter et al, 199) or when it is given by a cancer survivor rather than by a family member.

Based upon Goldsmith's and Fitch's (1997) ethnographic research, we know that advice providers and recipients face three specific dilemmas, which include being helpful versus butting in, being supportive versus being honest, and showing gratitude and respect versus making your own decision. Advice is perceived as more helpful if it is appropriate, useful, and takes into account problem solving, identity and relational implications (Goldsmith, 2004). We also know that advice is perceived as more helpful if it is also emotionally supportive and may be more effective in combination with other types of support (Dunkel-Schetter, Blasband, Feinstein, & Herbert, 1992). Advice that includes attributions of blame, incompetence or failure is typically seen as unhelpful (Dunkel-Schetter, Blasband, Feinstein, & Herbert, 1992). It is likely that there are other factors which influence how advice is evaluated by recipients.

The majority of advice research has focused on examining how facework influences perceived advice effectiveness (Goldsmith & MacGeorge, 2000; Goldsmith, 2000; MacGeorge, Lichtman, & Pressey, 2002). The majority of advice studies have also utilized samples of undergraduate students and examined general advice giving (Goldsmith & MacGeorge, 2000; Goldsmith, 2000; MacGeorge, Lichtman & Pressey, 2002; MacGeorge, Feng, Butler, & Budarz, 2004). This poses two problems to our understanding of advice giving: 1) It is difficult to apply such general dilemmas of advice giving to an illness context; and 2) undergraduates'

advice seeking and receiving may differ significantly from chronic illness survivors' advice seeking and receiving.

The focus in the literature on facework has restricted our understanding of advice, as it is only one variable that potentially influences outcomes of advice giving. Goldsmith's (2000) findings indicated that target receptiveness plays an important role in advice evaluation. Advice which is directly solicited is seen as less face threatening (Goldsmith, 2000). MacGeorge, Feng, Butler, and Budarz (2004) were the first to expand a study of advice giving beyond facework by examining the impact of advice content, and the first to examine how advice influences outcomes such as coping. MacGeorge et al. investigated the collective impact of advice content (comprehensibility, feasibility, absence of limitations, and relevance), target receptiveness, and facework on message quality, facilitation of emotion-focused coping and problem-focused coping, sufficiency of support, and intention to implement advice. Their findings found consistent support for the impact of absence of limitations and target receptiveness on all of the outcome variables. Sufficiency of support was measured by assessing whether participants reported a need to seek further advice. This outcome variable was only predicted by absence of limitations and this interaction did not affect a significant change in the explained variance. This is likely a problem of conceptualization, as sufficiency of support may be different from the need to seek further advice, especially in the context of illness. One may find a piece of advice useful for coping with one aspect of a problem but may need advice from multiple people to cope with the entirety of the problem. MacGeorge, Feng, Butler, and Budarz (2004) findings also suggest that target receptiveness

moderates the relationship between advice content and advice evaluation and that receptiveness is a key and influential characteristic. One may be receptive to advice in part because one is seeking information to reduce uncertainty. If a survivor is seeking information to increase or reduce uncertainty then they may be likely to evaluate advice based upon their current uncertainty management behavior. Thus, uncertainty management likely influences receptivity to advice and advice evaluation. As a result, uncertainty management may also influence survivor coping.

The Current Study

The current study employs a 2 (target receptive, target not receptive) X 2 (information sensitive, information not sensitive) X 5 (advice content: absence of limitations, comprehensibility, relevance, feasibility) X 2 (advice optimistic, advice not optimistic) design (See Tables 1 & 2 and Appendix B).

Target receptiveness has been identified as an important variable in advice evaluation in previous research (MacGeorge et al., 2004). MacGeorge et al. (2004) expanded on previous research by examining the relative influence of advice content and target receptiveness. The advice content characteristics examined by MacGeorge et al. (2004) included comprehensibility, feasibility, relevance and absence of limitations. MacGeorge et al. (2004) derived these four content characteristics from a cure and cost-benefit stock issues analysis (stemming from argumentation and debate). Accordingly, advice that is more easily understood, more plausible, more appropriate, and does not contain numerous negative implications is likely to be judged as more effective. Optimistic support has been identified as an important variable in uncertainty management (Brashers et al., 2004, Mishel,1990).

According to Brashers' et al. (2000) theory of uncertainty management the appraisal of uncertainty as either an opportunity or as a threat leads to different uncertainty management behaviors including seeking information or avoiding information to increase, maintain, or reduce uncertainty. Incongruent uncertainty management goals between people living with HIV/AIDS and their support providers is problematic (Brashers et al., 2004). Social support can encourage perspective shifts such as reappraisal of uncertainty as a normal part of life (Brashers et al., 2004). Brashers' et al. (2004) research indicates that there is a relationship between social support and uncertainty management. The current study explores whether or not there is a link between advice giving and uncertainty management. The current study's focus is on informal advice given to survivors by friends, family, or strangers versus formal advice given to survivors by doctors or nurses.

Importance of This Research

This study examines how advice content, target receptiveness, information sensitivity, and advice optimism jointly influence advice evaluation, problem coping process, emotion coping processes, and uncertainty management processes (see Table 1 and Table 2). The regression model tested by MacGeorge, Feng, Butler, & Budarz (2004) was able to account for 38% of the variance in facilitation of coping, and 51% of the variance in advice quality or evaluation. The current study examined whether adding uncertainty considerations strengthens the predictive ability of the model in a cancer survivor context.

This research is the first to systematically investigate the influence of advice giving on uncertainty management and builds on previous research by including

strong predictor variables identified in previous literature, including target receptiveness and advice content (MacGeorge, Feng, Butler, & Budarz, 2004). This study also provides an opportunity to build on the theoretical work of Brashers, Neidig, Haas, Dobbs, Cardillo and Russell (2000). This study is the first to investigate the relative influence of uncertainty management on advice and advice on uncertainty management.

This research is important for both theoretical and practical reasons, and makes a contribution to our understanding of advice giving, uncertainty management, and the cancer survivors' experience. The findings for this study of advice giving and uncertainty management could be used to develop training for American Cancer Society volunteers. Volunteers could be trained to ask questions to ascertain how the survivor is managing their uncertainty, whether they are seeking or avoiding information, and modify their advice giving based upon this. Further, American Cancer Society handouts, materials, and web-sites could be developed in such a way that they are responsive to survivor's uncertainty management needs, helping to facilitate instead of potentially hindering coping.

Table 1
Summary of Independent Variables

IV	Target Receptiveness	Information Sensitivity	Advice Content	Advice Optimism

Table 2
Summary of Dependent Variables

DV	Uncertainty Management Processes	Emotion Coping Processes	Problem Coping Processes	Advice Evaluation

CHAPTER II

Literature Review

This chapter addresses the weaknesses and gaps in our understanding of advice giving and uncertainty management processes and presents a rationale for the study of the influence of advice giving on uncertainty management in the context of cancer. This exploratory study is the first to systematically investigate the relationship between advice giving and uncertainty management, moving us toward further theoretical development of a theory of supportive advice and uncertainty management. This study leads to increased understanding of the way survivors' uncertainty management processes influence perceptions of supportive advice giving as well as how supportive advice giving influences survivors' uncertainty management. Further, this study increases the depth of our understanding regarding the impact that advice content and survivors' target receptiveness, as well as advice sensitivity to survivors' uncertainty management, have on the outcomes of advice evaluation, the facilitation of survivor coping, and survivor uncertainty management. Increasing our understanding of these relationships in the context of cancer survivorship is important as it allows us to design effective social support and uncertainty management interventions for cancer survivors. This chapter first addresses what we know about uncertainty management and social support processes in the context of cancer survivorship, second, specifically discusses what we know about advice giving and cancer survivorship, and lastly presents a rationale for the study of these processes in the context of cancer survivorship.

Cancer Survivorship

A cancer diagnosis threatens survivors' physical, psychological, social, spiritual, and economic well-being (National Action Plan for Cancer Survivorship: Advancing Public Health Strategies, 2004). Cancer also transforms the self, the survivors' identity and the survivors' everyday life (O'Hair et al., 2003; Zebrack, 2000). Charmaz (2000) explains, "People with serious chronic illness must repeatedly rethink how they live and who they are becoming" (p. 286). As a result of cancer diagnosis, survivors feel uncertainty and as a result seek and receive support.

Uncertainty Management and Cancer

Even after cancer treatment ends, survivors report continuing illness uncertainty (Gil, Mishel, Belyea, Germino, Porter, LaNey, & Stewart, 2004). Common triggers for fears of recurrence include hearing about someone else's cancer, new aches and pains, environmental triggers, and information conveyed in the media. Chronic disease increases uncertainty not only about illness, symptoms and treatment, but also about life issues and the ability to achieve valued goals (Mishel, 1990). As we live in a society where certainty, control, and predictability are valued (Mishel, 1990), managing uncertainty becomes a large concern for cancer survivors. Changing one's view of uncertainty, as an inevitable part of life, can become a catalyst for positive change (Bailey, Mishel, Belyea, Stewart, & Mohler, 2004).

Utilizing chaos theory, Mishel (1990) reconceptualized uncertainty in illness theory by arguing that chronic uncertainty threatens the pre-existing organization of the person or self. When uncertainty exceeds the level of tolerance, it makes the person's system unstable. In Mishel's words, "…the uncertainty surrounding a

chronic or life-threatening condition qualifies as a sufficient fluctuation to threaten the preexisting organization of the person, a far-from-equilibrium system" (p. 259). Mishel writes, "Thus uncertainty may be a condition under which a person can make a transition during illness from one perspective of life toward a new, higher order, a more complex orientation toward life" (p. 260). This new orientation to life, according to Mishel (1990), must include probabilistic thinking which emphasizes that uncertainty is part of life and must be managed. Mishel's work stresses the importance of viewing illness through a probabilisitc rather than mechanistic paradigm in order to facilitate reappraisal of uncertainty.

Extending Mishel's original work, Brashers, Goldsmith, and Hsieh's (2002) theory of Uncertainty Management states that we seek to maintain, increase or decrease uncertainty by information seeking and information avoiding during chronic illness. Further, when facing a chronic uncertainty situation we react to uncertainty based on the meaning it has for us, appraising the situation as either danger or opportunity. If we appraise uncertainty as danger then we are likely to experience such emotions as anxiety and distress. If we appraise uncertainty as opportunity then we are likely to experience hope or optimism. Further, these appraisals and emotions then lead us to make choices in order to manage our uncertainty.

Brashers et al. (2000) explored this theory in the context of HIV/AIDS patients, finding support for their uncertainty management theory. In order to manage their uncertainty, patients utilized information avoiding and seeking. Those who appraised uncertainty as danger experienced fear and anxiety and engaged in active information seeking or passive information seeking, while accumulating knowledge

about their experience. Those who appraised uncertainty as opportunity experienced hope and optimism, avoiding information to maintain uncertainty, and seeking new findings to increase uncertainty (i.e., alternative medicine treatments). Their findings indicated that the management of uncertainty can lead to decreased or increased uncertainty as well as new uncertainty. For example, new uncertainty may arise as a result of seeking information. Managing uncertainty while receiving supportive communication messages may be challenging. Brashers (2001) explains, "Social support behaviors act upon either the experience of uncertainty, appraisal processes, or the selection of uncertainty management behaviors" (p. 485).

Building on previous work, the focus group research by Brashers, Neidig, & Goldsmith (2004) explored HIV/AIDS patients' experiences with uncertainty and social support. This was the first study to examine Brashers' et al. (2000) uncertainty management theory and social support. Their findings indicated that social support assists with information seeking and avoiding, and encourages uncertainty reappraisal (Brashers, Neidig, & Goldsmith, 2004). Thus, what we know about social support and uncertainty management is that social support affects uncertainty management. What we do not know is how type of support, content of support, receptiveness to support, and support's information sensitivity together influence uncertainty management. The next section discusses social support and cancer as a prelude to an examination of advice-giving as a form of social support.

Social Support and Cancer

Social support, a multidimensional concept, likely plays an integral role in both coping with cancer as well as adaptation to illness (Leeuw, Graeff, Ros, Hordijk,

Blijham, & Winnubst, 2000). Research has shown that received support has a buffer effect on stressful situations while perceived support has a main effect on health and well-being irregardless of the situation (Leeuw et al., 2000). Received support refers to support that participants report being given while perceived support refers to support that participants perceive is available to them should they need it.

Link between Social Support and Outcomes

Previous research has shown that social support is an important process, as it helps to manage uncertainty and provide hope and motivation (Albrecht, & Goldsmith, 2003). Although it is well established that there is a positive correlation between social support and cancer related outcomes, the processes and mechanisms whereby this is communicated are not well established. Taylor and Dakof (1988) found evidence for a positive correlation between perceived social support and positive adjustment to cancer in two studies but caution that this could be due to individual characteristics of the cancer patient. For example, those who are well adjusted to cancer could utilize their available social support more effectively.

Perceived support has been found to be strongly correlated with quality of life for cancer patients (Sammarco, 2001) and greater psychological well-being and more positive health behaviors (Holland & Holahan, 2003). Sammarco (2003) found a significant association between perceived social support and quality of life for older survivors of breast cancer. Their findings showed that for the older survivors, social support was particularly important, because as women age, the size of their support network decreased. Holland and Holahan's (2003) findings indicate that perceived social support and approach coping strategies are associated with positive adjustment

for breast cancer patients. It suggests that cancer patients who had higher levels of perceived social support have higher levels of adjustment and coping.

Social support has been found to be of particular importance to women facing breast cancer and has been linked with more positive adjustment to survivorship (Davis, Williams, Parle, Redman, & Turner, 2004). A modest significant relationship has been found between perceived social support and psychological well-being for breast cancer survivors (Roberts, Cox, Shannon, & Wells, 1994). Appraisal social support may serve as a buffer for the influence of intrusive thoughts on quality of life for breast cancer survivors (Lewis, Manne, DuHamel, Vickburg, Bovbjerg, Currie, Winkel, & Redd, 2001).

According to Blanchard, Albrecht, Ruckdeschel, Grant and Hemmick (1995) social support continues to be widely studied in the context of cancer as both a mediator of survival and as a mediator for patient adjustment to cancer. Research supports the conclusion that social support plays a buffer role for cancer patients, mediating the impact of stressors caused by cancer. However, due to the nature of cancer and the ubiquitous perception of cancer as a killer, support attempts may cause more distress than reprieve after diagnosis (Krishnasamy, 1996). Well intentioned support attempts, such as telling a cancer survivor to have a positive attitude may be perceived by the survivor as rejection or as disconfirming.

Head and neck cancer survivors reported that received support was more strongly correlated to depressive symptomology before treatment than after treatment. Survivors who received more support before treatment reported more depressive symptoms (Leeuw, Graeff, Ros, Hordijk, Blijham, & Winnubst, 2000). Too much

social support may reduce self-efficacy and lead to further depression. It is also plausible that patients who reported more depressive symptoms reached out for more social support. Leeuw, Graeff, Ros, Hordijk, Blijham and Winnubst (2000) research points to the complexity of social support research. Individual level characteristics such as self-efficacy, depression, coping style, self-esteem, mood, and emotions may buffer the effect of different types of social support. Further, physical complaints and quality of life may influence the effect of social support. The number of health complaints mediates the relationship between social support and depressive symptoms (Leeuw et al., 2000). Leeuw et al. (2000) findings indicate that, "…social support seems to have a different effect on psychological well-being in patients with head and neck cancer, depending on the type of support (received versus available), the situation (shortly after diagnosis versus 6 months later), and the number of physical complaints" (p. 27). This research points to the need for social support to be tailored to the individual's needs after diagnosis.

Schulz and Schwarzer (2004) examined the long-term effects of spousal support on coping with cancer after surgery. Patient coping after surgery was predicted by provided support, thus increased support facilitated increased coping (Schulz and Schwarzer, 2004). Having more people in a social network is significantly associated with less mood disturbance for those with greater life stress who have advanced breast cancer (Koopman, Hermanson, Diamond, Angell, & Spiegel, 1998). This study provides support for the buffering hypothesis, such that social support may mediate the relationship between previous life stress and emotional adjustment to breast cancer. Social support plays a buffer role for the

negative association between intrusive thoughts/avoidance and psychological adjustment (Devine, Parker, Fouladi, & Cohen, 2003).

Landmark, Strandmark, and Wahl (2002) determined that positive and negative social support include emotional, practical, and informative dimensions. The emotional dimension includes love, friendship, and solidarity while the practical dimension is composed of physical nearness and tangible aid. The informative dimension includes information, advice, and counseling. The support the women received in each of these three dimensions influenced their ability to cope with the cancer. Positive support consisted of nearness and practical support. Negative support consisted of lack of understanding and avoiding. Women in this study reported receiving positive and helpful support at work and having difficulty communicating about their cancer with their teenage children.

Little social support and cancer research examines advice-giving as a form of social support, and the studies which do examine this have measured the quantity of advice-giving instead of the quality of advice-giving. Within the literature of helpful-unhelpful social support and cancer, there is some indication that advice-giving can be both a helpful and unhelpful behavior.

Helpful and Unhelpful Behaviors

Previous studies have identified helpful and unhelpful support behaviors. Taylor and Dakof (1988) report that cancer survivors view being there (physical presence), expressing concern or love, a calm acceptance of the illness and consequences, practical assistance and expressing optimism as helpful spouse behaviors. Annoying spouse behaviors were reported as being critical, minimizing the

impact of the cancer, and expressing pessimism. Helpful support from the family was reported as expressions of concern and affection, being there for them, and practical assistance. Unhelpful support from the family included minimizing and being critical. Friends were reported as being helpful when they showed love and concern, provided practical assistance, and calmly accepted the illness. Friends' unhelpful support behaviors were reported as avoiding social contact and expressing pessimism.

Dakof and Taylor (1990) asked cancer patients about helpful and unhelpful actions in a variety of interaction contexts. They asked survivors about specific social support transactions with their spouse or partner, family members, friends, support group members, others they know with cancer, physicians, nurses, acquaintances and strangers. Findings suggest that esteem/emotional support is most helpful when provided by intimate others; however, informational support is most helpful from cancer patients and physicians. Nurses were also relied on for esteem and emotional support instead of informational support. Minimization of the cancer experience was found to be a frequent complaint and avoidance of contact was mentioned frequently as a non-helpful behavior exhibited by friends (Dakof & Taylor, 1990).

Rose (1990) focused on examining the cancer survivors' desires for eleven components of social support from three different interpersonal contexts (family, friends, and health professionals). The eleven components of social support included: reassurance; esteem; intimacy; ventilation; open communication; clarification; modeling; advocacy; directive guidance; tangible aid; and social diversion. Findings indicated that survivors preferred tangible aid from family, modeling from friends with cancer, and open communication with health professionals. Survivors desired

intimacy, opportunities to ventilate, and social diversion from both friends and family. Survivors reported a need for reassurance, esteem, directive guidance, and advocacy support from family, friends, and health professionals. This research indicates that directive guidance (advice) is useful for survivors and that survivors wanted this type of support from family and friends as well as health professionals.

Advice Giving

Advice giving is a common and important form of social support (Goldsmith, 2004). Advice low income pregnant women received from close women friends was more persuasive than advice from their partners (Dunn, Pirie, & Hellerstedt, 2003). Lay advice giving may have impacted the women's health decisions.

Emotionally supportive behaviors and instrumental aid or assistance have been found in the literature to be helpful across relational contexts; however, information and advice were not found to be consistently helpful across relational contexts (Dunkel-Schetter, Blaband, Feinstein, & Herbert, 1992).

A small subset of support studies have examined advice giving as a form of supportive communication (Goldsmith and Fitch, 1997; Goldsmith, 2000, Goldsmith & MacGeorge, 2000; Goldsmith, McDermott, & Alexander; MacGeorge, Feng, Butler, & Budarz, 2004; MacGeorge, Lichtman, & Pressey, 2002). This line of research has primarily been concerned with the influence of face threat and facework strategies (Goldsmith & Fitch, 1997; Goldsmith, 2000; Goldsmith & MacGeorge, 2000; MacGeorge, Lichtman, & Pressey, 2002).

Researchers have begun to examine the influence of advice in various situations. For example, Kiuru, Posiparta, Kettunen, Saltevo, and Liimatainen (2004)

examined nurses' advice giving styles in the context of diabetes care. Their findings indicated that nurses primarily gave recommending advice but also gave persuasive, supportive, and permitting advice. Recommending advice consisted of giving suggestions while persuasive advice consisted of providing persuasive arguments. Supportive advice included giving personalized suggestions, while permitting advice involved providing permission or denial of a behavior. What this study did not do was test which of these types of advice was found to be rated higher by the diabetes patients, nor did they test how these different types of advice influenced various outcomes.

Buetow (1999) examined advice giving in the doctor-patient relationship and found that unsolicited advice to stop smoking is perceived by the patient as a competitive behavior instead of a collaborative behavior and leads to further resistance. In a study of lay advice giving to pregnant women about smoking cessation and alcohol avoidance, Dunn, Pirie, and Hellerstedt (2004) found that female friends and family (confidantes) are actively involved in providing advice during pregnancy and are important role models. Again, this research points to the importance of receptivity to advice as an important variable.

Goldsmith and Fitch (1997) investigated in an ethnographic study of college-educated adults the difficulties of seeking, giving, and receiving advice in a naturalistic community setting (everyday advice giving). Thus, the focus of their research was in understanding advice giving in its natural setting and was not specifically focused on advice giving between relational partners. Based on this study it was found that advice is not just about giving information, but that advice has

multiple meanings and purposes. Goldsmith and Fitch (1997) identified three dilemmas of advice giving, which included being helpful versus butting in, being supportive versus being honest, and lastly showing gratitude and respect versus making your own decision. The dilemmas point toward at least three variables which could potentially influence advice evaluation -- target receptiveness, the emotional supportiveness of advice, and respecting the recipient's autonomy.

Dunkel-Schetter, Blasband, Feinstein, and Herbert (1992) report that emotionally supportive behavior and instrumental aid are seen as uniformly helpful, while advice was not. Advice may be more helpful if it is also emotionally supportive. Advice that includes attributions of blame or implies overinvovlement and intrusiveness is seen as unhelpful (Dunkel-Schetter, Blaband, Feinstein, & Herbert, 1992). Based on prior research, advice appears to have the potential to be helpful or unhelpful; thus, future research needs to determine what aspects of advice lead to positive evaluation of that advice as well as improved survivor coping.

According to Goldsmith (2000) advice is threatening to negative face as advice inevitably involves telling someone what to do. Advice can also be threatening to positive face if the receiver views the advice as implied or voiced criticism (Goldsmith, 2000). Goldsmith (2000) found that there is a positive association between a) the degree to which advice is perceived to be solicited by the recipient; and b) the perception that the advice giver took into consideration the face concerns for the recipient. The more the advice receiver felt the advice was solicited, the more they perceived the advice giver was considerate of their face concerns. Her findings further indicate that advice is seen as more solicited when the recipient asks

for advice, and ambiguous when the participant introduces or discloses a problem into the conversation. Advice was seen as less face threatening when the advice recipient introduced the problem into the conversation and/or asked for advice. Advice was also less threatening if the advice provider first discussed the problem itself with the advice recipient. Goldsmith (2004) explains, "Different patterns by which advice is introduced into a conversation imply different kinds of roles and relationships between participants" (p. 77). Advice seeking can be direct, involving a direct question for information or advice, or indirect, involving the introduction of a problem into a conversation through self-disclosure. The directness of the advice seeking influences the degree to which the advice is perceived as solicited, possibly influencing the way in which the advice is evaluated on the dimensions of problem solving utility, emotional awareness, and relational assurance.

Goldsmith (2004) asserts that advice is useful when the support is appropriate for the problem, the content of the advice is useful, and when the advice is communicated in such a way as to take into consideration the identity and relational implications. Beyond these considerations, however, other variables may influence the evaluation of advice, such as uncertainty management (Brashers, Neidig, and Goldsmith, 2004) and content of advice (MacGeorge, Feng, Butler, & Budarz, 2004).

MacGeorge et al. (2004) was the first study to take a different approach, systematically examining the influence of advice content (comprehensibility, relevance, feasibility, and limitations), facework, and target receptiveness on advice quality, facilitation of coping, sufficiency of support, and intention to implement advice. The current study is different from MacGeorge et al (2004), as it takes into

consideration the relative influence of uncertainty management on advice and advice on uncertainty management.

Rationale, Hypotheses, and Research Questions

Advice giving is an important area of study, as advice is one of the most common forms of social support given (Goldsmith, 2004). Uncertainty must be managed by those with chronic illness and is impacted by social support (Brashers et al., 2004). This study explores the link between advice giving and uncertainty management extending our understanding of both processes.

Problem Coping Processes

Previous research indicates that target receptiveness is positively related to facilitation of coping (MacGeorge et al., 2004). Previous research however did not consider the role of uncertainty management in target receptiveness. In order to be receptive an individual may also need to be openly seeking information and not avoiding information. Previous research further indicates that optimistic support impacts the perception of uncertainty and can lead to a new perspective (Brashers et al., 2004). Moreover, more optimistic thinking is thought to be linked with the ability to envision multiple possibilities and solutions, a reevaluation of uncertainty and life, and a new appraisal of uncertainty from danger to opportunity (Mishel, 1990). Therefore it is predicted that:

H_1: Target receptiveness and advice optimism are positively related to problem coping processes.

Advice content is an important variable to consider in the context of this research. Recall that advice content is composed of the following dimensions absence

of limitations, comprehensibility, relevance, and feasibility. MacGeorge et al. (2004) found that only absence of limitations was positively related to facilitation of coping. However, MacGeorge et al. (2004), examined undergraduate advice experiences while the current study examines cancer survivor advice experiences. Therefore, it is anticipated that content will be positively related to problem coping processes for cancer survivors, as the advice given relates to an illness context and not a general situation. This study is the first to consider how the variable information sensitivity affects coping processes. It is expected that advice which is tailored to a survivor's level of seeking or avoiding information and provides the specific information a survivor is seeking or avoiding will be positively related to problem coping processes. Therefore it is predicted that:

H_2: Advice content and information sensitivity are positively related to problem coping processes.

Emotion Coping Processes

This study is the first to consider how advice differentially affects emotion coping processes and problem coping processes. MacGeorge et al. (2004) examined coping processes as one dependent variable that included emotion and problem coping. The independent variables may have varying degrees of positive impact on emotion coping. Certain aspects of advice may have a larger positive impact on problem coping such as target receptiveness and advice content while advice optimism and information sensitivity may have a larger impact on emotion coping. Thus, the following hypotheses are advanced:

H_3: Target receptiveness and advice optimism are positively related to emotion coping processes.

H_4: Advice content and information sensitivity are positively related to emotion coping processes.

Advice Evaluation

MacGeorge et al. (2004) found that advice content and target receptiveness were positively related to message quality. However, the current study utilizes a different advice quality evaluation than that which was used in MacGeorge et al. (2004). Goldsmith, McDermott, and Alexander (2000) developed a multidimensional semantic differential scale for assessing the effectiveness of enacted support that is composed of problem-solving utility, relational assurance, and emotional awareness. This scale was developed to measure the dimensions support recipients use to evaluate supportive communication. Their findings indicated that recipients evaluated supportive communication differently on these three dimensions. Goldsmith et al. (2000) scale is thus utilized as it allows for a closer examination of how each of the independent variables positively impacts three aspects of advice evaluation. Thus the following research questions are advanced:

RQ_1: Are target receptiveness and advice optimism positively related to advice evaluation?

RQ_2: Are advice content and information sensitivity positively related to advice evaluation?

Uncertainty Management Processes

Social support helps people with HIV or AIDs to manage their uncertainty; however, it also creates dilemmas for uncertainty management (Brashers et al., 2004). This study is breaking new ground by exploring how advice affects uncertainty management processes. If a survivor is more receptive, then perhaps this leads to further information seeking. If a survivor receives highly optimistic advice, then this may lead to less information seeking. Thus, the following research questions are advanced:

RQ_3: Are target receptiveness and advice optimism positively related to uncertainty management processes?

RQ_4: Are advice content and information sensitivity positively related to uncertainty management processes?

CHAPTER III

Method

Pilot Testing

The questionnaire for the current study was initially pilot tested with a cancer survivor group. Participants in this group did not fill out the survey but provided feedback. Participants expressed confusion regarding what was considered advice and focused their comments solely on medical advice. Based on these comments, doctor and nurse were removed as sample advice givers from the questionnaire instructions in order to take the focus solely off medical advice.

The questionnaire for the current study was then pilot tested by six cancer survivors who completed the questionnaire and also provided feedback on the questionnaire instrument. The questionnaire was pilot tested to ensure that the questions created by the author to address uncertainty management and advice giving were clear. The pilot questionnaire asked survivors to report on three different pieces of advice in order to receive as much feedback as possible. Further, the pilot questionnaire asked participants to report sections that were confusing and to report changes they would make to the questionnaire to make it clearer.

Participants reported that the questionnaire was too long and that the directions for the open-ended questions needed to be clearer. Participants also reported that the wording of some questions was confusing, for example, “I was seeking to increase my uncertainty when given this advice.” The questionnaire was updated to reflect the concerns raised. The questionnaire was shortened and only asked participants to report on one piece of advice they received (rather than three

pieces of advice). The directions for each section were expanded to decrease confusion. Lastly, questions in the target receptiveness section were re-worded to eliminate confusion. For example, "I was seeking to increase my uncertainty when given this advice" was changed to, "I was seeking to increase my uncertainty." Based on feedback from pilot testing, explanations were added to the front end of the questionnaire to describe uncertainty management, information seeking and information avoiding.

Participants and Procedures

Study participants (N = 161) were recruited via web-site announcements, announcements in newsletters, handing out fliers, attending cancer survivor events to hand out questionnaires and fliers, attending support groups to hand out questionnaires and fliers, and snowball sampling. Recruiting took place online at numerous web-sites including the American Cancer Society's Cancer Survivor Network (www.acscsn.org), She's A Cancer Survivor (www.shesacancersurvivor.com), American Brain Tumor Association (http://hope.abta.org), Lymphoma Research Foundation (http://www.lymphoma.org), Cancer Research and Prevention Foundation (http://www.preventcancer.org/), and Planet Cancer (http://www.planetcancer.org). Announcements about the study and a link to the study web-site were posted on each of the above web-sites. The questionnaire was posted online at www.ou.edu/cancersurvivor/. Participants were also recruited at several local American Cancer Society Relay for Life events, through church newsletters, the local hospital, and two cancer support groups. Communication students taking summer courses were also asked to pass out the

questionnaire to cancer survivors they knew and to bring the completed questionnaires back to class for extra credit. Students were told that the cancer survivor must fill out the questionnaire.

Eighty three percent of participants indicated that they were Caucasian (1.9% African American, 1.2% Asian, .6% Hispanic, 2.5% other). Seventeen participants did not report their ethnicity. Participants ranged in age from 18 to 97 years of age (M=50.3, SD=12.6). Seventeen participants (11%) did not indicate their age. Participants' survivor length ranged from 2 months to 290 months (24 years) (M=54.9, SD = 53.0). The majority of participants were married (64% married, 9% single, 5% dating, 11% divorced). Seventeen participants did not indicate their marital status. Participants indicated a variety of education backgrounds (23% high school, 10% associates degree, 27% bachelors degree, 18% masters, 7% Ph.D., 0.6% Ed.D., and 1.9% MD). Twenty participants did not indicate their level of education. Of the 161 participants, 38 (24%) reported having no children, 18 (11%) reported having one child, 50 (31%) reported having two children, 22 (13%) reported having three children, 10 (6.2%) reported having four children, 4 (1.9%) reported having 5 children, and 1 (0.6%) reported having six or more children. Nineteen participants (11%) did not report their number of children.

Participation in this study involved filling out the paper version or online version of the questionnaire which took approximately 20 minutes. Participants who filled out the paper version of the study were given an informed consent form prior to completing the questionnaire. Participants who filled out the questionnaire online were prompted to read the consent form prior to completing the questionnaire. The

first page of the questionnaire explains uncertainty and uncertainty management (see Appendix A). Participants are prompted to read the description of uncertainty management prior to completing the questionnaire. First, uncertainty is defined as a mental state we experience in situations where we are unable to predict the outcome and/or where we encounter unfamiliar or vague information. Participants are then given a list of uncertainty triggering events which include: cancer diagnosis, information gathering, treatment, discussions with family after diagnosis, discussion about cancer diagnosis and treatment, life decisions after diagnosis, side effects, coping, financial resources, and lifestyle after treatment. Next, uncertainty management is defined and examples of information seeking and information avoiding behaviors are given. Last, further explanation and examples of maintaining uncertainty, increasing uncertainty and reducing uncertainty are provided.

Part I of the questionnaire asks participants to recall an example of advice given to them after their cancer diagnosis by a spouse/significant other, family member, your children, friend, support group member, an acquaintance or stranger (see Appendix A). Examples of advice are provided which include: go to the American Cancer Society web-site, you need to cut all of the fat out of your diet and lose weight, get your protein from beans and peanut butter, only go for treatment at MD Anderson, rely on God to bring you through this, and don't eat raw oysters while you are on chemotherapy. The first five pieces of advice listed above are actual pieces of advice reported in the pilot study. The last piece of advice was observed in a cancer support group meeting. In this section participants are prompted to indicate the advice giver's relationship to them.

In Part II participants report on different characteristics of the advice they received. Part IIA asks participants to report how receptive they were to the advice (See Appendix A & B). Part IIB asks participants to report how sensitive the advice was to their uncertainty management needs. Part IIC asks participants to report on whether the advice given was appropriate for their situation. Part IID asks participants to report whether they thought the advice was comprehensible. Part IIE asks participants to report how relevant the advice was to the problem they were facing. Part IIF asks participants to report on the feasibility of the advice. Part IIG asks participants to report on how optimistic the advice was.

In Part III participants report on how the advice influenced their uncertainty management and coping as well as their evaluation of the advice (see Appendix A & B). Part IIIA asks participants to report how this advice influenced their level of uncertainty, uncertainty management behaviors, and intentions to increase their uncertainty, reduce their uncertainty, or maintain their uncertainty. Part IIIB asks participants to report how this advice influenced their ability to handle the emotions they felt after cancer diagnosis. Part IIIC asks participants to report how this advice influenced their ability to handle the issue(s) the advice addressed. Part IIID asks participants to evaluate this advice on its relational assurance, emotional awareness, and problem-solving utility.

Part IV asks participants to respond to three open-ended questions (see Appendix A & B) about their uncertainty management after receiving this advice. In part V participants are asked to report on demographic information that includes

current age, length of survivorship, age when diagnosed, diagnosis, current marital status, ethnicity, highest education degree, and number of children (see Appendix A).

The description of uncertainty at the beginning of the questionnaire is drawn from Mishel (1990) and Brashers et al. (2000) as well as Brashers, Neidig, and Goldsmith (2004). The examples of advice provided in the questionnaire are drawn from actual advice reported in pilot study questionnaires. Parts of section IIA were taken from MacGeorge, Feng, Butler, and Budarz (2004) (see Appendix B). Three questions assessing survivor target receptiveness were taken from MacGeorge et al. (2004). Parts IIC, IID, IIE, IIF, IIIB, and IIIC were taken verbatim from MacGeorge, Feng, Butler, and Budarz (2004) (see Appendix B). Also taken from MacGeorge et al. (2004) include advice content questions assessing absence of limitations, comprehensibility, relevance, feasibility, and questions assessing facilitation of emotional and problem coping processes. Part IIID is taken verbatim from Goldsmith, McDermott, & Alexander (2000) (see Appendix B). The advice rating scale used in section IIID is a 12 item semantic differential scale created by Goldsmith, McDermott, & Alexander (2000). This semantic differential scale assesses the problem solving utility, relational assurance, and emotional awareness of the advice given. Questions in section IIA, IIB, IIG, and IIIA were theoretically derived from Brashers, Neidig, Haas, Dobbs, Cardillo and Russell (2000), Brashers, Neidig, Goldsmith (2004) HIV/AIDS uncertainty management, and Mishel (1990) (see Appendix B).

Factor Analysis

Exploratory factor analysis was conducted on all scales with the exception of the Goldsmith et al. (2000) semantic differential scales as these are established scales. Exploratory factor analysis was conducted on the remaining scales as they were either new scales created by the researcher, altered scales changed for this context, or scales that had been utilized in one previous advice study.

Independent Variables

Likert-style items with a 5-point scale (1=strongly disagree, 5 = strongly agree) were utilized to measure participants' perception of advice characteristics as well as their target receptiveness (see Table 3 for all items). Target receptiveness (first three items), absence of limitations, comprehensibility, relevance and feasibility were each measured with three items taken from MacGeorge et al. (2004). Target receptiveness (last five items), information sensitivity, and advice optimism were created by the author based on Brashers et al. (2004). Previous research has demonstrated that social support providers and recipients face the dilemma of coordinating on the issue of uncertainty management (Brashers et al., 2004). For example, in Brashers et al. (2004) HIV patients reported having difficulty avoiding information and maintaining their current level of uncertainty. Social support may also facilitate a reappraisal of uncertainty, a new way of looking at uncertainty as less threatening (Brashers et al., 2004). Accordingly, five items were created to measure target receptiveness, six items were created to measure information sensitivity, and

four items were created to measure probabilistic nature of the advice to measure the influence of uncertainty management.

To reduce redundancy in the independent variables, the 30 items were subjected to a principal components factor analysis with varimax rotation. This factor analysis revealed that advice information sensitivity did not load highly on any factor. This set of questions may have been confusing to participants. This set of questions was removed and the remaining 24 items were subjected to a principal components factor analysis with varimax rotation. This factor analysis revealed that three items for target receptiveness (7, 8, & 5) and one item for comprehensibility (3) together loaded on a sixth factor. The three removed items from target receptiveness may have been confusing to participants. This sixth factor did not make sense at a conceptual level and was therefore removed from the factor analysis.

The remaining 20 items were subjected to a principal components factor analysis with varimax rotation. The procedure generated five factors with eigenvalues greater than 1 (see Table 2). The first two items for comprehensibility and three items for relevance loaded on the first factor, and reliability analysis indicated that these items formed a reliable scale (α= .8630). These items were averaged to form the index of appropriateness. This index was renamed appropriateness as advice that is relevant and clear should be more appropriate for the context. The four items for advice optimism loaded on the second factor and formed a reliable scale (α= .8811). These items were averaged to form the index of advice optimism. The three items measuring absence of limitation loaded on the third factor and formed a reliable scale (α= .9373). These items were averaged to form the index of absence of limitation.

The first three items as well as the fourth and sixth item measuring target receptiveness loaded on the fourth factor and formed a reliable scale (α= .8326). These items were averaged to form the index of target receptiveness. The three items measuring feasibility loaded on the fifth factor and formed a reliable scale (α= .8856). These items were averaged to form the index of feasibility.

Table 3
Items and Factor Loadings for Independent Variables

	Factors				
Items	1	2	3	4	5
I understood the advice[a]	.83				
I was able to make sense of the advice[a]	.81				
The advice I was given was applicable to my situation[b]	.75		.23		.32
The advice was suited to the problem I was having[b]	.67	.23	.24		.32
*The advice I received was irrelevant to my problem[b]	.62		.35		
The advice given was optimistic[c]	.23	.86			
The advice given increased my feelings of optimism[c]	.23	.80			
*The advice given did not increase my feelings of optimism[c]		.72	.35		.28
*The advice given was not hopeful[c]		.71	.39		.29
*I could predict that the advised action would have serious drawbacks[d]	.21	.27	.85		.22
*I could tell that the advised action would have serious drawbacks[d]	.24	.28	.83		.22
*I could see that the advised action had significant disadvantages[d]	.21	.23	.81		
I was currently seeking information[e]				.81	
I asked for advice from this person[e]	.22		.24	.77	
I was looking for advice from this person[e]	.23		.30	.76	
I was seeking to reduce my uncertainty[e]			.24	.74	
I opened myself up for advice from this person[e]	.35	.46	.24	.51	.24
*The advice recommended an action that was impossible for me to do[f]			.22		.85
*I was advised to do something I was not capable of accomplishing[f]	.21	.28	.28		.81
The advice given was something I could do[f]	.52	.21		.20	.67
Alpha for items used in predictor indices (items with italicized loadings)	.86	.88	.94	.83	.88

NOTE: Blank cells indicate loadings less than .20. Factor 1 was labeled *appropriateness*. Factor 2 was labeled *advice optimism*. Factor 3 was labeled *absence of limitations*. Factor 4 was labeled *target receptiveness*. Factor 5 was labeled *feasibility*. [a]Item for comprehensibility. [b]Item for relevance. [c]Item for advice optimism. [d]Item for absence of limitations. [e]Item for target receptiveness. [f]Item for feasibility. *Reverse coded.

Dependent Variables

Twelve items measured on 5-point semantic differential scales were employed to measure participants' evaluation of the advice message. Goldsmith et al. (2000) created this scale to measure the problem-solving utility, relational assurance, and emotional awareness aspects of received advice. The four items measuring problem-solving utility formed a reliable scale (α = .89) and were averaged to form an index of problem-solving utility. The four items measuring relational assurance formed a reliable scale (α = .91) and were averaged to form an index of relational assurance. The four times measuring emotional awareness formed a reliable scale (α = .92) and were averaged to form an index of emotional awareness.

Seventeen Likert-style items with a 5-point scale (1= strongly diagree, 5 = strongly agree) were utilized to measure the facilitation of emotion coping processes, facilitation of problem coping processes and uncertainty management processes (see Table 4). Facilitation of emotion coping processes and facilitation of problem coping processes were each measured with three items taken from MacGeorge et al. (2004). Uncertainty management processes was measured with eleven items created by the author based on Brashers et al. (2004). Previous research indicated that people with HIV or AIDS must manage the complications brought on by incongruent social support attempts and their own uncertainty management efforts. Accordingly, eleven items were created by the author to measure the influence of advice on uncertainty management behaviors.

To reduce redundancy in the dependent variables, the 17 items were subjected to a principal components factor analysis with varimax rotation. The procedure

generated four factors with eigenvalues greater than 1 (see Table 3). The three items measuring facilitation of problem coping processes and uncertainty management processes items seven and ten loaded on the first factor and formed a reliable scale (α = .87). These items fit together conceptually as advice that facilitates problem solving should also facilitate seeking further information and/or reducing uncertainty. These items were averaged together to form an index of problem coping processes. Influence on uncertainty items four, two, and one and the three items measuring facilitation of emotion coping processes loaded together on the second factor and formed a reliable scale (α = .86). These items fit together conceptually as advice that facilitates emotion coping processes should either reduce, increase or create new uncertainty. These items were averaged together to form an index of emotion coping processes.

Uncertainty management processes items eleven, nine, and eight loaded together on a third factor but did not form a reliable scale (α = .67). Uncertainty management processes items six, three, and five loaded together on a fourth factor but did not form a reliable scale (α = .52). Further, at a conceptual level, the above combinations do not hold up. It is possible that these questions in particular caused some confusion among participants.

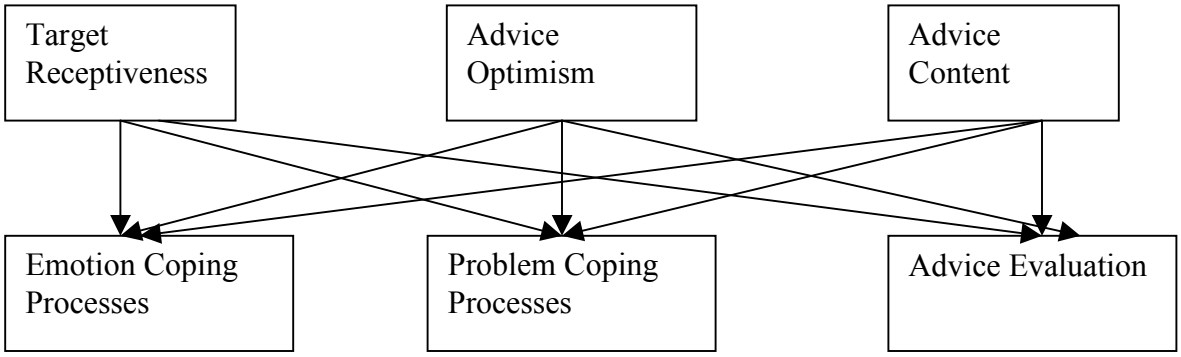
Table 4
Items and Factor Loadings for Dependent Variables

Items	*Factors* 1	2	3	4
I was more confident about my ability to improve the situation[a]	.88	.27		
I felt more strongly that I was able to make the situation better[a]	.86	.32		
I felt more capable of improving the situation[a]	.86	.28		
This advice motivated me to seek further Information[b]	.63			.24
This advice motivated me to reduce my uncertainty[b]	.59		-.23	.35
This advice created new uncertainty for me[b]		.71	-.37	-.23
It felt easier to handle any unhappiness I had about the situation[c]	.45	.69		.28
I felt more capable of dealing with any upset feelings I had[c]	.51	.68		
*This advice increased my uncertainty[b]		.68	-.45	
I felt better able to manage any emotional distress I was having[c]	.59	.60		.28
This advice reduced my uncertainty[b]	.41	.56		.33
This advice motivated me to increase my uncertainty[b]			.78	
This advice motivated me to try to maintain my current level of uncertainty[b]	-.42		.68	
This advice motivated me to avoid further information[b]			.64	
After receiving this advice I began to think differently about my uncertainty[b]	.22			.73
This advice did not influence my uncertainty[b]			-.26	.70
This advice encouraged me to see uncertainty as a natural part of life[b]			.27	.56
Alpha for items used in predictor indices (items with italicized loadings)	.87	.86	.67	.52

NOTE: Blank cells indicate loadings less than .20. Factor 1 was labeled *problem coping processes*. Factor 2 was labeled *emotion coping processes*. [a]Item for problem coping processes. [b]Item for uncertainty management processes. [c]Item for emotion coping processes.
* Reverse coded.

Based on the factor analyses, it was decided to reframe the conceptual model guiding the hypotheses to more appropriately frame the discussion of results. Therefore the following conceptual framework is offered (see Figure 1).

Figure 1
Revised Conceptual Framework



Note: The independent variables target receptiveness and advice content were revised based upon the factor analyses. Advice content now has the dimensions appropriateness (combination of comprehensibility and relevance), absence of limitations and feasibility. The dependent variables emotion coping processes and problem coping processes were revised based upon the factor analyses and include items measuring uncertainty management processes.

Descriptive Data

Participants were asked to respond to five open-ended questions on the questionnaire – one at the beginning and four at the end. The first open-ended question asked participants to report a piece of advice they received sometime after they were diagnosed with cancer. The second open-ended question asked participants whether they experienced more or less uncertainty after receiving advice. The third open-ended question asked participants what they did after receiving this advice. The fourth open-ended question asked participants whether they sought further

information after receiving the advice. The fifth question asked participants whether they responded differently to advice given to them when they were seeking or avoiding information.

Participant responses to the above questions were read and reread by the author for themes. The focus of the analysis was on understanding types of advice given to cancer survivors, how received advice influences uncertainty management, and how receptiveness to receiving information influences response to advice. Coding and memoing were utilized to elicit themes from the data by the researcher (Lofland & Lofland, 1995).

CHAPTER IV

Results

Descriptive Analyses

The most frequently reported advice giver was a family member (25%), followed by a friend (23%), spouse/significant other (18%), acquaintance (14%), support group member (4%), child (4%), stranger (4%), cancer survivor (2.5%), doctor (1.9%), nurse (1.2%), co-worker (.6%), and preacher (.6%). Two participants did not report the advice giver's status.

Thematic analyses of the types of advice reported in the study revealed nine categories of advice messages. The following advice categories emerged from the data: 1) treatment; 2) faith in God; 3) cancer health tips; 4) food; 5) alternative treatment; 6) attitude; 7) information gathering; 8) second opinion; and 9) reassurance (see Table 5).

Table 5

Summary of Advice Types and Examples

Type of Advice	**Advice Example**	**Advice Example**
Treatment	Get a chemotherapy port	Get a follow up after mastectomy
Faith in God	Pray and go to church	Trust God
Cancer Health Tips	Don't jog	Wash your hands frequently
Food	Eat herbs and blueberries	Don't eat sugar it causes cancer
Alternative Treatment	Use Chinese herbs	Implement immune boosting regimens
Attitude	Be positive	Avoid negative television and laugh a lot
Information Gathering	Do your homework	Gather as much information as possible
Second Opinion	Shop around for your medical team	Get a second opinion even when you don't think you need one
Reassurance	We'll get through this	I'll be here for you

Thematic analyses of responses to the questions "did you experience more or less uncertainty after receiving this advice" and "did you seek further information after receiving this advice" revealed five ways advice impacted uncertainty management (see Table 6). The first three areas of impact are drawn from the first question (more or less uncertainty) and the last two areas of impact are drawn from the second question (did you seek further information).

Table 6

Advice Impact on Uncertainty Management

Experienced more uncertainty	14.3%
Experienced less uncertainty	43.5%
No impact on uncertainty	16.8%
Sought further information	51%
Did not seek further information	.03%

In response to the question what did you do after receiving this advice, six categories of responses were derived from the thematic analysis: 1) took advice; 2) ignored advice; 3) prayed; 4) stayed positive; 5) moved on with my life; and 6) became active. Thematic analyses of the open-ended question, "did you respond differently to advice given when seeking or avoiding information" revealed the following categories 1) no difference; 2) differently; 3) based on advice giver; 4) not avoiding or seeking; and 5) never avoided. For example, a 54-year-old cancer survivor reported "I didn't want to get into a lot of emotional discussion. I was

focused on the medical treatment. I avoided talking with people who wanted to talk about how difficult it might be." Further, a 50-year-old cancer survivor reported, "I don't think I avoided as much as I filtered. I knew what to look for and had my own plan to develop in managing my personal circumstance. Again, no one could do that for me other than myself." A 38-year-old cancer survivor reported, "While trying to avoid information I may have just tuned them out. While seeking advice I always took notes." A 62-year-old cancer survivor reported, "Yes, I considered how I could implement the information when seeking advice. Sometimes I got angry or put off by unsolicited information." Other survivors reported that they responded differently based upon the advice giver. An 18-year-old cancer survivor reported, "It depended on the advice. You get used to the think positive, be positive clichés so that they become white noise. Specific advice, in particular about diet just became annoying, because most people have no idea what it's like to live on chemotherapy. You can't learn to fly an airplane from someone who has never even been to the airport."

Correlation Analyses

Zero-order correlations were computed between each of the independent and dependent variables (see Table 7). The zero-order correlations for the independent variables indicated significant relationships between each pair of independent variables. All of the correlations were positive and ranged from .35 to .63, indicating small to moderate shared variance between the independent variables. The zero-order correlations for the dependent variables indicated a significant relationship between each pair of dependent variables. The negative correlations ranged from -.46 to -.70 indicating small to moderated shared variance between the dependent variables. The

positive correlations ranged from .59 to .86 indicating moderate shared variance between the dependent variables. Correlations between all of the independent and dependent variables are summarized in Table 7.

Table 7
Correlations Among Independent and Dependent Variables

Variables	2	3	4	5	6	7	8	9	10
Independent Variables									
1. Appropriateness	.53	.55	.42	.63	-.65	-.48	-.57	.36	.39
2. Advice Optimism		.59	.35	.55	-.56	-.70	-.61	.51	.69
3. Absence of Limitations			.35	.52	-.63	-.66	-66	.39	.58
4. Target Receptiveness				.36	-.45	-.44	-.48	.52	.51
5. Feasibility					-.56	-.52	-.48	.40	.47
Dependent Variables									
6. Problem-Solving Utility						.84	.86	-.50	-.56
7. Relational Assurance							.86	-.49	-.70
8. Emotional Awareness								-.46	-.57
9. Problem Coping Processes									.59
10. Emotion Coping Processes									

NOTE: All correlations are $p < .01$.

Multicollinearity

As significant positive correlations were found between the independent variables the regression analyses included multicollinearity tests. The Cohen, Cohen, West and Aiken (2003) rule of thumb regarding multicollinearity was utilized. Cohen et al. (2003) rule of thumb states that multicollinearity is not a serious concern unless the tolerance is lower than .10, the VIF exceeds 10, or the condition index exceeds 30. The independent variables did not exceed these levels of tolerance (see Table 8).

Regression Analyses

Multiple regression analysis using the Enter method was utilized to test the following hypotheses and to answer RQ_1.

Problem Coping Processes

H_1 predicted that target receptiveness and advice optimism would be positively related to problem coping processes. This hypothesis was supported by the data (see Table 9). H_2 predicted that advice content and advice information sensitivity would be positively related to problem coping processes. Advice information sensitivity was removed as a variable since the scale measuring this variable did not load together as a factor. This hypothesis was not supported as advice content was not significantly and positively related to problem coping processes (see Table 9). The main effect terms jointly accounted for 41% of the variance in problem coping processes, $F(5,128) = 18.05$, $p < .001$. A fairly large multiple correlation was found between the predictor variables (appropriateness, advice optimism, absence of limitations, target receptiveness, feasibility) and problem coping processes ($R = .64$). The direction of influence for the beta values is positive with the exception of appropriateness ($\beta = -.07$). Target receptiveness ($\beta = .40$) was significant ($p < .001$) as was advice optimism ($\beta = .30$) ($p < .01$). These variables had positive independent effects on problem coping processes. The betas for appropriateness, absence of limitations, and feasibility were nonsignificant (see Table 9).

Emotion Coping Processes

H_3 predicted that target receptiveness and advice optimism would be positively related to emotion coping processes. This hypothesis was supported (see

Table 9). H_4 predicted that advice content and information sensitivity would be positively related to emotion coping processes. This hypothesis was not supported as only absence of limitations was significantly and positively related to emotion coping processes (see Table 9). The main effect terms jointly accounted for 60% of the variance in emotion coping processes, $F(5,129) = 39.42$, $p < .001$. A fairly large multiple correlation was found between the predictor variables (appropriateness, advice optimism, absence of limitations, target receptiveness, feasibility) and emotion coping processes ($R = .78$). The direction of influence for the beta values is positive with the exception of appropriateness ($\beta = -.16$). Advice optimism ($\beta = .46$) and target receptiveness ($\beta = .30$) were significant ($p < .001$) as were appropriateness ($\beta = -.16$) ($p < .05$) and absence of limitations ($\beta = .25$) ($p < .01$). Advice optimism, target receptiveness, and absence of limitations had positive independent effects on emotion coping processes. Appropriateness had a negative independent effect on emotion coping processes. The beta for feasibility was nonsignificant (see Table 9).

Advice Evaluation

RQ_1 asked whether target receptiveness and advice optimism were positively related to advice evaluation. Advice optimism is negatively and significantly related to relational assurance and emotional awareness. Target receptiveness is negatively and significantly related to problem-solving utility, relational assurance and emotional awareness. RQ_2 asks whether advice content and information sensitivity are positively related to advice evaluation. Appropriateness is negatively and significantly associated with problem-solving utility. Absence of limitations is negatively and significantly associated with problem solving utility, relational

assurance, and emotional awareness. Feasibility is not significantly related to any of the three categories of advice evaluation. The main effect terms jointly accounted for 58% of the variance in problem-solving utility, $F(5,121) = 33.39$, $p < .001$. A fairly large multiple correlation was found between the predictor variables (appropriateness, advice optimism, absence of limitations, target receptiveness, feasibility) and problem-solving utility ($R = .76$). The direction of influence for all five β values is negative. Appropriateness ($\beta = -.30$) and absence of limitation ($\beta = -.28$) both have significant negative β values ($p < .001$). These variables had negative independent effects on problem-solving utility. Target receptiveness ($\beta = -.16$) was found to be significant ($p < .05$). The betas for advice optimism and for feasibility were nonsignificant (see Table 9).

The main effect terms jointly accounted for 60% of the variance in relational assurance, $F(5,122) = 37.67$, $p < .001$. A fairly multiple large correlation was found between the predictor variables (appropriateness, advice optimism, absence of limitations, target receptiveness, feasibility) and relational assurance ($R = .78$). The direction of influence for advice optimism, absence of limitations, target receptiveness, and feasibility β values is negative. The direction of influence for the appropriateness β value is positive. Advice optimism ($\beta = -.40$) and absence of limitations ($\beta = -.33$) were significant ($p < .001$). Target receptiveness ($\beta = -.15$) was found to be significant ($p < .05$). These variables had negative independent effects on relational assurance. The betas for appropriateness and feasibility were nonsignificant (see Table 9).

The main effect terms jointly accounted for 57% of the variance in emotional awareness, $F(5, 122) = 32.04$, $p < .001$. A fairly large multiple correlation was found between the predictor variables (appropriateness, advice optimism, absence of limitations, target receptiveness, feasibility) and emotional awareness ($R = .75$). The direction of influence for the beta values is negative with the exception of feasibility ($\beta = .03$). Absence of limitations ($\beta = -.39$) was significant ($p < .001$), as were advice optimism ($\beta = -.21$) and target receptiveness ($\beta = -.21$) ($p < .05$). These variables had negative independent effects on emotional awareness. The betas for appropriateness and feasibility were nonsignificant (see Table 9).

RQ_3 asked whether target receptiveness and advice optimism are positively related to uncertainty management processes. RQ_4 asked whether advice content and information sensitivity were positively related to uncertainty management. The scale measuring the variable uncertainty management processes did not load together on a single factor and was removed with the exception of the items which loaded together with items from the coping scales. Thus, research questions three and four are unanswerable.

Table 8
Summary of Collinearity Diagnostics for Regression Analyses

	Dependent Variable				
Independent Variable	PSU	RA	EA	PCP	ECP
Appropriateness					
Tolerance	.50	.50	.49	.51	.51
VIF	2.0	2.0	2.0	1.9	2.0
Condition Index	9.5	9.3	9.3	9.4	9.4
Advice Optimism					
Tolerance	.53	.53	.51	.51	.53
VIF	1.9	1.9	1.9	1.9	1.9
Condition Index	12.9	12.9	13.1	12.8	12.8
Absence of Limitations					
Tolerance	.48	.49	.47	.49	.51
VIF	2.1	2.0	2.1	2.0	1.9
Condition Index	14.1	14.0	13.1	14.5	14.2
Target Receptiveness					
Tolerance	.75	.75	.74	.76	.76
VIF	1.3	1.3	1.3	1.3	1.3
Condition Index	17.2	17.0	17.1	17.3	16.8
Feasibility					
Tolerance	.49	.51	.51	.51	.52
VIF	2.0	1.9	2.0	1.9	1.9
Condition Index	19.3	19.2	19.7	19.3	19.3

Note: Advice Evaluation is composed of three dimensions (PSU = Problem-Solving Utility, RA = Relational Assurance, EA = Emotional Awareness). PCP= Problem Coping Processes. ECP = Emotion Coping Processes.

Table 9
Summary of Multiple Regression Analyses:
Standardized Regression Coefficients

	Dependent Variables									
Independent Variable	*PSU*		*RA*		*EA*		*PCP*		*ECP*	
Appropriateness	-.30***		.04		-.16		-.08		-.16*	
95% CI	-.55	-.16	-.14	.24	-.38	.01	-.28	.12	-.35	-.01
Advice Optimism	-.11		-.40***		-.21*		.29**		.46***	
95% CI	-.27	.05	-.57	-.25	-.36	-.04	.10	.43	.29	.57
Absence of Limitations	-.28***		-.33***		-.39***		.07		.25**	
95% CI	-.37	-.09	-.40	-.14	-.44	-.17	-.09	.18	.07	.30
Target Receptiveness	-.16*		-.15*		-.21*		.40***		.30***	
95% CI	-.32	.02	-.31	-.03	-.36	-.07	.23	.52	.17	.42
Feasibility	-.11		-.10		.03		.11		.09	
95% CI	-.31	.06	-.30	.06	-.15	.21	-.08	.30	-.06	.24

NOTE: *p < .05, **p < .01, ***p < .001. PSU = Problem-Solving Coping. RA = Relational Assurance. EA = Emotional Awareness. Advice Evaluation is composed of PSU, RA, and EA. PCP = Problem Coping Processes. ECP = Emotion Coping Processes.

CHAPTER V

Discussion

This study indicated that advice optimism and target receptiveness were positively related to cancer survivors' problem coping processes. This finding is consistent with MacGeorge's et al. (2004) finding that target receptiveness had a significant positive impact on facilitation of coping. This study extends previous research, however, by measuring information and avoiding behaviors as well as openness to receiving advice and assessing its impact on facilitation of coping. The finding that optimistic advice impacts coping extends Brashers et al. (2004) previous finding that optimistic advice can encourage reappraisal of uncertainty. In the current study optimistic advice also helped to facilitate problem coping processes. That is, advice was perceived as more useful for problem coping processes when it was given in an optimistic way and when cancer survivors were open to receiving information.

Target receptiveness had the largest independent effect on problem coping processes. In this study target receptiveness measured whether the individual asked for advice, was seeking information, and was seeking to reduce uncertainty. Previous studies investigating target receptiveness did not include uncertainty management considerations as a part of receptiveness. Target receptiveness appears to be a key variable that heavily influences the success of advice giving. This finding is consistent with MacGeorge et al. (2004). Uncertainty management begins to play a role in advice giving from the very beginning, influencing whether the survivor is open to receiving information or advice.

Second, this study indicated that advice optimism, target receptiveness, and absence of limitations are positively related to cancer survivors' emotion coping processes. This study extends previous research by Brashers et al. (2004) as optimistic support was shown to increase the facilitation of emotion coping processes as well as uncertainty reappraisal. The finding that target receptiveness and absence of limitations are positively related to emotion coping processes is consistent with MacGeorge et al. (2004) which found that both variables positively influenced facilitation of coping. When survivors are more receptive to receiving advice and the advice given is more optimistic and has fewer limitations, emotion coping is increased. Advice that contains fewer limitations may be perceived as being more personalized and more tailored to the survivors' needs, thereby increasing emotion coping.

The optimistic level of advice had the largest individual impact on emotion coping processes. More optimistic advice lead to more emotion coping processes. Previous research has demonstrated that social support which is more optimistic can lead to a new way of thinking about uncertainty (Brashers et al., 2004). Advice that is highly optimistic may lead survivors to think differently about their uncertainty and to appraise their uncertainty differently, thereby increasing emotion coping. This is an important finding, as previous research has not explored how advice optimism influences coping or uncertainty management.

Third, two hypotheses were not supported in this study. First, advice content was not positively related to problem coping processes. Advice content was negatively and not significantly related to problem coping processes. Other aspects of

the advice giving situation may play a larger role in problem coping assistance when the content of the advice given is poor. Participants in this study were not asked to report on advice received from doctors and nurses; rather, they reported on informal advice received from family, friends, strangers, etc. The overall content of the advice reported in this study may have been lower due to its informal nature, and participants may have a tendency to report and remember advice they rated as lower in content quality. Participants who reported advice received from family and friends may not have placed as much emphasis on advice content. Perhaps the act of offering advice itself in this relationship enhances problem-solving coping. Further, there may be a direct link between participants' attitudes toward receiving advice in general and how effective the advice is at enhancing problem-solving coping. Although this result is consistent with MacGeorge et al. (2004) which found no significant relationship between advice usefulness and feasibility and facilitation of coping, it is a puzzling finding as it seems that the content of advice would play a key role in its ability to assist in problem-solving.

Given the counter-intuitive findings present in the social support literature, this finding is not surprising. For example, De Leeuw, De Graeff, Ros, Hordijk, Blijham and Winnubst (2000) found a positive relationship between received support and depressive symptoms before cancer treatment. Further, research has found that those who receive more enacted support also have higher levels of stress as well as distress (Albrecht, Burleson, & Goldsmith, 1994). Multiple costs and risks for seeking and receiving social support have been identified including impression management, stigmatization, loss of independence, feeling obligated,

overinvolvement, loss of privacy, and may in and of themselves create further anxiety and uncertainty (Albrecht, Burleson, & Goldsmith, 1994). Advice content may not be as important in the context of informal advice giving. The act of giving advice, regardless of content, may be useful for problem-solving. The dimensions measuring advice content may not have related to the dimensions measuring coping. Other aspects of advice content may have been more important for coping beyond those measured. Advice that was medical in nature such as "take an herb," may have fit better with the advice content dimensions measured than advice which was spiritual in nature, "pray to God" or related to attitude or reassurance.

Advice content was not positively related to emotion coping processes with the exception of absence of limitations. Absence of limitations was significant and positively related to emotion coping processes. Thus, the less limitations, the more emotion coping. Absence of limitations appears to be a key advice content variable. This finding is consistent with MacGeorge et al. (2004) which found that absence of limitations is positively and significantly related to facilitation of coping. Appropriateness was negatively related to emotion coping processes. Thus, the less appropriate the advice the more emotion coping. This counter-intuitive findings is likely also a result of an incongruency between the content scales and the coping scales for this context. The dimensions measuring advice content, aside from absence of limitations, may not have been important for emotional coping. Absence of limitations is likely important as it shows that the advice is tailored for the individual survivor. The act of giving the advice in a tailored way may be perceived as emotional supportive and enhance emotional coping.

Fourth, some puzzling findings were indicated by the regression analysis in regards to advice evaluation. Research questions one and two asked whether the independent variables were positively related to advice evaluation. Target receptiveness was negatively and significantly related to problem solving utility, relational assurance, and emotional awareness. Thus, the less receptive the survivor was to the advice, the higher it was rated in problem solving, relational assurance, and emotional awareness. When survivors were less open to receiving advice they found that the advice given was more helpful in solving problems, contained more relational assurance statements, and was more sensitive to their emotional needs. Sometimes survivors may receive advice that they were not open to but this advice may be helpful. Receptiveness to advice may not be related to these dimensions of advice evaluation. Advice optimism was negatively and significantly related to relational assurance and emotional awareness. Thus, the more optimistic the advice, the less it was relationally assuring, or emotionally aware. Advice optimism may not be related to these dimensions of advice evaluation. Advice optimism may only be related to coping processes.

Appropriateness was negatively and significantly associated with problem solving utility. Thus, the more appropriate the advice, the less it was useful for problem-solving. Absence of limitations was significantly and negatively associated with problem-solving utility, relational assurance, and emotional awareness. Thus, less absence of limitations (more limitations) is associated with higher problem-solving utility, relational assurance, and emotional awareness. The finding that advice content was not positively associated with advice evaluation was the most surprising

given that a connection between these variables makes intuitive sense. The dimensions measuring advice content may not have matched up with the dimensions measuring advice evaluation. The advice content dimensions focus on the logic within the advice, or whether it made sense to the survivor. Two of the advice evaluation dimensions focused on the relational aspects of the advice (relational assurance and emotional awareness). Relational assurance and emotional awareness are likely not directly related to the advice logic.

None of the independent variables in the study positively influenced any of the advice evaluation dimensions (problem-solving utility, relational assurance, emotional awareness). The advice evaluation scale utilized in this study may have been confusing as it was a semantic differential scale and differed from all of the previous questions on the questionnaire. The advice evaluation items came at the end of the questionnaire and participants may have experienced fatigue at this point.

Limitations and Future Directions

Participants in this study were not ethnically diverse and a large part of the data for this study was gathered online. Those who came across this study online through announcements on various web-sites were seeking information. It is possible that the survivors who filled out the online survey were more prone to using information seeking to manage their uncertainty. Future studies should explore ways to gather a larger and more representative sample of survivors. The online participants may also be heavy users of online support and may have sought less face-to-face support. Future research should also examine whether there are differences

between in-person or online advice giving and its implications for uncertainty and coping.

Future research should also focus on survivors who have just been diagnosed and are currently going through treatment as it was difficult for some survivors to remember advice they received and how they felt about the advice at the time unless it was particularly bad advice. The average length of survivorship in this study was 4.5 years. Moreover, the way in which survivors see themselves, and their experience with cancer may change with the length of survivorship.

This study did not control for characteristics of the advice giver. For example, if the advice giver was a cancer survivor, then this may have influenced the response to the advice given. Some participants reported that they were more open to receiving advice from a fellow cancer survivor as they had been through a similar experience and they felt that they could understand their experience better than a family member, friend, or stranger. Moreover, a fellow cancer survivor, is likely to have a better understanding of uncertainty management. Further, the advice giver's uncertainty management style may play a role in how the survivor responded to the advice. Future research should consider examining this phenomenon in a particular relational context and include both the advice giver and receiver in the study. For example, future studies could examine advice giving and uncertainty management for a cancer survivor and their spouse. This research would tell us more about how the advice giver and receiver reciprocally influence one another's uncertainty management through advice giving. The American Cancer Society's Reach to Recovery program pairs a newly diagnosed breast cancer survivor with a breast cancer survivor

volunteer who is beyond treatment to provide support and understanding. Future research could examine how advice given in this relationship influences uncertainty management for both survivors.

This study did not control for characteristics of the cancer survivor such as self-efficacy or a predisposition toward information seeking or avoiding. One of the participants in the study, a 53-year-old survivor, wrote, "I have never avoided advice. I listen to everything and investigate everything. My sister who had breast cancer at the time preferred and still does, to live in a total world of 'Not Knowing'."

This study used a self-report method and asked participants to recall previous advice given to them as well as to recall their thoughts and feelings about that advice. There was no time limit placed on the advice which was reported; for example, the advice could have been given 30 years ago. Future studies should consider placing a limit, such as, "report on a piece of advice that was given to you in the last month." The scales measuring information sensitivity, and uncertainty management processes should be revised in future studies as they did not factor together as expected. It may have been difficult to pinpoint and remember uncertainty management behaviors prior to and after advice. Further, individuals may simultaneously be seeking and avoiding different types of information and/or utilizing various uncertainty management strategies for different contexts. Future researchers might consider asking survivors to keep a diary of advice received and to record their thoughts and feelings after receiving this advice. This method may elicit a discussion of uncertainty management in a more naturally occurring real time manner.

Another potential limitation for this study is that a clarification was not made between information seeking or avoiding and advice seeking or avoiding. These may be two different concepts and need to be separated in future research. Someone may be seeking information but not seeking advice or not seeking advice from particular individuals. Also, twenty one questionnaires were missing substantial portions of data; thus, the questionnaire may have been too long for an online survey.

Future research should examine what function advice giving serves for the advice giver. Giving advice may be cathartic for the advice giver and allow the advice giver to feel as though they have provided help or comfort. Advice givers may provide advice in order to meet their own uncertainty management needs, and/or to enhance their coping. Future studies need to consider examining advice giving in friendships or romantic relationships. Both partners could be asked to keep a diary of advice giving and receiving and could participate in interviews about their advice giving and uncertainty management.

Another limitation of this study included the high correlations between the three dimensions of the advice evaluation scale. The three dimensions of Goldsmith et al.'s (2000) semantic differential scale; problem-solving utility, relational assurance, and emotional awareness are highly correlated. Initial studies utilizing this scale also found high correlations between the three dimensions (Goldsmith et al., 2000). However, Goldmsith et al. (2000) also found that a conceptual model with these three dimensions was a significantly better fit than a single factor model. Advice may be good or bad on all three dimensions or good on one dimension and bad on the other two dimensions (Goldsmith et al., 2000). The relational assurance

dimension may have been less relevant for advice given by strangers, people at work, or acquaintances at church or from support groups. Emotional awareness may be more important for advice given by a friend versus an acquaintance. Emotional awareness may not play a role in informal medical advice given by acquaintances. Future research needs to examine the differences between advice giving by close friends, and family versus acquaintances, or strangers. In this study emotional awareness and relational assurance may have been measuring the same concept, the perception that the advice giver was trying to be helpful (intention to help). Future studies should consider carefully how to measure advice evaluation, and examine whether these three dimensions are representative of the way in which people make evaluations of advice.

Future research should address the scales which were problematic. Goldsmith et al.'s (2000) semantic differential scales (problem-solving utility, relational assurance, emotional awareness) were difficult for people to apply to their advice giving experience. Many participants experienced confusion about the terms utilized in the scales as well as the directions for filling out this scale. It is likely that the counter-intuitive findings related to this scale are a reflection of participants' having difficulty understanding this scale. Many of the uncertainty scales did not work out as planned. The advice sensitivity to uncertainty management scale was removed entirely from the analysis. Advice sensitivity may have been an inappropriate term for this scale, leading participants to believe that the scale related to the emotional sensitivity of this scale. Participants may not have been able to recall or sort out whether the advice was congruent with their uncertainty needs at the moment.

Further, this scale may have overlapped with the target receptiveness scale, and may have been measuring the same construct.

Although items from the uncertainty management scale formed a reliable scale in combination with items measuring coping, the scale itself did not hold up. It may be difficult, given our current understanding of support and uncertainty to measure the influence of support on uncertainty via a scale. For example, the items "this advice created new uncertainty for me" and "after receiving this advice I began to think differently about my uncertainty" may have been difficult to answer as the participants may not have considered this at the time they were given the advice. If participants were prompted to think about this issue and keep a journal of advice giving after diagnosis they would be able to reflect at the moment how the advice influenced their uncertainty. The scale asked participants to differentiate between minute aspects of uncertainty management behaviors and they not have been able to do this, given the time since they received the advice, and they may not have thought about this when they received the advice. Future research needs to reconsider how to best address the influence of social support on uncertainty management.

Future research should also take into account sequencing of advice in the conversation as whether the advice was perceived to be solicited (by both advice giver and receiver). If the advice receiver solicited the advice they may pay less attention to the emotional awareness and relational assurance aspects of the advice. The relational status and history between the advice giver and receiver may shape how the advice is received and advice outcomes. If the cancer survivor received advice from this person previously on other issues, this is likely to influence how they

perceive the current advice. Future research should consider the impact of these variables on advice giving and receiving.

Theoretical and Practical Implications

Uncertainty management appears to influence target receptiveness increasing or decreasing the ability of advice to facilitate coping. Advice optimism also appears to be a key variable influencing the facilitation of coping. This study extends Brashers et al. (2004) indicating that uncertainty management processes play a role in the way advice is received. Uncertainty management processes impact whether the advice recipient is open to receiving advice. Further advice optimism influences survivor coping. Brashers et al. (2004) found that social support enhanced or detracted from uncertainty management and that people living with HIV and AIDS developed strategies for dealing with the costs and complications of social support. This study shows that advice which is coordinated with the survivors' uncertainty management positively influences coping. This study extends MacGeorge et al. (2004) by indicating that uncertainty management processes affect the facilitation of coping.

The findings from this study are a good launch board for further research exploring the influence of uncertainty management on advice outcomes in the context of chronic illness. Based on the findings from this study we know that uncertainty management is an important consideration when providing advice. Future research should explore how relational partners coordinate advice giving and uncertainty management concerns in the context of chronic illness.

Those providing advice to cancer survivors should consider whether or not the survivor is open to receiving advice and open to receiving information. The

receptiveness of the cancer survivor affects the success of the advice to increase coping. Further, advice givers should carefully frame their advice so that it is as optimistic as possible. Advice givers should also consider their expertise in the situation prior to offering advice and strive to give only first hand advice. Advice givers should minimize the number of limitations in their advice.

Advice givers need to be given some guidance in terms of how to approach a cancer survivor and determine if they are seeking information and open to receiving their advice. Pamphlets could be given to family members and friends of cancer survivors at treatment centers and should be available online with various organizations including the American Cancer Society. The pamphlets could contain sample advice giving scenarios, advice giving tips, and sample questions to ask in order to determine receptiveness to receiving advice. For example, advice givers should ask survivors if they are currently looking for information about alternative treatments before telling them about hormone therapies and herbs. If the survivor is receptive to receiving information and they are a credible source on the subject, the advice giver should make sure to present the advice in an optimistic way. Advice that has many limitations does not increase coping. Advice givers should anticipate any limitations inherent in their advice and address them. For example, if the advice includes traveling to a distant treatment center, the advice giver should also mention that there is funding available for travel from organizations such as the American Cancer Society. If the cancer survivor is not seeking advice, then other types of support should be offered such as emotional support.

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Appendix A: Advice and Uncertainty Management Questionnaire

Thank you for taking the time to fill out this questionnaire. This will take approximately 15-20 minutes to complete. Your responses will help us to better understand the cancer survivor perspective on advice and uncertainty management.

Before responding to the following questions please read the following uncertainty management description.

Uncertainty is a mental state we experience in situations where we are unable to predict the outcome and/or where we encounter unfamiliar or vague information.

Uncertainty Triggering Events: Cancer Diagnosis, Information Gathering, Treatment, Discussions with Family After Diagnosis, Discussions About Cancer Diagnosis and Treatment, Life Decisions After Diagnosis, Side Effects, Coping, Financial Resources, Lifestyle After Treatment

Patients find different ways to cope with uncertainty they feel about each of these areas by **seeking information** or **avoiding information**. Patients seek or avoid information to maintain their uncertainty, increase their uncertainty, or reduce their uncertainty. This process is called **uncertainty management**. Seeking or avoiding information allows patients to manipulate their level of uncertainty and maintain a comfortable level of uncertainty.

Examples of Information Seeking: Volunteering at American Cancer Society, Attending Support Groups, Asking Questions
Examples of Information Avoiding: Avoiding Discussions of Cancer, Tuning Out, Avoiding Specific Individuals, Avoiding Internet and Other Media

Sometimes you may want to **reduce uncertainty**, sometimes you may want to **increase uncertainty**, and sometimes you may want to **maintain your level of uncertainty**. All three strategies are utilized by patients to **effectively manage their uncertainty**. If you are trying to increase hope then you may want to increase your uncertainty about the prognosis. If you are receiving a new drug therapy then you may want to reduce your uncertainty and seek out information. If you are feeling optimistic and informed about a procedure then you may want to maintain your level of uncertainty and avoid new information.

Example of Maintaining Uncertainty: Avoid Seeking New Information
Examples of Increasing Uncertainty: Avoid Information or Seek Ambiguous Information
Example of Reducing Uncertainty: Seek Information

Part I: Advice after Cancer Diagnosis

This section addresses the issue of **Advice** you received **after Cancer Diagnosis**. Cancer survivors often receive informal advice from family, friends, support group members, acquaintances and strangers that they did not request.

Advice Example: Go to the American Cancer Society web-site

Advice Example: You need to cut all of the fat out of your diet & loose weight

Advice Example: Get your protein from beans and peanut butter

Advice Example: Only go for treatment at MD Anderson

Advice Example: Rely on God to bring you through this

Advice Example: Don't eat raw oysters while you are on chemotherapy

Please recall an example of **advice** given to you **after your cancer diagnosis** by a spouse/significant other, family member, your children, friend, support group member, an acquaintance, or stranger.

Please describe the advice below:

_____
_____
_____
_____
_____
_____

Please indicate the Advice Giver's relationship to you: _____

Part II: Advice Characteristics

This section asks you to report on different characteristics of the advice you reported on in section I. Keep the advice you described in section I in mind throughout the remainder of the questionnaire.

Part IIA: Target Receptiveness
This section asks you to report how receptive you were to the advice given to you based on whether you were currently seeking advice, whether you were seeking or avoiding information or whether you were seeking to increase, reduce, or maintain your uncertainty.

Please respond to each statement with the advice you described in section I in mind. Circle the number that corresponds with your response to the following statements.
5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1 = Strongly Disagree

I asked for advice from this person

5 4 3 2 1

I opened myself up for advice from this person

5 4 3 2 1

I was looking for advice from this person

5 4 3 2 1

I was currently seeking information

5 4 3 2 1

I was currently avoiding information

5 4 3 2 1

I was seeking to reduce my uncertainty
5 4 3 2 1

I was seeking to increase my uncertainty
5 4 3 2 1

I was seeking to maintain my uncertainty

5 4 3 2 1

Part IIB: Information Sensitivity

This section asks you to estimate how sensitive the advice you received was to your uncertainty management needs. If you were seeking to maintain your current level of uncertainty then this advice may have conflicted with this. If you were seeking to avoid information then this advice may have conflicted with this.

Please respond to each statement with the advice you described in section I in mind. Circle the number that corresponds with your response to the following statements.
5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1 = Strongly Disagree

The advice was sensitive to my need to avoid information

5 4 3 2 1

The advice was sensitive to my need to seek information

5 4 3 2 1

The advice was sensitive to my uncertainty management needs
5 4 3 2 1

The advice was **not** sensitive to my need to avoid information

5 4 3 2 1

The advice was **not** sensitive to my need to seek information

5 4 3 2 1

The advice was **not** sensitive to my uncertainty management needs
5 4 3 2 1

Part IIC: Absence of Limitations
This section asks you to report on whether the advice given was appropriate for your situation.

Please respond to each statement with the advice you described in section I in mind. Circle the number that corresponds with your response to the following statements.
5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1 = Strongly Disagree

I could see that the advised action had significant disadvantages

5 4 3 2 1

I could predict that the advised action would have serious drawbacks

5 4 3 2 1

I could tell that the advised action would have serious drawbacks

5 4 3 2 1

Part IID: Comprehensibility
In this section you will report your perception of the advice comprehensibility.

Please respond to each statement with the advice you described in section I in mind. Circle the number that corresponds with your response to the following statements.

5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1 = Strongly Disagree

I understood the advice

5 4 3 2 1

I was able to make sense of the advice

5 4 3 2 1

I was unable to comprehend the advice

5 4 3 2 1

Part IIE: Relevance
In this section you will report on how relevant the advice given was to the problem you were facing.

Please respond to each statement with the advice you described in section I in mind. Circle the number that corresponds with your response to the following statements.
5=Strongly Agree 4=Agree 3=Neutral, 2=Disagree 1 = Strongly Disagree

The advice I received was irrelevant to my problem

5 4 3 2 1

The advice I was given was applicable to my situation

5 4 3 2 1

The advice was suited to the problem I was having

5 4 3 2 1

Part IIF: Feasibility
In this section you will report on how feasible the advice given was for you.

Please respond to each statement with the advice you described in section I in mind. Circle the number that corresponds with your response to the following statements.
5=Strongly Agree 4=Agree 3=Neutral, 2=Disagree 1 = Strongly Disagree

The advice given was something I could do

5 4 3 2 1

The advice recommended an action that was impossible for me to do

5 4 3 2 1

I was advised to do something I was not capable of accomplishing

5 4 3 2 1

Part IIG: Advice Optimism
This section asks you to report on how optimistic you perceived this advice to be.

Please respond to each statement with the advice you described in section I in mind. Circle the number that corresponds with your response to the following statements.
5=Strongly Agree 4=Agree 3=Neutral, 2=Disagree 1 = Strongly Disagree

The advice given was optimistic

5 4 3 2 1

The advice given increased my feelings of optimism
5 4 3 2 1

The advice given was not hopeful

5 4 3 2 1

The advice given did not increase my feelings of optimism
5 4 3 2 1

Part III: Advice Evaluation

This section examines your evaluation of the advice you received as well as how you felt this advice influenced your uncertainty management, and coping. For this section please answer each question based upon the advice example you provided in section I.

Advice you are given may have impacted your current level of uncertainty, your information seeking and avoiding behaviors, and motivate you to either seek to increase, reduce, or maintain your uncertainty level. Further advice may influence you to think differently about uncertainty altogether, seeing uncertainty as a natural part of life and as not always a negative experience.

Part IIIA: Uncertainty Management Processes

This section asks you to report on how the advice given influenced your current level of uncertainty, and how it influenced your uncertainty management behaviors (information avoiding, information seeking) and your intentions to increase your uncertainty, reduce your uncertainty or maintain your uncertainty.

Please respond to each statement with the advice you described in section I in mind. Circle the number that corresponds with your response to the following statements.
5=Strongly Agree 4=Agree 3=Neutral, 2=Disagree 1 = Strongly Disagree

This advice reduced my uncertainty

5 4 3 2 1

This advice increased my uncertainty

5 4 3 2 1

This advice did **not** influence my uncertainty

5 4 3 2 1

This advice created new uncertainty for me

5 4 3 2 1

This advice encouraged me to see uncertainty as a natural part of life

5 4 3 2 1

After receiving this advice I began to think differently about my uncertainty
5 4 3 2 1

This advice motivated me to seek further information

5 4 3 2 1

This advice motivated me to avoid further information
5 4 3 2 1

This advice motivated me to try to maintain my current level of uncertainty
5 4 3 2 1

This advice motivated me to reduce my uncertainty

5 4 3 2 1

This advice motivated me to increase my uncertainty
5 4 3 2 1

Part IIIB: Emotion Coping Processes
This section asks you to report on how this advice influenced your ability to handle the emotions you felt after cancer diagnosis.

Please respond to each statement with the advice you described in section I in mind. Circle the number that corresponds with your response to the following statements.
5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1 = Strongly Disagree

I felt better able to manage any emotional distress I was having
5 4 3 2 1

It felt easier to handle any unhappiness I had about the situation
5 4 3 2 1

I felt more capable of dealing with any upset feelings I had
5 4 3 2 1

Part IIIC: Problem Coping Processes
This section asks you to report on how this advice influenced your ability to handle the issue(s) the advice addressed.

Please respond to each statement with the advice you described in section I in mind. Circle the number that corresponds with your response to the following statements.

5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1 = Strongly Disagree

I felt more capable of improving the situation

5 4 3 2 1

I was more confident about my ability to improve the situation

5 4 3 2 1

I felt more strongly that I was able to make the situation better

5 4 3 2 1

Part IIID: Advice Evaluation

This section asks you to evaluate this advice based on its problem solving content, how much this advice took the relationship into consideration, and its emotional content.

Evaluate this advice by circling a number for each pair of opposing characteristics.

understanding	1	2	3	4	5	misunderstanding
helpful	1	2	3	4	5	hurtful
useful	1	2	3	4	5	useless
reassuring	1	2	3	4	5	upsetting
generous	1	2	3	4	5	selfish
encouraging	1	2	3	4	5	discouraging
supportive	1	2	3	4	5	unsupportive
compassionate	1	2	3	4	5	heartless
comforting	1	2	3	4	5	distressing
sensitive	1	2	3	4	5	insensitive
considerate	1	2	3	4	5	inconsiderate
knowledgeable	1	2	3	4	5	ignorant

Part IV: Advice and Uncertainty

The following open-ended questions ask you to consider how the advice described above influenced your uncertainty.

Did you experience more or less uncertainty after receiving this advice?

What did you do after receiving this advice? Did you seek further information?

Did you respond differently to advice given when seeking or avoiding information?

Part V: Cancer Survivor Information

What is your current age? _____

How long have you been a survivor (begin calculating from the day you were diagnosed)?_____

How old were you when you were diagnosed? _____

What was your diagnosis?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

What is your current marital status (circle one)?

Single
Dating
Married
Divorced

What is your ethnicity (circle one)?

White
African American
Asian
Native American
Hispanic
Other

What is the highest education degree you have earned (circle one)?

High School
Associates
Bachelors
Masters
Ph.D.
Ed.D.
MD

How many children and/or step children do you have (circle one)?

0
1
2
3
4
5
6 or more

Thank you for taking the time to fill out the questionnaire! Please tell other survivors about the questionnaire. They may take the online questionnaire at www.ou.edu/cancersurvivor/ ***or contact me for a paper copy of the questionnaire at*** sharlenet@ou.edu***. Please take some fliers and business cards to pass on to other survivors. Thanks!***

Appendix B: Variables and Related Questionnaire Items

Independent Variable: Target Receptiveness

- Taken from MacGeorge, Feng, Butler, and Budarz (2004)
    - I asked for advice from this person
    - I opened myself up for advice from this person
    - I was looking for advice from this person
- Theoretically derived from Brashers, Neidig, Haas, Dobbs, Cardillo, and Russell (2000) and Brashers, Neidig, and Goldsmith (2004)
    - I was currently seeking information
    - I was currently avoiding information
    - I was seeking to reduce my uncertainty
    - I was seeking to increase my uncertainty
    - I was seeking to maintain my uncertainty

Independent Variable: Information Sensitivity

- Theoretically derived from Brashers, Neidig, Haas, Dobbs, Cardillo, and Russell (2000) and Brashers, Neidig, and Goldsmith (2004)
    - The advice was sensitive to my need to avoid information
    - The advice was sensitive to my need to seek information
    - The advice was sensitive to my uncertainty management needs
    - The advice was not sensitive to my need to avoid information
    - The advice was not sensitive to my need to seek information
    - The advice was not sensitive to my uncertainty management needs

Independent Variable: Advice Content

- Taken from MacGeorge, Feng, Butler, and Budarz (2004)
    - Absence of Limitations
        - I could see that the advised action had significant disadvantages
        - I could predict that the advised action would have serious drawbacks
        - I could tell that the advised action would have serious drawbacks
    - Comprehensibility
        - I understood the advice
        - I was able to make sense of the advice
        - I was unable to comprehend the advice
    - Relevance

        - The advice I received was irrelevant to my problem
        - The advice I was given was applicable to my situation
        - The advice was suited to the problem I was having
    - Feasibility
        - The advice given was something I could do
        - The advice recommended an action that was impossible for me to do
        - I was advised to do something I was not capable of accomplishing

Independent Variable: Advice Optimism

- Theoretically derived from Brashers, Neidig, Haas, Dobbs, Cardillo, and Russell (2000), Brashers, Neidig, and Goldsmith (2004), and Mishel (1990)

    - The advice given was optimistic
    - The advice given increased my feelings of optimism
    - The advice given was not hopeful
    - The advice given did not increase my feelings of optimism

Dependent Variable: Uncertainty Management Processes

- Theoretically derived from Brashers, Neidig, Haas, Dobbs, Cardillo, and Russell (2000) and Brashers, Neidig, and Goldsmith (2004)

    - This advice reduced my uncertainty
    - This advice increased my uncertainty
    - This advice did not influence my uncertainty
    - This advice created new uncertainty for me
    - This advice encouraged me to see uncertainty as a natural part of life
    - After receiving this advice I began to think differently about my uncertainty
    - This advice motivated me to seek further information
    - This advice motivated me to avoid further information
    - This advice motivated me to try to maintain my current level of uncertainty
    - This advice motivated me to reduce my uncertainty
    - This advice motivated me to increase my uncertainty

Dependent Variable: Emotion Coping Processes

- Taken from MacGeorge, Feng, Butler, and Budarz (2004)

    - Facilitation of Emotion Coping Processes
        - I felt better able to manage any emotional distress I was having

- It felt easier to handle any unhappiness I had about the situation
- I felt more capable of dealing with any upset feelings I had

Dependent Variable: Problem Coping Processes

- Taken from MacGeorge, Feng, Butler, and Budarz (2004)

  - Facilitation of Problem Coping Processes
    - I felt more capable of improving the situation
    - I was more confident about my ability to improve the situation
    - I felt more strongly that I was able to make the situation better

Dependent Variable: Advice Evaluation

- Taken from Goldsmith, McDermott, and Alexander (2000)

  - Relational Assurance
    - Supportive-Unsupportive
    - Reassuring-Upsetting
    - Comforting-Distressing
    - Encouraging-Discouraging
  - Emotional Awareness
    - Sensitive-Insensitive
    - Compassionate-Heartless
    - Considerate-Inconsiderate
    - Understanding-Misunderstanding
  - Problem-Solving Utility
    - Helpful-Hurtful
    - Useful-Useless
    - Knowledgeable-Ignorant
    - Generous-Selfish