

COPING WITH BREAST CANCER: THE INFLUENCE OF PARTNERS' BENEFIT  
FINDING ON THE PARTNER, THE PATIENT, AND THEIR RELATIONSHIP

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## **ABSTRACT**

Matthew Cohen: Coping with Breast Cancer: The Influence of Partners' Benefit Finding on the Partner, the Patient, and Their Relationship  
(Under the direction of Don Baucom)

As couples attempt to cope together with a female partner's breast cancer diagnosis, researchers have begun investigating the extent to which benefit finding, defined as one's ability to find the positive effects that result from a traumatic event, is an adaptive response. Whereas researchers have investigated benefit finding in patients with breast cancer, the literature on benefit finding in caregiving partners of breast cancer patients has been largely unexplored. This paper presents findings from a study involving 142 couples enrolled in a couple-based intervention for women with early-stage breast cancer. The findings indicate that while male benefit finding is positively associated with male relationship satisfaction, it is not related to any patient related variables under investigation. These results indicate that this construct is not consistently adaptive across studies. It will be worthwhile to further investigate the ways in which males provide support during challenging times in future studies.

To Donna - my mentor and most cherished friend -who taught me what it meant to find benefit. Thank you for your inspiration, your love, and for helping me to understand how to live with grace and happiness, even in your absence.

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## **CHAPTER 1: INTRODUCTION**

In 2014, it is estimated that over 232,600 women will be newly diagnosed with invasive breast cancer, the most common cancer among all women in the United States (Society, 2014). For these women, along with their family and friends, a breast cancer diagnosis is life-changing. The accompanying physical and psychological sequelae present challenges for even the most psychologically healthy individuals and families. From a physical standpoint, breast cancer patients experience a range of symptoms stemming both from the illness and the subsequent treatment. The physical symptoms range from those that interfere with daily functioning, such as fatigue, nausea, and vomiting, to broader symptoms that include sexual problems, sleep disruptions, and lymphedema (Fobair et al., 2006; Velanovich & Szymanski, 1999). Other undesirable physical changes include hair loss, skin changes, and scarring that results from chemotherapy and potential surgical procedures (Moyer & Salovey, 1996; Ogden & Lindridge, 2008). Although breast cancer can occur in both men and women, the focus of the current study is on female patients, as breast cancer is far more prevalent in women (Society, 2014). In this study, the term patient is used in reference to the female with breast cancer; the term partner references the male partner who does not have breast cancer. Most current research studies on breast cancer have examined heterosexual couples where the healthy partner is male, and this study focuses on the same population.

Over the last several decades, these symptoms, while unpleasant, have become less pronounced than they once were. In 1983, breast cancer patients were polled to determine the symptoms of greatest relative importance to them; vomiting and nausea ranked as the top two

(Coates et al., 1983). In 1993, just ten years later, after improvements in side effect management, an identical study yielded different results: chief concerns about breast cancer sequelae were less physical and more of a psychosocial nature, with anxiety, depression, and concern for partner all ranking among the top concerns (Griffin et. al., 1996). In the years that followed Griffin's 1996 study, researchers have continued to make progress with respect to the efficacy and relative ease of treatments, as well as increased rates of earlier detection. As such, death rates from breast cancer have been steadily declining; from 2006 to 2010, among patients below the age of 50, these rates have declined 3.0% every year (Society, 2014). Specifically, among breast cancer cases where the cancer has not spread, the 5-year survival rate is 99% (Society, 2014). While these strides have resulted in a markedly lower mortality rate among women with breast cancer, the psychological concerns and resulting distress remains. In one survey across three different cancer treatment centers, when patients were asked about the impact that chemotherapy had on the quality of their lives, anxiety and worry about their future were found to have a much greater impact than any resulting physical limitations (Cooper & Georgiou, 1992).

The weight of a breast cancer diagnosis carries with it a heavy psychological burden. Researchers have consistently found that women with breast cancer are more likely to experience greater incidences of depression and anxiety than physically healthy women (Fallowfield, Hall, Maguire, & Baum, 1990; Montazeri et al., 2000). Similarly, they are also more likely to exhibit elevated levels of negative affect, a construct that measures subjective distress through evaluation of a range of mood states that includes anger, guilt, fear, and nervousness (Watson & Clark, 1984). These same individuals also often experience distorted views of themselves (e.g., dwelling consistently on their own failures and shortcomings, maintaining a bleak personal future outlook, an unfavorable self-view, etc.) and of the world (Watson & Clark, 1984; Watson,

Clark, & Tellegen, 1988). In addition, breast cancer patients report increased dissatisfaction with their appearance and self-concept, along with a host of other concerns relating to body image. Existential worries characterized by questions about religion and expectations for one's life are also common among women with breast cancer (Landmark, Strandmark, & Wahl, 2001). These areas of psychological vulnerability and uncertainty, paired with the disruption in day-to-day life that breast cancer brings (e.g., financial worries resulting from cost of treatment and work limitations, time spent at medical appointments, changing roles within the household, etc.), create an onerous situation for many patients (Arozullah et al., 2004; Northouse & Swain, 1987).

These challenges highlight the need for women to find effective coping mechanisms as they confront their illness. There are a range of coping mechanisms that breast cancer patients tend to use with great variation in both frequency and efficacy. For instance, research shows that acceptance and humor are negatively related to distress across different time points of the disease, whereas denial is positively related to distress (Roussi, Krikeli, Hatzidimitriou, & Koutri, 2007; Stanton, Danoff-burg, & Huggins, 2002). Avoidance is also a common coping strategy and while it has been shown to help lower immediate distress, in the long term it is associated with higher levels of distress and an intensified fear of recurrence (Roth & Cohen, 1986; Stanton, Danoff-burg, et al., 2002). In their efforts to cope, it is also common for women with breast cancer to seek support through religion, a strategy that is consistently associated with improved quality of life and psychological well-being (Halstead & Fernsler, 1994; Meraviglia, 2006; Taleghani, Yekta, & Nasrabadi, 2006).

One less intuitive, but common coping strategy among women confronting breast cancer is to focus on positive functioning and growth that result from their illness. There are several related terms that attempt to explain this phenomenon. Positive reappraisal and posttraumatic

growth are two constructs that attempt to examine the processes that lead individuals to cope through perceiving traumatic events as opportunities for growth (Folkman, Lazarus, Gruen, & DeLongis, 1986; Tedeschi & Calhoun, 2004). Whereas these two terms typically focus on the process through which women find positive meaning in their cancer, the concept of *benefit finding* focuses on the outcomes or positive effects that result from a traumatic event (Helgeson, Reynolds, & Tomich, 2006). Unlike post-traumatic growth, which is a measure of how growth happens (e.g., analyzing the process where the individual frequently thinks about the trauma) (Tedeschi & Calhoun, 2004), the study of benefit finding focuses on the extent to which personal growth and resilience occurs in a given situation (Kim, Schulz, & Carver, 2007).

There is a growing body of evidence highlighting the adaptive nature of benefit finding. It is a construct that has been examined across populations, from childhood sexual abuse survivors to parents of children with Asperger syndrome to women with breast cancer (Helgeson et al., 2006; Pakenham, Sofronoff, & Samios, 2004; Wright, Crawford, & Sebastian, 2007). Much of the research on benefit finding among breast cancer patients has highlighted its utility as a coping mechanism for individuals who have encountered some unexpected life event. In one sample of breast cancer patients, benefit finding, which was reported by 83% of patients, related positively to individual levels of optimism and adaptive coping strategies such as positive reframing and the use of religious coping (Sears, Stanton, & Danoff-Burg, 2003; Urcuyo, Boyers, Carver, & Antoni, 2005). Other studies involving cancer patients have examined the physiological value of benefit finding, from influencing cortisol level to increasing immune functioning (McGregor & Antoni, 2009). These findings are consistent with the results of an experimental study concluding that patients who engage in benefit finding (as operationalized by having them journal once a week about the positive thoughts and feelings around their breast

cancer) had fewer medical appointments for cancer-related morbidities in the three month period of the study than did a control group of patients who were asked to write only the facts of their cancer and treatment once a week (Stanton, Danoff-Burg, et al., 2002). From a mental health standpoint, benefit finding in breast cancer patients has been found to be associated with improved outcomes in the context of depression, positive well-being, and affect (Helgeson et al., 2006; Katz, Flasher, Cacciapaglia, & Nelson, 2001). Research also shows that benefit finding among breast cancer patients is associated with positive changes in relationships, an unsurprising finding given the way in which psychopathology in one partner can impact relationship functioning (Davila, Bradbury, Cohan, & Tochluk, 1997; Sears et al., 2003). From individual to interpersonal outcomes, there is a base of research that supports the use of benefit finding as an effective coping strategy.

Although there is myriad research supporting the use of benefit finding as an adaptive coping strategy, not all findings support the association between benefit finding and psychological and physical outcomes. For example, Antoni (2001) examined distress among breast cancer patients and found no association between benefit finding and levels of distress. In terms of adjustment or positive change, this finding is consistent with other studies that have found no significant difference between those who find benefit and those who report low levels of benefit finding (Cordova, Cunningham, Carlson, & Andrykowski, 2001).

Other studies have shown that among women with more severe breast cancer, benefit finding is actually positively related to negative affect and worse mental functioning (Tomich & Helgeson, 2004). This highlights a possible circumstance in which benefit finding may not be a helpful or adaptive approach: when a patient experiences high levels of benefit finding in the wake of a severe, debilitating illness (Roussi et al., 2007; Stanton, Danoff-burg, et al., 2002).

Indeed, research shows that when patients experience increased symptom severity, there is a shift in expected psychosocial outcomes (Northouse, Dorris, & Charron-Moore, 1995). In their 2012 study, Baucom et al., found that among couples where the female partner has breast cancer, symptom severity served as a key moderating variable. In their study they found that when patients experience high levels of physical symptoms, these side effects tend to override other factors and as a result, associations that would typically occur between psychological variables and positive outcomes no longer hold (Baucom et al., 2012). As is the case with many other coping mechanisms, it seems likely that the efficacy of benefit finding is dependent largely on the context within which it occurs. That is, benefit finding might not be inherently beneficial or maladaptive in isolation; it is important to consider how it relates to other aspects of the patient's life and circumstances.

While breast cancer patients report using a range of individual strategies to cope with their illness, they also are likely to use interpersonal strategies, eliciting support from important people in their lives. Broadly, perceived social support among women with breast cancer is related to increased levels of positive affect and decreased level of negative affect (Funch & Mettlin, 1982). As they seek support, women report that their most important confidant in their experience with breast cancer is their partner, rather than a friend or a member of their medical team (Figueiredo, Fries, & Ingram, 2004). Across studies, the literature suggests that one of the primary methods of coping for many women with breast cancer is looking to their significant others for support (Neuling & Winefield, 1988; Taleghani et al., 2006). Moreover, research indicates that breast cancer patients with supportive partners experience lower levels of distress (Alferi, Carver, Antoni, Weiss, & Durán, 2001). Further highlighting the importance of partner support, research also shows that even when a woman has supportive relationships with people

outside of her marriage, this cannot compensate for an unsupportive relationship with her partner (Pistrang & Barker, 1995). The support that a patient perceives, especially from her partner, is a key factor in her ability to contend with the challenges of breast cancer, as perceived support has been shown to be more important than received support as it pertains to adjustment to major life events (Wethington & Kessler, 1986). The distinction between perceived support and received support is subtle but meaningful: perceived support is defined as an individual's perception of the general availability of support and satisfaction with that support (Haber, Cohen, Lucas, & Baltes, 2007), whereas received support is a more objective measure, referring to actual helpful behaviors provided by people in their lives (Barrera, 1986).

The extent to which patients perceive support is influenced by many factors, including their own feelings and behaviors. Research indicates that breast cancer patients who exhibit high levels of distress and negative affect will perceive less support (Bolger, Foster, Vinokur, & Ng, 1996; Moyer & Salovey, 1999). As symptoms of distress tend to erode the partner's ability to offer support, the patient may actually be receiving less support. This finding is consistent with the literature on dyads where one partner has depression, a diagnosis characterized by distress and negative affect (Dennis & Ross, 2006; Pasch, Bradbury, & Davila, 1997). Both partner and patient variables contribute to this dynamic. From a partner perspective, research shows that many men who live with depressed wives are uncertain as to how to approach their partner, often lacking the skills to cope with their partners' struggles (Biglan et al., 1985). These skills can be absent in the depressed partner as well. One study examining dyads in which the wife has depression found that the majority of conversations within these relationships focus on the wife and that in these conversations, she is unlikely to make solution-oriented contributions (Biglan et al., 1985). These interpersonal difficulties are notable, as research indicates that relationship

satisfaction is associated with perceived support among couples where one partners has cancer (Kuijer et al., 2000; Lichtman, Taylor, & Wood, 1988). Given that both partners in these circumstances often lack specific interpersonal coping skills, it is likely that patients who experience higher levels of distress do, in fact, receive less support.

Whereas breast cancer patients with high levels of negative affect are likely to receive less support from their partners, it is also possible that their negative affect is interfering with their ability to perceive support that is offered. That is, individuals experiencing high levels of negative affect are inclined to negatively filter the way in which they perceive the world and minimize positive aspects of their environment (Watson & Clark, 1984; Watson et al., 1988). Given this tendency, it is possible that even if the woman's partner is offering support, her negative cognitions may interfere with her ability to perceive that support. As such, while higher level of negative affect in the patient may make it less likely that she receives support, it may also be that her negative mood is filtering out her perception of existing support. In spite of this lack of clarity, the literature consistently suggests that perceived support is an important factor among breast cancer patients and that of all the people in her life, her partner's support is the most influential.

The aforementioned research findings confirm the importance of viewing the experience of adapting to cancer from a dyadic perspective, as the role of the partner is central in the patient's ability to cope with her illness. While partner support can be a facilitator of recovery for many breast cancer patients, it is important to consider the impact of the disease on the partner's life as well. The presence of the breast cancer in a relationship can both disrupt the partner's functioning and make it difficult for the partner to provide support to the patient. Among married women with breast cancer, it is common for husbands to serve as the primary



caregiver, and research indicates that caregiving partners experience similar or even greater levels of distress as the patients themselves (Northouse, 1988; Weiss, 2002). In fact, more than 30% of men with partners who have breast cancer meet criteria for clinical depression (Bigatti, Wagner, Lydon-Lam, Steiner, & Miller, 2011). These male partners are likely to face psychological distress due to multiple individual factors (e.g., grappling with his wife's illness, changing roles) and interpersonal factors (e.g., contact with a partner who is likely experiencing elevated negative affect). These interpersonal factors are especially salient given that among married couples where one partner has cancer, there is a consistent, positive correlation between patient and partner depression and anxiety (Ey, Compas, Epping-Jordan, & Worsham, 1999; Northouse, Templin, & Mood, 2001). These distressed partners are less likely to offer support as compared to the approximately 70% who are not meeting criteria for depression (McLean & Jones, 2007).

While patient factors such as negative affect are likely to impact the male partner's psychological well-being, these factors also serve as stressors for the relationship as a whole. According to both patients and their partners, family functioning has been shown to decline over the first year after the initial cancer diagnosis, even if there are individual improvements over that time (Arora et al., 2001). As stated earlier, there are many psychological sequelae for patients with breast cancer, from excessive worry to depression to emotional numbness. Considering the positive association that exists between patient and partner distress, it stands to reason that relationships with two distressed partners face considerable challenges. This emotional distress that both partners often report, coupled with other relational sequelae that result from breast cancer (e.g., shifts in roles, potential financial burden of treatment and time away from work, etc.), is likely to challenge even the most functional couples.

The challenges of responding to a partner's cancer is compounded by the fact that for many male partners, it is not always apparent how to be helpful to their wives. Qualitative studies highlight the ways in which well-intended male partners' attempts to be supportive often threatens the patients' sense of autonomy and self-worth (Revenson, Wollman, & Felton, 1983). Further, one common misperception held by male partners is that sharing their concerns or anxieties about the cancer will upset their partner and even potentially result in a recurrence of the cancer (Lichtman et al., 1988). This apprehension, which stems from a desire to protect their partners, can prolong the psychological challenges that male partners in this role endure (Vess, Moreland, Schwebel, & Kraut, 1989). In this scenario, this lack of male communication is likely to negatively impact her perception of support, given that among cancer patients, open communication is associated with greater mutual support (Rogers & Escudero, 2004). Although social support can be behaviorally enacted, verbal communication among couples has been found to be more closely associated with support and marital adjustment than nonverbal communication (Navran, 1967). Indeed, in their 1994 study on partners' adjustment after a breast cancer diagnosis, Hilton and Koop found that the most facilitative pattern of communication for couples in this situation is one characterized by openness and sensitivity, two characteristics closely tied with verbal, communicative relationships. The authors also found that among relationships where partners withhold information or are not expressive in an open way, both members of the dyad are more likely to have problems coping with the illness (Hilton & Koop, 1994). These findings suggest that males often have difficulty supporting their partner in an adaptive way.

In addition to showing a reluctance to communicate their feelings of concern to their partner, men are also unlikely to share these feelings with a professional. One study found that

less than a quarter of men whose wives have cancer seek professional help (Glasdam, Jensen, Madsen, & Rose, 1996). Instead, many men employ emotional avoidance as an alternative coping strategy, focusing their attention on their wives and their family, rather than on themselves (Lindholm, Rehnsfeldt, Arman, & Hamrin, 2002).

Given the many positive consequences associated with benefit finding for patients, it is possible that benefit finding may prove to be an adaptive strategy for male partners. Furthermore, as increased partner distress is likely to interfere with the male's ability to offer support to his partner (Manne, Alfieri, Taylor, & Dougherty, 1999), cultivating male benefit finding to reduce his own distress might yield positive results for the patient as well. In spite of the many hardships associated with serving as a caregiver, the majority of individuals in this role report increased levels of personal strength, a deepened connection with family, and a general perception of growth (Hudson, 2004; Wong, Ussher, & Perz, 2009). This finding, coupled with the research suggesting that emotional avoidance is a maladaptive response, suggests that focusing on one's family and oneself in a balanced way is likely to yield better psychological outcomes than an avoidant approach. While researchers have explored benefit finding among patients with cancer, the literature on benefit finding in breast cancer caregivers is considerably thinner. Although much of the literature on benefit finding in patients shows evidence of physical and psychological benefits, the research examining male partners is primarily descriptive (Affleck & Tennen, 1996; Weiss, 2002, 2004). Many of these studies have found that benefit finding in male partners of breast cancer patients is positively associated with increased positive affect and greater marital satisfaction (Helgeson et al., 2006; Segrin, Badger, Sieger, Meek, & Lopez, 2006). Consistent with the benefit finding research in breast cancer patients, however, the literature is somewhat mixed in that there have also been studies wherein the results call into

question whether benefit finding in the partner is always an adaptive coping strategy. In their 2007 study, Kim, Schultz, and Carver found that caregivers who reported a shifting of priorities and greater levels of empathy as a result of their caregiving experience, two core components of benefit finding, experienced negative life adjustment and greater depressive symptoms. The investigators hypothesized that reprioritization can be disruptive, causing an individual to change a set of priorities that had been long held. Furthermore, they suggested that increased levels of empathy can also be linked with heightened vulnerability, both for his partner and himself. Within the same study, they also found that caregivers who exhibited greater levels of acceptance and a greater appreciation of life, two additional characteristics of benefit finding, experienced positive adjustment (Kim et al., 2007). That benefit finding within the same population would yield such different outcomes suggests the complexity of this construct. The uncertain role of benefit finding among cancer caregivers highlights the need to explore this construct in a broader context, taking into account how other key variables can influence the efficacy of benefit finding within this population.

### **Current Investigation**

The primary focus of the current investigation is to examine benefit finding in men whose partners are undergoing treatment for early stage breast cancer. Given the paucity of research on the impact of benefit finding in male caregivers and the mixed results of existing studies, we sought to understand this construct in a broader context. We examined benefit finding in male partners and how it impacts both individual and interpersonal outcomes in both partners. Specifically, we examined the partner's benefit finding and its interaction with individual and relationship variables to examine the extent to which it predicts individual and relational health. The specific hypotheses of the current study are detailed below.

## Hypotheses

The primary hypotheses in this model examines the extent to which two different variables within the partner (i.e., benefit finding and communication) influence perceived support in the patient. See Figure 1 for a visual representation of these primary hypotheses.

Our primary hypothesis is that benefit finding in the male partner has a direct effect on perceived support in the patient. Although research studies offer mixed results, the majority of findings suggest that benefit finding in cancer caregivers is negatively correlated with their own psychological distress and perceived stress, as well as the perceived burden of care (Cassidy, 2013). Since men with high levels of benefit finding are likely to experience less distress, we anticipate that this will enable them to focus more on their partners and provide greater support. As such, we predict that a positive association will exist between partner benefit finding following his wife's breast cancer diagnosis and perceived support in the patient.

As mentioned earlier, research also suggests that the association between benefit finding and perceived support is likely moderated by the female partner's negative affect. We therefore anticipate that the patient's current state of psychological functioning will interact with her partner's level of benefit finding. Specifically, we predict that increased levels of patient negative affect will override their partners' benefit finding in their experience of support. Thus, as the patient's level of negative affect increases, we predict that she will experience lower levels of partner support regardless of his level of benefit finding. We further anticipate that patients with lower levels of negative affect will experience higher levels of support offered by partners with higher benefit finding.

In examining the association between male benefit finding and female perceived support further, we anticipate that indirect effects exist within this model as well. Specifically, we predict

that male benefit finding affects relationship satisfaction in both partners, which in turn affects female perceived support. Although results are mixed with regard to the utility of benefit finding for individuals, research indicates that there is a consistent, positive association between benefit finding and relationship functioning. We seek both to confirm these findings as well as extend them by examining the impact of men's benefit finding on their partners' relationship satisfaction. Given the consistent positive association that exists between men's benefit finding and their own relationship satisfaction, we predict that there will also be a positive association between male benefit finding and his partner's relationship satisfaction.

We further propose that these interpersonal measures, male and female partner relationship satisfaction, have direct effects on the patient's level of perceived support. This hypothesis stems from the research that highlights the association between relationship satisfaction and social support. Combining these two sets of hypotheses results in the prediction that the association between male benefit finding and female perceived support is partially mediated through both partners' relationship satisfaction.

The presence of a male partner's benefit finding may be more beneficial in some dyads than in others. Specifically, a man's ability to share his perception of the positive aspects of his partner's cancer experience may contribute to the patient's perception of support. We therefore predict that in relationships where the male partner possesses high levels of benefit finding *and* communicates effectively, the patient will experience higher levels of perceived support from her partner.

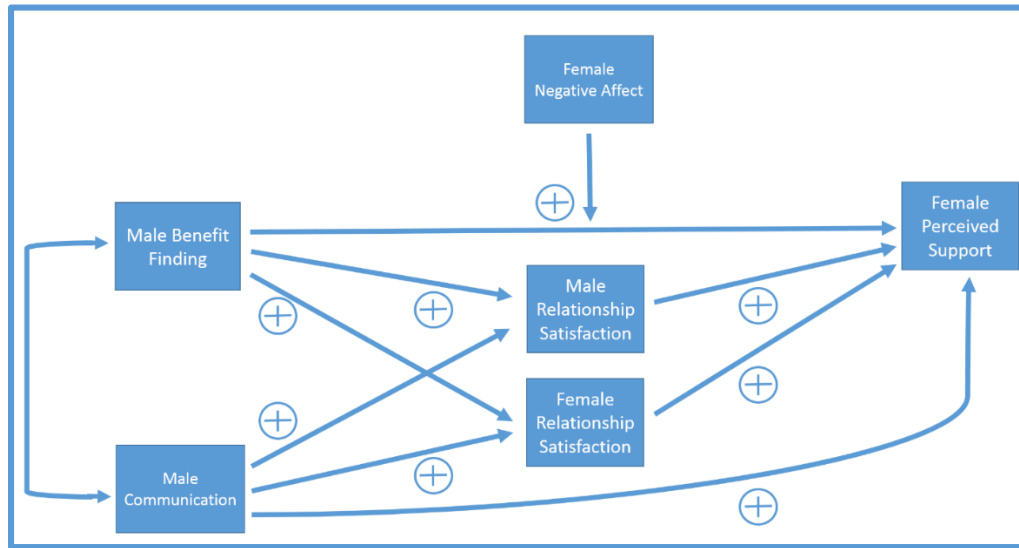
The proposed association between male communication and female perceived support stems from research that highlights the importance of communication in couples when one partner has cancer. As noted above, among cancer patients and their partners, communication is

consistently linked with improved mutual support (Rogers & Escudero, 2004). However, male partners are often uncertain about the best way to communicate effectively regarding cancer. These communication-related challenges about cancer-related issues likely decrease the patient's perception of support as well as opportunities for constructive processing within the relationship.

Whereas communication may be an influential variable in perceived support, male partners who do not communicate well yet experience high levels of benefit finding are still likely to have partners who perceive support, given the way in which support can be behaviorally enacted. Examples of the partner offering support behaviorally include helping with tasks around the house, bringing his partner flowers, or simply behaving in a positive or cheerful manner. As such, male benefit finding and male communication are predicted to operate independently of one another in an additive fashion in contributing to the patient's perception of support.

Just as we anticipate that much of the variance in the path between benefit finding and perceived support can be explained by relationship satisfaction in both partners, we expect to find a similar path from male communication to perceived support. Research shows that as constructive cancer-related communication between partners increases, so too does relationship functioning. In particular, Manne et al. (2004) found a strong association between partner communication and relationship satisfaction in breast cancer patients. A host of other studies also support the way in which cancer-related communication is linked with relationship satisfaction in both partners (Langer, Brown, & Syrjala, 2009; Manne et al., 2006; Porter, Keefe, Hurwitz, & Faber, 2005). Alternatively, among cancer patients, a lack of communication is associated with relationship dysfunction and dissatisfaction (Badr & Carmack Taylor, 2009; Manne et al., 2006).

**Figure 1: Visual Representation of Path Analysis Used to Test Primary Hypotheses**



Just as patient and partner psychological factors have been shown to interrelate with one another, physical factors are also likely to be associated with psychological outcomes. Specifically, as mentioned earlier, symptom severity among breast cancer patients has been linked to increased distress in both the patients and their male partners (Northouse et al., 1995). Male benefit finding, often a helpful response to combat distress, diminishes in its impact when patients experience more severe symptoms (Baucom et al., 2012).

We therefore anticipate that the patient's symptom severity will interact with the partner's level of benefit finding in a unique way. We predict that as the patient's symptom severity increases, so too will negative affectivity in both partners, regardless of the partner's level of benefit finding. We anticipate, however, that patients with less severe physical symptoms and a partner with high levels of benefit finding will experience lower levels of negative affect, as will their partners. Thus, benefit finding in the male partner will be positively associated with lower negative affectivity in both partners, but only in the context of patients' lower physical symptoms.



## **CHAPTER 2: METHOD**

### **Participants**

The couples participating in the study were drawn from a larger project, CanThrive, a treatment-outcome study for women with early stage breast cancer. For CanThrive, recruitment occurred in cancer clinics in the vicinity of two major southeastern universities (the University of North Carolina at Chapel Hill and Duke University); all treatment in the study occurred at hospital facilities affiliated with these two universities. In total, 142 heterosexual couples participated in the study. Among the couples, each pair was either married or had been cohabitating with each other for at least one year at the time the study began. The eligibility criteria for the patients in the study included: (a) diagnosis with Stage I, II or IIIa breast cancer in the year prior to recruitment, (b) no prior history of breast cancer, and (c) no diagnosis of any other kind of cancer within the previous five years. Furthermore, both the patient and her partner had to be fluent in English and willing to participate in the study in order for the couple to be eligible.

Demographic information on both the patients and their male partners were collected. With respect to ethnicity, the patients were 85.1% White, 9.9% Black, 2.5% Hispanic, and 2.5% Asian or Pacific Islander. The male partners' ethnic makeup was similar: 85.7% White, 9.3% Black, 1.9% Hispanic, 1.9% Asian or Pacific Islander, and 1.2% other. In terms of age, the patients ranged from 25 to 82 years old ( $M=52.59$ ,  $SD = 11.366$ ) while their partners ranged from 26 to 85 years old ( $M=54.47$ ,  $SD = 11.85$ ). The couples in the study had been living together for an average of 23.86 years ( $SD=2.86$ ). Both the patients and their male partners had

received similar levels of education (the median education was 16 years), and the median household income for the couples ranged from \$100,000 to \$249,999. The treatments that the patients in the study received, which were often combined, were as follows: lumpectomy (66 patients), mastectomy (61 patients), reconstruction (20 patients), chemotherapy (51 patients), radiation (39 patients) and hormone therapy (23 patients). Upon taking the baseline questionnaire, the women in the study had been diagnosed an average of 106 days earlier.

## **Procedure**

Recruitment occurred at UNC-Hospitals and Duke University Medical Center where women seeking treatment for breast cancer were approached to participate in the CanThrive project (for more details, see Baucom et al., 2009). The Institutional Review Board at both the UNC-Hospitals and Duke University Medical Center approved all procedures of the study. Women who met the eligibility requirements were sent letters in the mail with information about the study. They were then contacted to determine whether or not they were interested in participating. Interested couples were invited to a study site to participate in an initial assessment that involved completing a series of questionnaires (measures to be described below), as well as engage in a videotaped conversation with their partner about a cancer-related concern. Couples received \$40 upon completion of the initial assessment. Following the initial assessment, each couple was randomly assigned to one of three groups: (a) Treatment-as-usual, in which couples were given written materials about resources for cancer patients in their community, (b) Couples-based Cancer Education, in which couples were given medical information about cancer treatment together for six sessions or (c) Relationship Enhancement, a couples-based, cognitive-behavioral intervention that involved both partners' discussing cancer-related concerns within the context of their relationship for six sessions. Upon completion of the

treatment, the couples were asked to return for a post-treatment follow up assessment, in addition to further assessments at six and 12 months post-treatment.

The present study uses data drawn from both members of the couple at the baseline assessment. The measures employed for the current investigation are described in further detail below.

## **Measures**

**Benefit finding (partner).** Benefit Finding (Antoni et al., 2001) is a 17-item measure used to assess the extent to which the individual found meaning or benefit from their partner's experience of breast cancer. The stem for each question reads, "My partner's having had breast cancer..." and each question expresses a potential benefit (e.g., has taught me to be more patient) that might be derived from the experience. Male partners were asked to respond to each item on a Likert scale from 1 (*Not at all*) to 5 (*Extremely*). All items were summed to determine the partner's overall level of benefit finding. The scale has been shown to be a valid and reliable indicator of benefit finding, with an alpha coefficient of 0.95 in the original validation sample (Antoni et al., 2001).

**Partner support (patient).** The Source Specific Social Provisions Scale (SPS; Cutrona, 1989) was used to measure daily patient perceived support. The SPS was drawn from a broader Social Provisions Scale and modified as a 12-item questionnaire. This revised inventory contained six domains that assess perceived social support: attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance. Each item was rated on a six-point scale ranging from 0 (*Not at all*) to 5 (*A great deal*). Of the twelve items, one specific perceived support score was taken daily over a fourteen period and the average of these fourteen scores was used to assess for perceived support within this study. The scale has

been shown to be a valid and reliable indicator of partner support, with an alpha coefficient ranging from 0.64 to 0.76 in the original validation sample (Cutrona, 1989).

**Negative affect (patient, partner).** In the current study, both patients and their partners completed the PANAS to assess their mood state over the past week. A subscale of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) was used to assess each participant's level of negative affect. This scale measured the extent to which participants endorsed six items describing negative affect (e.g., "unhappy"). Every item was rated on a 6-point scale ranging from 0 (*Not at all*) to 5 (*Extremely*). The items from the negative affect subscale were summed to represent the patient and partner's level of negative affect. In the original validation sample, six time frames were investigated (i.e., this moment, today, the past few days, the past week, during the past year, and in general). The scale has been shown to be a valid and reliable indicator of negative affect, with an alpha coefficient ranging from 0.84 to 0.90 in the original validation sample (Watson, Clark, & Tellegen, 1988).

**Relationship satisfaction (patient, partner).** The Quality of Marriage Index (QMI; Norton, 1983) was used to measure relationship satisfaction in both partners. The QMI is a 6-item measure; five items are rated using a 7-point scale ranging from 1 (*Very strong disagreement*) to 7 (*Very strong agreement*). The sixth item, which assesses happiness, is rated using a 10-point scale from 1 (*Very unhappy*) to 10 (*Very happy*). All items were summed to measure each partners' relationship satisfaction. The QMI is a valid and reliable indicator of relationship satisfaction, with an alpha coefficient ranging from 0.72 to 0.82 in the original validation sample (Norton, 1983).

**Symptom severity (patient).** The Rotterdam Symptom Checklist (RSCL; De Haes, Van Knippenberg, & Neijt, 1990) is a measure completed by patients at baseline to describe the

physical and psychological symptoms they experienced as a result of their cancer. The 16-item “physical distress” subscale was used in this study to gather information about the extent to which the patient experienced cancer-related physical symptoms (e.g., nausea, loss of hair, dizziness, fatigue, etc.) over the past week. Scores from the subscale were summed to measure the patient’s physical symptom severity. The reliability of the physical distress subscale were adequate, with alpha scores ranging from 0.71 to 0.88 (De Haes, Van Knippenberg, & Neijt, 1990).

**Communication (partner).** The Marital Satisfaction Inventory Revised (MSI-R; Snyder & Aikman, 1999) is a multidimensional measure used to measure the partner’s communication patterns. The communication score was calculated using the Affective Communication subscale (AFC), which contains 13 true-false items that encompass two domains: lack of support and affection and limited disclosure of feelings or lack of understanding. In the current study, these scores were summed in order to measure the male partner’s self-reported communication. Cronbach’s alpha coefficients for individual subscales range from .70 to .93 (Snyder et al., 2004).

### **Data Analytic Plan**

The current investigation included data obtained at a baseline assessment from the 142 couples described above. The statistical analyses were performed using Mplus Version 7.2 and SPSS version 22. Descriptive statistics on each of the independent and dependent variables were collected as part of the first step of the analyses. The goal in this first step was to assess the distribution of the data, with a focus on identifying any outliers that exist. The second step was to perform a path analysis using a multiple mediator model to test the primary hypotheses under consideration in the investigation. As there is no formal, standardized power analysis

investigation for path analysis, which was used for testing the majority of the hypotheses, no power analyses were performed. The secondary hypothesis was tested using a linear regression analysis. The models are presented below:

### **Primary Hypothesis**

Given the overlap that exists among the majority of the hypotheses in this investigation, a path analysis model was used to fit the data. Path analysis is considered to be an extension of multiple regression and is the preferred option in the context of the study due to its ability to examine complex models (Streiner, 2005). Another benefit of using path analysis to test this set of hypotheses was that it provided a general analytical framework that allowed for the integration of both moderation and mediation within the same model (Edwards & Lambert, 2007). From a mediation standpoint, path analysis is designed such that the mediator can serve as both a predictor and a criterion variable. Finally, rather than running distinct analyses, as would be necessary in regression, by using path analysis, each hypothesized path was statistically evaluated within this one analysis.

Maximum likelihood (ML) was used in these analyses for estimation purposes. ML estimation makes use of a chi-square difference test in order to evaluate statistical significance between the parameters of different models within the analysis (Bentler & Bonett, 1980). The goal in using ML was to create estimates that best represented this population. In order to evaluate the indirect effects in the model with precision, bias corrected bootstrap confidence intervals were used. Moving forward with this approach afforded the analyses with sufficient power (Mallinckrodt, Abraham, Wei, & Russell, 2006).

### **Secondary Hypothesis**

The secondary hypothesis examined relationships where the patient experienced severe symptomology and within these relationships, whether male partner benefit finding had an effect

on both partners' resulting level of negative affect. This interaction effect was tested using the following models:

$$FNA = B_1MBF + B_2FSS + B_3MBF*FSS + B_0 + \epsilon$$

$$MNA = B_1MBF + B_2FSS + B_3MBF*FSS + B_0 + \epsilon$$

MBF represented the male partner's score on the benefit finding measure with  $B_1$  serving as the slope for the male's benefit finding score. FSS represented the female partner's symptom severity score, as measured by the RSCL with  $B_2$  serving as the slope for the female's symptom severity score. Female negative affect (FNA) and male negative affect (MNA) both represented negative affectivity levels as measured by the PANAS. The interaction term,  $B_3MBF*FSS$ , was the multiplicative relationship between male benefit finding and female symptom severity. The error term in the model was represented by  $\epsilon$ . The  $\alpha$ -level was set at 0.05 for this interaction analysis. As the omnibus F test for the interaction was not significant, no post-hoc tests were necessary.

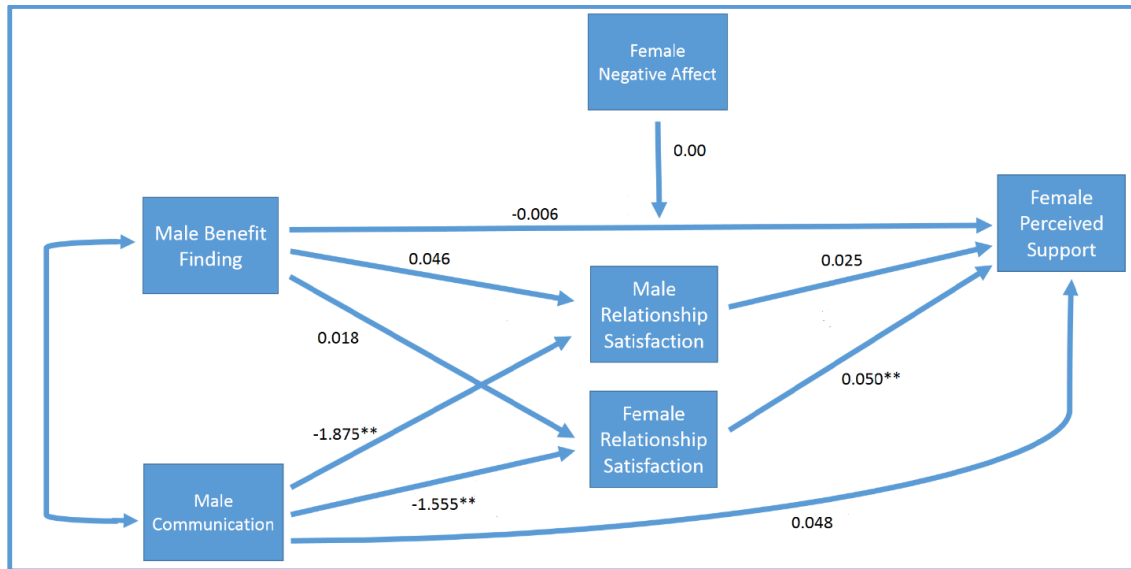
### **CHAPTER 3: RESULTS**

Means and standard deviations among variables in the primary analysis (i.e., male benefit finding, female perceived support, male communication, female negative affect and relationship satisfaction in both partners) are presented in Table 1. Means and standard deviations for variables included in the secondary analysis (i.e., male benefit finding, female symptom severity and negative affect in both partners) are also presented in Table 1. While both partners reported similar levels of relationship satisfaction, females in the sample appear to have experienced higher levels of negative affect. Correlations among the variables in the primary and secondary analyses are presented in Table 5 and Table 6. The correlational data in the primary analysis suggest that a moderate to strong association exists between male communication and relationship satisfaction in both partners. The data also suggest that moderate associations exist among female relationship satisfaction and female perceived support, the primary outcome variable in the analysis.

The study's primary hypothesis was tested through the use of a path analysis, which included each of the model's six variables. The model included male and female relationship satisfaction as mediators, as well as female negative affect as the lone moderator. The primary outcome variable was female perceived support. An accompanying path diagram depicting this model and each path estimate appears as Figure 2. The path estimates for each individual path are also listed in Table 7, Table 8, and Table 9.



**Figure 2: Visual Representation of Path Analysis Used to Test Primary Hypotheses with Path Estimates**



Note: \*\* $p < .01$ .

In running the primary path analysis, we estimated only the direct and indirect paths from male communication and male benefit finding to female perceived support, omitting the interaction term. Our goal in doing so was to examine the model for adequacy when it was not fully saturated. Diagnostics on the model indicated that the fit was adequate ( $X^2(2) = 4.78$ ,  $p = 0.09$ ; CFI = 0.99; RMSEA = 0.1; SRMR = 0.03). Research shows that an RMSEA of 0.1 or lower indicates reasonable error of approximation (Browne, Cudeck, & Bollen, 1993). This is especially noteworthy within this analysis, one with relatively few degrees of freedom, as the RMSEA is contingent on misspecification per degree of freedom (Rigdon, 1996). Given that, although the RMSEA is on the border of acceptability, it is a reasonable value for the initial measurement model when taking into account the accepted research.

As this initial model proved to fit the data well, the predictive utility of both male variables under investigation (i.e., benefit finding and communication) were examined through the use of the path analysis. The direct and indirect effects of the analysis are presented in Table 7, Table 8, and Table 9. Several direct and indirect paths within the analysis were significant. Specifically, the paths from male communication to the model's mediating variables, male and female relationship satisfaction, were significant. (Note that the measure of communication is inversely scored. Therefore, a negative path estimate suggests a positive association between the variables.) No other predictor-to-mediator variables were significant in the model. One mediator-to-outcome path was significant: female relationship satisfaction to female perceived support. The other mediator, male relationship satisfaction, was not related to female perceived support. Upon running the model with the interaction term included, the results indicated that the interaction between male benefit finding and female negative affect was not associated with female perceived support.

The aim of the secondary analysis was to test the hypothesis that female symptom severity is positively associated with negative affectivity in both partners, regardless of the male partner's level of benefit finding. We further hypothesized that female symptom severity would moderate the relationship between male benefit finding and negative affect in both partners such that when the male partner experiences higher levels of benefit finding in the context of lower female symptom severity, negative affect would be lower in both partners. Male benefit finding would therefore only be inversely related to negative affectivity when the patient experiences milder physical symptoms. Within this model, the dependent variables were male and female negative affect while the interaction term was the multiplicative relationship between male benefit finding and female symptom severity. Two distinct linear regression analyses were

conducted to test for a moderation effect on negative affect (one analysis for each partner) and the  $\alpha$ -level was set at .05 for each. The independent variables were mean-centered for this analysis. The results of the analysis indicated that no significant interaction exists between male benefit finding and female symptom severity on either partner's negative affect. In terms of individual main effects, while there was no linear association between benefit finding and either partner's negative affectivity, a significant linear association emerged in the relationship between female symptom severity and both male and female negative affect. All results of the analyses testing the secondary hypothesis are indicated in Table 2 and Table 3.

Male benefit finding, a central predictor variable in both the primary and secondary hypothesis, was not a significant predictor in either analysis. Further analyses were conducted to clarify the role of male benefit finding in the breast cancer experience. Upon examining individual correlations between variables, the only variable that was significantly correlated with male benefit finding was male relationship satisfaction (see Table 5). Male benefit finding was also regressed individually against male negative affect, male psychological well-being, and male depression scores in order to determine if the effect of this variable was more intrapersonal than interpersonal. The results indicated that no significant relationship exists between male benefit finding and any of these three variables reflecting male functioning (see Table 4).

## **CHAPTER 4: DISCUSSION**

Research on the psychological effects of breast cancer suggests that both patients and their partners tend to experience significant psychological distress. Men confronted with their partner's illness are often unsure how to best offer their partner support and also uncertain how to deal with their own pain (Lichtman et al., 1988). This lack of clarity has implications for men's psychological well-being and the health of their relationships, in addition to their partners' ability to effectively cope. The primary aim of this study was to investigate the extent to which male benefit finding affects each partner's psychological well-being and relationship satisfaction. Furthermore, we included male communication into the primary analysis to understand how it may enhance the effect of the partner's benefit finding. Reflecting the inconsistency in the literature, the results of our primary analysis largely did not support the central hypothesis that male benefit finding is positively associated with female perceived support. There was, however, a significant correlation between male benefit finding and male relationship satisfaction. While male benefit finding did not appear to have an effect on perceived female support, our primary outcome variable, our analyses confirmed the importance of male communication in the context of individual and interpersonal outcomes. Implications of these findings, methodological limitations, and directions for future research will be discussed in the following section.

The primary hypothesis of the study, that male benefit would be positively associated with female perceived support and relationship satisfaction in both partners, was driven by research that highlighted the utility of benefit finding as a predictor of individual functioning across contexts (Sears et al., 2003; Urcuyo et al., 2005). The majority of studies examining

benefit finding occurred in individual contexts. This study's primary prediction, that male benefit finding would be positively associated with female perceived support, was an extension of this research. Our results indicated, however, that no such association exists between male benefit finding and female perceived support. One possible explanation for this result may be that benefit finding is possibly related to received support and that there was a mismatch between perceived and received support. As mentioned earlier, perceived support carries more weight than received support in predicting patient psychological outcomes. As such, a measure of negative affect was included to determine if the hypothesized negative filter in patients with high levels of negative affect was responsible for skewing the patient's perception of support. We predicted that female negative affect would moderate the relationship between male benefit finding and perceived support, a hypothesis that was also not supported by the findings. In light of these null findings, we are left to wonder about the utility of male benefit finding in this context. The absence of the interaction in this model may simply suggest that male benefit finding does not produce the positive interpersonal effects that we anticipated. One variable that may fit well into this model in place of male benefit finding is male relationship schematic processing, the extent to which the partner views the world through the lens of his relationship. It stands to reason that partners who process events in the context of their relationship would therefore be well-positioned to offer consistent support in a form that is more likely to meet their partner's needs.

Another possible explanation for the lack of association between male benefit finding and female perceived support may lie in the fact that the male partner does not necessarily have to find benefit in order to make his partner feel supported. Breast cancer is a physically and emotionally draining experience that can impact multiple domains of a couple's lives. For many,

it can feel unnatural to find benefit from such a traumatic experience. Yet, this does not preclude the male partner from standing by his wife and offering high levels of support. While benefit finding may allow partners to be more emotionally available to their partner (based on research suggesting that they are likely to be less distressed), it does not appear to have the effect on patient perceived support that we predicted in our initial hypothesis. Thus, future investigations should explore how males provide support within the context of breast cancer when the male experiences few positives as a result of the breast cancer experience. One hypothesis may be that an acceptance model may be a better fit than benefit finding for this population in the context of understanding how males provide support at such difficult times.

Within the primary analysis, we also speculated about the role of male communication in predicting female perceived support as mediated by male and female relationship satisfaction. The indirect path from male communication to female perceived support was significant when mediated by female relationship satisfaction. While this path does not infer causality, it increases the likelihood of the pre-defined causal hypothesis that we proposed. This finding is consistent with results that have previously been found across couple and health research. Across couples, male communication tends to be highly correlated with female relationship satisfaction. It also stands to reason that, as we hypothesized, females who are more content in their relationships report higher levels of perceived support. The path from male relationship satisfaction to female perceived support, however, was not significant. As was the case with male benefit finding, it appears that male relationship satisfaction does not appear to impact the patient's perception of support. Why would it be that when males are more satisfied in their relationships that this does not manifest itself in regard to the amount of support that their partners perceive? The answer may once again lie in the fact that male partners do not always know how to offer support in the

most effective manner. For example, Hagedoorn et al. (2000) examined the relationship between relationship satisfaction and support and discussed three categories of support that spouses of cancer patients tend to offer: active engagement (using constructive problem-solving strategies and being open with the patient), protective buffering (not sharing concerns with the partner), and overprotection (offering excessive help and offering disproportionate praise for accomplishments due to the underestimation of the patient's state)(Hagedoorn et al., 2000). While these approaches are likely used by well-meaning partners who experience high relationship satisfaction, the results of the Hagedoorn paper suggest that only active engagement is an adaptive response and that protective buffering and overprotection are negatively associated with relationship satisfaction. In applying this three category model of support to the current findings, it very well may be that the presence of protective buffering and overprotection is at least partially responsible for male relationship satisfaction's lack of association with female perceived support.

The prediction that male and female relationship satisfaction would mediate the relationship between male benefit finding and female perceived support was central to the primary hypothesis. As a number of questions within the benefit finding assessment pertain to family (e.g., My partner's having had breast cancer has made me more sensitive to family issues.), the significant correlation between male benefit finding and male relationships satisfaction is understandable. It was less expected, however, that male benefit finding did not share that same association with female relationship satisfaction. This suggests that although the male partner may feel a deeper purpose and sense of reprioritization in his own life, it does not necessarily impact his wife's relationship satisfaction. This may be due to the fact that benefit finding is perhaps more of an individual phenomenon, one that largely impacts the individuals'

intrapersonal experience. The investigation of this hypothesis suggests that benefit finding manifests itself more internally than externally, and it may also explain why male benefit finding does not appear to be associated with female perceived support.

Our secondary analyses, which examined the impact of male benefit finding and female symptom severity on negative affect in both partners, further highlighted the way in which male benefit finding does not appear to play a role in the coping process for either partner. The results did not support an association between male benefit finding and either partner's negative affect. These findings suggest that the extent to which the male partner finds positive effects from his wife's diagnosis has no significant bearing on her mood. While the primary analysis suggested that male benefit finding appears to be an index of how satisfied the male partner is in his relationship, the results from the secondary analysis suggest that male benefit finding is a construct unrelated to his own mood, as there was no association between benefit finding and male negative affect. We were surprised by this finding, given the way in which benefit finding has traditionally been thought of as a predictor of individual psychological outcomes. This prompted us to run additional analyses in hopes of shedding light on our main independent variable, male benefit finding. The results of these analyses indicated that within this sample, male benefit finding was not associated with several indices of the male's psychological well-being, nor was it related to his level of depression. These results confirm that male benefit finding, while often found to be associated with psychological outcome, is not consistently adaptive across studies.

Researchers who have encountered similar results have speculated that increased levels of benefit finding may be indicative of an unwillingness to acknowledge the level of emotional distress that the individual is experiencing (Tomich & Helgeson, 2004). By focusing on the



positive meaning that results from the illness, researchers have theorized that this allows individuals to protect themselves from the often frightening reality of their situations. One factor to consider in attempting to understand the role of benefit finding and the extent to which it is an adaptive response is the time of assessment. Tomich and Hegelson (2004) suggest that individuals who find benefit early in their coping process may be seeking benefit in order to avoid distressed feelings. The authors contend, however, that individuals who find benefit upon having had time to reflect on their illness and the ways in which it has changed their lives, are perhaps doing so in a healthier, more positive manner. They are finding benefit in a way that is characterized more by growth and less by avoidance. This theory may better explain the findings from this study, as the sample was comprised of couples who had been coping with the illness for less than a year, allowing less opportunity for reflection.

Within the secondary analysis, while female symptom severity did not play a moderating role between male benefit finding and the dependent variables, it was shown to be related to negative affectivity in both partners. This finding confirms our hypothesis that the physical experiences of the patient play an important role in the level of psychological distress of both the patient and the partner. This finding aligns with past research and theory which suggests that greater symptomology is associated with diminished psychosocial outcomes.

There were several limitations of the current study. Primarily, this study was conducted using cross-sectional data. As such, all findings must be viewed as correlational, rather than causal. While the use of path analysis in the primary analysis highlighted significant paths that exist within the model, it does not indicate causality in either direction. Therefore, any extrapolation of the above findings are speculative, requiring further research to move the needle from correlational to causal. Another limitation of the study is that the data were drawn from a

sample that was predominantly white, highly educated, and upper middle class. That the population was predominantly from the upper middle class suggests that these couples were less likely to experience the financial hardships and subsequent life stress that is often present among those within a lower socioeconomic class. The distribution of these demographic variables raise questions about generalizability of the findings to populations that have disparate racial, financial, or educational backgrounds.

The results of the study build upon the foundation of research investigating benefit finding among couples with breast cancer and establishes possible directions for future research. Specifically, the findings suggest that it may be worthwhile to study these same variables among breast cancer patients and their partners who are more than one year post-diagnosis. This would allow researchers to understand how the impact of benefit finding among this population compares to its impact among couples in their first year of adjusting to the illness. When we consider our findings in the context of previous research, we would anticipate that measuring benefit finding later in the process (i.e., more than a year post-diagnosis) might allow more time for positive reflection and reframing in a constructive manner. We anticipate that this reframing would inform their support behaviors, as well as their relationship maintenance behaviors, resulting in improved levels of perceived support in the patient and increased relationship satisfaction in both partners.

Finally, another area for future research may include further analysis of male communication, a variable whose importance was highlighted in this study. As research has shown that active engagement may not be a particularly natural approach for most men, future research should investigate variables that help to facilitate this type of cancer-related communication for men with their partners. One study found that among male partners, higher

levels of self-efficacy were positively associated with active engagement (Kuijter et al., 2000). However, researchers have yet to investigate which patient-specific variables may serve as moderators in the relationship between male communication and perceived support. Although female negative affect did not serve in a moderating role in this study, we hypothesize that another possible factor may be patient age, as research has shown that younger women (i.e., younger than 50 years old) with breast cancer tend to have a more difficult time with the cancer experience as compared to older women (Baucom, D., Porter, L., Kirby, J., Gremore, T., & Keefe, F., 2006). While this is likely to be due to a host of logistical factors that are often more burdensome to younger women (e.g., undergoing treatment when juggling a career and a young family), it may also be related to research suggesting that people experience greater acceptance as they age, a quality that is likely to facilitate communication (Ranzijn, R., & Luszcz, M., 1999). Ultimately, the goal in pursuing this potential research direction is to help identify and understand situations in which well-meaning partners are engaging in protective buffering or overprotection.

As we consider these findings in light of existing theory and research, this study further highlights the complexities of patient and partner attempts to cope with breast cancer, both individually and as a dyad. We primarily examined male benefit finding and communication, and although on the surface they both might appear to be adaptive qualities, our findings suggest that neither fits unequivocally in this category. Given the mixed results within benefit finding research, our aim was to examine this construct in a more contextual fashion, and our results suggest that benefit finding is not a universally positive quality. Whereas some researchers have theorized that those who derive meaning from difficult circumstances are universally strengthened, our findings suggest that it is not that straightforward. Our model, one that

included partner, patient and dyadic variables, did not produce results consistent with the hypothesis that male benefit finding is adaptive across all contexts; still, it would be useful for future research to further explore this nuanced construct in hopes of clarifying effective coping mechanisms in the face of this challenging illness.

## Statistical Tables

Table 1

*Descriptive statistics for all predictor and outcome variables*

Variable	Mean	Standard Deviation
Male Benefit Finding	52.89	15.82
Female Negative Affect	20.57	7.23
Male Negative Affect	17.77	6.19
Male Quality of Marriage	38.46	7.90
Female Quality of Marriage	38.43	7.27
Male Communication	2.98	2.90
Female Perceived Support	3.52	0.88
Female Symptom Severity	24.83	7.13

Table 2

*Results from regression analysis predicting female negative affect from male benefit finding, female symptom severity, and their interaction.*

Variable	B	SE	t
Male Benefit Finding	-0.053	0.036	-1.459
Female Symptom Severity	0.213	0.091	2.340*
Male Benefit Finding * Female Symptom Severity	-0.004	0.006	-0.707

*DV: Female Negative Affect*

\*  $p < 0.05$  (two-tailed)

Table 3

*Results from regression analysis predicting male negative affect from male benefit finding, female symptom severity, and their interaction.*

Variable	B	SE	t
Male Benefit Finding	-0.011	0.032	-0.371
Female Symptom Severity	0.197	0.073	2.670*
Male Benefit Finding * Female Symptom Severity	-0.003	0.005	-0.559

*DV: Male Negative Affect*

\*  $p < 0.05$  (two-tailed)

Table 4

*Results from individual regression analyses predicting different male psychological variables from male benefit finding.*

Variable	B	SE	t
Male Negative Affect	0.050	0.033	1.496
Male Psychological Well-Being	0.020	0.066	0.310
Male Depression Summary Score	-0.001	0.014	-0.087

*IV: Male Benefit Finding*

Table 5

*Correlations between male benefit finding, male communication and primary analysis outcome variables*

Variable	1	2	3	4	5	6
1. Male Benefit Finding	1.00					
2. Female Negative Affect	-.07	1.00				
3. Male Relationship Sat.	.22**	-.18*	1.00			
4. Female Relationship Satisfaction	.13	-.23*	.60*	1.00		
5. Male Communication	-.16	.17	-.77**	-.57**	1.00	
6. Female Perceived Support	-.02	-.17*	-.25**	.47**	-.25**	1.00

Note: \* $p < .05$ . \*\* $p < .01$ .

Table 6

*Correlations between Male Benefit Finding, Female Symptom Severity and Negative Affect in both partners*

Variable	1	2	3	4
1. Male Benefit Finding	1.00			
2. Female Symptom Severity	.09	1.00		
3. Female Negative Affect	-.10	.24**	1.00	
4. Male Negative Affect	.09	.16*	.28**	1.00

Note: \* $p < .05$ . \*\* $p < .01$ .

Table 7

*Direct effects of predictor variables on outcome variables in the primary analysis path analysis*

Predictor Variable	Outcome Variable	B	SE	Two-Tailed P-Value
<b>Direct Effects</b>				
Male Benefit Finding	Female Perceived Support	-0.006	0.004	0.161
Female Negative Affect	Female Perceived Support	-0.008	0.009	0.393
Female Relationship Satisfaction	Female Perceived Support	0.050	0.011	0.000**
Male Relationship Satisfaction	Female Perceived Support	0.025	0.015	0.084
Male Communication	Female Perceived Support	0.048	0.035	0.170
Male Benefit Finding*Female Negative Affect	Female Perceived Support	0.000	0.001	0.606
Male Benefit Finding	Male Relationship Satisfaction	0.046	0.025	0.064
Male Communication	Male Relationship Satisfaction	-1.875	0.136	0.000**
Male Benefit Finding	Female Relationship Satisfaction	0.018	0.035	0.601
Male Communication	Female Relationship Satisfaction	-1.555	0.192	0.000**

Note: \* $p < .05$ . \*\* $p < .01$ .



Table 8

*Indirect effects of male benefit finding on female perceived support*

	B	SE	Two-Tailed P-Value
Total Effect	-0.004	0.005	0.415
Total Indirect	0.002	0.002	0.327
<i>Indirect Paths</i>			
Male Communication to Female Quality of Marriage to Female Perceived Support	0.001	0.002	0.603
Male Communication to Male Quality of Marriage to Female Perceived Support	0.001	0.001	0.206

Note: \* $p < .05$ , \*\* $p < .01$ .

Table 9

*Indirect effects of male communication on female perceived support*

<b>Indirect Effects: Male Communication to Female Perceived Support</b>		<b>B</b>	<b>SE</b>	<b>Two-Tailed P-Value</b>
Total Effect		-0.076	0.025	0.003
Total Indirect		-0.125	0.030	0.000
<i>Indirect Paths</i>				
Male Communication to Female Quality of Marriage to Female Perceived Support		-0.077	0.019	0.000
Male Communication to Male Quality of Marriage to Female Perceived Support		-0.048	0.028	0.086

Note: \* $p < .05$ , \*\* $p < .01$ .

## REFERENCES

- Affleck, G., & Tennen, H. (1996). Construing benefits from adversity: Adaptational significance and dispositional underpinnings. *Journal of Personality*, 64(4), 899-922.
- Alferi, S. M., Carver, C. S., Antoni, M. H., Weiss, S., & Durán, R. E. (2001). An exploratory study of social support, distress, and life disruption among low-income Hispanic women under treatment for early stage breast cancer. *Health Psychology*, 20(1), 41.
- Antoni, M. H., Lehman, J. M., Kilbourn, K. M., Boyers, A. E., Culver, J. L., Alferi, S. M., . . . Harris, S. D. (2001). Cognitive-behavioral stress management intervention decreases the prevalence of depression and enhances benefit finding among women under treatment for early-stage breast cancer. *Health Psychology*, 20(1), 20.
- Arora, N. K., Gustafson, D. H., Hawkins, R. P., McTavish, F., Cella, D. F., Pingree, S., . . . Mahvi, D. M. (2001). Impact of surgery and chemotherapy on the quality of life of younger women with breast carcinoma. *Cancer*, 92(5), 1288-1298.
- Arozullah, A. M., Calhoun, E. A., Wolf, M., Finley, D. K., Fitzner, K. A., Heckinger, E. A., . . . Bennett, C. L. (2004). The financial burden of cancer: estimates from a study of insured women with breast cancer. *J Support Oncol*, 2(3), 271-278.
- Badr, H., & Carmack Taylor, C. L. (2009). Sexual dysfunction and spousal communication in couples coping with prostate cancer. *Psycho-Oncology*, 18(7), 735-746.
- Barrera, M. (1986). Distinctions between social support concepts, measures, and models. *American journal of community psychology*, 14(4), 413-445.
- Baucom, D. H., Kirby, J. S., Pukay-Martin, N. D., Porter, L. S., Fredman, S. J., Gremore, T. M., . . . Atkins, D. (2012). Men's psychological functioning in the context of women's breast cancer. *Journal of Marital and Family Therapy*, 38(2), 317-329. doi: 10.1111/j.1752-0606.2009.00133.x
- Baucom, D. H., Porter, L. S., Kirby, J. S., Gremore, T. M., & Keefe, F. J. (2006). Psychosocial issues confronting young women with breast cancer. *Breast disease*, 23(1), 103-113.
- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological bulletin*, 88(3), 588-606.
- Bigatti, S. M., Wagner, C. D., Lydon-Lam, J. R., Steiner, J. L., & Miller, K. D. (2011). Depression in husbands of breast cancer patients: relationships to coping and social support. *Supportive Care in Cancer*, 19(4), 455-466.

- Biglan, A., Hops, H., Sherman, L., Friedman, L. S., Arthur, J., & Osteen, V. (1985). Problem-solving interactions of depressed women and their husbands. *Behavior Therapy*, 16(5), 431-451.
- Bolger, N., Foster, M., Vinokur, A. D., & Ng, R. (1996). Close relationships and adjustments to a life crisis: The case of breast cancer. *Journal of personality and social psychology*, 70(2), 283.
- Browne, M. W., Cudeck, R., & Bollen, K. A. (1993). Alternative ways of assessing model fit. *Sage Focus Editions*, 154, 136-136.
- Cassidy, T. (2013). Benefit finding through caring: The cancer caregiver experience. *Psychology & Health*, 28(3), 250-266. doi: 10.1080/08870446.2012.717623
- Coates, A., Abraham, S., Kaye, S. B., Sowerbutts, T., Frewin, C., Fox, R., & Tattersall, M. (1983). On the receiving end—patient perception of the side-effects of cancer chemotherapy. *European Journal of Cancer and Clinical Oncology*, 19(2), 203-208.
- Cooper, S., & Georgiou, V. (1992). The impact of cytotoxic chemotherapy-perspectives from patients, specialists and nurses. *European Journal of Cancer*, 28, S36-S38.
- Cordova, M. J., Cunningham, L. L., Carlson, C. R., & Andrykowski, M. A. (2001). Posttraumatic growth following breast cancer: a controlled comparison study. *Health Psychology*, 20(3), 176.
- Cutrona, C. E. (1989). Ratings of social support by adolescents and adult informants: Degree of correspondence and prediction of depressive symptoms. *Journal of personality and social psychology*, 57(4), 723-730. doi: 10.1037/0022-3514.57.4.723
- Davila, J., Bradbury, T. N., Cohan, C. L., & Tochluk, S. (1997). Marital functioning and depressive symptoms: Evidence for a stress generation model. *Journal of personality and social psychology*, 73(4), 849-861. doi: 10.1037/0022-3514.73.4.849
- De Haes, J., Van Knippenberg, F., & Neijt, J. (1990). Measuring psychological and physical distress in cancer patients: structure and application of the Rotterdam Symptom Checklist. *British Journal of Cancer*, 62(6), 1034.
- Dennis, C., & Ross, L. (2006). Women's perceptions of partner support and conflict in the development of postpartum depressive symptoms. *Journal of Advanced Nursing*, 56(6), 588-599. doi: 10.1111/j.1365-2648.2006.04059.x
- Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: a general analytical framework using moderated path analysis. *Psychological methods*, 12(1), 1.

- Ey, S., Compas, B. E., Epping-Jordan, J. E., & Worsham, N. (1999). Stress responses and psychological adjustment in patients with cancer and their spouses. *Journal of Psychosocial Oncology*, 16(2), 59-77.
- Fallowfield, L. J., Hall, A., Maguire, G. P., & Baum, M. (1990). Psychological outcomes of different treatment policies in women with early breast cancer outside a clinical trial. *BMJ: British Medical Journal*, 301(6752), 575.
- Figueiredo, M. I., Fries, E., & Ingram, K. M. (2004). The role of disclosure patterns and unsupportive social interactions in the well-being of breast cancer patients. *Psycho-Oncology*, 13(2), 96-105.
- Fobair, P., Stewart, S. L., Chang, S., D'Onofrio, C., Banks, P. J., & Bloom, J. R. (2006). Body image and sexual problems in young women with breast cancer. *Psycho-Oncology*, 15(7), 579-594.
- Folkman, S., Lazarus, R. S., Gruen, R. J., & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of personality and social psychology*, 50(3), 571.
- Funch, D., & Mettlin, C. (1982). The role of support in relation to recovery from breast surgery. *Social Science & Medicine*, 16(1), 91-98.
- Glasdam, S., Jensen, A. B., Madsen, E. L., & Rose, C. (1996). Anxiety and depression in cancer patients' spouses. *Psycho-Oncology*, 5(1), 23-29.
- Haber, M. G., Cohen, J. L., Lucas, T., & Baltes, B. B. (2007). The relationship between self-reported received and perceived social support: A meta-analytic review. *American journal of community psychology*, 39(1-2), 133-144.
- Hagedoorn, M., Kuijer, R. G., Buunk, B. P., DeJong, G. M., Wobbles, T., & Sanderman, R. (2000). Marital satisfaction in patients with cancer: Does support from intimate partners benefit those who need it most? *Health Psychology*, 19(3), 274.
- Halstead, M. T., & Fernsler, J. I. (1994). Coping strategies of long-term cancer survivors. *Cancer nursing*, 17(2), 94-100.
- Helgeson, V. S., Reynolds, K. A., & Tomich, P. L. (2006). A meta-analytic review of benefit finding and growth. *Journal of Consulting and Clinical Psychology*, 74(5), 797-816. doi: 10.1037/0022-006X.74.5.797
- Hilton, B. A., & Koop, P. M. (1994). Family communication patterns in coping with early breast cancer. *Western Journal of Nursing Research*, 16(4), 366-391.

- Hudson, P. (2004). Positive aspects and challenges associated with caring for a dying relative at home. *International journal of palliative nursing*, 10(2), 58-65.
- Katz, R. C., Flasher, L., Cacciapaglia, H., & Nelson, S. (2001). The psychosocial impact of cancer and lupus: a cross validation study that extends the generality of “benefit-finding” in patients with chronic disease. *Journal of Behavioral Medicine*, 24(6), 561-571.
- Kim, Y., Schulz, R., & Carver, C. S. (2007). Benefit finding in the cancer caregiving experience. *Psychosomatic Medicine*, 69(3), 283-291. doi: 10.1097/PSY.0b013e3180417cf4
- Kuijer, R. G., Ybema, J. F., Buunk, B. P., De Jong, G. M., Thijs-Boer, F., & Sanderman, R. (2000). Active engagement, protective buffering, and overprotection: Three ways of giving support by intimate partners of patients with cancer. *Journal of Social and Clinical Psychology*, 19(2), 256-275.
- Landmark, B. T., Strandmark, M., & Wahl, A. K. (2001). Living with newly diagnosed breast cancer—The meaning of existential issues: A qualitative study of 10 women with newly diagnosed breast cancer, based on grounded theory. *Cancer nursing*, 24(3), 220-226.
- Langer, S. L., Brown, J. D., & Syrjala, K. L. (2009). Intrapersonal and interpersonal consequences of protective buffering among cancer patients and caregivers. *Cancer*, 115(S18), 4311-4325.
- Lichtman, R. R., Taylor, S. E., & Wood, J. V. (1988). Social support and marital adjustment after breast cancer. *Journal of Psychosocial Oncology*, 5(3), 47-74.
- Lindholm, L., Rehnsfeldt, A., Arman, M., & Hamrin, E. (2002). Significant others' experience of suffering when living with women with breast cancer. *Scandinavian Journal of Caring Sciences*, 16(3), 248-255.
- Mallinckrodt, B., Abraham, W. T., Wei, M., & Russell, D. W. (2006). Advances in testing the statistical significance of mediation effects. *Journal of Counseling Psychology*, 53(3), 372.
- Manne, S., Alfieri, T., Taylor, K. L., & Dougherty, J. (1999). Spousal negative responses to cancer patients: The role of social restriction, spouse mood, and relationship satisfaction. *Journal of Consulting and Clinical Psychology*, 67(3), 352-361. doi: 10.1037/0022-006X.67.3.352
- Manne, S., Ostroff, J. S., Norton, T. R., Fox, K., Goldstein, L., & Grana, G. (2006). Cancer-related relationship communication in couples coping with early stage breast cancer. *Psycho-Oncology*, 15(3), 234-247.

- McGregor, B. A., & Antoni, M. H. (2009). Psychological intervention and health outcomes among women treated for breast cancer: a review of stress pathways and biological mediators. *Brain, behavior, and immunity*, 23(2), 159-166.
- McLean, L. M., & Jones, J. M. (2007). A review of distress and its management in couples facing end-of-life cancer. *Psycho-Oncology*, 16(7), 603-616.
- Meraviglia, M. (2006). Effects of spirituality in breast cancer survivors. Paper presented at the Oncology Nursing Forum.
- Montazeri, A., Harirchi, I., Vahdani, M., Khaleghi, F., Jarvandi, S., Ebrahimi, M., & Haji-Mahmoodi, M. (2000). Anxiety and depression in Iranian breast cancer patients before and after diagnosis. *European Journal of Cancer Care*, 9(3), 151-157.
- Moyer, A., & Salovey, P. (1996). Psychosocial sequelae of breast cancer and its treatment. *Annals of Behavioral Medicine*, 18(2), 110-125.
- Moyer, A., & Salovey, P. (1999). Predictors of social support and psychological distress in women with breast cancer. *Journal of Health Psychology*, 4(2), 177-191.
- Navran, L. (1967). Communication and adjustment in ma. *Family Process*, 6(2), 173-184.
- Neuling, S. J., & Winefield, H. R. (1988). Social support and recovery after surgery for breast cancer: frequency and correlates of supportive behaviours by family, friends and surgeon. *Social Science & Medicine*, 27(4), 385-392.
- Northouse, L. (1988). Social support in patients' and husbands' adjustment to breast cancer. *Nursing Research*, 37(2), 91-97.
- Northouse, L., Dorris, G., & Charron-Moore, C. (1995). Factors affecting couples' adjustment to recurrent breast cancer. *Social Science & Medicine*, 41(1), 69-76.
- Northouse, L., & Swain, M. A. (1987). Adjustment of patients and husbands to the initial impact of breast cancer. *Nursing Research*, 36(4), 221-225.
- Northouse, L., Templin, T., & Mood, D. (2001). Couples' adjustment to breast disease during the first year following diagnosis. *Journal of Behavioral Medicine*, 24(2), 115-136.
- Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and the Family*, 45(1), 141-151.
- Ogden, J., & Lindridge, L. (2008). The impact of breast scarring on perceptions of attractiveness: An experimental study. *Journal of Health Psychology*, 13(3), 303-310. doi: 10.1177/1359105307088132

- Pakenham, K. I., Sofronoff, K., & Samios, C. (2004). Finding meaning in parenting a child with Asperger syndrome: Correlates of sense making and benefit finding. *Research in developmental disabilities*, 25(3), 245-264.
- Pasch, L., Bradbury, T., & Davila, J. (1997). Gender, negative affectivity, and observed social support behavior in marital interaction. *Personal Relationships*, 4(4), 361-378.
- Pistrang, N., & Barker, C. (1995). The partner relationship in psychological response to breast cancer. *Social Science & Medicine*, 40(6), 789-797. doi: 10.1016/0277-9536(94)00136-H
- Porter, L. S., Keefe, F. J., Hurwitz, H., & Faber, M. (2005). Disclosure between patients with gastrointestinal cancer and their spouses. *Psycho-Oncology*, 14(12), 1030-1042. doi: 10.1002/pon.915
- Revenson, T. A., Wollman, C. A., & Felton, B. J. (1983). Social supports as stress buffers for adult cancer patients. *Psychosomatic Medicine*, 45(4), 321-331.
- Rigdon, E. E. (1996). CFI versus RMSEA: A comparison of two fit indexes for structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 3(4), 369-379.
- Rogers, L. E., & Escudero, V. (2004). *Relational communication: An interactional perspective to the study of process and form*: Lawrence Erlbaum Associates.
- Roth, S., & Cohen, L. (1986). Approach, avoidance, and coping with stress. *American psychologist*, 41(7), 813.
- Roussi, P., Krikeli, V., Hatzidimitriou, C., & Koutri, I. (2007). Patterns of coping, flexibility in coping and psychological distress in women diagnosed with breast cancer. *Cognitive Therapy and Research*, 31(1), 97-109.
- Sears, S. R., Stanton, A. L., & Danoff-Burg, S. (2003). The yellow brick road and the emerald city: Benefit finding, positive reappraisal coping and posttraumatic growth in women with early-stage breast cancer. *Health Psychology*, 22(5), 487-497.
- Segrin, C., Badger, T., Sieger, A., Meek, P., & Lopez, A. M. (2006). Interpersonal well-being and mental health among male partners of women with breast cancer. *Issues in Mental Health Nursing*, 27(4), 371-389. doi: 10.1080/01612840600569641
- Snyder, D., Cepeda-Benito, A., Abbott, B., Gleaves, D., Negy, C., Hahlweg, K., & Laurenceau, J.-P. (2004). Cross-cultural Applications of the Marital Satisfaction Inventory-Revised. In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment: Volume 3: Instruments for adults* (3rd ed). (pp. 603-623). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.



- Society, A. C. (2014). Cancer Facts & Figures 2014.
- Stanton, A. L., Danoff-Burg, S., Sworowski, L. A., Collins, C. A., Branstetter, A. D., Rodriguez-Hanley, A., . . . Austenfeld, J. L. (2002). Randomized, controlled trial of written emotional expression and benefit finding in breast cancer patients. *Journal of Clinical Oncology*, 20(20), 4160-4168.
- Stanton, A. L., Danoff-burg, S., & Huggins, M. E. (2002). The first year after breast cancer diagnosis: hope and coping strategies as predictors of adjustment. *Psycho-Oncology*, 11(2), 93-102.
- Streiner, D. L. (2005). Finding our way: an introduction to path analysis. *The Canadian Journal of Psychiatry/La Revue canadienne de psychiatrie*.
- Taleghani, F., Yekta, Z. P., & Nasrabadi, A. N. (2006). Coping with breast cancer in newly diagnosed Iranian women. *Journal of Advanced Nursing*, 54(3), 265-272.
- Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic Growth: Conceptual Foundations and Empirical Evidence. *Psychological Inquiry*, 15(1), 1-18.
- Tomich, P. L., & Helgeson, V. S. (2004). Is finding something good in the bad always good? Benefit finding among women with breast cancer. *Health Psychology*, 23(1), 16.
- Urcuyo, K. R., Boyers, A. E., Carver, C. S., & Antoni, M. H. (2005). Finding benefit in breast cancer: Relations with personality, coping, and concurrent well-being. *Psychology & Health*, 20(2), 175-192. doi: 10.1080/08870440512331317634
- Velanovich, V., & Szymanski, W. (1999). Quality of life of breast cancer patients with lymphedema. *The American journal of surgery*, 177(3), 184-188.
- Vess, J., Moreland, J., Schwebel, A., & Kraut, E. (1989). Learning from patients and their spouses. *Journal of Psychosocial Oncology*, 6(1-2), 31-51.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: the disposition to experience aversive emotional states. *Psychological bulletin*, 96(3), 465.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of personality and social psychology*, 54(6), 1063.
- Weiss, T. (2002). Posttraumatic growth in women with breast cancer and their husbands: An intersubjective validation study. *Journal of Psychosocial Oncology*, 20(2), 65-80. doi: 10.1300/J077v20n02\_04
- Weiss, T. (2004). Correlates of posttraumatic growth in husbands of breast cancer survivors. *Psycho-Oncology*, 13(4), 260-268. doi: 10.1002/pon.735

- Wethington, E., & Kessler, R. C. (1986). Perceived support, received support, and adjustment to stressful life events. *Journal of Health and Social behavior*, 78-89.
- Wong, W., Ussher, J., & Perz, J. (2009). Strength through adversity: Bereaved cancer carers' accounts of rewards and personal growth from caring. *Palliative and Supportive Care*, 7(02), 187-196.
- Wright, M. O. D., Crawford, E., & Sebastian, K. (2007). Positive resolution of childhood sexual abuse experiences: The role of coping, benefit-finding and meaning-making. *Journal of Family Violence*, 22(7), 597-608.